54.8

Article II.—A LIST OF NEW CRYSTAL FORMS OF MINERALS

By Herbert P. Whitlock

The present list of new crystal forms is an extension of a list published in 1910 by the writer.[1] This former compilation listed the crystal forms described subsequent to the publication of Goldschmidt's 'Index' (1891), the entries being arranged by authors under each species. This arrangement involved several disadvantages in as much as the sequence of forms was necessarily broken and the availability for ready reference seriously impaired. The present compilation aims to correct these defects, to include additional data, and, while embracing the former work, to extend it to cover the great mass of new material which has resulted from crystallographic investigation during the past decade.

That such a systematic compendium of new crystal forms should prove of value is evidenced by the fact that the writer has, in the course of preparing the present list, frequently encountered crystal forms which were given by their respective authors as new, but which have upon investigation proved to have been previously cited by other authorities. The literature of crystallography has become so complex and voluminous that it is now obviously extremely difficult for an investigator to be sure as to the status of an apparently new form without long and arduous search. It is the purpose of the present list to supply in a convenient form an answer to this difficulty.

The scope of the work involves the results of the thirty years from 1890 to 1920, references prior to the former date being available in Goldschmidt's 'Index der Krystallformen der Mineralien.' Although frequent use has been made of the abstracts published in the Neues Jahrbuch der Mineralien and in the appendices of Dana's 'System of Mineralogy,' in most instances the work has been checked by direct reference to the original articles. Care has also been taken to obtain accurate data regarding the localities cited, which were, in many instances, vague and, in some cases, misleading. Where new orientations of a species have been proposed and authoratively accepted, forms previously cited have been transposed to correspond with the new axial elements. In such cases the axial elements used are given at the head of the species. In a number oi instances, particularly where species rich in forms are involved, articles have been published which contain bibli-

[1]H. P. Whitlock. 1910. 'A List of New Crystal Forms of Minerals.' School of Mines Quarterly, XXXI, p. 320 and XXXII, p. 51.

ographies, lists of previously described forms, and other crystallographic information of exceptional value relating to the species. These have been designated with a star in the list of numbered references.

Under each listed form is given

(1) The letter by which it was designated in the original paper, or where the letter system has been revised, the letter assigned to it in such revision;

(2) The Goldschmidt indices, as given in the second column of his 'Krystallographische Winkeltabellen';

(3) The Miller indices;

(4) The locality from which the crystals furnishing the form was derived; and

(5) A number corresponding to an entry in a list of references placed at the end of each species, giving the author and the publication containing the original description.

In attempting a compilation of this scope, the writer is keenly conscious of the possibility of omissions and errors, and will gratefully welcome additions and corrections.

ACMITE-AEGIRITE

V	11∞	11.1.0	Eker, Norway	1
χ	5∞	510	" "	1
f	3∞	310	" "	1
L	$\frac{7}{3}\infty$	730	" "	1
W	$\frac{16}{15}\infty$	16.15.0	" "	1
t	∞3	130	Libby, Mont.	6+7
Λ	∞7	170		7
r	$0\frac{5}{3}$	053	Långban, Sweden (Urbanite)	3
H	$-\frac{3}{2}0$	$\bar{3}02$	Eker, Norway	1
s	—1	$\bar{1}11$	" "	1
v	2	221	" "	1
w	3	331	Quincy, Mass.	5
	5	551	" "	5
C	6	661		2
Ω	—8	$\bar{8}81$	Eker, Norway	1
O	—6	$\bar{6}61$	" "	1
π	—5	$\bar{5}51$	" "	1
λ	—3	$\bar{3}31$	" "	1

	—2	$\bar{2}21$	Kororsuak, Greenland	4
	$-\frac{1}{2}$	$\bar{1}12$	Quincy, Mass.	5
d	13	131	" ".	5
Q	16	161	Eker, Norway	1
K	—19	$\bar{1}91$	" "	1
Λ	45	451	" "	1
Δ	$\frac{5}{2}\frac{9}{2}$	592	" "	1
X	46	461	Igaliko, Greenland	2
𝔅	57	571	" "	2
y	$-\frac{3}{2}\frac{1}{4}$	$\bar{6}14$	Långban, Sweden (Urbanite)	3
k	$-\frac{3}{2}\frac{1}{2}$	$\bar{3}12$	Eker, Norway	1
z	$-\frac{4}{3}\frac{10}{3}$	$\bar{4}.10.3$	" "	1

1.—W. C. Brögger, 1890, Zeitschr. f. Kryst., XVI, p. 658.
2.—G. Flink, 1894, Zeitschr. f. Kryst., XXIII, p. 360.
3.—Hj. Sjögren, 1894, Geol. Fören. Förh., XIV, p. 251.
4.—O. B. Böggild, 1905, Min. Grönland, p. 379.
5.—C. Palache and C. H. Warren, 1911, Amer. Journ. Sci., XXXI, p. 550.
6.—E. S. Larsen and W. F. Hunt, 1913, Amer. Journ. Sci., XXXIV, p. 289.
7.—R. Doht and C. Hlawatsch, 1913, Verh. d. k. k. geol. Reich., Wien, p. 79.

Adelite

$a: b: c = 1.0989:1:1.5642 \quad \beta = 73° \ 15'$

a	∞0	100	Nordmark—Långban, Sweden	1
c	0	001	" " "	1
m	∞	110	" " "	1
f	01	011	" " "	1
d	—2	$\bar{2}21$	" " "	1

1.—Hj. Sjögren, 1891, Geol. Fören. Förh., XIII, p. 781.

Adamite

f	$\frac{1}{3}0$	103	Island of Thasos, Greece	2
e	$\frac{2}{5}0$	205	" " " "	2
	$\frac{6}{7}0$	607	Monte Valerio, Italy	1
	12	121	" " "	1
p	$\frac{1}{3}\frac{2}{3}$	123	Island of Thasos, Greece	2

1.—Aloisi, 1909, Riv. Min. Ital., XXXIX, p. 58.
2.—V. Rosicky, 1908, Abh. d. böhm. Akad., XIII, No. 28.

Alamosite

a: b: c = 1.375:1:0.924 $\beta = 84° 10'$

c	0	001	Alamos, Mexico	1
a	∞0	100	" "	1
b	0∞	010	" "	1
m	∞	110	" "	1
v	10	101	" "	1
g	01	011	" "	1
p	—12	$\bar{1}21$	" "	1
r	12	121	" "	1

1.—C. Palache and H. E. Merwin, 1909, Amer. Journ. Sci., XXVII, p. 399.

Albite

a: b: c = 0.6367:1:0.5593 $\alpha = 94° 15'$ $\beta = 116° 37'$ $\gamma = 87° 41'$ (2)

K	$\frac{3}{5}\infty$	350	Greenland	3
Z	$\frac{1}{2}\infty$	120	Haddam Neck, Conn.	1
ϑ	$0\bar{4}$	$0\bar{4}1$	Greenland	3
Ξ	$0\bar{5}$	$0\bar{5}1$?	"	3
Γ	$\frac{\bar{1}}{3}\frac{1}{3}$	$\bar{1}13$	"	3
Λ	$\frac{\bar{3}}{2}\frac{3}{2}$	$\bar{3}32$	"	3
φ	$\bar{2}1$	$\bar{2}11$	"	3
Υ	$\bar{3}1$	$\bar{3}11$	Haddam Neck, Conn.	1
Θ	$\overline{13}$	$\overline{13}1$	San Benito, Calif.	4
	$\bar{1}3$	$1\overline{31}$		5
ξ	$\overline{15}$	$\overline{15}1$	Greenland	
Q	$\overline{1\frac{5}{2}}$	$\overline{15}2$	"	
	$\frac{1}{2}\frac{\bar{9}}{2}$	$1\bar{9}2$		
χ	$\overline{24}$	$\overline{24}1$	Haddam Neck, Conn.	1
X	$\bar{2}9$	$\bar{2}91$?	Greenland	3
ω	$\bar{3}\frac{1}{2}$	$\bar{3}12$	"	3

1.—H. Bowman, 1902, Min. Mag., XIII, p. 115.
2.—G. Melczer, 1906, Zeitschr. f. Kryst., XL, p. 571.
*3.—C. Dreyer and V. Goldschmidt, 1907, Medd. om. Grönland, p. 34.
4.—G. D. Lauterback, 1909, Univ. Calif. Pub., V, p. 331.
5.—L. Iwanow, Abh. d. Ges. z. Erforschung Wolhyniens, p. 7.

Allcharite

a: b: c = 0.9284:1:0.6080

b	0∞	010	Allchar, Macedonia	1
m	∞	110	" "	1

n	2∞	210	Allchar, Macedonia	1
u	01	011	" "	1
z	10	101	" "	1
p	1	111	" "	1

1.—B. Ježek, 1912, Zeitschr. f. Kryst., LI, p. 275.

Altaite

β	$\frac{3}{2}$1	322	Tuolumne Co., Calif.	1

1.—A. S. Eakle, 1903, Bull. Geol. Univ. Calif., XIII, p. 279.

Amalgam

t	54	541		1

1.—H. Steinmetz and B. Gossner, 1915, Zeitschr. f. Kryst., LV, p. 156.

Analcite

	$\frac{3}{2}$	332	Renfrewshire, Scotland	1
z	$\frac{5}{3}\frac{4}{3}$	543	" "	1
t	42	421	" "	1

1.—M. F. Heddle, 1897, Trans. Edin. Geol. Soc., VII, p. 241.

Anapäite

$a:b:c = 0.7069:1:0.8778$ $\alpha = 97° 12'$ $\beta = 95° 17'$ $\gamma = 70° 11'$ (2)

c	0	001	Anapa, Kuban, Russ.	1
a	∞0	100	" " "	1
b	0∞	010		2
m	—∞	$1\bar{1}0$	Anapa, Kuban, Russ.	1
N	+10	101		2
s	—10	$\bar{1}01$		2
q	+0$\frac{1}{2}$	012		2
o′	+1	111		2
o	$\bar{1}\bar{1}$	$\bar{1}\bar{1}1$	Anapa, Kuban, Russ.	1

1.—A. Sachs, 1902, Sitzungber. d. K. Akad. d. Wiss. Berlin, p. 18.
2.—S. Popov, 1910, Mus. Geol. Pierre le Grand. Petrograd, IV, p. 99.

Ancylite

$a:b:c = 0.916:1:0.9174$

d	10	101	Narsarsuk, Greenland	1
e	01	011	" "	1

1.—G. Flink, 1899, Medd. om. Grönland, XIV, p. 235.

Andalusite

i	$\frac{3}{2}\infty$	320	Pitzthal, Tyrol	1
t	$0\frac{1}{3}$	013	" "	1
v	$0\frac{5}{4}$	054	" "	1
x	$\frac{1}{2}$	112	" "	1

1.—P. E. Haefell, 1894, Zeitschr. f. Kryst., XXIII, p. 551.

Andesine

	$\frac{1}{2}\infty$	120	Siebengebirge	1

1.—K. Busz, 1898, Neues Jahrb. f. Min., I, p. 36.

Andorite

a: b: c = 0.6772:1:0.4458 Brögger (1)

c	0	001	Ororo, Bolivia	2
a	$\infty 0$	100	" "	2
b	0∞	010	" "	2
φ	6∞	610	" "	2
Ψ	5∞	510	" "	2
n	2∞	210	" "	2
o	$\frac{3}{2}\infty$	320	" "	2
i	$\frac{4}{3}\infty$	430	Felsöbánya, Hungary	2
m	∞	110	Ororo, Bolivia	2
l	$\infty\frac{3}{2}$	230	" "	2
k	$\infty 2$	120	" "	2
g	$\infty\frac{5}{2}$	250	" "	1
u	$\infty 3$	130	Felsöbánya, Hungary	2
w	$0\frac{3}{5}$	035	Ororo, Bolivia	3
x	01	011	" "	2
v	$0\frac{4}{3}$	043	" "	2
π	$0\frac{3}{2}$	032	" "	2
γ	02	021	" "	2
y	03	031	" "	2
n	04	041	" "	3
t	09	091	Felsöbánya, Hungary	2
h	$\frac{1}{2}0$	102	Ororo, Bolivia	2
Θ	$\frac{3}{5}0$	305	" "	2
σ	$\frac{2}{3}0$	203	" "	2
κ	$\frac{4}{5}0$	405	" "	2

f	10	101	Ororo, Bolivia	2
e	$\frac{3}{2}0$	302	" "	2
χ	30	301	" "	2
μ	$\frac{9}{2}0$	902	" "	2
d	60	601	" "	1
v	$\frac{1}{2}$	112	" "	2
χ	$\frac{2}{3}$	223	" "	2
p	1	111	" "	2
z	$\frac{3}{2}$	332	" "	2
q	2	221	" "	2
ρ	3	331	" "	2
B	4	441	" "	3
s	21	211	" "	2
C	$\frac{2}{3}\frac{4}{3}$	243	" "	3
δ	$\frac{3}{4}\frac{3}{2}$	364	" "	2
r	12	121	" "	2
ϵ	$\frac{3}{2}3$	362	" "	2
D	24	241	" "	3
ω	$\frac{1}{2}\frac{3}{2}$	132	" "	2
β	13	131	" "	2
E	26	261	" "	3
α	$\frac{1}{2}3$	162	" "	2
ζ	$\frac{2}{7}3$	2.21.7	" "	2
ξ	$\frac{2}{2}\frac{1}{2}$	312	" "	3
A	32	321	" "	3

1.—W. C. Brögger, 1893, Zeitschr. f. Kryst., XXI, p. 193.
2.—G. F. Prior and L. J. Spencer, 1897, Min. Mag., XI, p. 286.
3.—L. J. Spencer, 1907, Min. Mag., XIV, p. 308.

Anglesite

C	$\frac{10}{7}\infty$	10.7.0	Tintic Dist., Utah	3
Ω	$\frac{5}{4}\infty$	540	Monte Poni, Sardinia	4
	$\infty\frac{5}{4}$	450	Sardinia and Tintic Dist., Utah	10+11
	$0\frac{1}{6}$	016	Altai Mts., Siberia	1
j	$0\frac{4}{5}$	045	Siegen, Ger.	6
D	$\frac{1}{16}0$	1.0.16	Tintic Dist., Utah	3
𝔰	$\frac{1}{5}0$	105	Siegen and Cerro Gordo, Mex.	6+7
Y	$\frac{2}{9}0$	209	Tintic Dist., Utah	3
	$\frac{21}{2}0$	21.0.2	Monte Poni, Sardinia	8
𝔳	$\frac{25}{17}$	25.25.17	Tintic Dist., Utah	3

$\mathfrak{v}$.	$\frac{14}{9}$	14.14.9	Tintic Dist., Utah	3
$\mathfrak{v}$:	$\frac{15}{11}$	15.15.11	" " "	3
D	$\frac{2}{5}1$	255	Source unknown	2
	$\frac{3}{4}1$	344	Siegen and Sardinia	6+9
$\mathfrak{n}$	$\frac{1}{5}\frac{2}{5}$	125	Monte Poni, Sardinia	4
Σ	$\frac{1}{7}\frac{2}{7}$	127	" " "	4
Ξ	$\frac{3}{4}\frac{7}{4}$	374	Siegen, Ger.	6
σ	$\frac{1}{2}\frac{4}{3}$	386	" "	6
$\mathfrak{U}$	$\frac{3}{2}\frac{5}{2}$	352	" "	6
ϑ	$\frac{1}{2}\frac{1}{3}$	326	Schwartzwald, Ger.	9
X	$\frac{1}{4}\frac{1}{3}$	3.4.12?	Broken Hill, N. S. W.	5
v	$\frac{5}{8}\frac{9}{8}$	598?	" " "	5
$\mathfrak{w}$	23	231	Siegen, Ger.	6
$\mathfrak{z}$	$\frac{8}{3}\frac{11}{3}$	8.11.3	" "	6
$\mathfrak{v}$	34	341	" "	6
v	9.12	9.12.1	Tintic Dist., Utah	3
$\mathfrak{n}$	45	451	Siegen, Ger.	6
Φ	$\frac{7}{4}\frac{11}{4}$	7.11.4	" "	6
	$\frac{2}{27}\frac{28}{27}$	2.28.27	Sardinia	10
	$\frac{1}{18}\frac{13}{18}$	1.13.18	"	10
Y	$\frac{1}{7}\frac{8}{7}$	187?	Broken Hill, N. S. W.	5
	$\frac{2}{7}\frac{15}{7}$	2.15.7	Sardinia	10
	$\frac{2}{5}\frac{9}{10}$	4.9.10	"	10
	$\frac{1}{10}\frac{1}{5}$	1.2.10	"	10
	$\frac{6}{165}\cdot\frac{7}{165}$	6.7.165	"	10
	$\frac{5}{6}\frac{2}{3}$	546	"	10
	$\frac{15}{19}\frac{8}{19}$	15.8.19	"	10
	$\frac{3}{5}\frac{1}{5}$	315	"	10
	$\frac{9}{16}\frac{1}{8}$	9.2.16	"	10
	$\frac{6}{11}\frac{1}{11}$	6.1.11	"	10
R	$\frac{1}{13}\frac{1}{12}$	12.13.156	Tintic Dist., Utah	11
Φ	$\frac{7}{4}\frac{11}{4}$	7.11.4	Siegen, Ger.	6

1.—P. Jeremejew, 1892, Verh. Min. Ges., XXIX, p. 174.
2.—L. J. Spencer, 1897, Min. Mag., XI, p. 197.
3.—V. Hulyák, 1900, Term. Füz., XXIII, p. 187.
4.—P. Hermann, 1904, Zeitschr. f. Kryst., XXXIX, p. 463.
5.—C. Anderson, 1908, Rec. Austr. Mus., VII, p. 63.
6.—J. Kruse, 1909, Neues Jahrb. f. Min., B.-B., XXVII, p. 541.
7.—J. Krizo, 1909, Földt. Közlöny, XXXIX, p. 388.
8.—E. Tacconi, 1911, Rend. Inst. Lomb., XLIV, p. 986.
9.—V. Dürrfeld, 1912, Zeitschr. f. Kryst., L, p. 582.
10.—G. Cesàro, 1912, Mém. Soc. Géol. Belg., XXXIX, p. 239.
11.—E. H. Kraus and A. B. Peck, 1916, Neues Jahrb. f. Min., II, p. 17.

Anhydrite

$a:b:c = 1.1204:1:1.1195$

φ	$\frac{1}{6}0$	106	Monte Somma, Italy	2
p	$\frac{1}{5}$	115	Aussee, Styria	1

1.—F. Bascom and V. Goldschmidt, 1908, Zeitschr. f. Kryst., XLIV, p. 65.
2.—F. Zambonini, 1910, R. Accad. d. Sci. d. Napoli, p. 324.

Anorthite

G	$-\frac{4}{5}0$	$\bar{4}05$	Aranyi-Berg, Transylvania	1
F	$-\frac{2}{5}0$	$\bar{2}05$	" "	1
V	$\bar{1}3$	$\bar{1}31$	" "	1
H	42	421	" "	1
K	$\frac{\bar{2}}{3}\frac{4}{3}$	$\bar{2}43$	" "	1
L	$\frac{\bar{2}}{3}\frac{\bar{4}}{3}$	$\bar{2}\bar{4}3$	" "	1

1.—V. Hulyák, 1904, Zeitschr. f. Kryst., XL, p. 504.

Apatite

K	$\frac{10}{9}\infty$	$10.9.\overline{19}.0$	Epprechtstein, Bavaria	11
B	$\frac{5}{4}\infty$	$54\bar{9}0$	" "	11
l	$\frac{4}{3}\infty$	$43\bar{7}0$	Haddam Neck, Conn.	7
W	$\frac{5}{2}\infty$	$52\bar{7}0$	" " "	7
K_1	$\infty\frac{10}{9}$	$9.10.\overline{19}.0$	Epprechtstein, Bavaria	11
W_1	$\infty\frac{5}{2}$	$25\bar{7}0$	Haddam Neck, Conn.	7
P	$\frac{2}{19}0$	$2.0.\bar{2}.19$	" " "	7
λ	$\frac{4}{21}0$	$4.0.\bar{4}.21$	Gletsch, Switzerland	10
K	$\frac{2}{9}0$	$20\bar{2}9$	Halvorsröd, Norway	12
F	$\frac{1}{4}0$	$10\bar{1}4$	Biella, Italy	9
Q	$\frac{2}{7}0$	$20\bar{2}7$	Haddam Neck, Conn.	7
e	$\frac{7}{11}0$	$7.0.\bar{7}.11$	Gellivara, Sweden	8
f	$\frac{2}{3}0$	$20\bar{2}3$	" "	8
β	$\frac{5}{7}0$	$50\bar{5}7$	Gletsch, Switzerland	10
g	$\frac{7}{9}0$	$70\bar{7}9$	Gellivara, Sweden	8
δ	$\frac{4}{5}0$	$40\bar{4}5$	Gletsch, Switzerland	10
j	$\frac{7}{8}0$	$70\bar{7}8$	Gellivara, Sweden	8
γ	$\frac{8}{9}0$	$80\bar{8}9$	Gletsch, Switzerland	10
	$\frac{8}{7}0$	$80\bar{8}7$	Ural Mts., Russia	4
L	$\frac{15}{13}0$	$15.0.\overline{15}.13$	Halvorsröd, Norway	12
O	$\frac{12}{5}0$	$12.0.\overline{12}.5$	Knappenwand	6
D	$\frac{13}{4}0$	$13.0.\overline{13}.4$	Epprechtstein, Bavaria	11

t	$\frac{1}{12}$	$1.1.\bar{2}.12$	Münster, Westfalia, Ger.	2
W	$\frac{1}{9}$	$11\bar{2}9$	Halvorsröd, Norway	12
A	$\frac{1}{3}$	$11\bar{2}3$	Lake Orta, Italy	3
b	$\frac{2}{3}$	$22\bar{4}3$	St. Just, Cornwall, Eng.	1
R	$\frac{5}{3}\,\frac{2}{3}$	$52\bar{7}3$	Lake Orta, Italy	3
p	$\frac{2}{3}\,\frac{1}{6}$	$41\bar{5}6$	Ala—Tal, Piedmont, Italy	5

1.—R. H. SOLLY, 1887, Min. Mag., VII, p. 141.
2.—C. VRBA, 1889, Zeitschr. f. Kryst., XV, p. 449.
3.—G. STRUVER, 1895, Zeitschr. f. Kryst., XXIV, p. 316.
4.—P. JEREMEJEW, 1895, Verh. Min. Ges., XXXIII, p. 65.
5.—G. STRUVER, 1899, Riv. d. Min. Padua, XXII, p. 80.
6.—F. SLAVIC, 1901, Abh. d. böhm. Akad., p. 16.
7.—H. L. BOWMAN, 1902, Min. Mag., XIII, p. 97.
8.—K. ZIMÁNYI, 1904, Zeitschr. f. Kryst., XXXIX, p. 508.
9.—F. ZAMBONINI, 1905, Zeitschr. f. Kryst., XL, p. 220.
10.—K. BUSZ, 1906, Centralb. f. Min., p. 755.
*11.—K. WALTER, 1907, Neues Jahrb. f. Min., Beil. B., XXIII, p. 581.
12.—J. SCHETELIG, 1913, Norks. geol. Tidsskrift, (3) II, p. 38.

APOPHYLLITE

	$0\frac{1}{3}$	013	Seiser Alp, Italy	4
ξ	$\frac{1}{9}$	119	Kimberley, S. Africa	2
	$\frac{1}{5}$	115	Utö, Sweden	6
χ	$\frac{2}{3}$	223	Kimberley, S. Africa	2
	$\frac{19}{18}$	19.19.18	Sulitelma, Sweden	3
	$\frac{17}{16}$	17.17.16	" "	3
	$\frac{15}{14}$	15.15.14	" "	3
	$\frac{14}{13}$	14.14.13	" "	3
	$\frac{13}{12}$	13.13.12	" "	3
	$\frac{12}{11}$	12.12.11	" "	3
	$\frac{11}{10}$	11.11.10	Harz, Germany	1
	$\frac{10}{9}$	10.10.9	Sulitelma, Sweden	3
	$\frac{9}{8}$	998	" "	3
	$\frac{7}{6}$	776	" "	3
	$\frac{6}{5}$	665	" "	3
	$\frac{5}{4}$	554	" "	3
k	$\frac{3}{2}$	332	Kimberley, S. Afrika	2
h	7	771	Bergen Hill, N. J.	5
	42	421	Utö, Sweden	6

1.—O. LUEDECKE, 1896, Min. d. Harzes, p. 572.
2.—J. CURRIE, 1897, Trans. Edin. Geol. Soc., VII, p. 252.

3.—A. Hennig, 1899, Geol. Fören. Förh., XXI, p. 391.
4.—F. Zambonini, 1901, Zeitschr. f. Kryst., XXXIV, p. 391.
5.—H. P. Whitlock, 1910, School of Mines Quar., XXXI, p. 231.
6.—G. Flink, 1906, Geol. Fören. Förh., XXVIII, p. 423.

Aragonite

	$\infty\frac{7}{5}$	570	Monte Ramazzo, Italy	2
	$\infty\frac{13}{11}$	11.13.0?	Val Santerna, Italy	6
	$\frac{17}{16}\infty$	17.16.0?	" " "	6
	$\frac{7}{6}\infty$	760	Chaudfontaine, Belgium	4
	$\frac{6}{5}\infty$	650	" "	4
	$\frac{5}{4}\infty$	540	Herrengrund, Hungary	8
	$\frac{9}{7}\infty$	970	" "	8
	$\frac{4}{3}\infty$	430	Monte Ramazzo, Italy	2
	$0\frac{1}{12}$	0.1.12	Harz Mts., Germany	3
π	$0\frac{19}{10}$	0.19.10	Dognácska, Hungary	7
	$0\frac{7}{3}$	073	Monte Ramazzo, Italy	2
	$0\frac{23}{10}$	0.23.10	Kajántó, Hungary	10
	$0\frac{5}{2}$	052	Monte Ramazzo, Italy	2
	$0\frac{13}{5}$	0.13.5	Kajántó, Hungary	10
	$0\frac{23}{9}$	0.23.9	" "	10
	$0\frac{8}{3}$	083	" "	10
	$0\frac{18}{5}$	0.18.5	" "	10
r	$0\frac{11}{3}$	0.11.3	Dognácska, Hungary	7
	$0\frac{37}{10}$	0.37.10	Herrengrund, Hungary	8
N	$0\frac{9}{2}$	092	Dognácska, Hungary	7
	$0\frac{28}{5}$	0.28.5	Kajántó, Hungary	10
	$0\frac{15}{2}$	0.15.2	Framont, Alsace, France	1
K	0.17	0.17.1	Dognácska, Hungary	7
P	0.19	0.19.1	" "	7
Q	0.21	0.21.1	" "	7
R	$0.\frac{45}{2}$	0.45.2	" "	7
T	0.26	0.26.1	" "	7
U	0.27	0.27.1	" "	7
Ü	0.29	0.29.1	" "	7
W	0.32	0.32.1	" "	7
X	0.35	0.35.1	" "	7
Y	0.40	0.40.1	" "	7
	0.48	0.48.1	Kajántó, "	10
e	45.45	45.45.1	Dognácska, "	7
g	21.21	21.21.1	" "	7

𝔟	12.12	12.12.1	Dognácska, Hungary	7
J	11.11	11.11.1	Korlát, Mograd, Hungary	9
𝔞	5	551	Dognácska, Hungary	7
	3	331	Monte Ramazzo, Italy	2
	$\frac{1}{3}1$	133	" " "	2
	$\frac{3}{2}2$	342	" " "	2
	$\frac{7}{3}\frac{10}{3}$	7.10.3	" " "	2
	$\frac{3}{2}\frac{5}{2}$	352	" " "	2
	27	271	" " "	2
	$\frac{5}{2}\frac{1}{2}$	512	" " "	2
	$\frac{9}{16}\frac{1}{8}$	9.2.16	" " "	2
	$\frac{4}{3}\frac{1}{3}$	413	" " "	2
	$\frac{1}{4}\frac{1}{6}$	3.2.12	" " "	2
	43	431	" " "	2
	24.25	24.25.1	" " "	2
	16.22	16.22.1	Val Santerna, Italy	5

1.—F. Stöber, 1894, Mitth. d. geol. Land. Els.-Lothr.
2.—G. B. Nigri, 1896, Riv. Min. Ital., XV, p. 65.
3.—L. Luedecke, 1896, Min. d. Harzes, p. 338.
4.—G. Cesàro, 1897, Mém. Ac. Sci. Belg., LIII, p. 100.
5.—L. Brugnatelli, 1898, Riv. Min. Ital., XVIII, p. 51.
6.—L. Brugnatelli, 1899, Zeitschr. f. Kryst., XXXI, p. 56.
7.—K. Zimányi, 1899, Term. Füz., XXII.
8.—G. Melczer, 1903, Zeitschr. f. Kryst., XXXVIII, p. 253.
9.—A. Liffa, 1910, Zeitschr. f. Kryst., XLVII, p. 249.
10.—E. Balogh, 1911, Mitth. Samml. Sibenb. Nat. Mus., p. 51.

Argentite

6 ∞	610	Zacatecas, Mex.	1

1.—H. Ungemach, 1910, Bull. Soc. fr. Min., p. 33.

Argyradite

Isometric

d	∞	110	La Paz, Bolivia	1
o	1	111	" "	1
v	$\frac{1}{3}$	113	" "	1

1.—S. L. Penfield, 1893, Amer. Journ. Sci., XLVI, p. 107.

Arizonite

a: b: c=1.88:1:2.3 β=55° (?)

	0	001	Hackberry, Ariz.	1
	∞0	100	" "	1
	∞	110	" "	1
	—10	$\bar{1}01$	" "	1
	—½	$\bar{1}12$	" "	1

1.—C. Palmer, 1909, Amer. Journ. Sci., XXVIII, p. 353.

Arsenoferrite

Isometric Pyritohedral

a	0	100	Binnenthal, Switzerland	1
f	3∞	310	" "	1
d	∞	110	" "	1
o	1	111	" "	1

1.—H. Baumhauer, 1912, Zeitschr. f. Kryst., LI, p. 143.

Arsenopyrite

a: b: c=0.6762:1:1.1917 (Flink 4)

δ	3∞	310	Deloro, Ontario, Can.	2
α	$0\frac{1}{24}$	0.1.24	Serbia	1
β	$0\frac{1}{6}$	016	"	1
ε	$0\frac{5}{4}$	054	Deloro, Ontario, Can.	2
s	$0\frac{17}{2}$	0.17.2	" " "	2
	$\frac{1}{2}$	112	Franklin, N. J.	5
	2	221	Brosso, Italy	3
	$\frac{1}{2}2$	142	Franklin, N. J.	5
	$\frac{1}{2}\frac{3}{2}$	132	" "	5
	$\frac{5}{2}\frac{3}{2}$	532	" "	5

1.—A. Schmidt, 1888, Zeitschr. f. Kryst., XIV, p. 573.
2.—F. Scheerer, 1893, Zeitschr. f. Kryst., XXI, p. 354.
3.—L. Colomba, 1906, Rend. Accad. Linc., XV, p. 642.
4.—G. Flink, 1908, Arkiv f. Kemi. Min., (11) III, p. 1.
5.—C. Palache, 1910, Amer. Journ. Sci., XXIX, p. 177.

Arzrunite

Orthorhombic Axial ratio=?

c	0	001	Tarapaca, Chile	1
b	0∞	010	" "	1

m	∞	110	Tarapaca, Chile	1
	02	021	" "	1
	1	111	" "	1

1.—A. Arzruni and K. Thaddéeff, 1899, Zeitschr. f. Kryst., XXXIII, p. 230.

Atacamite

γ	$\infty 5$	150	Paposo, Atacama, Chile	2
τ	$\left\{\begin{array}{l}\infty\frac{9}{8}\\ \infty\frac{10}{9}\end{array}\right.$	$\left.\begin{array}{r}890\\ 9.10.0\end{array}\right\}?$	Seirra Gorda, Chile	1
β	2∞	210	Paposo, Atacama, Chile	2
	$0\frac{1}{18}$	0.1.18	Boleo, Lower California, Mex.	3
	$0\frac{1}{9}$	019	" " " "	3
	$0\frac{1}{7}$	017	" " " "	3
	$0\frac{1}{6}$	016	" " " "	3
	$0\frac{1}{5}$	015	" " " "	3
	$0\frac{3}{5}$	035	" " " "	3
	$0\frac{5}{3}$	053	" " " "	3
	03	031	" " " "	3
	06	061	" " " "	3
	$\frac{1}{9}0$	109	" " " "	3
	$\frac{1}{8}0$	108	" " " "	3
	$\frac{1}{7}0$	107	" " " "	3
	$\frac{1}{6}0$	106	" " " "	3
	$\frac{2}{7}0$	207	" " " "	3
	$\frac{2}{5}0$	205	" " " "	3
	$\frac{5}{7}0$	507	" " " "	3
	$\frac{3}{4}0$	304	" " " "	3
	$\frac{7}{9}0$	709	" " " "	3
	$\frac{3}{2}0$	302	" " " "	3
Φ	13	131	Sierra Gorda, Chile	1
	$1\frac{3}{2}$	232	Boleo, Lower California, Mex.	3
	$1\frac{1}{8}$	818	" " " "	3
σ	$\frac{3}{2}$	332	Sierra Gorda, Chile	1
s	$\frac{4}{3}$	443	" " "	1
	$\frac{1}{2}$	112	Boleo, Lower California, Mex.	3
	$\frac{1}{4}$	114	" " " "	3
	$\frac{1}{5}$	115	" " " "	3
	$\frac{1}{7}$	117	" " " "	3
h	$\frac{1}{2}\,\frac{3}{2}$	132	Sierra Gorda, Chile	1

$\frac{1}{2}2$	142	Boleo, Lower California, Mex.	3
$\frac{1}{5}\frac{4}{5}$	145	" " " "	3
$\frac{2}{3}\frac{1}{3}$	213	" " " "	3
$\frac{1}{2}\frac{1}{4}$	214	" " " "	3

Uncertain Forms

$\frac{7}{8}0$	708	Boleo, Lower California, Mex.	3
$\frac{4}{5}0$	405	" " " "	3
$\frac{7}{12}0$	7.0.12	" " " "	3
$1\frac{2}{7}$	727	" " " "	3
$\frac{3}{8}1$	388	" " " "	3
$\frac{2}{9}\frac{7}{9}$	279	" " " "	3
$\frac{4}{7}\frac{11}{7}$	4.11.7	" " " "	3

1.—G. F. Herbert-Smith, 1898, Min. Mag., XII, p. 15.
2.—A. J. Moses, 1901, Amer. Journn. Sci., XII, p. 100.
3.—H. Ungemach, 1911, Bull. Soc. fr. Min., XXXIV, p. 148.

Augelite

$a: b: c = 1.6419:1:1.2708\ \beta = 67° 33\frac{1}{2}'$

c	0	001	Bolivia	1
b	0∞	010	"	1
a	$\infty 0$	100	"	1
m	∞	110	"	1
g	9∞	910	"	2
x	—10	$\bar{1}01$	"	1
	01	011	"	1
n	$\frac{1}{2}$	112	"	1
o	$-\frac{1}{2}$	$\bar{1}12$	"	1

1.—G. T. Prior and L. J. Spencer, 1895, Min. Mag., XI, p. 16.
2.—L. J. Spencer, 1898, Min. Mag., XII, p. 1.

Axinite

	$\overline{17}\infty$	$17.\bar{1}.0$	Dauphiné, France	1
C	14∞	14.1.0	California	5
	8∞	810	Dauphiné, France	1
D	$\bar{\frac{7}{2}}\infty$	$7\bar{2}0$	California	5
E	$\bar{\frac{9}{4}}\infty$	$9\bar{4}0$	"	5
A	2∞	210	"	5
	$\frac{5}{3}\infty$	530	Dauphiné, France	1
ρ	$\bar{\frac{4}{3}}$	$4\bar{3}0$	Quenast, Belgium	3

	$\frac{11}{13}\infty$	17.13.0	Dauphiné, France	1
	$\frac{11}{9}\infty$	11.9.0	" "	1
	$\frac{13}{11}\infty$	13.11.0	" "	1
	$-\frac{9}{8}\infty$	$9\bar{8}0$	" "	1
	$-\frac{13}{12}\infty$	$13.\overline{12}.0$	" "	1
F	$-\infty\frac{10}{9}$	$9.\overline{10}.0$	California	5
G	$-\infty\frac{8}{7}$	$7\bar{8}0$	"	3
γ	$\infty 2$	120	Nordmark, Sweden	2
	$-\infty 2$	$\bar{1}20$	" "	8
B_0	$-\infty\frac{7}{3}$	$3\bar{7}0$	Nickel Plate Mt., British Columbia	7
σ_0	$-\infty 3$	$1\bar{3}0$	" " " "	7
N	$-\infty\frac{9}{2}$	$2\bar{9}0$	California	5
A_0	$-\infty 6$	$1\bar{6}0$	Nickel Plate Mt., British Columbia	7
Ω	$-\infty 8$	$\bar{1}80$	" " " "	7
P	$-\infty 13$	$1.\overline{13}.0$	California	5
ϑ	$-\infty 34$	$1.\overline{34}.0$	Quenast, Belgium	3
	$\infty 41$	1.41.0	Dauphiné, France	1
	$-0\frac{5}{8}$	$0\bar{5}8$	Biella, Italy	4
φ_0	$-0\frac{3}{4}$	$0\bar{3}4$	Nickel Plate Mt., British Columbia	7
Δ	02	021	" " " "	7
U	06	061	Nordmark, Sweden	2
R	08	081	" "	2
π	-09	$0\bar{9}1$	Quenast, Belgium	3
Σ	$\frac{1}{4}0$	104	Nickel Plate Mt., British Columbia	7
Π	$\frac{2}{5}0$	205	" " " "	7
Ψ_0	20	201	" " " "	7
	$\frac{\bar{1}}{56}\,\frac{1}{56}$	$\bar{1}.1.56$	Dauphiné, France	1
	$\frac{\bar{1}}{16}\,\frac{1}{16}$	$\bar{1}.1.16$	" "	1
	$\frac{1}{2}\,\frac{\bar{1}}{2}$	$1\bar{1}2$	Pic d'Arbizon, France	6
	$\frac{\bar{1}}{4}\,\frac{\bar{1}}{4}$	$\bar{1}\bar{1}4$	" "	6
	$\frac{\bar{2}}{9}\,\frac{2}{9}$	$\bar{2}29$	Dauphiné, France	1
Z	$\bar{4}4$	$\bar{4}41$	Nordmark, Sweden	2
δ	$\bar{1}3$	$\bar{1}31$	Pic d'Arbizon, France	6
x_0	$\overline{\frac{3}{2}}\,\bar{1}$	$\bar{3}\bar{2}2$	Nickel Plate Mt., British Columbia	7
	$\frac{\bar{1}}{2}\,\frac{7}{6}$	$\bar{3}76$	Dauphiné, France	1
	$\frac{\bar{5}}{2}\,\frac{\bar{7}}{2}$	$\bar{5}\bar{7}2$	" "	1
Q	$\frac{3}{7}\,\frac{2}{7}$	327	Nordmark, Sweden	2
λ	$\frac{\bar{2}}{5}\,\frac{8}{5}$	$\bar{2}85$	" "	2
σ	$\frac{\bar{3}}{2}\,\frac{5}{2}$	$\bar{3}52$	Pic d'Arbizon, France	6
λ_0	$\frac{3}{2}\,\frac{1}{2}$	312	Nickel Plate Mt., British Columbia	7

p_0	$\frac{7}{5}\frac{3}{5}$	735	Nickel Plate Mt., British Columbia	7
θ	$\frac{2}{3}\frac{4}{3}$	243	Nordmark, Sweden	8
s	$\frac{1}{4}\frac{7}{4}$	174	" "	8
Σ	$\frac{\bar{1}}{3}\frac{5}{3}$	$\bar{1}53$	" "	8

1.—A. Offret and F. Gonnard, 1893, Bull. Soc. fr. Min., XVI, p. 76.
2.—H. Sjögren, 1893, Bull. Geol. Inst. Upsala, p. 1.
3.—A. Franck, 1893, Bull. Ac. Belg., (3) XXV, p. 17.
4.—F. Zambonini, 1905, Zeitschr. f. Kryst., XL, p. 262.
5.—W. T. Schaller, 1911, Zeitschr. f. Kryst., XLVIII, p. 156.
6.—H. Ungemach, 1912, Bull. Soc. fr. Min., XXXV, p. 526.
7.—E. Poitevin, 1919, Amer. Miner., IV, p. 32.
8.—G. Flink, 1917, Arkiv Kemi. Min., Geol., VI, No. 21.

Azurite

	$\infty\frac{5}{3}$	350	Stadtberger, Siegen, Ger.	10
	$0\frac{1}{20}$	0.1.20	Durango, Mex.	8
Λ	$0\frac{1}{10}$	0.1.10	Pretoria, Transvaal, S. Africa	3
	$0\frac{1}{7}$	017	Durango, Mex.	8
	$-\frac{19}{8}0$	$\overline{19}.0.8$	Tsumeb, S. W. Africa	9
𝔐	$-\frac{13}{6}0$	$\overline{13}.0.6$	Broken Hill, N. S. Wales	5
𝔭	$-\frac{15}{8}0$	$\overline{15}.0.8$	" " " "	5
	$-\frac{5}{3}0$	$\bar{5}03$	Tsumeb, S. W. Africa	9
𝔯	$-\frac{4}{3}0$	$\bar{4}03$	Broken Hill, N. S. Wales	5
w	$+\frac{6}{5}0$	605	Laurium, Greece	2
	$-\frac{11}{13}0$	$\overline{11}.0.13$	Tsumeb, S. W. Africa	9
T	$-\frac{4}{5}0$	$\bar{4}05$	Laurium, Greece	2
𝔟	$-\frac{2}{3}0$	$\bar{2}03$	Mineral Point, Wis.	4
𝔠	$-\frac{3}{7}0$	$\bar{3}07$	" " "	4
I	$+\frac{2}{5}0$	205	Laurium, Greece	2
	$-\frac{4}{11}0$	$\bar{4}.0.11$	Tsumeb, S. W. Africa	9
ℭ	$-\frac{3}{10}0$	$\bar{3}.0.10$	Moonta, S. Australia	5
𝔏	$-\frac{3}{11}0$	$\bar{3}.0.11$	Broken Hill, N. S. Wales	11
	$-\frac{3}{14}0$	$\bar{3}.0.14$	Tsumeb, S. W. Africa	9
	$-\frac{4}{9}0$	$\bar{4}09$	" "	9
	$-\frac{2}{11}0$	$\bar{2}.0.11$	" "	9
	$+\frac{1}{7}0$	107	" "	9
N	$\frac{\bar{4}}{7}\frac{4}{7}$	$\bar{4}47$	Longfellow Mine, Arizona	1
	$\bar{7}7$	$\bar{7}71$	Tsumeb, S. W. Africa	9
Ω	$1\frac{1}{2}$	212	Bisbee, Arizona	11
Γ	$\frac{2}{3}2$	263	Pretoria, Transvaal, S. Africa	3

	$\bar{2}6$	$\bar{2}61$	Chessy, France	6
W	$\frac{1}{15}\frac{1}{5}$	1.3.15	Pretoria, Transvaal, S. Africa	3
R	$\bar{2}4$	$\bar{2}41$	Moonta, S. Australia	5
$\mathfrak{b}$	$\frac{9}{8}\frac{3}{2}$	9.12.8	Mineral Point, Wis.	4
G	$\bar{3}2$	$\bar{3}21$	Morenci, Arizona	1
K	$\frac{\overline{12}}{5}2$	$\overline{12}.10.5$	" "	1
$\mathfrak{v}$	$\frac{5}{8}\frac{1}{4}$	$\bar{5}28$	Agua Galiente, Peru	7
	$\frac{\bar{1}}{2}5$	$\bar{1}.10.2$	Chessy, France	6

1.—O. C. Farrington, 1891, Amer. Journ. Sci., XLI, p. 300.
2.—K. Zimányi, 1892, Zeitschr. f. Kryst., XXI, p. 86.
3.—G. A. F. Molengraaf, 1893, Zeitschr. f. Kryst., XXII, p. 156.
4.—W. H. Hobbs, 1895, Bull. Univ. Wis., I, p. 145.
5.—C. Steiner, 1906, Ann. Mus. Nat. Hung., IV, p. 293.
6.—G. Cesàro, 1905, Bull. Ac. Belg., p. 130.
7.—E. Hunek, 1910, Zeitschr. f. Kryst., XLIX, p. 11.
8.—H. Ungemach, 1910, Bull. Soc. fr. Min., XXXIII, p. 25.
9.—Z. v. Toborffy, 1913, Zeitschr. f. Kryst., LII, p. 225.
10.—J. F. Oebike, 1915, Inaug.-Diss. Münster i. Westf. p. 56.
11.—G. Aminoff, 1919, Arkiv Kemi. Min., Geol., VII, No. 17.

Babingtonite

k	—∞	$1\bar{1}0$	Sommerville, Mass.	1
u	$0\frac{5}{4}$	054	" "	1
v	$0\frac{3}{5}$	035	" "	1
w	$0\frac{2}{5}$	025	" "	1
n	—10	$\bar{1}01$	" "	1
y	$\frac{2}{5}0$	205	" "	1
x	$\frac{3}{5}0$	305	" "	1
p	1	111	" "	1
t	$\frac{1}{2}$	112	" "	1
i	$-\frac{1}{2}$	$\bar{1}12$	" "	1

1.—C. Palaché and F. R. Fraprie, 1902, Proc. Amer. Acad., XXXVIII, p. 382.

Bäckstromite

$a : b : c = 0.7393 : 1 : 0.6918$

b	0∞	010	Långban, Sweden	1
l	2∞	210	" "	1
m	∞	110	" "	1
d	01	011	" "	1
q	02	021	" "	1

y	12	121	Långban, Sweden	1
z	13	131	" "	1
u	15	151	" "	1
x	21	211	" "	1

1.—G. Aminoff, 1919, Geol. Fören. Förh., XLI, p. 473.

Baddeleyite

$a: b: c = 0.9768:1:1.0475 \quad \beta = 81° 20'$

c	0	001	São Paulo, Brazil	2
a	∞0	100	Rakwana, Ceylon	1
b	0∞	010	" "	1
g	2∞	210	Balangoda, Ceylon	3
m	∞	110	Rakwana, Ceylon	1
l	$\infty\frac{3}{2}$	230	São Paulo, Brazil	2
k	∞2	120	" "	2
d	01	011	Rakwana, Ceylon	1
d_1	02	021	São Paulo, Brazil	2
s	$\frac{2}{3}0$	203	" "	2
r	—10	$\bar{1}01$	" "	2
t	10	101	" "	2
x	20	201	" "	2
α	—20	$\bar{2}01$	Balangoda, Ceylon	3
n	—1	$\bar{1}11$	São Paulo, Brazil	2
p	2	221	Balangoda, Ceylon	3

1.—L. Fletcher, 1893, Min. Mag., X, p. 145.
2.—E. Hussak, 1892, Neues Jahrb. f. Min., II, p. 141.
3.—G. S. Blake and G. F. Herbert-Smith, 1907, Min. Mag., XIV, p. 378.

Barite

ϑ	9∞	910	Russia	22
Σ_3	5∞	510	McCormick, S. C.	35
	$\frac{10}{7}\infty$	10.7.0	Laconia, Sardinia	34
e_1	$\frac{4}{3}\infty$	430	Belgium	18
E	$\frac{6}{5}\infty$	650	Hüttenberg, Carinthia, Austria	9
	$\infty\frac{5}{4}$	450	Hastigen, Sweden	8
M	$\infty\frac{7}{5}$	570	Russia	22
π_1	$\infty\frac{5}{3}$	350	Traversella, Italy	26
χ_1	$\infty\frac{5}{2}$	250	Lunkány, Hungary	11
F	$\infty\frac{8}{3}$	380	McCormick, S. C.	35

U	$\infty\frac{11}{4}$	4.11.0	Hüttenberg, Carinthia, Austria	9
E_1	$\infty 7$	170	Traversella, Italy	26
E_2	$\infty 10$	1.10.0	" "	26
B	$\infty 22$	1.22.0	Hüttenberg, Carinthia, Austria	9
R	$\infty 30$	1.30.0	" " "	9
B_1	$\infty 44$	1.44.0	" " "	9
A_1	$0\frac{1}{20}$	0.1.20	" " "	9
A	$0\frac{1}{16}$	0.1.16	" " "	9
a	$0\frac{1}{12}$	0.1.12	Templeton, Canada	10
a_6	$0\frac{1}{6}$	016	Belgium	2
	$0\frac{2}{7}$	027	Sympheropol, Crymea	28
	$0\frac{2}{5}$	025	Harstigen, Sweden	8
	$0\frac{4}{7}$	047	Gömör, Hungary	30
ϵ	$0\frac{3}{5}$	035	Harstigen, Sweden	8
j	$0\frac{3}{4}$	034	Russia	22
ϵ_2	$0\frac{4}{5}$	045	Mies, Bohemia	25
ϵ_3	$0\frac{6}{7}$	067	" "	25
j_3	$0\frac{5}{3}$	053	Five Islands, Nova Scotia	35
	$0\frac{8}{5}$	085	Aquadoro Valley, Italy	23
	$0\frac{8}{3}$	083	Colorado	29
o_7	07	071	Midlothian, Scotland	1
c_1	$\frac{1}{25}0$	1.0.25	Montevecchio, Sardinia	12
w	$\frac{2}{13}0$	2.0.13	Kongsberg, Norway	31
	$\frac{7}{20}0$	7.0.20	Lubine, France	29
$d\frac{3}{8}$	$\frac{3}{8}0$	308	Midlothian, Scotland	1
K	$\frac{5}{13}0$	5.0.13	Kongsberg, Norway	31
V	$\frac{3}{7}0$	307	Harz Mts., Germany	4
	$\frac{4}{7}0$	407	Gömör, Hungary	30
S	$\frac{4}{5}0$	405	Harz Mts., Germany	4
F	$\frac{5}{6}0$	506	Bergheim, Alsace, France	13
μ_2	$\frac{4}{3}0$	403	Montevecchio, Sardinia	12
P_2	$\frac{2}{63}$	2.2.63	Bergheim, Alsace, France	13
	$\frac{1}{27}$	1.1.27	Freiberg, Saxony, Germany	5
Q_2	$\frac{1}{26}$	1.1.26	Bergheim, Alsace and Harz Mts.	13+15
e_1	$\frac{1}{17}$	1.1.17	Traversella, Italy	26
e_2	$\frac{1}{14}$	1.1.14	" "	26
j_1	$\frac{1}{10}$	1.1.10	Valsugana, Tyrol	7
p_1	$\frac{1}{7}$	117	Waldshut, Baden, Germany	6
f_1	$\frac{2}{5}$	225	Odenwald, Germany	17
B_2	$\frac{2}{7}$	227	Russia	22

B_3	$\frac{3}{7}$	337	Russia	22
	$\frac{8}{7}$	887	Colorado	29
ψ	$\frac{5}{4}$	554	Fehn, Norway	31
R_1	$\frac{10}{7}$	10.10.7	Russia	22
$\mathfrak{p}$	$\frac{7}{2}$	772	Dobsina, Hungary	16
s	5	551	Frostburg, Md.	27
ϑ	$1\frac{2}{7}$	727	Traversella, Italy	
Y_3	$\frac{1}{16}1$	1.16.16	Mies, Bohemia	25
Y_2	$\frac{1}{9}1$	199	" "	25
Y_1	$\frac{1}{8}1$	188	" "	25
Y	$\frac{1}{7}1$	177	Harz Mts., Germany	4
Ψ	$\frac{1}{6}1$	166	Mies, Bohemia	25
J	$\frac{3}{5}1$	355	Caucasus	14
P	$\frac{3}{4}1$	344	Midlothian, Scotland	1
Δ_2	$\frac{5}{2}1$	522	Kladno, Bohemia	33
Θ_1	$\frac{1}{20}\frac{23}{20}$	1.23.20	Harstigen, Sweden	8
Γ_3	$\frac{1}{24}\frac{2}{3}$	1.16.24	Mies, Bohemia	25
Γ	$\frac{1}{32}\frac{1}{2}$	1.16.32	" "	25
Υ	$\frac{1}{11}\frac{12}{11}$	1.12.11	" "	25
$\mathfrak{i}$	$\frac{1}{6}\frac{3}{2}$	196	Odenwald, Germany	17
Y_6	$\frac{1}{5}\frac{8}{5}$	185	Kladno, Bohemia	33
μ_3	$\frac{1}{9}\frac{7}{9}$	179	Mies, Bohemia	25
$\mathfrak{s}_1$	$\frac{1}{3}2$	163	Montevecchio, Sardinia	12
$\mathfrak{s}_2$	$\frac{1}{4}\frac{3}{2}$	164	Mies, Bohemia	25
Ψ_2	$\frac{1}{5}\frac{6}{5}$	165	Five Islands, Nova Scotia	35
Ψ_3	$\frac{1}{7}\frac{6}{7}$	167	" "	35
μ_2	$\frac{1}{8}\frac{3}{4}$	168	Mies, Bohemia	25
Γ_2	$\frac{1}{9}\frac{2}{3}$	169	" "	25
Θ_3	$\frac{2}{9}\frac{5}{3}$	2.15.9	Kladno, Bohemia	33
$\mathfrak{s}_2$	$\frac{1}{4}\frac{4}{3}$	3.16.12	Freiberg, Saxony, Germany	32
Y	$\frac{1}{2}\frac{5}{2}$	152	Island of San Pietro, Sardinia	21
μ_1	$\frac{1}{7}\frac{5}{7}$	157	Montevecchio, Sardinia	12
W_2	$\frac{1}{8}\frac{5}{8}$	158	Kladno, Bohemia	33
W_1	$\frac{1}{9}\frac{5}{9}$	159	Freiberg, Saxony, Germany	5
K	$\frac{2}{7}\frac{6}{7}$	267	Tetschen, Bohemia	19
δ	$\frac{1}{7}\frac{3}{7}$	137	Freiberg, Saxony, Germany	5
t_2	$\frac{2}{3}\frac{5}{3}$	253	Mies, Bohemia	25
φ_1	$\frac{2}{11}\frac{5}{11}$	2.5.11	Montevecchio, Sardinia	12
Δ_1	$\frac{7}{16}\frac{17}{16}$	7.17.16	Belgium	18
χ	$\frac{1}{3}\frac{2}{3}$	123	Montevecchio, Sardinia	12

μ_4	$\frac{1}{6}\,\frac{1}{3}$	126	Kladno, Bohemia	33
$\mathfrak{h}$	$\frac{1}{8}\,\frac{1}{4}$	128	Neurode, Germany	3
$\mathfrak{d}$	$\frac{1}{40}\,\frac{1}{20}$	1.2.40	Harz Mts., Germany	4
Ξ_2	$\frac{1}{44}\,\frac{1}{22}$	1.2.44	Freiberg, Saxony, Germany	5
	$\frac{3}{2}2$	342	Colorado	29
τ^1	$\frac{3}{4}\,\frac{1}{2}$	324	Midlothian, Scotland	1
τ^2	$\frac{3}{8}\,\frac{1}{4}$	328	Kladno, Bohemia	33
λ^1	$\frac{2}{3}\,\frac{1}{3}$	213	Midlothian, Scotland	1
λ_2	$\frac{1}{2}\,\frac{1}{4}$	214		24
λ_5	$\frac{2}{5}\,\frac{1}{5}$	215	McCormick, S. C.	35
σ^1	$\frac{1}{5}\,\frac{1}{11}$	11.5.55	Midlothian, Scotland	1
ω	$\frac{4}{3}\,\frac{4}{9}$	12.4.9	Harz Mts., Germany	4
Y_1	$\frac{11}{8}\,\frac{3}{8}$	11.3.8	Auvergn, France	20
$\mathfrak{r}$	$\frac{3}{2}\,\frac{1}{4}$	614	Freiberg, Saxony, Germany	32
	$\frac{12}{11}\,\frac{8}{33}$	36.8.33?	Laconi, Sardinia	34
	$4\frac{16}{7}$	28.16.7	Hüttenberg, Carinthia, Austria	9

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21.—F. Millosevidi, 1900, Rend. Accad. Linc., IX, p. 336.
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BARYSILITE

Hexagonal $a:c=1:0.4683$

c	0	0001	Långban, Sweden	1
s	10	$10\bar{1}1$	" "	1
r	$\frac{9}{7}0$	$90\bar{9}7$	" "	1
	40	$40\bar{4}1$	Jacobsberg, Sweden	2
n	$\frac{1}{2}\frac{7}{4}$	$27\bar{9}4$	Långban, Sweden	1

1.—HJ. SJÖGREN, 1905, Geol. Fören. Förh., XXVII, p. 458.
2.—G. FLINK, 1917, Ark. Kemi. Min., Geol., VI, No. 21, p. 33.

BAUMHAUERITE

$a:b:c=1.1368:1:0.9471$ $\beta=82°\ 43'$

c	0	001	Binnenthal, Switzerland	1
a	$\infty 0$	100	" "	1
b	0∞	010	" "	1
$\frac{11}{2}s$	$\frac{11}{2}\infty$	11.2.0	" "	1
$\frac{11}{3}s$	$\frac{11}{3}\infty$	11.3.0	" "	1
$\frac{10}{3}s$	$\frac{10}{3}\infty$	10.3.0	" "	1
3*s*	3∞	310	" "	1
$\frac{8}{3}s$	$\frac{8}{3}\infty$	830	" "	1
$\frac{5}{2}s$	$\frac{5}{2}\infty$	520	" "	1
$\frac{17}{8}s$	$\frac{17}{8}\infty$	17.8.0	" "	1
2*s*	2∞	210	" "	1
$\frac{9}{5}s$	$\frac{9}{5}\infty$	950	" "	1
$\frac{3}{2}s$	$\frac{3}{2}\infty$	320	" "	1
$\frac{9}{8}s$	$\frac{9}{8}\infty$	980	" "	1
r	∞	110	" "	1
$\frac{4}{3}$r	$\infty\frac{4}{3}$	340	" "	1
2r	$\infty 2$	120	" "	1
4r	$\infty 4$	140	" "	1
$\frac{1}{2}$l	$0\frac{1}{2}$	012	" "	1
k	01	011	" "	1
2k	02	021	" "	1

—30h	+30.0	30.0.1	Binnenthal,	Switzerland	1
—25h	+25.0	25.0.1	"	"	3
—19h	+19.0	19.0.1	"	"	3
$-\frac{25}{2}h$	$+\frac{25}{2}0$	25.0.2	"	"	1
$-\frac{19}{2}h$	$+\frac{19}{2}0$	19.0.2	"	"	3
—9h	+90	901	"	"	3
$-\frac{17}{2}h$	$+\frac{17}{2}0$	17.0.2	"	"	3
$-\frac{15}{2}h$	$+\frac{15}{2}0$	15.0.2	"	"	3
$-\frac{13}{2}h$	$+\frac{13}{2}0$	13.0.2	"	"	1
—5h	+50	501	"	"	1
$-\frac{9}{2}h$	$+\frac{9}{2}0$	902	"	"	1
—4h	+40	401	"	"	1
$-\frac{7}{2}h$	$+\frac{7}{2}0$	702	"	"	1
—3h	+30	301	"	"	1
$-\frac{13}{5}h$	$+\frac{13}{5}0$	13.0.5	"	"	1
$-\frac{5}{2}h$	$+\frac{5}{2}0$	502	"	"	1
$-\frac{13}{6}h$	$+\frac{13}{6}0$	13.0.6	"	"	1
—2h	+20	201	"	"	1
$-\frac{13}{7}h$	$+\frac{13}{7}0$	13.0.7	"	"	1
$-\frac{3}{2}h$	$+\frac{3}{2}0$	302	"	"	1
$-\frac{7}{5}h$	$+\frac{7}{5}0$	705	"	"	1
$-\frac{4}{3}h$	$+\frac{4}{3}0$	403	"	"	1
$-\frac{7}{6}h$	$+\frac{7}{6}0$	706	"	"	2
$-\frac{13}{12}h$	$+\frac{13}{12}0$	13.0.12	"	"	1
—h	+10	101	"	"	1
$-\frac{5}{6}g$	$+\frac{5}{6}0$	506	"	"	1
$-\frac{4}{5}g$	$+\frac{4}{5}0$	405	"	"	1
$-\frac{3}{4}g$	$+\frac{3}{4}0$	304	"	"	1
$-\frac{5}{8}g$	$+\frac{5}{8}0$	508	"	"	1
$-\frac{1}{2}g$	$+\frac{1}{2}0$	102	"	"	1
$-\frac{2}{5}g$	$+\frac{2}{5}0$	205	"	"	1
$-\frac{1}{3}g$	$+\frac{1}{3}0$	103	"	"	1
$-\frac{1}{4}g$	$+\frac{1}{4}0$	104	"	"	1
$-\frac{1}{6}g$	$+\frac{1}{6}0$	106	"	"	1
$-\frac{1}{7}g$	$+\frac{1}{7}0$	107	"	"	1
$-\frac{1}{9}g$	$+\frac{1}{9}0$	109	"	"	1
+8h	—80	$80\bar{1}$	"	"	1
$+\frac{15}{2}h$	$-\frac{15}{2}0$	$15.0.\bar{2}$	"	"	3
+7h	—70	$70\bar{1}$	"	"	3
+6h	—60	$60\bar{1}$	"	"	3

$+\frac{11}{2}h$	$-\frac{11}{2}0$	$11.0.\bar{2}$	Binnenthal, Switzerland	1
$+5h$	-50	$50\bar{1}$	“ “	1
$+\frac{9}{2}h$	$-\frac{9}{2}0$	$90\bar{2}$	“ “	3
$+4h$	-40	$40\bar{1}$	“ “	1
$+\frac{7}{2}h$	$-\frac{7}{2}0$	$70\bar{2}$	“ “	3
$+3h$	-30	$30\bar{1}$	“ “	1
$+\frac{13}{4}h$	$-\frac{13}{4}0$	$13.0.\bar{4}$	“ “	3
$+\frac{11}{4}h$	$-\frac{11}{4}0$	$11.0.\bar{4}$	“ “	3
$+\frac{5}{2}h$	$-\frac{5}{2}0$	$50\bar{2}$	“ “	1
$+\frac{9}{4}h$	$-\frac{9}{4}0$	$90\bar{4}$	“ “	3
$+\frac{11}{5}h$	$-\frac{11}{5}0$	$11.0.\bar{5}$	“ “	1
$+2h$	-20	$20\bar{1}$	“ “	1
$+\frac{13}{7}h$	$-\frac{13}{7}0$	$13.0.\bar{7}$	“ “	1
$+\frac{11}{6}h$	$-\frac{11}{6}0$	$11.0.\bar{6}$	“ “	3
$+\frac{7}{4}h$	$-\frac{7}{4}0$	$70\bar{4}$	“ “	1
$+\frac{5}{3}h$	$-\frac{5}{3}0$	$50\bar{3}$	“ “	2
$+\frac{8}{5}h$	$-\frac{8}{5}0$	$80\bar{5}$	“ “	2
$+\frac{3}{2}h$	$-\frac{3}{2}0$	$30\bar{2}$	“ “	1
$+\frac{4}{3}h$	$-\frac{4}{3}0$	$40\bar{3}$	“ “	3
$+\frac{5}{4}h$	$-\frac{5}{4}0$	$50\bar{4}$	“ “	3
$+h$	-10	$10\bar{1}$	“ “	1
$+\frac{5}{6}g$	$-\frac{5}{6}0$	$50\bar{6}$	“ “	3
$+\frac{3}{4}g$	$-\frac{3}{4}0$	$30\bar{4}$	“ “	1
$+\frac{2}{3}g$	$-\frac{2}{3}0$	$20\bar{3}$	“ “	1
$+\frac{5}{9}g$	$-\frac{5}{9}0$	$50\bar{9}$	“ “	3
$+\frac{1}{2}g$	$-\frac{1}{2}0$	$10\bar{2}$	“ “	1
$+\frac{2}{5}g$	$-\frac{2}{5}0$	$20\bar{5}$	“ “	3
$+\frac{3}{8}g$	$-\frac{3}{8}0$	$30\bar{8}$	“ “	2
$+\frac{1}{3}g$	$-\frac{1}{3}0$	$10\bar{3}$	“ “	2
$+\frac{1}{4}g$	$-\frac{1}{4}0$	$10\bar{4}$	“ “	1
$+\frac{1}{6}g$	$-\frac{1}{6}0$	$10\bar{6}$	“ “	3
$+\frac{2}{13}g$	$-\frac{2}{13}0$	$2.0.\overline{13}$	“ “	1
$+\frac{1}{7}g$	$-\frac{1}{7}0$	$10\bar{7}$	“ “	3
$+\frac{1}{9}g$	$-\frac{1}{9}0$	$10\bar{9}$	“ “	1
$+\frac{1}{12}g$	$-\frac{1}{12}0$	$1.0.\overline{12}$	“ “	3
$-2q$	$+12$	121	“ “	1
$-p$	$+1$	111	“ “	1
$+2q$	-12	$12\bar{1}$	“ “	1
$+p$	-1	$11\bar{1}$	“ “	1
$+u$	-2	$21\bar{1}$	“ “	1

—4x	$+\frac{3}{2}2$	342	Binnenthal, Switzerland	1
—2x	$+\frac{3}{2}1$	322	" "	1
+2x	$-\frac{3}{2}1$	$32\bar{2}$	" "	1
—4n	$+\frac{1}{2}2$	142	" "	1
—2n	$+\frac{1}{2}1$	122	" "	1
+4n	$-\frac{1}{2}2$	$14\bar{2}$	" "	1
+2n	$-\frac{1}{2}1$	$12\bar{2}$	" "	1
—2y	$+\frac{5}{2}1$	522	" "	1
+2y	$-\frac{5}{2}1$	$52\bar{2}$	" "	1
+z	—31	$31\bar{1}$	" "	1
—w	+41	411	" "	1
—3W	$+\frac{10}{3}1$	10.3.3	" "	1
—3V	$+\frac{16}{3}1$	16.3.3	" "	1
+4m	$-\frac{1}{4}1$	$14\bar{4}$	" "	1
—10T	$+\frac{4}{5}2$	4.10.5	" "	1

1.—R. H. Solly, 1903, Min. Mag., XIII, p. 151.
2.—H. Baumhauer, Cited by Solly in (1)
3.—R. H. Solly, 1903, Min. Mag., XIII, p. 336.

Bavenite

$a : b : c = 1.1751 : 1 : 0.7845 \quad \beta = 89° 17'$

a	0	100	Baveno, Italy	1
g	2∞	210	" "	1
m	∞	110	" "	1
	+10	101	" "	1
	$+\frac{1}{3}0$	103	" "	1

1.—E. Artini, 1901, Rend. Accad. Linc., X, p. 139.

Beckelite

Isometric

a	0	100	Mariupol, Russia	1
d	∞	110	" "	1
o	1	111	" "	1

1.—J. Morozewicz, 1905, Min. Mitth., XXIV, p. 120.

Benitoite

Hexagonal $a : c = 1 : 0.7319$

c	0	0001	San Benito Co., Calif.	1
a	∞	$11\bar{2}0$	" "	1
m	$+\infty 0$	$10\bar{1}0$	" "	1

u	$-\infty 0$	$01\bar{1}0$	San Benito Co., Cal.	3
p	$+10$	$10\bar{1}1$	" "	1
π	-10	$01\bar{1}1$	" "	1
r	$+\frac{1}{2}0$	$10\bar{1}2$	" "	5
e	$-\frac{1}{2}0$	$01\bar{1}2$	" "	2
x	2	$22\bar{4}1$	" "	3
D	$\frac{2}{3}$	$22\bar{4}3$	" "	4

1.—G. D. Louderback, 1907, Univ. Calif. Pub., V, p. 149.
2.—A. F. Rogers, 1908, Science, XXVIII, p. 616.
3.—C. Palache, 1909, Amer. Journ. Sci., XXVII, p. 398.
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Bertrandite

f	$\infty 3$	130	Oxford Co., Maine	1
e	03	031	" "	1
k	0.12	0.12.1	" "	1
l	$\frac{2}{3}0$	203	Albany, Maine	2

1.—S. L. Penfield, 1897, Amer. Journ. Sci., IV, p. 316.
2.—O. C. Farrington and E. W. Tillotson, 1908, Field Col. Mus., Geol. Ser., III, p. 136.

Beryl

s	13∞	$13.1.\overline{14}.0$	Russia	2
E	4∞	$41\bar{5}0$	Minas Geraes, Brazil	5
Ψ	$\frac{1}{12}0$	$1.0.\bar{1}.12$	Alexander Co., N. C.	1
	$\frac{1}{3}0$	$10\bar{1}3$	Bahia, Brazil	6
v	$\frac{4}{5}0$	$40\bar{4}5$	Russia	2
Y	$\frac{11}{12}0$	$11.0.\overline{11}.12$	Minas Geraes, Brazil	5
ϵ	$\frac{6}{5}0$	$60\bar{6}5$	Pisek, Bohemia	3
	$\frac{9}{4}0$	$90\bar{9}4$	Bahia, Brazil	6
	$\frac{5}{2}0$	$50\bar{5}2$	" "	6
μ	$\frac{1}{6}$	$11\bar{2}6$	Russia	2
ξ	$\frac{1}{4}$	$11\bar{2}4$	Pisek, Bohemia	3
o	$\frac{3}{8}$	$33\bar{6}8$	Minas Geraes, Brazil	5
	$\frac{3}{2}$	$33\bar{6}2$	Bahia, Brazil	6
	$\frac{9}{2}$	$9.9.\overline{18}.2$	" "	6
φ	$\frac{4}{3}\frac{7}{6}$	$7.8.\overline{15}.6$	Alexander Co., N. C.	1
x	$\frac{8}{7}1$	$8.7.\overline{15}.7$	" "	1
ψ	$\frac{9}{8}\frac{7}{8}$	$9.7.\overline{16}.8$	" "	1
	$\frac{1}{3}\frac{1}{6}$	$21\bar{3}6$	Bahia, Brazil	6

N	$\frac{5}{2}1$	$52\bar{7}2$	Minas Geraes, Brazil	5
V	$\frac{8}{3}\frac{2}{3}$	$8.2.\overline{10}.3$	" " "	5
	$\frac{11}{3}\frac{2}{3}$	$11.2.\overline{13}.3$	Elba, Italy	4
W	61	$61\bar{7}1$	Minas Geraes, Brazil	5
λ	15.1	$15.1.\overline{16}.1$	Pisek, Bohemia	3
	19.1	$19.1.\overline{20}.1$	Russia	2

1.—W. E. Hidden and H. S. Washington, 1887, Amer. Journ. Sci., XXXIII, p. 501.
2.—P. Jeremejew, 1892, Verh. Min. Ges., XXIX, p. 230 and 1895, XXXIII, p. 26.
3.—C. Vrba, 1894, Zeitschr. f. Kryst., XXIV, p. 104.
4.—G. d'Archardi, 1904, Soc. Tosc. d. sc. nat. Pisa.
5.—H. Kohlmann, 1908, Neues Jahrb. f. Min., Beil. B., XXV, p. 142.
6.—P. Siedel, 1915, Neues Jahrb. f. Min., Beil. B., XXXVIII, p. 760.

Binnite

(See Tetrahedrite)

Bismite

Hexagonal *a: c* = 1:0.5775

c	0	0001	Gold Field Dist., Nevada	1
o	$\frac{1}{6}0$	$10\bar{1}6$	" " " "	1
q	$\frac{1}{5}0$	$10\bar{1}5$	" " " "	1
u	$\frac{1}{4}0$	$10\bar{1}4$	" " " "	1
k	$\frac{1}{3}0$	$10\bar{1}3$	" " " "	1
	$\frac{2}{5}0$	$20\bar{2}5$?	" " " "	1
	$\frac{1}{2}0$	$10\bar{1}2$?	" " " "	1

1.—W. T. Schaller and F. L. Ransome, 1910, Amer. Journ. Sci., XXIX, p. 173.

Bixbyite

Isometric

a	∞0	100	Simpson, Utah	1
n	$\frac{1}{2}$	112	" "	1

1.—S. L. Penfield and H. W. Foote, 1897, Amer. Journ. Sci., IV, p. 105.

Blomstrandine-Priorite

a: b: c = 0.4746:1:0.6673

c	0	001	Hitterö and Arendal, Norway	1
a	∞0	100	" " " "	1
b	0∞	010	" " " "	1
m	∞	110	" " " "	1
r	∞2	120	" " " "	1

n	∞3	130	Hitterö and Arendel, Norway	1
t	∞4	140	" " " "	1
x	02	021	" " " "	1
d	10	101	" " " "	1
p	1	111	" " " "	1
π	12	121	" " " "	1

1.—W. C. Brögger, 1906, Min. d. Sudnorw. Gran. peg., p. 98.

Boléite

Tetragonal *a: c*=1:3.996

	0	001	Boleo, Lower California, Mex.	1
	8∞	810	" " " "	2
	$\frac{17}{4}$∞	17.4.0	" " " "	2
	4∞	410	" " " "	2
	$\frac{5}{2}$∞	520	" " " "	2
	$\frac{5}{3}$∞	530	" " " "	2
	$\frac{5}{4}$∞	540	" " " "	2
	$\frac{8}{7}$∞	870	" " " "	2
	10	101	" " " "	1

1.—G. Friedel, 1906, Bull. Soc. fr. Min., XXIX, p. 14.
2.—A. Hadding, 1919, Geol. Fören. Förh., XLI, p. 175.

Boothite

a: b: c=1.1622:1:1.500 *β*=74° 24′

c	0	001	Alameda and Calaveras Cos., Calif.	1
a	∞0	100	" " " " "	1
m	∞	110	" " " " "	1
t	—10	$\bar{1}01$	" " " " "	1
z	—30	$\bar{3}01$	" " " " "	1
π	—$\frac{1}{2}$	$\bar{1}12$	" " " " "	1
e	—1	$\bar{1}11$	" " " " "	1
σ	—12	$\bar{1}21$	" " " " "	1

1.—W. T. Schaller, 1903, Univ. Calif. Pub., III, p. 207.

Botryogen

a: b: c=0.6554:1:0.5994 *β*=62° 51′

a	∞0	100	Knoxville, Calif.	1
t	∞$\frac{5}{4}$	450	" "	1
v	0$\frac{2}{3}$	023	" "	1

o	$0\frac{3}{4}$	034	Knoxville, Calif.	1
d	$-\frac{4}{3}0$	$\bar{4}03$	" "	1
p	$-\frac{2}{3}$	$\bar{2}23$	" "	1
s	$-\frac{2}{3}\frac{4}{3}$	$\bar{2}43$	" "	1

1.—A. S. EAKLE, 1903, Amer. Journ. Sci., XVI, p. 379.

BOULANGERITE

$a:b:c = 0.5527:1:0.7478$

a	∞0	100	Sala, Sweden	1
b	0∞	010	" "	1
r	2∞	210	" "	1
q	$\frac{3}{2}$∞	320	" "	1
m	∞	110	" "	1
n	∞2	120	" "	1
μ	∞4	140	" "	1
l	∞6	160	" "	1
h	∞8	180	" "	1
i	∞10	1.10.0	" "	1
h	∞14	1.14.0	" "	1
w	$0\frac{1}{2}$	012	" "	1

1.—HJ. SJÖGREN, 1897, Geol. Fören. Förh., XIX, p. 153.

BOURNONITE

	$\frac{19}{5}$∞	19.5.0	Puy-de-Dôme, France	2
	$\frac{18}{5}$∞	18.5.0	" "	2
C	$\frac{5}{3}$∞	530	Pulacayo, Bolivia	4
	$\frac{9}{5}$∞	950	Isère, France	3
	∞$\frac{8}{7}$	780	" "	3
	∞$\frac{8}{3}$	380	" "	3
	$0\frac{3}{2}$	032	" "	3
𝔷	02	021	Nagybánya, Hungary	1
c	$\frac{5}{3}0$	503	" "	1
𝔤	60	601	Pulacayo, Bolivia	4
	$\frac{4}{9}$	449	" "	4
β_1	$\frac{5}{12}\frac{7}{12}$	5.7.12	Puy-de-Dôme, France	2
s	$\frac{5}{8}\frac{3}{4}$	568	Isère, "	3
V_1	$\frac{50}{59}\frac{66}{59}$	50.66.59	Puy-de-Dôme, "	2
t	$\frac{11}{4}\frac{3}{4}$	11.3.4	Isère, "	3
a	$\frac{9}{8}\frac{1}{8}$	918	Puy-de-Dôme, "	2

1.—A. Schmidt, 1892, Zeitschr. f. Kryst., XX, p. 151.
2.—F. Gonnard, 1897, Bull. Soc. fr. Min., XX, p. 312.
3.—P. Termier, 1897, Bull. Soc. fr. Min., XX, p. 101.
4.—B. Mauritz, 1905, Ann. Mus. Nat. Hung., III, p. 46.

Brandtite

$a:b:c = 0.8720:1:0.4475 \quad \beta = 99° 37'$

∞0	100	Harstigen, Sweden		1
0∞	010	"	"	1
2∞	210	"	"	1
$\frac{3}{2}$∞	320	"	"	1
∞	110	"	"	1
∞$\frac{3}{2}$	230	"	"	1
∞2	120	"	"	1
1	111	"	"	1
—1	$\bar{1}11$	"	"	1
1$\frac{1}{2}$	212	"	"	1
12	121	"	"	1

1.—G. Aminoff, 1919, Geol. Fören. Förh., XLI, p. 161.

Braunite

Dana's Orientation

a	∞0	100	Långban, Sweden		1
m	∞	110	"	"	1
o	$\frac{3}{4}$0	304	"	"	1
q	$\frac{5}{6}$0	506	Minas Geraes, Brazil		3
n	10	101	Långban, Sweden		1
d	20	201	Brazil		2
l	40	401	Långban, Sweden		1
r	60	601	Minas Geraes, Brazil		3
b	80	801	Brazil		5
τ	$\frac{1}{3}$	113	"		2
γ	$\frac{1}{2}$	112	"		5
w	13	131	Minas Geraes, Brazil		3
g	1$\frac{1}{2}$	212	Långban, Sweden		1
y	$\frac{4}{3}\frac{2}{3}$	423	"	"	1
ρ	$\frac{8}{5}\frac{6}{5}$	865	India		4
n	64	641	Brazil		5
σ	$\frac{6}{5}\frac{4}{5}$	645	Långban, Sweden		1
u	2$\frac{4}{3}$	643	Minas Geraes, Brazil		3

	$\frac{5}{2}\frac{3}{2}$	532	Brazil	5
t	$\frac{5}{4}\frac{1}{2}$	524	Långban, Sweden	1
v	$\frac{3}{2}\frac{1}{2}$	312	Minas Geraes, Brazil	3
j	62	621	Brazil	5
δ	82	821	"	5
ε	$\frac{8}{3}\frac{2}{3}$	823	"	2
	12.2	12.2.1	"	5
f	$\frac{7}{4}\frac{1}{4}$	714	"	2
μ	$\frac{7}{3}\frac{1}{3}$	713	Minas Geraes, Brazil	3
λ	$\frac{16}{3}2$	16.6.3	Brazil	5
	$\frac{22}{3}2$	22.6.3	"	5
	24.2	24.2.1	"	5

1.—G. Flink, 1891, Bihang. k. k. Sven. Vet. Ak., XVI, (2).
2.—R. Koechlin, 1908, Min. u. petro. Mitth., XXVII, p. 266.
3.—B. Ježek, 1908, Bull. Ac. Sci. Böhm., XIII.
4.—L. L. Fermor, 1909, Mem. Geol. Surv., India, XXXVII, p. 53.
*5.—R. Koechlin, 1913, Ann. Mus. Wein, XXVII, p. 159.

Breithopite

Hexagonal *a: c*=1:0.8627

70	$70\bar{7}1$	Andreasberg, Germany	1

1.—H. Busz, 1895, Neues Jahrb. f. Min., I, p. 119.

Britholite

Hexagonal *a: c*=1:0.7247

m	∞0	$10\bar{1}0$	Julianehaab, Greenland	1
a	∞	$11\bar{2}0$	" "	1
p	10	$10\bar{1}1$	" "	1

1.—O. B. Böggild, 1911, Zeitschr. f. Kryst., L, p. 430.

Brochanthite

$\frac{5}{2}\frac{3}{2}$	532	Utah	1

1.—F. Zambonini, 1901, Zeitschr. f. Kryst., XXXIV, p. 238.

Brookite

L	$\infty\frac{3}{2}$	230	Princeton, N. J.	7
φ	∞2	120	Magnet Cove, Ark.	1
D	$0\frac{2}{5}$	025	Princeton, N. J.	7
T	04	041	" "	7

g	$\frac{3}{5}0$	305	Brazil	2
ι	10	101	Brindletown, N. C.	4
X	$1\frac{1}{3}$	313?	Princeton, N. J.	7
v	$\frac{1}{4}\frac{1}{2}$	124	Brazil	2
σ	$\frac{3}{4}\frac{1}{2}$	324	Sondalo, Veltlin, Italy	3
ξ	$\frac{1}{6}\frac{1}{4}$	146	Brazil	2
E	$\frac{5}{4}1$	544	Sommerville, Mass.	6
β	$\frac{1}{2}\frac{2}{5}$	5.4.10	Brindletown, N. C.	4
F	$\frac{5}{4}\frac{3}{4}$	534	Sommerville, Mass.	6
G	$1\frac{10}{9}$	9.10.9	" "	6
ϑ	$\frac{5}{17}\frac{13}{17}$	5.13.17	Tremadoc, Wales	5

1.—E. S. Dana, 1886, Amer. Journ. Sci., XXXII, p. 314.
2.—E. Hussak, 1892, Min. Mitth., XII, p. 460.
3.—L. Brugnatelli, 1899, Rend. Inst. Lomb., XXXII, p. 1405.
4.—H. H. Robinson, 1901, Amer. Journ. Sci., XII, p. 182.
5.—H. Busz, 1901, Neues Jahrb. f. Min., II, p. 135.
6.—C. Palache, 1906, Festschr. 70 Geburst. Rosenbush, p. 311.
7.—A. C. Hawkins, 1913, Amer. Journ. Sci., XXXV, p. 446.

Calamine

$a:b:c = 0.78897:1:0.48698$

K	$0\frac{1}{5}$	015	Santa Eulalia, Chihuahua, Mex.	6
U	$0\frac{1}{4}$	014	" " " "	6
O	05	051	" " " "	6
θ	$\frac{5}{12}0$	5.0.12?	" " " "	6
Γ	$\frac{3}{7}0$	307?	" " " "	6
Δ	$\frac{4}{9}0$	409?	" " " "	6
j́	$\frac{4}{7}0$	407	Organ Mts., N. Mex.	4
S	$\frac{5}{4}0$	504	Ghergur, Algeria	3
	$\frac{5}{3}0$	503	Gorno, Valserine, Italy	1
T	$\frac{5}{2}0$	502	Ghergur, Algeria	3
s	$\frac{3}{4}$	334	Vielle Montagne, Belgium	5
N	41	411	Santa Eulalia, Chihuahua, Mex.	6
	—21	$21\bar{1}$	Moresnet, Belgium	2
L	$\frac{4}{3}1$	433	Santa Eulalia, Chihuahua, Mex.	6
V	$\frac{7}{2}\frac{3}{2}$	732	" " " "	6
Q	$3\frac{3}{2}$	632	" " " "	6
H	$\frac{9}{7}\frac{6}{7}$	967	" " " "	6
W	$\frac{5}{4}\frac{3}{4}$	534	" " " "	6
J	$\frac{7}{5}\frac{6}{5}$	765	" " " "	6

Ξ	$\frac{5}{9}\frac{4}{9}$	549?	Santa Eulalia, Chihuahua, Mex.	6
Λ	$\frac{4}{9}\frac{5}{9}$	459?	" " " "	6

1.—E. Artini, 1896, Riv. Min. Ital., XVI, p. 19.
2.—H. Buttgenbach, 1897, Ann. Soc. Géol. Belg., XXIV.
3.—E. Billows, 1908, Riv. Min. Ital., XXXIV, p. 47.
4.—W. E. Ford and F. Ward, 1909, Amer. Journ. Sci., XXVIII, p. 185.
5.—V. Goldschmidt and R. Schroeder, 1911, Zeitschr. f. Kryst., XLIX, p. 135.
6.—M. Seebach and E. P. Paul, 1912, Zeitschr. f. Kryst., LI, p. 149.

Calaverite

$a : b : c = 1.6313 : 1 : 1.1449 \quad \beta = 89° 47'$

c	0	001	Cripple Creek, Colo.	1
a	∞0	100	" " "	1
b	0∞	010	" " "	1
m	∞	110	" " "	1
I	$\frac{2}{11}0$	2.0.11	" " "	1
H	$\frac{5}{11}0$	5.0.11	" " "	1
D	$\frac{3}{4}0$	304	" " "	1
G	$\frac{13}{10}0$	13.0.10	" " "	1
F	$\frac{11}{5}0$	11.0.5	" " "	1
E	$\frac{5}{2}0$	502	" " "	1
C_1	40	401	" " "	1
C	50	501	" " "	1
B_3	$\frac{75}{11}0$	75.0.11	" " "	1
B	80	801	" " "	1
B_1	$\frac{17}{2}0$	17.0.2	" " "	1
B_2	90	901	" " "	1
L	$-\frac{1}{4}0$	$\bar{1}04$	" " "	1
M_1	$-\frac{9}{10}0$	$\bar{9}.0.10$	" " "	1
M	—10	$\bar{1}01$	" " "	1
M_2	$-\frac{11}{10}0$	$\overline{11}.0.10$	" " "	1
N_1	$-\frac{11}{6}0$	$\overline{11}.0.6$	" " "	1
N	—20	$\bar{2}01$	" " "	1
N_2	$-\frac{24}{11}0$	$\overline{24}.0.11$	" " "	1
P	$-\frac{11}{2}0$	$\overline{11}.0.2$	" " "	1
P_1	$-\frac{25}{4}0$	$\overline{25}.0.4$	" " "	1
R	—90	$\bar{9}01$	" " "	1
R_1	—110	$\overline{11}.0.1$	" " "	1
R_2	—150	$\overline{15}.0.1$	" " "	1
e	+4	441	" " "	1

p	$+1$	111	Cripple Creek, Colo.	1
f	$+\frac{1}{2}$	112	" " "	1
w	-1	$\bar{1}11$	" " "	1
μ	$+\frac{17}{2}20$	17.40.2	" " "	1
t	$+\frac{13}{4}5$	13.20.4	" " "	1
g	$+\frac{11}{5}\frac{29}{5}$	11.29.5	" " "	1
h	$+\frac{21}{11}\frac{37}{11}$	21.37.11	" " "	1
ω	$+\frac{5}{3}\frac{5}{4}$	20.15.12	" " "	1
o	$+\frac{13}{10}\frac{11}{5}$	13.22.10	" " "	1
n	$+\frac{11}{10}\frac{7}{5}$	11.14.10	" " "	1
i	$+\frac{10}{11}\frac{7}{11}$	10.7.11	" " "	1
π	$+\frac{22}{27}\frac{2}{3}$	22.18.27	" " "	1
g_1	$+\frac{5}{11}\frac{15}{22}$	10.15.22	" " "	1
g	$+\frac{2}{5}\frac{7}{10}$	4.7.10	" " "	1
y	$+\frac{1}{3}\frac{3}{2}$	296	" " "	1
v	$+\frac{2}{5}\frac{11}{10}$	2.11.10	" " "	1
k	$-\frac{10}{21}\frac{32}{21}$	$\overline{10}.32.21$	" " "	1
r	$-\frac{2}{3}\frac{44}{15}$	$\overline{10}.44.15$	" " "	1
u	$-\frac{11}{10}\frac{9}{5}$	$\overline{11}.18.10$	" " "	1
j	$-\frac{7}{6}\frac{5}{6}$	$\bar{7}56$	" " "	1
x	$-\frac{11}{6}\frac{10}{3}$	$\overline{11}.20.6$	" " "	1
s	$-\frac{11}{6}\frac{31}{3}$	$\overline{11}.62.6$	" " "	1
s_1	-2.11	$\bar{2}.11.1$?	" " "	1
σ	-2.10	$\bar{2}.10.1$?	" " "	1
τ	$-\frac{31}{11}\frac{38}{11}$	$\overline{31}.38.11$	" " "	1
z	-15.22	$\overline{15}.22.1$	" " "	1
ρ	$-22.\frac{21}{2}$	$\overline{44}.21.2$	" " "	1

1.—S. L. Penfield and W. E. Ford, 1901, Amer. Journ. Sci., XII, p. 225.

Calcite

$\mathfrak{h}$	19∞	$19.1.\overline{20}.0$	Arendal, Norway	43
ψ	10∞	$10.1.\overline{11}.0$	Neumark, Germany	13
σ	7∞	$71\bar{8}0$	Bergen Hill, N. J.	32
μ	$\frac{5}{3}\infty$	$53\bar{8}0$	Smith's Basin, N. Y.	35
j	$\frac{7}{6}\infty$	$7.6.\overline{13}.0$	Andreasberg, Germany	31
v	2	$11\bar{2}1$	Lake Superior, Mich.	20
ω	$\frac{32}{9}$	$16.16.\overline{32}.9$	" " "	20
ρ	$\frac{18}{5}$	$9.9.\overline{18}.5$	Långban, Sweden	41
h^2	$\frac{21}{4}$	21.21.42.8	" "	42

s	$\frac{20}{3}$	$10.10.\overline{20}.3$	Nordmark, Sweden	41
χ	10	$5.5.\overline{10}.1$	Frizington, England	22
φ	16	$8.8.\overline{16}.1$	Smith's Basin, N. Y.	35
$\mathfrak{c}$	24.0	$24.0.\overline{24}.1$	Mineral Point, Wis.	12
	11.0	$11.0.\overline{11}.1$	Andreasberg, Germany	4
	80	$80\overline{8}1$	Rhisnes, Belgium	6
	$\frac{13}{2}0$	$13.0.\overline{13}.1$	Rauris, Salzberg, Germany	8
R.	20	$20\overline{2}1$	Lake Superior, Mich.	20
M.	$\frac{3}{2}0$	$30\overline{3}2$	Långban, Sweden	41
$\mathfrak{d}$	$\frac{1}{3}0$	$10\overline{1}3$	" "	41
$\mathfrak{a}$	$-\frac{11}{20}0$	$0.11.\overline{11}.20$	Mineral Point, Wis.	12
$\mathfrak{b}$	$-\frac{18}{25}0$	$0.18.\overline{18}.25$	" " "	12
o	$-\frac{14}{17}0$	$0.14.\overline{14}.17$	Hillsboro, N. Mex.	31
	$-\frac{19}{20}0$	$0.19.\overline{19}.20$	Archennes, Belgium	6
	$-\frac{17}{16}0$	$0.17.\overline{17}.16$	Rhisnes, Belgium	6
H:	$-\frac{18}{13}0$	$0.18.\overline{18}.13$	Edgewater, N. J.	22
Y	$-\frac{19}{13}0$	$0.19.\overline{19}.13$	Lyon Mountain, N. Y.	29
	$-\frac{14}{11}0$	$0.14.\overline{14}.11$	Norberg, Sweden	10
N.	$-\frac{10}{7}0$	$0.10.\overline{10}.7$	Karta, Sweden	41
	$-\frac{8}{5}0$	$08\overline{8}5$	Narsarsuk, Greenland	18
	$-\frac{6}{3}0$	$05\overline{5}3$	Andreasberg, Germany	4
	$-\frac{7}{4}0$	$07\overline{7}4$	" "	4
	$-\frac{11}{6}0$	$0.11.\overline{11}.6$	" "	4
	$-\frac{17}{8}0$	$0.17.\overline{17}.8$	Limburg, "	36
g_1	$-\frac{13}{5}0$	$0.13.\overline{13}.5$	Stromberg, "	40
$\mathfrak{g}$	$-\frac{16}{5}0$	$0.16.\overline{16}.5$	Budapest, Hungary	14
J.	$-\frac{13}{4}0$	$0.13.\overline{13}.4$	Great Notch, N. J.	22
Q.	-70	$07\overline{7}1$	Rondout, N. Y.	35
	$-\frac{29}{4}0$	$0.29.\overline{29}.4$	Dillenberg, Germany	34
	-10.0	$0.10.\overline{10}.1$	" "	34
	-12.0	$0.12.\overline{12}.1$	Budapest, Hungary	14
	-13.0	$0.13.\overline{13}.1$	Rauris, Salzberg, Germany	8
	-18.0	$0.18.\overline{18}.1$	Dillenberg, Germany	34
	-20.0	$0.20.\overline{20}.1$	Joplin, Mo.	21
	-28.0	$0.28.\overline{28}.1$	Andreasberg, Germany	4
	-36.0	$0.36.\overline{36}.1$	Norberg, Sweden	10
	$-\frac{6}{13}\frac{1}{13}$	$1.6.\overline{7}.13$	San Francisco, Calif.	31
	$-\frac{4}{9}\frac{1}{9}$	$14\overline{5}9$	Körösmezö, Hungary	15
r:	$-\frac{12}{29}\frac{5}{29}$	$5.12.\overline{19}.29$	Utö, Sweden	41
	$-\frac{7}{18}\frac{2}{9}$	$4.7.\overline{11}.18$	Körösmezö, Hungary	15

	$-\frac{5}{13}\,\frac{3}{13}$	$3.5.\bar{8}.13$	Lake Superior, Mich.	20
l:	$\frac{8}{22}\,\frac{7}{22}$	$8.7.\overline{15}.22$	Norberg, Sweden	41
	$\frac{5}{13}\,\frac{4}{13}$	$5.4.\bar{9}.13$	Körösmezö, Hungary	15
	$\frac{3}{7}\,\frac{2}{7}$	$32\bar{5}7$	Bamle, Norway	1
	$\frac{11}{23}\,\frac{6}{23}$	$11.6.\overline{17}.23$	Couzon, Rhône, France	16
h	$\frac{11}{21}\,\frac{5}{21}$	$11.5.\overline{16}.21$	Terlingua, Texas	31
	$\frac{7}{13}\,\frac{3}{13}$	$7.3.\overline{10}.13$	Couzon, Rhône, France	16
e	$\frac{9}{13}\,\frac{2}{13}$	$9.2.\overline{11}.13$	Budapest, Hungary	14
s:	$\frac{8}{7}\,\frac{1}{7}$	$81\bar{9}7$	Sala, Sweden	41
	$\frac{13}{10}\,\frac{3}{10}$	$13.3.\overline{16}.10$	Andreasberg, Germany	4
	$\frac{21}{16}\,\frac{5}{16}$	$21.5.\overline{26}.16$	Neumark, Germany	13
	$\frac{11}{8}\,\frac{3}{8}$	$11.3.\overline{14}.8$	Engis, Belgium	3
λ:	$\frac{17}{12}\,\frac{5}{12}$	$17.5.\overline{22}.12$	Great Notch, N. J.	22
υ:	$\frac{22}{15}\,\frac{7}{15}$	$22.7.\overline{29}.15$	Bölet, Sweden	41
ρ:	$\frac{25}{16}\,\frac{9}{16}$	$25.9.\overline{34}.16$	Hesselkulla, Sweden	41
a:	$\frac{8}{5}\,\frac{3}{5}$	$8.3.\overline{11}.5$	Långban, Sweden	41
	$\frac{7}{4}\,\frac{3}{4}$	$7.3.\overline{10}.4$	Montecatini, Italy	17
	$\frac{11}{6}\,\frac{5}{6}$	$11.5.\overline{16}.6$	Neumark, Germany	13
	$\frac{15}{8}\,\frac{7}{8}$	$15.7.\overline{22}.8$	" "	13
	$\frac{13}{4}\,\frac{9}{4}$	$13.9.\overline{22}.4$	Limburg, "	36
	$\frac{41}{20}\,\frac{21}{20}$	$41.21.\overline{62}.20$	Schafbachthal, Switzerland	7
b:	$\frac{29}{14}\,\frac{15}{14}$	$29.15.\overline{44}.14$	Bölet, Sweden	41
	$\frac{25}{12}\,\frac{13}{12}$	$25.13.\overline{38}.12$	Schafbachthal, Switzerland	7
	$\frac{19}{8}\,\frac{11}{8}$	$19.11.\overline{30}.8$	Montecatini, Italy	5
	$\frac{12}{5}\,\frac{7}{5}$	$12.7.\overline{19}.5$	Iceland?	44
	$\frac{29}{12}\,\frac{17}{12}$	$29.17.\overline{46}.12$	Neumark, Germany	13
c:	$\frac{13}{5}\,\frac{8}{5}$	$13.8.\overline{21}.5$	Limburg, Germany	36
	$\frac{17}{6}\,\frac{11}{6}$	$17.11.\overline{28}.6$	Lake Superior, Mich.	20
	$\frac{17}{4}\,\frac{13}{4}$	$17.13.\overline{30}.4$	Plainfield, N. J.	32
d:	$\frac{11}{2}\,\frac{9}{2}$	$11.9.\overline{20}.2$	Limburg, Germany	36
	$\frac{15}{2}\,\frac{13}{2}$	$15.13.\overline{28}.2$	Framont, Alsace, France	11
	87	$8.7.\overline{15}.1$	Salgótarján, Nogard, Hungary	30
	10.9	$10.9.\overline{19}.1$	Montecatini, Italy	17
	$\frac{21}{2}\,\frac{19}{2}$	$21.19.\overline{40}.2$	Arendal, Norway	7
	$\frac{5}{6}\,\frac{1}{3}$	$52\bar{7}6$	Körösmezö, Hungary	15
	$-\frac{5}{4}\,\frac{1}{4}$	$51\bar{6}4$	Salgótarján, Nogard, Hungary	30
a	$-\frac{5}{3}\,\frac{1}{6}$	$1.10.\overline{11}.6$	Budapest, Hungary	14
	$-\frac{7}{3}\,\frac{1}{3}$	$17\bar{8}3$	Couzon, Rhône, France	16
t:	$-\frac{14}{3}\,\frac{8}{3}$	$8.14.\overline{22}.3$	Lyon Mountain, N. Y.	35
8:	—64	$4.6.\overline{10}.1$	Rondout, N. Y.	35

	$-\frac{11}{6}\frac{1}{3}$	$2.11.\overline{13}.6$	Rhisnes, Belgium	6
	$-\frac{20}{11}\frac{4}{11}$	$4.20.\overline{24}.11$	Budapest, Hungary	14
	$-\frac{12}{7}\frac{4}{7}$	$4.12.\overline{16}.7$	Rhisnes, Belgium	6
π:	$\frac{10}{3}\frac{1}{3}$	$10.1.\overline{11}.3$	Lake Superior, Mich.	20
o	$\frac{8}{3}\frac{2}{3}$	$8.2.\overline{10}.3$	Hillsboro, N. Mex.	31
Γ:	$\frac{17}{4}\frac{1}{4}$	$17.1.\overline{18}.4$	Lake Superior, Mich.	20
Δ	$\frac{13}{3}\frac{1}{3}$	$13.1.\overline{14}.3$	" " "	20
Σ	$\frac{22}{5}\frac{2}{5}$	$22.2.\overline{24}.5$	" " "	20
Θ:	$\frac{40}{9}\frac{4}{9}$	$40.4.\overline{44}.9$	" " "	20
Φ	$\frac{9}{2}\frac{1}{2}$	$9.1.\overline{10}.2$	" " "	20
Λ:	$\frac{32}{7}\frac{4}{7}$	$32.4.\overline{36}.7$	" " "	20
	$\frac{14}{3}\frac{2}{3}$	$14.2.\overline{16}.3$	Rhisnes, Belgium	6
	$\frac{16}{3}\frac{4}{3}$	$16.4.\overline{20}.3$	Tharandt, Saxony, Germany	19
	$\frac{11}{2}\frac{3}{2}$	$11.3.\overline{14}.3$	Catskill, N. Y.	35
	$\frac{15}{2}\frac{7}{2}$	$15.7.22.2$	Rhisnes, Belgium	6
	$\frac{17}{2}\frac{9}{2}$	$17.9.26.2$	" "	6
$\mathfrak{g}$:	$\frac{7}{2}1$	$72\overline{9}2$	Nordmark, Sweden	41
U:	$\frac{10}{3}\frac{4}{3}$	$10.4.\overline{14}.3$	Lake Superior, Mich.	20
	$\frac{19}{6}\frac{5}{3}$	$19.10.\overline{29}.6$	Rhisnes, Belgium	6
$\mathfrak{u}$	$\frac{14}{5}\frac{12}{5}$	$14.12.\overline{26}.5$	Lyon Mountain, N. Y.	29
	$-\frac{17}{12}\frac{5}{12}$	$5.17.\overline{22}.12$	Rauris, Salzberg, Germany	8
F	$-\frac{11}{6}\frac{5}{6}$	$5.11.\overline{16}.6$	Lake Superior, Mich.	20
	$-\frac{7}{3}\frac{4}{3}$	$4.7.\overline{11}.3$	Couzon, Rhône, France	16
	$-\frac{5}{2}\frac{3}{2}$	$35\overline{8}2$	Narsarsuk, Greenland	18
X	$\frac{16}{3}\frac{7}{3}$	$16.7.\overline{23}.3$	Terlingua, Texas	27
$\mathfrak{e}$	$-\frac{11}{2}\frac{1}{2}$	$1.11.\overline{12}.2$	Sommerville, N. Y.	35
$\mathfrak{d}$	-72	$27\overline{9}1$	Budapest, Hungary	14
$\mathfrak{j}$:	$2\frac{3}{2}$	$42\overline{7}2$	Långban, Sweden	41
$\mathfrak{w}$	$\frac{7}{6}\frac{2}{3}$	$7.4.\overline{11}.6$	Lake Superior, Mich.	20
	$-\frac{36}{13}\frac{19}{13}$	$19.36.\overline{55}.13$	Couzon, Rhône, France	16
$\mathfrak{k}$:	$\frac{7}{2}\frac{7}{4}$	$14.7.\overline{21}.4$	Långban, Sweden	41
$\mathfrak{N}$	$-\frac{28}{9}\frac{7}{9}$	$7.28.\overline{35}.9$	Skorrvång, Sweden	41
$\mathfrak{f}$	$-\frac{20}{13}\frac{6}{13}$	$6.20.\overline{26}.13$	Lake Superior, Mich.	20
	$-\frac{11}{7}\frac{3}{7}$	$3.11.\overline{14}.7$	Andreasberg, Germany	4
$\mathfrak{t}$	$-\frac{13}{8}\frac{3}{8}$	$3.13.\overline{16}.8$	Plainfield, N. J.	32
D	$-2\frac{3}{4}$	$3.8.\overline{11}.4$	Lake Superior, Mich.	20
A	$-2\frac{6}{7}$	$6.14.\overline{20}.7$	" " "	20
	$\frac{16}{5}2$	$16.10.\overline{26}.5$	Norberg, Sweden	10
$\mathfrak{H}$	$\frac{9}{2}2$	$9.4.\overline{13}.2$	Howes Cave, N. Y.	35
	52	$52\overline{7}1$	Budapest, Hungary	14

I	$-\frac{17}{8}\,\frac{7}{8}$	$7.17.\overline{24}.8$	Lake Superior, Mich.	20
J	$-\frac{20}{9}\,\frac{8}{9}$	$8.20.\overline{28}.9$	Guanajuato, Mexico	9
	$-\frac{23}{10}\,\frac{9}{10}$	$9.23.\overline{23}.10$	Couzon, Rhône, France	16
B	$-\frac{40}{11}\,\frac{12}{11}$	$12.40.\overline{52}.11$	Lake Superior, Mich.	20
𝔬	$-\frac{3}{2}\,\frac{5}{8}$	$5.12.\overline{17}.8$	Utö, Sweden	41
	$3\frac{4}{3}$	$15.4.\overline{19}.3$	Freiberg, Germany	7
	$5\frac{7}{5}$	$25.7.\overline{32}.5$	Dortmund, Germany	23
	$5\frac{3}{2}$	$10.3.\overline{13}.2$	Freiberg, Germany	7
𝔣:	$\frac{7}{2}\,\frac{3}{2}$	$7.3.\overline{10}.2$	Långban, Sweden	41
z	$\frac{16}{15}\,\frac{4}{15}$	$16.4.\overline{20}.15$	Lake Superior, Mich.	20
N	$\frac{12}{11}\,\frac{4}{11}$	$12.4.\overline{16}.11$	" " "	20
H	$\frac{6}{5}\,\frac{3}{5}$	$63\overline{9}5$	West Paterson, N. J.	28
	$\frac{10}{9}\,\frac{7}{9}$	$10.7.\overline{17}.9$	Körösmezö, Hungary	15
J.	$-\frac{19}{12}\,\frac{17}{24}$	$17.38.\overline{55}.24$	Lake Superior, Mich.	20
	$-\frac{24}{7}\,\frac{3}{7}$	$3.24.\overline{27}.7$	Bamle, Norway	1
L	$\frac{22}{37}\,\frac{8}{37}$	$22.8.\overline{30}.37$	Andreasberg, Germany	4
	$\frac{7}{2}3$	$7.6.\overline{13}.2$	Norberg, Sweden	10
𝔞	$\frac{37}{21}\,\frac{19}{21}$	$37.19.\overline{56}.21$	Lake Superior, Mich.	20
𝔟	$\frac{4}{3}\,\frac{11}{15}$	$20.11.\overline{31}.15$	" " "	20
M	$\frac{8}{5}\,\frac{4}{5}$	$8.4.\overline{12}.5$	" " "	20
	$\frac{5}{2}\,\frac{5}{4}$	$10.5.\overline{15}.4$	Blaton, Belgium	2
P	$\frac{13}{3}\,\frac{7}{3}$	$13.7.\overline{20}.3$	Lake Superior, Mich.	20
𝔩	$\frac{39}{8}\,\frac{15}{8}$	$39.15.\overline{54}.8$	Rossie, N. Y.	35
	$\frac{17}{3}\,\frac{8}{3}$	$17.8.\overline{25}.3$	Rhisnes, Belgium	6
	$\frac{63}{11}\,\frac{28}{11}$	$63.28.\overline{91}.11$	Budapest, Hungary	14
U'''	61	$61\overline{7}1$	Belgium	25
𝔇	$\frac{7}{6}\,\frac{5}{18}$	$21.5.\overline{26}.18$	Kelley's Island, Ohio	37
e^3	$2\frac{3}{2}$	$43\overline{7}2$	Långban, Sweden	42
e^1	$\frac{7}{6}\,\frac{7}{12}$	$14.7.\overline{21}.12$	" "	42
h^1	$\frac{16}{5}\,\frac{14}{5}$	$16.14.\overline{30}.5$	" "	42
g^1	$\frac{21}{5}\,\frac{8}{5}$	$21.8.\overline{29}.5$	" "	42
𝔦:	$\frac{28}{9}\,\frac{16}{9}$	$28.16.\overline{44}.9$	Sweden	41
𝔩:	$\frac{8}{3}\,\frac{4}{3}$	$8.4.\overline{12}.3$	Långban, Sweden	41
𝔥:	$\frac{7}{6}\,\frac{7}{12}$	$14.7.\overline{21}.12$	Sweden	41
𝔔	$3\frac{8}{3}$	$9.8.\overline{17}.3$	Långban, Sweden	41
𝔇	$\frac{21}{5}\,\frac{8}{5}$	$21.8.\overline{29}.5$	" "	41
𝔬	$\frac{16}{5}\,\frac{14}{5}$	$16.14.\overline{30}.5$	" "	41
ρ^1	$\frac{32}{35}\,\frac{24}{35}$	$32.24.\overline{56}.35$	Stromberg, Germany	40
	$\frac{18}{5}\,\frac{12}{5}$	$18.12.\overline{30}.5$	Dillenberg, "	34
	$\frac{25}{3}\,\frac{20}{3}$	$25.20.\overline{45}.3$	" "	34

D^1	$4\frac{8}{3}$	$12.8.\overline{20}.3$		38
υ:	$\frac{11}{3}\,\frac{4}{3}$	$11.4.\overline{15}.3$	Joplin, Mo.	33
μ:	$\frac{20}{11}1$	$20.11.\overline{31}.11$	Belleville, Ohio	33
E	$-\frac{56}{69}\,\frac{32}{69}$	$32.56.\overline{88}.69$	Lake Superior, Mich.	20
	$-\frac{3}{2}\,\frac{2}{3}$	$4.9.\overline{13}.6$	Neumark, Sweden	13
	$-\frac{20}{21}\,\frac{2}{21}$	$2.20.\overline{22}.21$	Rhisnes, Belgium	6
	$-\frac{20}{17}\,\frac{4}{17}$	$4.20.\overline{24}.17$	Utö, Sweden	7
$\mathfrak{d}$	$-\frac{36}{31}\,\frac{4}{31}$	$4.36.\overline{40}.31$	Lake Superior, Mich.	20
C	$-\frac{13}{10}\,\frac{1}{10}$	$1.13.\overline{14}.10$	West Paterson, N. J.	28
K	$-\frac{11}{8}\,\frac{1}{8}$	$1.11.\overline{12}.8$	Lake Superior, Mich.	20
$\mathfrak{l}$	$-\frac{10}{3}1$	$3.10.\overline{13}.3$	Hillsboro, New Mex.	31
	$-\frac{61}{26}\,\frac{3}{26}$	$3.61.\overline{64}.26$	Rhisnes, Belgium	6
	$-\frac{59}{17}\,\frac{16}{17}$	$16.59.\overline{75}.17$	Couzon, Rhône, France	16
	$-8\frac{3}{2}$	$3.16.\overline{19}.2$	Budapest, Hungary	14
	$-\frac{68}{35}\,\frac{12}{35}$	$12.68.\overline{80}.35$	Neumark, Germany	13
	-13.1	$1.13.\overline{14}.1$	Freiberg, "	7
$\mathfrak{x}$	$-\frac{15}{2}\,\frac{3}{2}$	$3.15.\overline{18}.2$	Union Springs and Rondout, N. Y.	35
$\mathfrak{T}$	$-\frac{13}{4}\,\frac{3}{2}$	$6.13.\overline{19}.4$	Kelley's Island, Ohio	37
h^5	$-\frac{13}{8}\,\frac{3}{4}$	$6.13.\overline{19}.8$	Utö, Sweden	42
h^6	$-\frac{3}{2}\,\frac{5}{8}$	$5.12.\overline{17}.8$	" "	42
	-10.6	$6.10.\overline{16}.1$?	Greenland	26
	$-\frac{35}{2}\,\frac{21}{2}$	$21.35.\overline{56}.2$	Limburg, Germany	36
B_{11}	$-\frac{50}{29}\,\frac{13}{29}$	$13.50.\overline{63}.29$	Stromberg, "	40
B_1	$-\frac{12}{5}\,\frac{3}{5}$	$3.12.\overline{15}.5$	" "	40
x_1	$-\frac{125}{48}\,\frac{35}{48}$	$35.125.\overline{160}.48$	" "	40
	$-\frac{36}{11}\,\frac{8}{11}$	$8.36.\overline{44}.11$	Dillenberg, "	34
	-25.15	$15.25.\overline{40}.1$	" "	34
$\mathfrak{p}$	$-\frac{9}{2}\,\frac{9}{20}$	$9.45.\overline{54}.20$	Utö, Sweden	41
$\mathfrak{L}$	$-\frac{38}{17}\,\frac{22}{17}$	$22.38.\overline{60}.17$	" "	41
$\mathfrak{M}$	$-\frac{9}{2}\,\frac{27}{20}$	$27.45.\overline{72}.20$	" "	41
$\mathfrak{D}$	$-5\frac{5}{4}$	$5.20.\overline{25}.4$	Nordmark and Visby, Sweden	41
	-20.12	$12.20.\overline{32}.1$	Stromberg, Germany	40

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Caledonite

a: *b*: *c* = 0.9190:1:2.8228

$0\frac{1}{5}$	015	Red Gill, Scotland	1
$0\frac{1}{3}$	013	" " "	1
$0\frac{2}{3}$	023	" " "	1
02	021	Lead Hills, "	1
03	031	" " "	1
05	051	" " "	1

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Calomel

l	∞2	120	Avala, Belgrad, Servia	3
ξ	$\infty\frac{9}{2}$	290	" " "	1
g	∞6	160	" " "	2
j	$\frac{4}{7}0$	407	Donna Anna Co., N. Mex.	5
j	$0\frac{1}{12}$	0.1.12	Terlingua, Texas	4
Y	$0\frac{1}{8}$	018	" "	4
δ	$0\frac{1}{6}$	016	" "	3
q	$0\frac{1}{5}$	015	Avala, Belgrad, Servia	2
t	$0\frac{1}{2}$	012	" " "	2
·Φ	$0\frac{3}{5}$	035	Terlingua, Texas	4
β	$0\frac{5}{4}$	054	Avala, Belgrad, Servia	1
d	03	031	Terlingua, Texas	3
k	04	041	Avala, Belgrad, Servia	1
H	$\frac{1}{24}$	1.1.24	Terlingua, Texas	4
ϵ	$\frac{1}{7}$	117	" "	4
h	$\frac{1}{4}$	114	Avala, Belgrad, Servia	1
T	$\frac{3}{4}$	334	Terlingua, Texas	4
K	$\frac{5}{3}$	553	" "	4
u	$\frac{5}{2}$	552	Avala, Belgrad, Servia	1
S	$\frac{3}{10}\frac{2}{5}$	3.4.10	Terlingua, Texas	4

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Carnallite

x	∞2	120	Königshutter, Germany	2
g	$0\frac{1}{2}$	012	" "	1
h	$0\frac{3}{2}$	032	" "	1
r	$0\frac{8}{3}$	083	" "	2
q	07	071	" "	2
n	$\frac{1}{3}0$	103	" "	1
u	$\frac{1}{8}$	118	" "	1
t	$\frac{1}{4}$	114	" "	1
ι	$\frac{3}{2}$	332	" "	2
w	$\frac{1}{6}\frac{1}{3}$	126	" "	1

y	13	131	Königshutter, Germany	2
v	$\frac{1}{6}\frac{1}{2}$	136	" "	1

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Cassiterite

λ	$\frac{10}{9}\infty$	10.9.0	Selangor, Malay Peninsula	2
	$\infty 4$	140	Cassiterite Creek, Alaska	5
n	6	661	Cornwall, England	1
σ	12	12.12.1	" "	1
s	18	18.18.1	" "	1
g	34	341		3
d	$\frac{3}{2}2$	342	Cornwall, England	1
θ	$\frac{11}{2}\frac{13}{2}$	11.13.2	" "	1
H	$2\frac{13}{4}$	8.13.4	Pitkäranta, Finland	4
K	$2\frac{10}{3}$	6.10.3	" "	4
L	$2\frac{7}{2}$	472	" "	4
M	$2\frac{15}{4}$	8.15.4	" "	4
N	24	241	" "	4
O	$2\frac{9}{2}$	492	" "	4
R	$\frac{13}{6}\frac{17}{6}$	13.17.6	" "	4
S	$\frac{11}{5}\frac{14}{5}$	11.14.5	" "	4
w	$\frac{16}{7}\frac{19}{7}$	16.19.7	" "	4
T	$\frac{7}{3}\frac{8}{3}$	783	" "	4

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5.—W. T. Schaller, 1905, U. S. Geol. Surv. Bull., CCLXII, p. 130.
*6.—L. H. Borgstrom, 1909, Ofver. Finska Vet. Soc. Förh., LIA, p. 2.

Celestite

A_1	$\frac{10}{3}\infty$	10.3.0	Dobogó Berg, Hungary	1
F_1	$\infty\frac{5}{4}$	450	Romagna, Italy	5
X_1	$\infty\frac{3}{2}$	230	" "	5
ξ^2	$0\frac{1}{20}$	0.1.20	Salzburg, Germany	2
	$0\frac{1}{16}$	0.1.16	Vicentine Alps, Italy	9
ξ^1	$0\frac{1}{10}$	0.1.10	Salzburg, Germany	2
	$0\frac{1}{9}$	019	Lornano, Siena, Italy	12
	$0\frac{1}{7}$	017	Romagna, Italy	10
	$0\frac{6}{7}$	067		14

	$0\frac{8}{7}$	087?	Romagna, Italy	5
	$0\frac{15}{2}$	0.15.2	Khotin, Bessarabia, Russia	7
	$\frac{1}{17}0$	1.0.17	Tumminelli, Sicily, Italy	15
K_1	$\frac{9}{8}0$	908	Schafenberg, Saxony, Ger.	3
N	$\frac{7}{5}0$	705	Giershagen, Stadberge, Ger.	6
	$\frac{1}{9}$	119	Vicentine Alps, Italy	9
	$\frac{1}{7}$	117	" " "	9
Q	$\frac{3}{2}$	332	Giershagen, Stadtberge, Ger.	6
R	$\frac{1}{19}1$	1.19.19	" " "	6
Y	$\frac{1}{10}1$	1.10.10	Bronseval, Haute Marne, France	4
	$\frac{1}{7}1$	177	Kresty, Saratow, Russia	11
	$\frac{1}{5}1$	155	Scharfenberg, Saxony, Ger.	3
	$\frac{3}{2}1$	322	Strongoli, Calabria, Italy	8
π^1	$\frac{1}{2}\frac{1}{4}$	214	Salzburg, Germany	2
v_1	$\frac{5}{4}\frac{1}{2}$	524	Scharfenberg, Saxony, Ger.	3
$\mathfrak{e}$	$\frac{1}{2}\frac{1}{3}$	326	Romagna, Italy	5
	$\frac{3}{7}\frac{2}{7}$	327	Lornando, Siena, Italy	12
	$\frac{3}{8}\frac{1}{4}$	328	Grottacalda, Sicily, Italy	15
ϑ	$\frac{1}{4}\frac{1}{2}$	124	Russia	16
	$\frac{1}{6}\frac{7}{6}$	176	Mokattan, Egypt	13
P	$\frac{5}{2}3$	562	Romagna, Italy	5
	$\frac{9}{8}\frac{5}{8}$	958	Isère, France	17
s	$\frac{2}{9}\frac{10}{9}$	2.10.9	Tunis	18
	$\frac{1}{10}\frac{11}{10}$	1.11.10	"	18

1.—K. Zimányi, 1887, Math. es term. tud. Estestito, VI, p. 84.
2.—L. Buchrucker, 1891, Zeitschr. f. Kryst., XIX, p. 113.
3.—F. Stöber, 1891, Zeitschr. f. Kryst., XIX, p. 437.
4.—F. Stöber, 1893, Zeitschr. f. Kryst., XXI, p. 339.
5.—E. Artini, 1893, Rend. Inst. Lomb., (2) XXVI, p. 333.
6.—A. Arzruni and K. Thaddéeff, 1895, Zeitschr. f. Kryst., XXV, p. 38.
7.—Prendel, 1896, Min. Ges. Petersb., XXXIV, p. 185.
8.—F. Millosevici, 1899, Rend. Accad. Linc, VIII, p. 345.
9.—E. Billows, 1904, Riv. Min. Ital., XXXI, p. 3.
10.—F. Zambonini, 1904, Rend. Accad. Linc., (1) XIII, p. 37.
11.—N. Surgunoff, 1904, Bull. Soc. Nat. Moscow, p. 435.
12.—E. Manasse, 1907, Atti. Soc. Tosc., XXIII.
13.—Couyat, 1907, Compt. Rend., CXLV, p. 504.
14.—A. S. Eakle, 1908, Univ. Cal. Pub. (Geol.), V, p. 225.
15.—E. Traina, 1908, Mem. Accad. Linc., VI, p. 544.
16.—J. Samojlov, 1909, Bull. Ac. St. Petersb., p. 692.
17.—A. Lacroix, 1910, Min. de France, IV, p. 103.
18.—G. Cesáro, 1910, Ann. Soc. Géol. Belg., XXXVIII, p. 23.

Celsian

$a:b:c=0.657:1:0.554 \quad \beta=115° 2'$

P	0	001	Jacobsberg, Sweden	1
M	0∞	010	" "	1
K	∞	110	" "	1
Y	20	201	" "	1
	$-\frac{1}{4}$	$\bar{1}14$	" "	1
G	$-\frac{1}{2}$	$\bar{1}12$	" "	1
O	—1	$\bar{1}11$	" "	1
	—3	$\bar{3}31$	" "	1
	—31	$\bar{3}11$	" "	1

1.—J. E. Strandmark, 1903, Geol. Fören. Förh., XXXV, p. 289.

Cenosite

$a:b:c=0.9517:1:0.8832$

c	0	001	Nordmark, Sweden	1
b	0∞	010	" "	1
m	∞	110	" "	1
h	$\infty\frac{3}{2}$	230	" "	1
f	$0\frac{2}{3}$	023	" "	1
d	01	011	" "	1
e	02	021	" "	1
g	20	201	" "	1

1.—Hj. Sjögren, 1897, Geol. Fören. Förh., XIX, p. 54.

Cerussite

$a:b:c=0.6102:1:0.7231$ (Dubigk)

	3∞	310	Santa Rosalia, Peru	2
𝔟	$\infty\frac{8}{3}$	380	Missoula, Wis.	4
	$\infty\frac{25}{8}$	8.25.0	Tsumeb, S. W. Africa	11
	∞5	150	Santa Rosalia, Peru	2
	∞10	1.10.0	Tsumeb, S. W. Africa	11
	∞23	1.23.0	" " "	11
	∞31	1.31.0	" " "	11
𝔢	$0\frac{2}{5}$	025	Tarnowitz, Silesia, Ger.	3
T	$0\frac{3}{4}$	034	Sardinia	8
	$0\frac{11}{10}$	0.11.10	Tsumeb, S. W. Africa	11
	$0\frac{8}{7}$	087	" " "	11
	$0\frac{7}{6}$	076	" " "	11

Q	$0\frac{5}{4}$	054	Sardinia	8
	$0\frac{9}{5}$	095	Tsumeb, S. W. Africa	11
	$0\frac{3}{2}$	032	Sardinia	1
R	$0\frac{5}{2}$	052	"	1
C	$0\frac{7}{2}$	072	Rézbánya, Hungary	9
B	$0\frac{9}{2}$	092	" "	9
D	$0\frac{11}{2}$	0.11.2	" "	9
λ	$0\frac{25}{4}$	0.25.4	Missoula, Wis.	4
M	$0\frac{13}{2}$	0.13.2	Rézbánya, Hungary	9
	$0\frac{29}{4}$	0.29.4	Tsumeb, S. W. Africa	11
	0.13	0.13.1	Val Seriana, Italy	5
	0.22	0.22.1	Mies, Bohemia	6
	0.25	0.25.1	" "	6
	0.29	0.29.1	" "	6
	0.33	0.33.1	" "	6
	0.37	0.37.1	" "	6
E	$\frac{1}{4}0$	104	Sardinia	1
A	$\frac{3}{4}0$	304	Mepimi, Mexico	7
	$\frac{6}{7}0$	607	Reichenbach, Baden, Ger.	10
$\mathfrak{a}$	4	441	Tarnowitz, Silesia, Ger.	3
$\mathfrak{u}$	$\frac{3}{2}$	332	Missoula, Wis.	4
$\mathfrak{g}$	17	171	Tarnowitz, Silesia, Ger.	3
H	16	161	Sardinia	1
	$\frac{5}{14}\,\frac{4}{7}$	5.8.14	Reichenbach, Silesia, Ger.	10

1.—E. Artini, 1889, Rend. Accad. Linc., (4), V, p. 20.
2.—H. Buttgenbach, 1902, Ann. Soc. Géol. Belg., XXIX, p. 103.
3.—H. Traube, 1894, Zeitschr. Geol. Ges., XL, p. 60.
4.—W. H. Hobbs, 1895, Amer. Journ. Sci., L, p. 121.
5.—E. Artini, 1896, Riv. Min. Ital., XVI, p. 21.
6.—H. L. Bravič, 1900, Ber. böhm. Ges. Wiss., XXXVI.
7.—V. Goldschmidt, 1902, Neues Jahrb. f. Min., B.-B., XV, p. 562.
*8.—P. F. Hubrecht, 1905, Zeitschr. f. Kryst., XL, p. 147.
9.—Low, 1908, Földt. Közlöny, XXXVIII, p. 205.
10.—V. Dürrfeld, 1912, Zeitschr. f. Kryst., L, p. 582.
11.—H. Dubigk, 1913, Neues Jahrb. f. Min., B.-B., XXXVI, p. 214.

Chalcanthite

p	∞4	140	Zajecar, Servia	2
l	∞2	120	Alameda Co., Calif.	1
d	—20	$20\bar{1}$	Zajecar, Servia	3
o	—1	$1\bar{1}\bar{1}$	" "	3

o^1	—1	$1\bar{1}1$	Zajecar, Servia	2
g	$1\bar{4}$	$1\bar{4}1$	Alameda Co., Calif.	1

1.—W. T. SCHALLER, 1903, Bull. Univ. Calif. (Geol.), III, p. 212.
2.—V. ROSICKY, 1908, Abh. d. böhm. Akad., XIII, No. 28.
3.—O. HAAS, 1913, Zeitschr. f. Kryst., LIII, p. 183.

CHALCOPHYLLITE

$a : c = 1 : 2.671$

x	$\frac{1}{4}0$	$10\bar{1}4$	Bisbee, Ariz.	1
y	—20	$02\bar{2}1$	" "	1

1.—C. PALACHE AND H. E. MERWIN, 1909, Amer. Journ. Sci., XXVIII, p. 537.

CHALCOCITE

	$0\frac{5}{2}$	052	Montecatini, Italy	1

1.—G. BOERIS, 1894, Zeitschr. f. Kryst., XXIII, p. 235.

CHALCOPYRITE

μ	$\frac{2}{5}0$	205	Arakawa, Japan	12
H^1	$\frac{2}{3}0$	203	Andreasberg, Harz, Ger.	5
τ	$\frac{5}{9}0$	509	Pulacayo, Bolivia	8
	$\frac{9}{8}0$	908	Canelas, Durango, Mex.	13
i	$\frac{7}{6}0$	706	Andreasberg, Harz, Ger.	5
τ	$\frac{6}{5}0$	605	Kis-Alamas, Hungary	4
K	$\frac{11}{9}0$	11.0.9	Schemnitz, Hungary	9
Q	$\frac{5}{4}0$	504	Andreasberg, Harz, Ger.	5
M	$\frac{14}{11}0$	14.0.11	Schemnitz, Hungary	9
s	$\frac{9}{7}0$	907	Kis-Alamas, Hungary	4
π	$\frac{4}{3}0$	403	Schemnitz, Hungary	9
ϵ	$\frac{7}{5}0$	705	" "	9
δ	$\frac{10}{7}0$	10.0.7	" "	9
q	$\frac{5}{3}0$	503	Andreasberg, Harz, Ger.	5
χ	$\frac{7}{4}0$	704	Kis-Alamas, Hungary	4
R	$\frac{7}{3}0$	703	Schemnitz, Hungary	9
	$\frac{9}{5}0$	905	Littfeld, Siegen, Ger.	14
L	$\frac{23}{12}0$	23.0.12	Schemnitz, Hungary	9
S	$\frac{5}{2}0$	502	" "	9
	30	301	Canelas, Durango, Mex.	13
	$\frac{11}{3}0$	11.0.3	Val de Villé, Alsace, France	11
T	60	601	Schemnitz, Hungary	9
W	70	701	" "	9
σ	$\frac{1}{12}$	1.1.12?	Redruth, Cornwall, Eng.	7

β	$\frac{1}{8}$	118	Redruth, Cornwall, Eng.	7
γ	$\frac{1}{5}$	115	Visé, Belgium	6'
λ	$\frac{2}{9}$	229	Redruth, Cornwall, Eng.	7
d_1	$\frac{1}{4}$	114	Schemnitz, Hungary	9
x	$\frac{1}{3}$	113	Pulacayo, Bolivia	8
	$\frac{5}{8}$	558	Val de Villé, Alsace, France	11
r	$\frac{3}{2}$	332	Andreasberg, Harz, Ger.	5
ρ	$\frac{5}{3}$	553	Redruth, Cornwall, Eng.	7
t	2	221	Andreasberg, Harz, Ger.	5
f	$\frac{5}{2}$	552	Redruth, Cornwall, Eng.	7
φ	$\frac{7}{2}$	772?	French Creek, Chester Co., Pa.	1
F	5	551	Redruth, Cornwall, Eng.	7
η	7	771	Pulacayo, Bolivia	8
μ	11	11.11.1?	Traversella, Italy	10
χ	$\frac{1}{2}1$	122	French Creek, Chester Co., Pa.	1
s	51	511	Schemnitz, Hungary	9
Y	$1\frac{1}{5}$	525	Traversella, Italy	10
F	$-1\frac{1}{4}$	$4\bar{1}4$	Schemnitz, Hungary	9
y	$1\frac{1}{3}$	313	Andreasberg, Harz, Ger.	5
Z	$1\frac{2}{5}$	525	Schemnitz, Hungary	9
s	$-1\frac{2}{3}$	$5\bar{2}5$	Westphalia	2
	$-1\frac{3}{7}$	$7\bar{3}7$	Canelas, Durango, Mex.	13
	$\frac{3}{2}\ \frac{1}{2}$	312	Burgholdingshaven, Siegen, Ger.	3
	$\frac{5}{4}\ \frac{3}{4}$	534	" " "	3
N	$-\frac{3}{4}\ \frac{1}{12}$	$9.\bar{1}.12$	Schemnitz, Hungary	9
H	$-\frac{5}{4}\ \frac{1}{10}$	$8.\bar{1}.10$	" "	9
G	$\frac{10}{7}\ \frac{4}{7}$	10.4.7	" "	9
ω	$\frac{5}{6}\ \frac{7}{6}$	576	French Creek, Chester Co., Pa.	1

1.—S. L. Penfield, 1890, Amer. Journ. Sci., XL, p. 207.
2.—G. Cesáro, 1894, Bull. Ac. Belg., XXVIII, p. 182.
3.—Sonheur, 1894, Zeitschr. f. Kryst., XIII, p. 545.
4.—K. Zimányi, 1896, Zeitschr. f. Kryst., XXVII, p. 95.
5.—O. Luedecke, 1896, Min. d. Harzes, p. 113.
6.—H. Buttgenbach, 1898, Ann. Soc. Géol. Belg., p. 25.
7.—W. J. Lewis and A. L. Hall, 1900, Min. Mag., XII, p. 324.
8.—Z. Toborffy, 1904, Zeitschr. f. Kryst., XXXIX, p. 366.
9.—B. Mauritz, 1905, Zeitschr. f. Kryst., XL, p. 589.
10.—L. Colomba, 1905, Rend. Accad. Linc., (5) XV.
11.—H. Ungemach, 1906, Bull. Soc. fr. Min., XXIX, p. 194.
12.—J. Beckenkamp, 1907, Zeitschr. f. Kryst., XLIII, p. 43.
13.—H. Ungemach, 1910, Bull. Soc. fr. Min., XXXIII.
14.—J. F. Oebike, 1915, Inaug. Diss. Münster, i. Westf., p. 56.

CHALCOSTIBITE

$a: b: c = 0.5283 : 1 : 0.6364$

c	0	001	Wolfsberg, Harz, Ger.	1
b	0∞	010	" " "	1
l	∞3	130	Huanchaca, Bolivia	4
f	01	011	Wolfsberg, Harz, Ger.	1
s	$0\frac{6}{5}$	065	Huanchaca, Bolivia	4
t	02	021	Wolfsberg, Harz, Ger.	1
u	06	061	" " "	1
Δ	$\frac{2}{9}0$	209	Huanchaca, Bolivia	4
Δ_1	$\frac{2}{7}0$	207	" "	4
Δ_2	$\frac{1}{3}0$	103	" "	4
e	$\frac{3}{7}0$	307	Wolfsberg, Harz, Ger.	2
j	$\frac{1}{2}0$	102	Huanchaca, Bolivia	4
h	$\frac{2}{3}0$	203	Wolfsberg, Harz, Ger.	1
d	10	101	" " "	1
i	$\frac{3}{2}0$	302	" " "	1
g	20	201	" " "	1
v	$\frac{1}{3}1$	133	Huanchaca, Bolivia	4
α	$\frac{2}{3}1$	233	" "	3
μ	$\frac{1}{6}\,\frac{1}{2}$	136	" "	4
r	$\frac{1}{4}\,\frac{3}{4}$	134	Wolfsberg, Harz, Ger.	2
π	$\frac{2}{5}\,\frac{6}{5}$	265	Huanchaca, Bolivia	4
ρ	$\frac{2}{3}2$	263	" "	4
σ	$\frac{4}{5}\,\frac{12}{5}$	4.12.5	" "	4
τ	26	261	" "	4
p	$\frac{6}{7}\,\frac{12}{7}$	6.72.7	Wolfsberg, Harz, Ger.	2
γ	$1\frac{7}{4}$	474	Huanchaca, Bolivia	3
δ	$\frac{4}{5}\,\frac{7}{5}$	475	" "	3
ε	$\frac{2}{3}\,\frac{7}{6}$	476	" "	3
β	$\frac{3}{4}\,\frac{5}{4}$	354	" "	3
q	$\frac{8}{3}2$	863	Wolfsberg, Harz, Ger.	2

1.—C. FRIEDEL, 1879, Bull. Soc. fr. Min., II, p. 203.
2.—H. LASPEYRES, 1891, Zeitschr. f. Kryst., XIX, p. 428.
3.—L. J. SPENCER, 1896, London Min. Soc.
4.—S. L. PENFIELD AND A. FRENZEL, 1897, Amer. Journ. Sci., IV, p. 27.

[NOTE: Friedel's indices are transposed to correspond with the position adopted by Lespeyres.]

CHALMERSITE

a: *b*: *c* = 0.5822:1:0.5611

c	0	001	Minas Gereas, Brazil	1
a	∞0	010	" " "	1
b	0∞	100	" " "	1
d	2∞	210	" " "	3
l	∞	110	" " "	1
r	∞2	120	" " "	1
m	∞3	130	" " "	3
y	01	011	" " "	3
f	$\frac{1}{2}$0	102	" " "	3
q	10	101	" " "	1
p	13	131	" " "	4
w	1	111	" " "	4
s	2	221	" " "	3
t	$\frac{1}{2}$	112	" " "	3
o	$\frac{1}{2}$1	122	" " "	3
v	$\frac{1}{2}\frac{3}{2}$	132	" " "	4
u	$\frac{3}{4}\frac{1}{4}$	314	" " "	3

1.—E. HUSSAK, 1902, Centralb. f. Min., p. 69; 1906, idem., p. 332.
2.—F. RINNE, 1902, Centralb. f. Min., p. 207.
3.—C. PALACHE, 1907, Amer. Journ. Sci., XXIV, p. 255.
4.—C. HLAWATSCH, 1910, Zeitschr. f. Kryst., XLVIII, p. 205.

CHILDRENITE

u	∞4	140	1

1.—F. SLAVIC, 1914, Abh. d. böhm. Akad., No. 4.

CHILLAGITE

Tetragonal *a*: *c* = 1:1.5291

c	0	001	Chillagoe, Queensland, Austr.	1
i	0$\frac{1}{3}$	013	" " "	1
e	01	011	" " "	1
Θ	0$\frac{3}{2}$	032	" " "	1
X	0$\frac{9}{4}$	094	" " "	1
Y	$\frac{1}{18}$	1.1.18	" " "	1
S	$\frac{1}{10}$	1.1.10	" " "	1
y	$\frac{1}{9}$	119	" " "	1
Z	$\frac{2}{17}$	2.2.17	" " "	1
l	$\frac{1}{8}$	118	" " "	1

k	$\frac{1}{7}$	117	Chillagoe, Queensland, Austr.	1
g	$\frac{1}{6}$	116	" " "	1
G	$\frac{2}{11}$	2.2.11	" " "	1
F	$\frac{3}{16}$	3.3.16	" " "	1
f	$\frac{1}{5}$	115	" " "	1
d	$\frac{1}{4}$	114	" " "	1
D	$\frac{6}{23}$	6.6.23	" " "	1
b	$\frac{1}{3}$	113	" " "	1
w	$\frac{2}{5}$	225	" " "	1
p	1	111	" " "	1
z	$\frac{2}{7}1$	277	" " "	1
π	$\frac{1}{3}1$	133	" " "	1
x	$1\frac{4}{3}$	343	" " "	1

1.—Miss C. D. Smith and L. A. Cotton, 1912, Journ. Roy. Soc. N. S. Wales, XLVI, p. 207.

Chlormanganokalite

Hexagonal Rhombohedral *a*: *c* = 1:0.5801

a	$11\bar{2}0$	Vesuvius, Italy	1
r	$10\bar{1}0$	" "	1

1.—H. J. Johnston-Lavis and L. J. Spencer, 1908, Min. Mag., XV, p. 54.

Chrysoberyl

t	$\frac{11}{3}\infty$	11.3.0	New York City	4
l	2∞	210	Ceylon	1
g	$\infty\frac{7}{3}$	370	New York City	4
q	$\infty 4$	140	Ceylon	1
h	$\infty 5$	150	"	2
π	13	131	"	3
p	$1\frac{3}{2}$	232	"	1
h	$1\frac{1}{3}$	313	"	1
g	$1\frac{1}{5}$	515	"	1
f	$1\frac{1}{10}$	10.1.10	"	1
τ	$\frac{2}{7}1$	277	"	3
l	$\frac{1}{3}1$	133	"	2
Ψ	$\frac{11}{20}1$	11.20.20	"	3
α	31	311	"	2
β	51	511	"	2
η	$\frac{1}{3}$	113	"	3
Q	$\frac{1}{2}2$	142	"	2

φ	$\frac{1}{9}2$	1.18.9	Ceylon	3
w	$\frac{7}{8}\frac{5}{4}$	7.10.8	"	3

1.—G. Melczer, 1900, Zeitschr. f. Kryst., XXXIII, p. 240.
2.—V. Goldschmidt and H. Preiswerk, 1900, Zeitschr. f. Kryst., XXXIII, p. 455.
3.—A. Liffa, 1902, Zeitschr. f. Kryst., XXXVI, p. 606.
4.—H. P. Whitlock, 1912, N. Y. State Mus., Bull. CLVIII, p. 185.

Chrysolite

t	$\infty\frac{3}{2}$	230	Latium, Italy		1
w	14	141	"	"	1

1.—F. Zambonini, 1899, Zeitschr. f. Kryst., XXXII, p. 152.

Cinnabar

I	$\frac{1}{2}$	$11\bar{2}2$	Alsósajó, Hungary		1
j	$\frac{5}{8}0$	$50\bar{5}8$	"	"	1
A	$\frac{8}{9}0$	$80\bar{8}9$	"	"	1
X	$\frac{9}{8}0$	$90\bar{9}8$	"	"	1
V	$\frac{8}{5}0$	$80\bar{8}5$	"	"	1
Y	$\frac{11}{4}0$	$11.0.\overline{11}.4$	"	"	1

1.—K. Zimányi, 1906, Zeitschr. f. Kryst., XLI, p. 439.

Clinohedrite

$a : b : c = 0.68245 : 1 : 0.3226 \quad \beta = 76° \ 2\frac{1}{2}'$

b	0∞	010	Franklin	Furnace,	N. J.	1
h	$\frac{3}{2}\infty$	320	"	"	"	1
m	∞	110	"	"	"	1
m_1	$-\infty$	$\bar{1}10$	"	"	"	1
n	$\infty 2$	120	"	"	"	1
l	$\infty 3$	130	"	"	"	1
e	$+10$	101	"	"	"	1
e_1	-10	$\bar{1}01$	"	"	"	1
p	$+1$	111	"	"	"	1
p_1	$1\bar{1}$	$\bar{1}1\bar{1}$	"	"	"	1
q	$\bar{1}1$	$\bar{1}11$	"	"	"	1
q_1	$\overline{11}$	$11\bar{1}$	"	"	"	1
r	-3	$\bar{3}31$	"	"	"	1
s	-5	$\bar{5}51$	"	"	"	1
t	-7	$\bar{7}71$	"	"	"	1
u	-53	$\bar{5}31$	"	"	"	1
o	13	131	"	"	"	1

o_1	—13	$13\bar{1}$	Franklin Furnace, N. J.	1
x	$1\bar{3}$	$\bar{1}3\bar{1}$	" " "	1
y	$1\bar{2}$	$\bar{1}2\bar{1}$	" " "	1

1.—S. L. Penfield and H. W. Foote, 1898, Amer. Journ. Sci., V, p. 289.

Cobaltnickelpyrite

Isometric Pyritohedral

	0	001	Musen, Germany	1
	$0\frac{2}{3}$	023	" "	1
	1	111	" "	1

1.—M. Henglein, 1913, Centralb. f. Min., p. 129.

Colemanite

$a: b: c = 0.7768:1:0.5430 \quad \beta = 110° \ 7'$

l	3∞	310	San Bernardino Co., Calif.	1
p	+30	301	" " "	1
g	$-\frac{5}{2}0$	$\bar{5}02$	" " "	1
f	—80	$\bar{8}01$	" " "	1

1.—A. S. Eakle, 1902, Bull. Univ. Calif., (Geol.), III, p. 31.

Columbite

r	14	141	San Diego Co., Calif.	1

1.—A. S. Eakle, 1907, Bull. Univ. Calif., (Geol.), V, p. 87.

Copper

	$\frac{3}{2}\infty$	320	Westphalia	1
	$\frac{11}{10}\infty$	11.10.0	"	1
	$\frac{7}{2}1$	722	"	1
	$\frac{3}{2}1$	322	"	1

1.—J. F. Oebike, 1915, Inaug. Diss. Münster, i. Westf., p. 56.

Cordylite

Hexagonal $a: c = 1:3.3865$

c	0	0001	Narsarsuk, Greenland	1
m	$\infty 0$	$10\bar{1}0$	" "	1
q	$\frac{1}{3}0$	$10\bar{1}3$	" "	1
p	$\frac{4}{15}0$	$4.0.\bar{4}.15$	" "	1
r	$\frac{2}{3}0$	$20\bar{2}3$	" "	1
s	$\frac{4}{3}0$	$40\bar{4}3$	" "	1

1.—G. Flink, 1898, Medd. om Grönland, XIV, p. 236.

Corundum

	$\frac{5}{2}\infty$	$52\bar{7}0$	Burma-Ceylon	5
e	3∞	$31\bar{4}0$	Burma	7
	$\frac{1}{10}0$	$1.0.\bar{1}.10$	Burma-Ceylon	5
r	$-\frac{1}{2}0$	$01\bar{1}2$	Burma	2
	$\frac{4}{5}0$	$40\bar{4}5$	Burma-Ceylon	5
	$\frac{7}{8}0$	$70\bar{.}8$	" "	5
	$\frac{6}{5}0$	$60\bar{6}5$	" "	5
	$\frac{3}{2}0$	$30\bar{3}2$	Ceylon	7
x	50	$50\bar{5}1$	"	6
ϑ	80	$80\bar{8}1$	Cashmere	6
	$\frac{5}{7}$	$5.5.\overline{10}.7$	Burma-Ceylon	5
	$\frac{10}{9}$	$10.10.\overline{20}.9$	Vontovorona, Madegascar	8
	$\frac{5}{4}$	$5.5.10.4$	Utal Mts., Russia	3
τ	$\frac{11}{9}$	$11.11.\overline{22}.9$	Cashmere	4
t	$\frac{3}{2}$	$33\bar{6}2$	Ceylon	7
	$\frac{5}{3}$	$5.5.\overline{10}.3$	Burma-Ceylon	5
σ	$\frac{8}{5}$	$8.8.\overline{16}.5$	Cashmere?	4
	$\frac{11}{6}$	$11.11.\overline{22}.6$	Ceylon	1
Θ	$\frac{8}{3}$	$8.8.\overline{16}.3$	Vontovorona, Madegascar	8
	$\frac{13}{6}$	$13.13.\overline{26}.6$	Cashmere?	4
λ	$\frac{7}{3}$	$7.7.\overline{14}.3$	Vontovorona, Madegascar	8
ξ	$\frac{5}{2}$	$5.5.\overline{10}.2$	Cashmere?	4
u	3	$33\bar{6}1$	"	4
	$\frac{10}{3}$	$10.10.\overline{20}.3$	Vontovorona, Madegascar	8
	$\frac{7}{2}$	$7.7.\overline{14}.2$	Burma-Ceylon	5
ϵ	$\frac{11}{3}$	$11.11.\overline{22}.3$	Cashmere?	4
ω	$\frac{14}{3}$	$14.14.\overline{28}.3$	Vontovorona, Madegascar	8
p	5	$5.5.\overline{10}.1$	Ceylon	6
p^1	-5	$10.\bar{5}.\bar{5}.1$	"	6
	$\frac{11}{2}$	$11.11.\overline{22}.2$	Burma-Ceylon	5
ι	21	$21\bar{3}1$	Ceylon	6
ξ	$\frac{5}{2}1$	$52\bar{7}2$	"	7
φ	41	$41\bar{5}1$	"	6
B	91	$9.1.\overline{10}.1$	"	7
ψ	$\frac{5}{3}\frac{1}{3}$	$51\bar{6}3$	"	7
h	$\frac{8}{5}\frac{4}{5}$	$8.4.\overline{12}.5$	"	7
s	$\frac{10}{3}\frac{5}{3}$	$10.5.\overline{15}.3$	"	7
D	$\frac{4}{3}\frac{9}{8}$	$12.8.\overline{20}.9$	"	7

φ_1	14	$14\bar{5}1$	Ceylon	6
χ	28	$2.8.\overline{10}.1$	"	6

1.—R. Busz, 1889, Zeitschr. f. Kryst., XV, p. 622.
2.—M. Bauer, 1896, Neues Jahrb. f. Min., II, p. 197.
3.—H. Barvíř, 1897, Ann. Mus. Wein, VII, p. 135.
4.—H. L. Bowman, 1900, Min. Mag., XII, p. 355.
5.—G. Melczer, 1902, Zeitschr. f. Kryst., XXXV, p. 561.
6.—A. Nies and V. Goldschmidt, 1908, Neues Jahrb. f. Min., II, p. 97.
7.—V. Goldschmidt and R. Schroeder, 1910, Min. u. Petro. Mitth., XXIX, p. 461.
8.—H. Ungemach, 1916, Bull. Soc. fr. Min., XXXIX.

Covellite

$a: b: c = 0.5746:1:0.6168 \quad \beta = 90° 46'$

c	0	001	Bor. Serbia	1
	$0\frac{1}{6}$	016	" "	1
	$0\frac{1}{4}$	014	" "	1
	$0\frac{1}{3}$	013	" "	1
	$0\frac{2}{5}$	025	" "	1
k	$0\frac{1}{2}$	012	" "	1
	$0\frac{3}{5}$	035	" "	1
	$0\frac{2}{3}$	023	" "	1
r	$0\frac{3}{4}$	034	" "	1
	$0\frac{3}{5}$	035	" "	1
	$0\frac{4}{5}$	045	" "	1
s	01	011	" "	1
	$0\frac{5}{4}$	054	" "	1
t	$0\frac{4}{3}$	043	" "	1
g	$0\frac{3}{2}$	032	" "	1
	$0\frac{8}{5}$	085	" "	1
	$0\frac{5}{3}$	053	" "	1
	$0\frac{7}{4}$	074	" "	1
	$0\frac{9}{5}$	095	" "	1
l	02	021	" "	1
	$0\frac{8}{3}$	083	" "	1
d	03	031	" "	1
	$0\frac{13}{4}$	0.13.4	" "	1
f	04	041	" "	1
h	$0\frac{9}{2}$	092	" "	1
i	05	051	" "	1
	06	061	" "	1
y	$0\frac{15}{2}$	0.15.2	" "	1

z	08	081	Bor. Serbia	1
v	09	091	" "	1
w	0.16	0.16.1	" "	1
p	1	111	" "	1

1.—S. Stevanovic, 1908, Zeitschr. f. Kryst., XLIV, p. 349.

Crocoite

S	$\frac{10}{3}\infty$	10.3.0	Dundas, Tasmania	1
T	$\frac{5}{3}\infty$	530	" "	1
f	$\infty\frac{7}{4}$	470	" "	5
J	$0\frac{3}{2}$	032	" "	4
	$\frac{4}{3}0$	403	Penchalonga, Mashonaland, S. Africa	2
x	—30	$\bar{3}01$	Dundas, Tasmania	3
Θ	3	331	" "	3

1.—C. Palache, 1896, Amer. Journ. Sci., I, p. 389.
2.—K. Redlich, 1896, Zeitschr. f. Kryst., XXVIII, p. 607.
3.—G. Moesz, 1899, Zeitschr. f. Kryst., XXXIV, p. 707.
4.—R. G. Van Name, 1902, Amer. Journ. Sci., XIII, p. 339.
5.—F. Slavic, 1904, Zeitschr. f. Kryst., XXXIX, p. 302.

Cryolite

0∞	010	Ivigtuk, Greenland	1
$0\frac{1}{2}$	012	" "	1
$0\frac{1}{5}$	015	" "	1
$\frac{1}{2}0$	102	" "	1
$\frac{1}{5}0$	105	" "	1
$-\frac{1}{2}0$	$\bar{1}02$	" "	1
$-\frac{1}{2}$	$\bar{1}12$	" "	1
$\frac{\bar{2}}{5}\frac{7}{5}$	$\bar{2}75$	" "	1
$\frac{7}{5}\frac{2}{5}$	725	" "	1

1.—O. B. Böggild, 1911, Medd. om Grönland, L,

Cumengite

a: c = 1:1.625

0	001	Boleo, Lower California, Mex.	1
∞	110	" " " "	1
10	101	" " " "	1

1.—G. Freidel, 1906, Bull. Soc. fr. Min., XXIX, p. 14.

Cuprite

	$\frac{6}{5}$	665	Kausen, Westphalia, Ger.	2
	27	27.27.1	" " "	2
	$\frac{6}{5}1$	655	" " "	2
	$\frac{5}{3}1$	533	Wheal Phoenix, Liskeard, Eng.	1

1.—H. A. Miers, 1889, Min. Mag., VIII, p. 204.
2.—J. F. Oebike, 1915, Inaug. Diss. Münster, i. Westf., p. 56.

Cuspidine

u	$\infty 2$	120	Alban Mts., Italy	1
l	12	121	" " "	1

1.—F. Stella Starrabba, 1913, Rend. Accad. Linc., (5) XXII, p. 871.

Cyanite

t	$\frac{5}{2}\infty$	520	Yancy Co., N. C.	1

1.—J. H. Pratt, 1898, Amer. Journ. Sci., V, p. 181.

Danburite

m	3∞	310	Obira, Japan	3
v	$\infty\frac{9}{5}$	590	Piz Giuf, Sedrun, Ubi, Switz.	2
	0.50	0.50.1	Takachio, Hiuga, Japan	1
	0.29	0.29.1	" " "	1
	0.23	0.23.1	" " "	1
	$0\frac{31}{5}$	0.31.5	" " "	1
	$0\frac{22}{5}$	0.22.5	" " "	1
	$0\frac{10}{3}$	0.10.3	Japan	4
χ	$\frac{3}{2}0$	302	Obira, Japan	3
n	$\frac{5}{2}0$	502	" "	3
P	$\frac{11}{3}0$	11.0.3	" "	3
Q	$\frac{9}{2}0$	902	" "	3
R	60	601	" "	3
	16.0	16.0.1	Takachio, Hiuga, Japan	1
S	$1\frac{1}{3}$	313	Obira, Japan	3
	$1\frac{3}{5}$	535	Japan	4
ϵ	$\frac{2}{3}$	223	Takachio, Hiuga, Japan	1
λ	$\frac{1}{2}2$	142	Piz Giuf, Sedrun, Ubi, Switz.	2
U	$\frac{1}{2}\frac{3}{4}$	234?	Obira, Japan	3
Z	$\frac{3}{5}\frac{2}{5}$	325	" "	3
η	26	261	Takachio, Hiuga, Japan	1
V	$\frac{3}{2}\frac{1}{4}$	614	Obira, Japan	3

γ	$\frac{2}{5}\frac{1}{10}$	4.1.10	Takachio, Hiuga, Japan	1
θ	$\frac{5}{8}\frac{9}{2}$	5.36.8	" " "	1
	$\frac{10}{19}2$	10.38.19	" " "	1
ω	$\frac{9}{10}2$	9.20.10	Piz Giuf, Sedrun, Ubi, Switz.	2

1.—M. Weber, 1903, Zeitschr. f. Kryst., XXXVII, p. 620.
2.—J. Koenigsberger, 1905, Centralb. f. Min., p. 377.
*3.—V. Goldschmidt and H. Philipp, 1912, Zeitschr. f. Kryst., L, p. 443.
4.—H. Ungemach, 1912, Mém. Soc. Belg., XXXIX, p. 419.

Darapskite

$a: b: c = 1.5258:1:0.7514 \quad \beta = 77° \ 5'$

c	0	001	Atacama, Chile	1
a	∞0	100	" "	1
b	0∞	010	" "	1
m	∞	110	" "	1
q	01	011	" "	1
r	10	101	" "	1
n	—10	$\bar{1}01$	" "	1
e	$\frac{3}{2}0$	302	" "	1
d	—20	$\bar{2}01$	" "	1
o	1	111	" "	1
s	—1	$\bar{1}11$	" "	1
v	12	121	" "	1

1.—A. Osann, 1894, Zeitschr. f. Kryst., XXIII, p. 584.

Dawsonite

$a: b: c = 0.6475:1:0.5339$

C	0	001	Montreal, Can.	1
A	∞0	100	" "	1
B	0∞	010	" "	1
M	∞	110	" "	1
D	01	011	" "	1
	2∞	210?	" "	1
	∞$\frac{3}{2}$	230?	" "	1
	∞3	130?	" "	1
	10	101?	" "	1

1.—R. P. D. Graham, 1908, Trans. Roy. Soc. Can., (3) II, p. 165.

Datolite

[Dana Orientation]

s	$\frac{5}{3}$∞	530	Westfield, Mass.	10
θ	∞4	140	" "	10

n_z	$0\frac{1}{10}$	0.1.10	Westfield, Mass.	5
m_y	$0\frac{6}{7}$	067	" "	5
N	$0\frac{4}{3}$	043	North Plainfield, N. J.	11
q:	70	701	Franklin Furnace, N. J.	7
y	60	601	Westfield, Mass.	10
	$-\frac{11}{2}0$	$\overline{11}.0.2$	" "	10
τ	$-\frac{7}{2}0$	$\bar{7}02$	Lake Superior, Mich.	1
$\mathfrak{j}$	$\frac{5}{2}0$	502	Westfield, Mass.	10
Σ	$-\frac{3}{2}0$	$\bar{3}02$	Guanajuato, Mexico	2
I	$\frac{3}{4}0$	304	Franklin Furnace, N. J.	7
$\mathfrak{H}$	$\frac{3}{8}0$	308	Westfield, Mass.	9
k	$\frac{3}{10}0$	3.0.10	" "	10
	$\frac{7}{2}1$	722	Markirch, Alsace, France	6
	31	311	" " "	6
$\mathfrak{B}$	21	211	Lake Superior, Mich.	1
$\mathfrak{G}$	$-\frac{7}{3}$	$\bar{7}73$	" " "	1
P	$-\frac{3}{2}$	$\bar{3}32$	Westfield, Mass.	9
μ_1	$-\frac{2}{7}$	$\bar{2}27$	Listic, Bohemia	3
m_z	$-\frac{1}{10}$	$\bar{1}.1.10$	Westfield, Mass.	5
$\mathfrak{B}$	$1\frac{1}{3}$	313	" "	9
$\mathfrak{K}$	$1\frac{5}{4}$	454	" "	9
$\mathfrak{F}$	13	131	" "	9
Y	$\frac{2}{5}1$	255	Erie Cut, Bergen Hill, N. J.	8
$\mathfrak{y}$	$-\frac{9}{2}1$	$\bar{9}22$	Westfield, Mass.	9
d	$\frac{2}{3}2$	263	Franklin Furnace, N. J.	7
k	$\frac{1}{2}\frac{3}{2}$	132	Erie Cut, Bergen Hill, N. J.	8
	$-\frac{1}{4}\frac{3}{4}$	$\bar{1}34$	Markirch, Alsace, France	6
	$-\frac{1}{5}\frac{3}{5}$	$\bar{1}35$	" " "	6
Ξ	$-\frac{1}{3}\frac{1}{2}$	$\bar{1}36$	Westfield, Mass.	10
ϵ^1	$-\frac{1}{8}\frac{1}{2}$	$\bar{1}48$	" "	4
λ^1	$-\frac{1}{9}\frac{4}{9}$	$\bar{1}49$	" "	4
μ^1	$-\frac{1}{10}\frac{2}{5}$	$\bar{1}.4.10$	" "	4
κ:	$-\frac{2}{5}\frac{4}{5}$	$\bar{2}45$	Franklin Furnace, N. J.	7
$\mathfrak{N}$	$-\frac{1}{6}\frac{1}{3}$	$\bar{1}26$	Westfield, Mass.	9
	23	231	Markirch, Alsace, France	6
k.	$\frac{4}{5}\frac{7}{5}$	475	Franklin Furnace, N. J.	7
I	$2\frac{1}{2}$	412	Westfield, Mass.	10
$\mathfrak{B}$	42	421	Andreasberg, Harz, Germany	9
$\mathfrak{U}$	$\frac{12}{5}2$	12.10.5	" " "	9
Φ	$-\frac{5}{6}\frac{2}{3}$	$\bar{5}46$	Westfield, Mass.	10
	$\frac{5}{8}\frac{1}{2}$	548	Lake Superior, Mich.	1

1.—O. Osann, 1895, Zeitschr. f. Kryst., XXIV, p. 5.
2.—O. C. Farrington, 1898, Amer. Journ. Sci., V, p. 285.
3.—F. Slavic and J. Fišer, 1903, Centralb. f. Min., p. 229.
4.—H. P. Whitlock, 1905, N. Y. State Mus., Bull., XCVIII, p. 19.
5.—E. H. Kraus and C. W. Cook, 1906, Amer. Journ. Sci., XXII, p. 21.
6.—H. Ungemach, 1909, Bull. Soc. fr. Min., XXXII, p. 397.
7.—C. Palache, 1910, Amer. Journ. Sci., XXIX, p. 185.
8.—H. P. Whitlock, 1910, School of Mines Quar., XXXI, p. 225.
*9.—R. Gorgey and V. Goldschmidt, 1910, Zeitschr. f. Kryst., XLVIII, p. 619.
10.—H. Ungemach, 1911, Zeitschr. f. Kryst., XLIX, p. 459.
11.—A. C. Hawkins, 1915, Amer. Journ. Sci., XXXIX, p. 473.

Delafossite

Hexagonal Rhombohedral $a: c=1:1.94\pm$

0	0001	Bisbee, Ariz.	1
∞0	$10\bar{1}0$	" "	1
10	$10\bar{1}1$	" "	1
$\frac{1}{4}0$	$10\bar{1}4$?	" "	1
$-\frac{1}{2}0$	$01\bar{1}2$?	" "	1

1.—A. F. Rogers, 1913, Amer. Journ. Sci., XXXV, p. 290.

Delorenzite

$a: b: c=0.3375:1:0.3412$

a	∞0	100	Graveggia, Piedmont, Italy	1
b	0∞	010	" " "	1
m	∞	110	" " "	1
d	2∞	210	" " "	1
g	∞3	130?	" " "	1
s	1	111	" " "	1

1.—F. Zambonini, 1908, Zeitschr. f. Kryst., XLV, p. 26.

Descloizite

3∞	310	Broken Hill, N. W. Rhodesia	1

1.—L. J. Spencer, 1908, Min. Mag., XV, p. 31.

Diamond

d	$0\frac{4}{5}$	045	Southwest Africa	4
n	$\frac{2}{3}$	223	Kimberley, S. Africa	5
X	$\frac{2}{7}1$	277	Transvaal, S. Africa	3
	$\frac{2}{5}1$	255	" "	3
Z	$\frac{1}{5}\,\frac{3}{5}$	135	" "	2
Ξ	$\frac{1}{7}\,\frac{3}{7}$	137	Taiga	3

θ	$\frac{1}{9}\frac{7}{9}$	179	Ural Mts., Russia	1
	$\frac{1}{64}\frac{63}{64}$	1.63.64	Transvaal, S. Africa	3

1.—P. Jeremejeff, 1896, Verh. russ. Min. Ges., XXXIV, p. 59.
2.—P. Jeremejeff, 1897, Verh. russ. Min. Ges., XXXV, p. 31.
3.—P. Jeremejeff, 1899, Verh. russ. Min. Ges., XXXVI, p. 34.
4.—E. Kaiser, 1909, Centralb. f. Min., p. 231.
5.—A. von Fersmann and V. Goldschmidt, 1911, Der Diamant, Heidelberg.

Diaspore

d	03	031	Ovre Arö, Langesund, Norway	1
s	$1\frac{1}{2}$	212	Chester, Mass.	2
d	$\frac{4}{5}1$	455	" "	2
g	$\frac{7}{8}1$	788	" "	2

1.—G. Flink, 1898, Bull. Geol. Inst. Upsala, IV, p. 63.
2.—C. Palache and H. O. Wood, 1909, Proc. Amer. Acad., XLIV, p. 641.

Didymolite

$a:b:c = 0.6006:1:0.2867 \quad \beta = 74°$

	0∞	010	Tatarka River, Yenisei, Siberia	1
	∞	110	" " " "	1
	01	011	" " " "	1

1.—A. Meister, 1908, Verh. Min. Ges., XXXVI, p. 151.

Dietzeite

$a:b:c = 1.3826:1:0.9515 \quad \beta = 73° 28'$

c	0	001	Atacama, Chile	1
a	∞0	100	" "	1
b	0∞	010	" "	1
l	2∞	210	" "	1
m	∞	110	" "	1
u	—10	$\bar{1}01$	" "	1
s	$-\frac{2}{3}$	$\bar{2}23$	" "	1
o	—2	221	" "	1

1.—A. Osann, 1894, Zeitschr. f. Kryst., XXIII, p. 588.

Dolerophanite

$a:b:c = 1.3042:1:1.2100 \quad \beta = 108° 14'$

μ	70	701	Åvidaberg, Sweden	1

1.—J. E. Standmark, 1902, Geol. Fören. Förh., XXIV, p. 80.

Dolomite

F	$\frac{4}{3}\frac{1}{3}$	$41\bar{5}3$	Gébroulaz Glacier, Savoie, France	1
Γ	—12.4	$4.12.\overline{16}.1$	" " " "	1
χ	$5\frac{5}{2}$	$10.5.\overline{15}.2$	Sulzbach, Saar, Germany	2

1.—F. Becke, 1890. Min. u. petro. Mitth., XI, p. 536.
2.—F. Slavic, 1912, Abh. d. böhm. Akad., No. 16, p. 9.

Dufrenoysite

$a: b: c=0.6509:1:0.6125 \quad \beta=89° 26\frac{1}{2}'$

14 ∞	14.1.0	Binnenthal, Switzerland	1
6 ∞	610	" "	1
4 ∞	410	" "	1
$\frac{7}{2}$ ∞	720	" "	2
3 ∞	310	" "	1
2 ∞	210	" "	1
$\frac{7}{4}$ ∞	740	" "	2
$\frac{5}{3}$ ∞	530	" "	1
$\frac{3}{2}$ ∞	320	" "	2
$\frac{7}{5}$ ∞	750	" "	2
$\frac{4}{3}$ ∞	430	" "	1
$\frac{7}{6}$ ∞	760	" "	1
$\frac{12}{11}$ ∞	12.11.0	" "	1
∞ $\frac{12}{11}$	11.12.0	" "	1
∞ $\frac{7}{6}$	670	" "	1
∞ $\frac{6}{5}$	560	" "	1
∞ $\frac{4}{5}$	450	" "	1
∞ $\frac{4}{3}$	340	" "	1
∞ $\frac{7}{5}$	570	" "	1
∞ $\frac{3}{2}$	230	" "	1
∞ $\frac{8}{5}$	580	" "	1
∞ $\frac{3}{5}$	350	" "	1
∞ $\frac{7}{4}$	470	" "	1
∞ $\frac{9}{5}$	590	" "	1
∞ 2	120	" "	1
∞ $\frac{9}{4}$	490	" "	1
∞ $\frac{5}{2}$	250	" "	1
∞ 3	130	" "	1
∞ $\frac{7}{2}$	270	" "	1
∞ 5	150	" "	1

$\infty 14$	1.14.0	Binnenthal, Switzerland	1
$0\frac{1}{6}$	016	" "	1
$0\frac{1}{5}$	015	" "	1
$0\frac{1}{4}$	014	" "	1
$0\frac{2}{7}$	027	" "	2
$0\frac{1}{3}$	013	" "	2
$0\frac{2}{5}$	025	" "	2
$0\frac{4}{9}$	049	" "	2
$0\frac{4}{7}$	047	" "	2
$0\frac{3}{5}$	035	" "	1
$0\frac{3}{4}$	034	" "	1
$0\frac{5}{6}$	056	" "	1
$0\frac{7}{6}$	076	" "	3
$0\frac{5}{4}$	054	" "	1
$0\frac{4}{3}$	043	" "	1
$0\frac{3}{2}$	032	" "	1
$0\frac{11}{7}$	0.11.7	" "	1
$0\frac{5}{3}$	053	" "	1
$0\frac{17}{10}$	0.17.10	" "	1
$0\frac{7}{4}$	074	" "	1
$0\frac{11}{6}$	0.11.6	" "	3
$0\frac{15}{8}$	0.15.8	" "	1
02	021	" "	1
$0\frac{11}{5}$	0.11.5	" "	1
$0\frac{9}{4}$	094	" "	1
$0\frac{7}{3}$	073	" "	1
$0\frac{5}{2}$	052	" "	1
$0\frac{11}{4}$	0.11.4	" "	1
03	031	" "	1
$0\frac{7}{2}$	072	" "	1
04	041	" "	1
$0\frac{9}{2}$	092	" "	1
05	051	" "	1
$0\frac{11}{2}$	0.11.2	" "	1
06	061	" "	3
07	071	" "	3
08	081	" "	1
09	091	" "	1
0.11	0.11.1	" "	3
$\frac{5}{2}0$	502	" "	1

$\frac{7}{4}0$	704	Binnenthal, Switzerland	1
$\frac{3}{2}0$	302	" "	1
$\frac{5}{4}0$	504	" "	1
$\frac{4}{7}0$	407	" "	2
$\frac{2}{5}0$	205	" "	2
$\frac{1}{3}0$	103	" "	2
$\frac{2}{7}0$	207	" "	2
-10	$\bar{1}01$	" "	1
4	441	" "	2
$\frac{3}{2}$	332	" "	1
$\frac{5}{4}$	554	" "	1
$\frac{2}{3}$	223	" "	2
-1	$\bar{1}11$	" "	1
-2	$\bar{2}21$	" "	1
-3	$\bar{3}31$	" "	3
$1\frac{7}{2}$	272	" "	1
13	131	" "	3
-13	$\bar{1}31$	" "	3
$1\frac{5}{2}$	252	" "	1
12	121	" "	1
$-1\frac{7}{3}$	$\bar{3}73$	" "	3
-12	$\bar{1}21$	" "	3
$1\frac{3}{2}$	232	" "	1
$-1\frac{3}{2}$	$\bar{2}32$	" "	1
$-1\frac{4}{3}$	$\bar{3}43$	" "	1
$1\frac{5}{4}$	454	" "	3
$1\frac{3}{4}$	434	" "	3
$-1\frac{3}{5}$	$\bar{5}35$	" "	3
$1\frac{1}{2}$	212	" "	1
$-1\frac{1}{2}$	$\bar{2}12$	" "	1
$-1\frac{2}{5}$	$\bar{5}25$	" "	3
$-1\frac{1}{3}$	$\bar{3}13$	" "	3
$1\frac{1}{4}$	414	" "	1
$-1\frac{1}{4}$	$\bar{4}14$	" "	1
$-\frac{3}{2}1$	$\bar{3}22$	" "	3
$-\frac{5}{3}1$	$\bar{5}33$	" "	3
$\frac{5}{2}1$	522	" "	1
23	231	" "	1
-23	$\bar{2}31$	" "	1
$2\frac{5}{2}$	452	" "	1

—$2\frac{5}{2}$	$\bar{4}52$	Binnenthal, Switzerland	1
—$2\frac{3}{2}$	$\bar{4}32$	" "	1
$2\frac{4}{3}$	643	" "	3
—$2\frac{1}{2}$	$\bar{4}12$	" "	1
$3\frac{1}{2}$	$\bar{3}21$	" "	3
$\frac{1}{2}\frac{1}{4}$	214	" "	3
$\frac{1}{2}2$	142	" "	1
$\frac{5}{2}\frac{1}{2}$	512	" "	1
—$\frac{5}{2}2$	$\bar{5}42$	" "	3
$\frac{5}{4}\frac{1}{2}$	524	" "	1
$\frac{7}{4}2$	784	" "	1
$\frac{5}{3}3$	593	" "	1
—$\frac{5}{3}\frac{4}{3}$	$\bar{5}43$	" "	3

1.—R. H. Solly, 1903, Min. Mag., XIII, p. 151.
2.—H. Baumhauer, 1904, Zeitschr. f. Kryst., XXXIV; 1907, idem., XXXVIII, p. 649.
3.—R. H. Solly, 1912, Min. Mag., XVI, p. 282.

Dumortierite

$a:b:c = 0.8897:1:0.6871$

a	∞0	100	San Diego Co., Calif. and New York City	1
b	0∞	010	San Diego Co., Calif.	1
n	2∞	210	" " "	1
g	$\frac{3}{2}$∞	320	San Diego Co., Calif. and New York City	1
m	∞	110	San Diego Co., Calif. and Clip, Ariz.	1
l	∞2	120	San Diego Co., Calif. and New York City	1
d	$\frac{1}{2}0$	102	Clip, Ariz.	1
v	$\frac{2}{3}0$	203	San Diego Co., Calif.	1

1.—W. T. Schaller, 1905, U. S. Geol. Surv., Bull. CCLXII, p. 107.

Edingtonite

Orthorhombic Hemimorphic $a:b:c = 0.9873:1:0.6733$

c	0	001	Bôhlet, Sweden	1
m	∞	110	" "	1
p	1	111	" "	1
p_1	—1	$1\bar{1}\bar{1}$	" "	1
r	12	121	" "	1

r_1	-12	$1\bar{2}1$	Böhlet, Sweden	1
	$-\frac{3}{2}$	$3\bar{3}2$	" "	2
	$\frac{1}{9}\ \frac{10}{9}$	$\bar{1}.10.9$	" "	2

1.—O. Nordenskiöld, 1895, Geol. Fören. Förh., VII, p. 597.
2.—H. Sjögren, 1906, Geol. Fören. Förh., XXVIII, p. 169.

Eglestonite

Isometric

a	$\infty 0$	100	Terlingua, Texas	1
d	∞	110	" "	1
e	$\infty 2$	120	" "	2
f	$\infty 3$	130	" "	2
ρ	4	441	" "	2
p	2	221	" "	2
r	$\frac{3}{2}$	332	" "	2
o	1	111	" "	2
n	$\frac{1}{2}$	112	" "	1
φ	$\frac{1}{6}$	116	" "	2
s	$\frac{1}{3}\ \frac{2}{3}$	123	" "	1
i	$\frac{1}{9}\ \frac{8}{9}$	189	" "	2
j	$\frac{1}{7}\ \frac{6}{7}$	167	" "	2
w	$\frac{1}{6}\ \frac{5}{6}$	156	" "	2
k	$\frac{1}{6}\ \frac{2}{3}$	146	" "	2
Σ	$\frac{1}{5}\ \frac{4}{5}$	145	" "	2
F	$\frac{1}{6}\ \frac{1}{3}$	126	" "	2
v	$\frac{4}{11}\ \frac{7}{11}$	4.7.11	" "	2
M	$\frac{1}{2}\ \frac{3}{4}$	234	" "	2
l	$\frac{3}{7}\ \frac{4}{7}$	347	" "	2

1.—A. J. Moses, 1903, Amer. Journ. Sci., XVI, p. 253.
2.—W. F. Hillebrand and W. T. Schaller, 1909, U. S. Geol. Surv., Bull., CDV, p. 147.

Elpidite

$a: b: c = 0.5117:1:0.9781$

c	0	001	Narsarsuk, Greenland	1
a	$\infty 0$	100	" "	1
b	0∞	010	" "	1
u	$\frac{5}{4}\infty$	540?	" "	1
m	∞	110	" "	1
t	$\infty\frac{8}{5}$	580	" "	1

n	$\infty 2$	120	Narsarsuk, Greenland	1
s	$\infty \frac{12}{5}$	5.12.0	" "	1
e	$0\frac{1}{3}$	013	" "	1
d	01	011	" "	1
	$\frac{1}{2}0$	102	" "	2

1.—G. Lindström and G. Nordenskiöld, 1894, Geol. Fören. Förh., XVI, pp. 330 343.
2.—G. Flink, 1898, Medd. om Grönland, XIV, p. 230.

Embolite

	31	311	Coahuila, Mexico	1

1.—F. R. Van Horn, 1913, Amer. Journ. Sci., XXXV, p. 23.

Enargite

$a: b: c = 0.8665:1:0.8299$

y	6∞	610	Famatina, Argentine	2
s	4∞	410	Peru	3
f	$\frac{5}{2}\infty$	520	Willis Gulch, Colo.	2
v	2∞	210	Colorado	1
T	$\frac{4}{3}\infty$	430	Peru	3
i	$\frac{5}{4}\infty$	540	Luzon, Phillipine Isl. and Colo.	2
F	$\frac{9}{8}\infty$	980	Peru	3
N	$\infty\frac{3}{2}$	230	Silverton and Willis Gulch, Colo.	2
h	$\infty 2$	120	Luzon, Phillipine Isl.	4
P	$\infty\frac{5}{2}$	250	Peru	3
l	$\infty 3$	130	Luzon, Phillipine Isl.	4
L	$\infty\frac{7}{2}$	270	Peru	3
R	$\infty 4$	140	"	3
Q	$\infty 5$	150	"	3
D	$\infty 6$	160	"	3
H	06	061	"	3
Θ	05	051	Luzon, Phillipine Isl.	4
G	04	041	Peru	3
π	03	031	Morococha, Peru	2
K	$0\frac{5}{4}$	054	Willis Gulch, Colo.	2
t	$\frac{1}{8}0$	108	Famatina, Argentine	2
A	$\frac{2}{7}0$	207	Famatina, Argent. and Luzon	2
B	$\frac{2}{5}0$	205	Peru	3
w	$\frac{7}{9}0$	709	Parad, Hungary	2
u	30	301	Famatina, Argentine	2

β	60	601	Famatina, Argentine	2
P	$\frac{2}{3}$	223	Luzon, Phillipine Isl.	4
z	$\frac{1}{4}\ \frac{3}{4}$	134	Colorado	1
φ	$\frac{1}{2}\ \frac{3}{2}$	132	Morococha, Peru	2
$φ_1$	$\frac{3}{4}\ \frac{9}{4}$	394	" "	2
$φ_2$	13	131	" "	2
$φ_3$	$\frac{3}{2}\ \frac{9}{2}$	392	" "	2

1.—L. V. Pirsson, 1894, Amer. Journ. Sci., XLVII, p. 212.
*2.—L. J. Spencer, 1897, Min. Mag. XI, pp. 69, 196.
3.—S. Stevanovič, 1903, Zeitschr. f. Kryst., XXXVII, p. 241.
4.—A. J. Moses, 1905, Amer. Journ. Sci., XX, p. 277.

Endeiolite

Isometric

o	1	111	Narsarsuk, Greenland	1

1.—G. Flink, 1901, Medd. om Grönland, XXIV, p. 166.

Epidesmine

$a: b: c = 0.57145:1:0.41810$

c	0	001	Schwarzenberg, Germany	1
a	∞0	100	" "	1
b	0∞	010	" "	1
p	1	111	" "	1

1.—V. Rosický and S. J. Thugutt, 1913, Abh. bohm. Akad., XVIII, p. 4.

Epididymite

$a: b: c = 0.5758:1:0.5340$

c	0	001	Narsarsuk, Greenland	1
a	∞0	100	" "	1
b	0∞	010	" "	1
	3∞	310	" "	2
m	∞	110	" "	1
l	∞2	120	" "	1
n	∞3	130	" "	1
	$0\frac{1}{5}$	015	" "	3
	$0\frac{5}{8}$	058	" "	3
i	$0\frac{2}{3}$	023	" "	1
h	$0\frac{3}{4}$	034	" "	1
g	01	011	" "	1
e	$0\frac{4}{3}$	043	" "	1

d	02	021	Narsarsuk, Greenland	1
f	04	041	" "	1
λ	06	061	" "	1
χ	08	081	" "	1
	30	301	" "	2
p	2	221	" "	1
	32	321	" "	2

1.—G. Flink, 1893, Geol. Fören. Förh., XV, p. 201.
2.—G. Flink, 1899, Geol. Fören. Förh.
3.—G. Flink, 1898, Bull. Geol. Inst. Upsala, p. 4.

Epidote

	$\infty\frac{5}{3}$	350	Montigliano, Elba, Italy	2
	$0\frac{5}{2}$	052	Sulzbach, Tyrol	5
𝔡	$0\frac{1}{4}$	014	Unknown locality	4
	39.0	39.0.1	Knappenwand, Tyrol	8
	13.0	13.0.1	Val di Viù, Italy	10
	12.0	12.0.1	" "	10
	10.0	10.0.1	Montigliano, Elba, Italy	2
	80	801	Bettolina, Valloni di Verra, Italy	7
	50	501	" " " "	7
	$\frac{13}{3}0$	13.0.3	Montigliano, Elba, Italy	2
	$\frac{11}{5}0$	11.0.5	Val di Viù, Italy	10
	$\frac{9}{5}0$	905	Montigliano, Elba, Italy	2
	$\frac{19}{11}0$	19.0.11	Nordmark, Sweden	1
	$\frac{25}{12}0$	25.0.12	Chiavrié, Valle di Susa, Italy	9
	$\frac{3}{2}0$	302	Sulzbach, Tyrol	5
	$\frac{19}{14}0$	19.0.14	Montigliano, Elba, Italy	2
	$\frac{27}{20}0$	27.0.20	Nordmark, Sweden	1
	$\frac{5}{4}0$	504	Montigliano, Elba, Italy	2
	$\frac{13}{11}0$	13.0.11	Sulzbach, Tyrol	5
	$\frac{13}{12}0$	13.0.12	Montigliano, Elba, Italy	2
	$\frac{49}{50}0$	49.0.50	Nordmark, Sweden	1
	$\frac{22}{23}0$	22.0.23	Montigliano, Elba, Italy	2
	$\frac{7}{9}0$	709	Nordmark, Sweden	1
	$\frac{2}{3}0$	203	Sulzbach, Tyrol	5
	$\frac{6}{11}0$	6.0.11	Nordmark, Sweden	1
	$\frac{23}{50}0$	23.0.50	" "	1
	$\frac{7}{17}0$	7.0.17	" "	1
	$\frac{9}{22}0$	9.0.22	" "	1

	$\frac{13}{33}0$	13.0.33	Nordmark, Sweden	1
	$\frac{7}{18}0$	7.0.18	" "	1
	$\frac{19}{50}0$	19.0.50	Val di Viù, Italy	10
	$\frac{17}{50}0$	17.0.50	Nordmark, Sweden	1
S_0	$\frac{1}{4}0$	104	White Horse Rapids, Yukon, B. C.	12
	$\frac{1}{9}0$	109	Guttannen, Switzerland	8
	$\frac{1}{10}0$	1.0.10	Nordmark, Sweden	1
	$\frac{1}{11}0$	1.0.11	Notodden, Telemarken, Norway	11
	$-\frac{3}{34}0$	$\bar{3}.0.34$	" " "	11
	$-\frac{3}{20}0$	$\bar{3}.0.20$	Nordmark, Sweden	1
	$-\frac{3}{14}0$	$\bar{3}.0.14$	" "	1
	$-\frac{6}{25}0$	$\bar{6}.0.25$	" "	1
	$-\frac{4}{15}0$	$\bar{4}.0.15$	Notodden, Telemarken, Norway	11
	$-\frac{8}{25}0$	$\bar{8}.0.25$	Nordmark, Sweden	1
	$-\frac{7}{20}0$	$\bar{7}.0.20$	" "	1
	$-\frac{19}{50}0$	$\overline{19}.0.50$	" "	1
	$-\frac{9}{22}0$	$\bar{9}.0.22$	" "	1
	$-\frac{7}{17}0$	$\bar{7}.0.17$	" "	1
	$-\frac{17}{40}0$	$\overline{17}.0.40$	" "	1
	$-\frac{5}{11}0$	$\bar{5}.0.11$	" "	1
	$-\frac{23}{50}0$	$\overline{23}.0.50$	" "	1
	$-\frac{8}{15}0$	$\bar{8}.0.15$	" "	1
	$-\frac{7}{9}0$	$\bar{7}09$	" "	1
	$-\frac{19}{20}0$	$\overline{19}.0.20$	" "	1
	$-\frac{24}{25}0$	$\overline{24}.0.25$	" "	1
	$-\frac{33}{34}0$	$\overline{33}.0.34$	" "	1
	$-\frac{5}{3}0$	$\bar{5}03$	Val di Viù, Italy	10
	$-\frac{11}{6}0$	$\overline{11}.0.6$	" "	10
φ_0	$-\frac{15}{8}0$	$\overline{15}.0.8$	White Horse Rapids, Yukon, B. C.	12
	$-\frac{25}{12}0$	$\overline{25}.0.12$	Val di Viù, Italy	10
	$-\frac{7}{3}0$	$\bar{7}03$	" "	10
	$-\frac{5}{2}0$	$\bar{5}02$	" "	10
ψ_0	$-\frac{8}{3}0$	$\bar{8}03$	White Horse Rapids, Yukon, B. C.	12
	$-\frac{11}{2}0$	$\overline{11}.0.2$	Nordmark, Sweden	1
	$-\frac{13}{2}0$	$\overline{13}.0.2$	" "	1
	-80	$\bar{8}01$	Val di Viù, Italy	10
	-90	$\bar{9}01$	" "	10
	-11.0	$\overline{11}.0.1$	" "	10
	-14.0	$\overline{14}.0.1$	Ala-Thal, Tyrol	8
m	$\frac{1}{7}$	117	Val di Viù, Italy	10

𝔷	$\frac{1}{8}$	118	Val di Viù, Italy	10
𝔫	$\frac{1}{9}$	119	" "	10
	$\frac{1}{19}$	1.1.19	" "	10
	$\frac{1}{25}$	1.1.25	" "	10
	14	14.14.1	Monte Acuto, Vico Canavese, Italy	8
	$-\frac{9}{4}$	$\bar{9}94$	Montigliano, Elba, Italy	2
	$-\frac{5}{2}$	$\bar{5}52$	" " "	2
	-3	$\bar{3}31$	" " "	2
	$-1\frac{6}{7}$	$\bar{7}67$	" " "	2
	$-1\frac{5}{4}$	$\bar{4}54$	Morkhult, Norway	1
	$-1\frac{15}{8}$	$\bar{8}.15.8$	Montigliano, Elba, Italy	2
	$-1\frac{17}{3}$	$\bar{3}.17.3$	" " "	2
	-1.10	$\bar{1}.10.1$	" " "	2
	-1.13	$\bar{1}.13.1$	" " "	2
	$\frac{9}{14}1$	9.14.14	" " "	2
	$\frac{11}{20}1$	11.20.20	" " "	2
	$-\frac{15}{16}1$	$\overline{15}.16.16$	" " "	2
o	$-\frac{5}{4}1$	$\bar{5}44$	Sulzer, Prince of Wales Island, Alaska	6
j	$-\frac{7}{5}1$	$\bar{7}55$	Sulzer, Prince of Wales Island, Alaska	6
x	$-\frac{3}{2}1$	$\bar{3}22$	Montigliano, Elba, Italy	2
	$-\frac{21}{10}1$	$\overline{21}.10.10$	" " "	2
	$-\frac{13}{6}1$	$\overline{13}.6.6$	Sulzbach, Tyrol	5
	$-\frac{8}{3}1$	$\bar{8}33$	Montigliano, Elba, Italy	2
	-51	$\bar{5}11$	Habachthal, Tyrol	3
	-71	$\bar{7}11$	" "	3
	-81	$\bar{8}11$	" "	3
Y	$\frac{1}{2}\ \frac{1}{4}$	214	Val di Viù, Italy	10
	$-\frac{1}{4}\ \frac{3}{4}$	$\bar{1}34$	Ala, Piedmont, Italy?	13
	-42	$\bar{4}21$	Nordmark, Sweden	1
	$-2\frac{1}{3}$	$\bar{6}13$	" "	1
	$-\frac{11}{5}\ \frac{6}{5}$	$\overline{11}.6.5$	Sulzbach, Tyrol	5
	$-2\frac{1}{12}$	$\overline{24}.1.12$	Nordmark, Sweden	1
	$-\frac{23}{7}\ \frac{10}{7}$	$\overline{23}.10.7$	Montigliano, Elba, Italy	2
	$-\frac{28}{9}\ \frac{4}{3}$	$\overline{28}.12.9$	" " "	2
	$-\frac{13}{4}\ \frac{11}{8}$	$\overline{26}.11.8$	" " "	2

1.—G. Flink, 1886, Bihang. t. k. Sven. Vet. Ak. Stockholm, XII, p. 2.
2.—E. Artini, 1887, Rend. Accad. Linc., IV, p. 380.
3.—J. Gränzer, 1887, Min. u. Petro. Mitth., IX, p. 36.

4.—L. BRUGNATELLI, 1890, Zeitschr. f. Kryst., XVII, p. 529.
5.—F. ZAMBONINI, 1900, Neues Jahrb. f. Min., I, p. 181.
6.—C. PALACHE, 1902, Proc. Amer. Acad. Sci., XXXVII, p. 531.
7.—F. ZAMBONINI, 1903, Rend. Accad. Linc., XII, p. 567.
*8.—F. ZAMBONINI, 1903, Zeitschr. f. Kryst., XXXVII, p. 1.
9.—F. ZAMBONINI, 1906, Rend. Accad. Linc., XV, (2), p. 179.
10.—Z. TOBORFFY, 1907, Zeitschr. f. Kryst., XLIII, p. 564.
11.—O. ANDERSEN, 1911, Archiv f. Math. og Naturv., XXXI, p. 48.
12.—E. POITEVIN, 1919, Amer. Miner., IV, p. 24.
13.—L. J. SPENCER, 1920, Min. Mag., XIX, No. 88, p. 7.

EPISTOLITE

$a: b: c = 0.803:1:1.206 \quad \beta = 74° 42'$

c	0	001	Julianehaab, Greenland		1
m	∞	110	"	"	1
o	01	011	"	"	1
r	$\frac{5}{4}0$	504	"	"	1
s	$-\frac{1}{2}0$	$\bar{1}02$	"	"	1

1.—O. B. BÖGGILD, 1900, Medd. om Grönland, XXIV, p. 183.

ERIKITE

$a: b: c = 0.57552:1:0.75796$

o	0	001	Tunugdliarfik-Fjord, Greenland		1
a	∞0	100	"	"	1
b	0∞	010	"	"	1
m	∞	110	"	"	1
n	∞2	120	"	"	1
o	∞3	130	"	"	1
p	$\infty\frac{7}{2}$	270	"	"	1
e	01	011	"	"	1
f	$0\frac{3}{2}$	032	"	"	1
g	02	021	"	"	1
h	$0\frac{5}{2}$	052	"	"	1
i	03	031	"	"	1
s	20	201	"	"	1
r	10	101	"	"	1
t	1	111	"	"	1
u	$\frac{1}{4}$	114	"	"	1

1.—O. B. BÖGGILD, 1903, Medd. om Grönland, XXVI, p. 93.

Erythite

	$\infty\frac{5}{3}$	350	Cobalt, Ontario, Can.	1
	$\frac{1}{4}0$	104	" " "	1

1.—W. F. Green, 1910, Trans. Can. Inst., VIII, p. 443.

Euchroite

d	10	101		1
f	$\frac{1}{2}0$	102		1

1.—Gissinger, 1892, Zeitschr. f. Kryst., pp. 22, 367.

Euclase

	$\infty\frac{7}{4}$	470	Brazil	1
δ	$\frac{3}{2}\frac{17}{4}$	6.17.4	Locality unknown	2
	$\frac{12}{7}3$	12.21.7	Brazil	1

1.—V. Dürrfeld, 1910, Zeitschr. f. Kryst., XLVII, p. 376.
2.—R. Köchlin, 1912, Min. u. petro. Mitth., XXXI, p. 532.

Eudidymite

$0\frac{5}{3}$	053	Narsarsuk, Greenland	1
2	221	" "	2
$-\frac{1}{4}$	$\bar{1}14$	" "	2
$-\frac{3}{8}$	$\bar{3}38$	" "	2
$-\frac{5}{9}$	$\bar{5}59$	" "	2
$\frac{6}{5}\frac{2}{5}$	625	" "	1
$5\frac{5}{3}$	15.5.3	" "	1
$-5\frac{5}{3}$	$\overline{15}.5.3$	" "	1

1.—G. Flink, 1898, Medd. om. Grönland, XIV, p. 230.
2.—G. Flink, 1898, Bull. Geol. Inst. Upsala, IV.

Ferberite

$a : b : c = 0.8255 : 1 : 0.8664 \quad \beta = 89° 32'$

L	7∞	710	Boulder Co., Colo.	4
	6∞	610	Greenland	3
N	$\frac{11}{2}\infty$	11.2.0	Boulder Co., Colo.	4
M	5∞	510	" "	4
G	$\frac{7}{2}\infty$	720	" "	4
F	$\frac{5}{2}\infty$	520	" "	4
C	$\frac{9}{4}\infty$	940	" "	4
R	$\frac{15}{7}\infty$	15.7.0	" "	4
i	$\infty\frac{11}{7}$	7.11.0	South Dakota	1

H	$\frac{9}{4}0$	904	Boulder Co., Colo.	4
A	$\frac{3}{7}$	337	" "	4
D	$1\frac{1}{3}$	313	" "	4
B	$\frac{1}{3}\ \frac{2}{3}$	123	" "	4
p	$2\frac{1}{4}$	214	" "	2
E	$\frac{5}{14}\ \frac{9}{14}$	5.9.14	" "	4

1.—C. H. WARREN, 1901, Amer. Journ. Sci., XI, p. 372.
2.—A. J. MOSES, 1905, Amer. Journ. Sci., XX, p. 281.
3.—O. B. BÖGGILD, 1905, Min. om Grönland, p. 180.
*4.—W. T. SCHALLER, 1914, U. S. Geol. Surv., Bull. DLXXXIII, p. 40.

FICHTELITE

$a: b: c = 1.4249:1:1.7165 \quad \beta = 52° 56'$

z	01	011	Borkovic, Bohemia	2
e	—20	$\bar{2}01$	" "	2
x	$—\frac{3}{4}0$	$\bar{3}04$	" "	2
	$—\frac{1}{3}0$	$\bar{1}03$	Kolbermoor, Bavaria, Ger.	3
o	—1	$\bar{1}11$	Salzendeich, Austria	1
y	$—\frac{1}{4}$	$\bar{1}14$	Borkovic, Bohemia	2

1.—H. BÖCKH, 1904, Földt. Közlöny, XXXIV, p. 335.
2.—F. PLZÁK AND V. ROSICKY, 1908, Zeitschr. f. Kryst., XLIV, p. 332.
3.—A. ROSATI, 1910, Rend. Accad. Linc., XIX, p. 450.

FLORENCITE

Hexagonal Rhombohedral $a\ c = 1:1.15875$

c	0	0001	Minas Geraes, Brazil	1
m	∞0	$10\bar{1}0$	" " "	1
r	10	$10\bar{1}1$	" " "	1
f	—20	$02\bar{2}1$	" " "	1

1.—E. HUSSAK AND G. T. PRIOR, 1900, Min. Mag., XII, p. 244.

FLUORITE

g	9∞	910	Nordmark, Sweden	6
L	$\frac{8}{7}$∞	870	Christiania, Norway	8
Θ	19.1	19.1.1	Rossie, N. Y.	5
	17.1	17.1.1	Epprechtstein, Fichtelberg, Sax.	2
	10.1	10.1.1	" " "	2
σ	91	911	Nordmark, Sweden	6
M	$\frac{4}{3}1$	433	Christiania, Norway	8
	$\frac{8}{7}1$	877	Epprechtstein, Fichtelberg, Sax.	2

	53	531	Belgium	1
	$\frac{5}{3}\frac{4}{3}$	543	"	1
	93	931	Epprechtstein, Fichtelberg, Sax.	2
H	$\frac{9}{2}\frac{5}{2}$	952	Christiania, Norway and Quincy, Mass.	7+8
K	$\frac{11}{2}\frac{7}{2}$	11.7.2	Christiania, Norway	8
	$\frac{16}{3}\frac{10}{3}$	16.10.3	Quincy, Mass.	7
	$\frac{19}{5}\frac{9}{5}$	19.9.5	Epprechtstein, Fichtelberg, Sax.	2
	$\frac{20}{3}\frac{4}{3}$	20.4.3	Pisek, Bohemia	4
j	$\frac{15}{4}\frac{7}{4}$	15.7.4	Budapest, Hungary	3
r	$\frac{24}{7}\frac{10}{7}$	24.10.7	" "	3
	$\frac{7}{5}$	775?	Christiania, Norway	8

1.—H. Buttgenbach, 1899, Ann. Soc. Géol. Belg., XXVII, p. 111.
2.—M. Weber, 1903, Zeitschr. f. Kryst., XXXVII, p. 433.
3.—V. Hulyak, 1903, Földt. Közlöny, XXXIII, p. 54.
4.—A. Krejĕi, 1905, Abh. d. böhm. Akad., No. 2, p. 3.
5.—H. P. Whitlock, 1910, N. Y. State Mus., Bull. CXL, p. 198.
6.—G. Flink, 1910, Ark. Min. o. Geol., III, p. 1.
7.—C. Palache and C. H. Merwin, 1911, Amer. Journn. Sci., XXXI, p. 556.
8.—V. M. Goldschmidt, 1911, Videnskapsselskapet Skrifter, I, p. 233.

Franklinite

e	5∞	510	Franklin Furnace, N. J.	1

1.—A. H. Phillips, 1917, Amer. Miner., II, p. 5.

Fremontite

$a:b:c=0.7633:1:0.7633$ $\alpha=108°\ 31'$ $\beta=97°\ 48'$ $\gamma=106°\ 27'$

c	0	001	Fremont Co., Colo.	1
a	∞0	100	" "	1
b	0∞	010	" "	1
z	∞2	120	" "	1
e	02	021	" "	1
h	10	101	" "	1

1.—W. T. Schaller, 1916, U. S. Geol. Surv., Bull. DCX, p. 143.

Freidlerite

	∞5	150	Laurium, Greece	1

1.—A. Lacroix and A. de Schulten, 1908, Bull. Soc. fr. Min., XXXI, p. 83.

Galena

p	$\frac{1}{13}$	1.1.13	Unknown locality	3
g	$\frac{1}{8}$	118	Weiden, Fischbachthal, Tyrol	5

	$\frac{4}{7}$	447	Freiberg, Germany	2
π	$\frac{2}{7}1$	277	Weiden, Fischbachthal, Tyrol	5
	$\frac{1}{5}1$	155	Neudorf, Germany	1
	$\frac{1}{6}1$	166	Traversella, Italy	4
a	$\frac{1}{5}\ \frac{3}{10}$	2.3.10	Weiden, Fischbachthal, Tyrol	5
e	$\frac{1}{10}\ \frac{3}{20}$	2.3.20	" " "	5

1.—G. Cesàro, 1892, Zeitschr. f. Kryst., XX, p. 468.
2.—G. Cesàro, 1898, Ann. Soc. Géol. belg., XXIV.
3.—A. F. Rogers, 1901, Amer. Journ. Sci., XII, p. 45.
4.—L. Colomba, 1905, Rend. Accad. Linc., XV, p. 636.
5.—V. Dürrfeld, 1910, Zeitschr. f. Kryst., XLVII, p. 375.

Garnet

E	$\frac{3}{8}\ \frac{5}{8}$	358	Rothenkopf, Tyrol	1
D	$\frac{3}{10}\ \frac{7}{10}$	3.7.10	" "	1
	$\frac{2}{5}\ \frac{3}{5}$	235	Biella, Italy	3
	$\frac{4}{9}\ \frac{5}{9}$	459	Brompton Lake, Quebec, Can.	2

1.—A. Catherine, 1888, Min. u. petro. Mitth., X, p. 55.
2.—C. Palache and H. O. Wood, 1904, Amer. Journ. Sci., XVIII, p. 344.
3.—F. Zambonini, 1904, Zeitschr. f. Kryst., XL, p. 225.

Geikielite

Hexagonal $a: c = 1:1.370$

c	0	0001	Ceylon	1
φ	$\frac{5}{8}0$	$50\bar{5}8$	"	1

1.—P. P. Sustschinsky, 1902, Zeitschr. f. Kryst., XXXVII, p. 57.

Geocronite

$a: b: c = 0.6145:1:0.6797$

c	0	001	Val Castello, Tuscany, Italy	1
m	∞	110	" " "	1
	$0\frac{5}{8}$	058	" " "	1
	$0\frac{6}{7}$	067	" " "	1
	01	011	" " "	1
	$0\frac{3}{2}$	032	" " "	1
	02	021	" " "	1
	$\frac{2}{5}$	225	" " "	1
	1	111	" " "	1

1.—G. d'Achiardi, 1901, Alt. Soc. Tosc. Mem., XVIII.

Georgiadesite

a: b: c=0.5770:1:0.2228

	$\infty 0$	100	Laurium, Greece	1
	0∞	010	" "	1
	01	011	" "	1
	$0\frac{11}{4}$	0.11.4	" "	1
	45	451	" "	1
	$4\frac{5}{4}$	16.5.4	" "	1
	$2\frac{15}{2}$	4.15.2	" "	1

1.—A. Lacroix and A. de Schulten, 1907, Compt. Rend., CXLV, p. 783.

Gismondite

l	$0\frac{1}{3}$	013	Podhorn, Marienbad, Bohemia	1

1.—A. Himmelbauer, 1912, Min. u. petro. Mitth., XXXI, p. 42.

Glaucochroite

a: b: c=0.4409:1:0.5808

a	$\infty 0$	100	Franklin Furnace, N. J.	1
b	0∞	010	" " "	1
m	∞	110	" " "	1
s	$\infty 2$	120	" " "	1
x	$\frac{1}{3}0$	103	" " "	1
h	02	021	" " "	1
e	1	111	" " "	1
f	12	121	" " "	1

1.—C. Palache, 1910, Amer. Journ. Sci., XXIX, p. 181.

Goethite

x	$\frac{4}{3}\infty$	430	Lostwithiel, Cornwall, Eng.	2
n	$\infty 3$	130	Příbram, Bohemia	1
e	01	011	" "	1
w	$\frac{4}{3}\frac{1}{3}$	413	Lostwhithiel, Cornwall, Eng.	2
t	$\frac{4}{3}\frac{8}{27}$	36.8.27	Vasko, Krassó-Szörény, Hungary	3

1.—V. Rosicky, 1908, Abh. d. böhm. Akad., XIII.
2.—V. Goldschmidt and A. L. Parsons, 1910, Zeitschr. f. Kryst., XLVII, p. 240.
3.—M. Löw, 1911, Földt. Közlöny, XLI, p. 811.

Gold

	$\frac{1}{8}$	118	Ural Mountains, Russia	1

1.—P. Jeremejeff, 1895, Verh. russ. Min. Ges., XXXIII.

GRAFTONITE

$a : b : c = 0.886 : 1 : 0.582 \quad \beta = 66°$

a	∞0	100	Grafton, N. H.	1
b	0∞	010	" "	1
m	∞	110	" "	1
l	∞2	120	" "	1
n	∞3	130	" "	1
d	01	011	" "	1
e	02	021	" "	1
p	1	111	" "	1

1.—S. L. PENFIELD, 1900, Amer. Journ. Sci., IX, p. 20.

GROTHINE

$a : b : c = 0.4575 : 1 : 0.8484$

c	0	001	Campagna, Italy	1
b	0∞	010	" "	1
m	∞	110	" "	1
e	10	101	" "	1
o	1	111	" "	1
r	12	121	" "	1

1.—F. ZAMBONINI, 1913, Rend. Accad. Linc., (5) XXII, p. 801.

GYPSUM

p	5∞	510	Andreasberg, Harz, Germany	1
	$\frac{13}{7}$∞	13.7.0	Bad Lands, S. Dakota	3
φ	∞$\frac{5}{3}$	350	Andreasberg, Harz, Germany	1
	—$\frac{2}{3}$0	$\bar{2}03$	Paris, France	2
μ	$\frac{5}{3}$	553	Artificial	6
π	$\frac{1}{3}$	113	"	6
	—21	$\bar{2}11$	Paris, France	2
o	—1$\frac{1}{2}$	$\bar{2}12$	Ballabio, Italy	4
p	—1$\frac{1}{3}$	$\bar{3}13$	" "	4
	—$\frac{3}{4}$ $\frac{1}{4}$	$\bar{3}14$	Bellisio,	5
	—$\frac{5}{9}$ $\frac{4}{9}$	$\bar{5}49$	Paris, France	2
	$\frac{15}{26}$ $\frac{21}{26}$	15.21.26	" "	2

1.—O. LUEDECKE, 1896, Min. d. Harzes, p. 377.
2.—A. LACROIX, 1898, Bull. Soc. fr. Min., XXI, p. 39.
3.—A. F. ROGERS, 1902, School of Mines Quar., XXIII, p. 133.
4.—E. ARTINI, 1900, Rend. Inst. Lomb., XXXIII, p. 1181.
5.—G. CESÀRO, 1905, Bull. Ac. Belg., p. 140.
6.—C. PERRIER, 1905, Rend. Accad. Linc., (5) XXIV, p. 159.

Gyrolite

Hexagonal Rhombohedral $a: c = 1:1.9360$

c	0	0001	Niakornat, Greenland	1
r	10	$10\bar{1}1$	" "	1
u	$\frac{1}{2}0$	$10\bar{1}2$	" "	1

1.—O. B. Böggild, 1908, Medd. om. Grönland, XXXIV, p. 93.

Hackmanite

Isometric

d	∞	110	Kola, Lapland	1

1.—L. H. Borgstrom, 1901, Geol. Fören. Förh., XXIII, p. 563.

Hamlinite

Hexagonal Rhombohedral

r	10	$10\bar{1}1$	Oxford Co., Maine	1
f	02	$02\bar{2}1$	" "	1

1.—S. L. Penfield, 1897, Amer. Journ. Sci., IV, p. 313.

Hambergite

$a: b: c = 0.8023:1:0.7268$

c	0	001	Madagascar	1
l	4∞	410	"	1
h^7	$\frac{4}{3}\infty$	430	Antsirabe, France	2
h''	$\frac{6}{5}\infty$	650	" "	2
k'	$\infty\frac{3}{2}$	230	Madagascar	1
d	$\frac{1}{4}0$	104	"	1
r	$\frac{1}{2}$	112	"	1
p	1	111	"	1
v	2	221?	"	1
s	$1\frac{1}{2}$	212	"	1
u	12	121	"	1
y	$\frac{1}{2}1$	122	"	1
w	$\frac{1}{2}\frac{3}{2}$	132	"	1
q	$\frac{1}{3}\frac{2}{3}$	123	"	1
t	$\frac{1}{4}\frac{1}{2}$	124	"	1

1.—V. Goldschmidt and F. C. Müller, 1910, Zeitschr. f. Kryst., XLVIII, p. 473.
2.—H. Ungemach, 1912, Bull. Soc. fr. Min., XXXV.

Hancockite

c	0	001	Franklin Furance, N. J.			1
a	∞0	100	"	"	"	1
e	10	101	"	"	"	1
r	—10	$\bar{1}01$	"	"	"	1
n	1	111	"	"	"	1

1.—S. L. Penfield and C. H. Warren, 1899, Amer. Journ. Sci., VIII, p. 339.

Hatchite

a: *b*: *c*=0.9787:1:1.1575 $\alpha=116°\ 53\frac{1}{2}'$ $\beta=85°\ 12'$ $\gamma=113°\ 44\frac{1}{2}'$

c	0	001	Binnenthal, Switzerland		1
a	∞0	100	"	"	1
b	0∞	010	"	"	1
n	2∞	210	"	"	1
l	$-\frac{3}{2}\infty$	$\bar{3}20$	"	"	1
m	∞	110	"	"	1
M	—∞	$\bar{1}10$	"	"	1
g	$-0\frac{1}{2}$	$0\bar{1}2$	"	"	1
e	—01	$0\bar{1}1$	"	"	1
f	—20	$0\bar{2}1$	"	"	1
d	$\frac{1}{3}0$	103	"	"	1
r	—1	$1\bar{1}1$	"	"	1
o	—1	$11\bar{1}$	"	"	1
p	—1	$\bar{1}11$	"	"	1
w	—2	$2\bar{2}1$	"	"	1
s	$-\frac{1}{2}$	$\bar{1}12$	"	"	1
v	—12	$12\bar{1}$	"	"	1
i	—25	$2\bar{5}1$	"	"	1
q	$-\frac{1}{3}\frac{5}{6}$	$25\bar{6}$	"	"	1
j	$-\frac{1}{6}\frac{1}{2}$	$13\bar{6}$	"	"	1
w	—32	$32\bar{1}$	"	"	1

1.—R. H. Solly and G. F. Herbert-Smith, 1912, Min. Mag., XVI, p. 287.

Hauchecornite

Tetragonal *a*: *c*=1:1.05215

c	0	001	Hamm, Siegen, Ger.			1
a	∞0	100	"	"	"	1
m	∞	110	"	"	"	1
e	10	101	"	"	"	1

s	$\frac{1}{2}$	112	Hamm, Siegen, Ger.	1
p	1	111	" " "	1

1.—R. SCHEIBE, 1888, Zeitschr. Geol. Ges., XL, p. 611.

HAUERITE

β	$\frac{4}{7}1$	477	Raddusa, Hungary	1

1.—V. GOLDSCHMIDT AND R. SCHROEDER, 1908, Zeitschr. f. Kryst., XLV, p. 214.

HAUSMANNITE

$a: c = 1:1.1661$

a	∞0	100	Brazil	1
i	$\frac{1}{9}$	119	"	1
	$\frac{5}{11}$	5.5.11	Långban, Sweden	2
	$\frac{3}{5}$	335	" "	2
	$\frac{2}{3}$	223	" "	2
	$1\frac{1}{4}$	414	" "	2
k	13	131	Brazil	1
h	$\frac{1}{3}\frac{2}{3}$	123	"	1
x	$\frac{5}{9}\frac{7}{9}$	579	"	1

1.—R. KÖCHLIN, 1908, Min. u. petro. Mitth., XXVII, p. 259.
2.—G. FLINK, 1910, Ark. Kemi. Min. Geol., III.

HAUTEFEULLITE

Monoclinic?

a	∞0	100	Bamle, Norway	1
b	0∞	010	" "	1
m	∞	110	" "	1

1.—L. MICHEL, 1893, Bull. Soc. fr. Min., XVI, p. 38.

HELLANDITE

$a: b: c = 2.0646:1:2.1570 \quad \beta = 109° 45'$

c	0	001	Kragerö, Norway	1
a	∞0	100	" "	1
b	0∞	010	" "	1
n	$\frac{3}{2}$∞	320	" "	1
g	$\frac{5}{4}$∞	540	" "	1
m	∞	110	" "	1
t	∞2	120	" "	1
o	01	011	" "	1

g	30	301	Kragerö, Norway	1
t	$\frac{2}{5}0$	205	“ “	1
r	$-\frac{1}{3}0$	$\bar{1}03$	“ “	1
d	$-\frac{1}{2}0$	$\bar{1}02$	“ “	1
x	-10	$\bar{1}01$	“ “	1
e	-20	$\bar{2}01$	“ “	1
p	$-\frac{1}{2}1$	$\bar{1}22$	“ “	1

1.—W. C. Brögger. Nyt. Mag. f. Naturv.

Hematite

	$\infty 7$	$17\bar{8}0$	Caveradi, Grisons, Switzerland	7
J	$\frac{5}{72}$	$5.5.\overline{10}.72$	Vesuvius, Italy	8
U	$\frac{16}{3}$	$16.16.\overline{32}.3$	Lower California, Mexico	5
z'	$\frac{20}{9}0$	$20.0.\overline{20}.9$	Gellivare, Sweden	6
x'	$\frac{27}{17}0$	$27.0.\overline{27}.17$	“ “	6
Λ	$\frac{4}{9}0$	$40\bar{4}9$	Dognácska, Hungary	4
	$\frac{1}{5}0$	$10\bar{1}5$	Montdore, Haute-Saône, France	1
	$0\frac{1}{12}$	$0.1.\bar{1}.12$	Guanajuato Mexico	5
ω	$\frac{1}{11}\ \frac{5}{11}$	$1.5.\bar{6}.11$	Dognácska, Hungary	4
Φ	$\frac{1}{7}\ \frac{3}{7}$	$13\bar{4}7$	“ “	4
c	$\frac{5}{23}\ \frac{9}{23}$	$5.9.\overline{14}.23$	“ “	4
o	$\frac{3}{13}\ \frac{5}{13}$	$3.5.\bar{8}.13$	“ “	4
R	$\frac{1}{4}\ \frac{3}{8}$	$23\bar{5}8$	“ “	4
Y	$\frac{5}{19}\ \frac{7}{19}$	$5.7.\overline{12}.19$	“ “	4
L	$\frac{3}{11}\ \frac{4}{11}$	$3.4.\bar{7}.11$	“ “	4
S	$\frac{11}{25}\ \frac{7}{25}$	$11.7.\overline{18}.25$	Vesuvius, Italy	8
U	$\frac{7}{12}\ \frac{5}{24}$	$14.5.\overline{19}.24$	“ “	8
	$\frac{2}{3}\ \frac{1}{3}$	$21\bar{3}3$	Binnenthal, Switzerland	3
	$\frac{4}{5}\ \frac{2}{5}$	$42\bar{6}5$	Montdore, Haute-Saône, France	1
	$\frac{5}{6}\ \frac{5}{12}$	$10.5.\overline{15}.12$	Binnenthal, Switzerland	3
s	$\frac{6}{7}\ \frac{2}{7}$	$62\bar{8}7$	Pajsberg, Wermland, Sweden	6
j	43	$43\bar{7}1$	Kakuk Mountains, Hungary	9
	$\frac{14}{5}\ \frac{6}{5}$	$14.6.\overline{20}.5$	Norberg, Sweden	6
	$\frac{9}{2}\ \frac{1}{2}$	$9.1.\overline{10}.2$	Caveradi, Grisons, Switzerland	7
Ω	10.2	$10.2.\overline{12}.1$	Dognácska, Hungary	4
	$\frac{25}{47}\ \frac{24}{47}$	$25.24.\overline{49}.47$	Montdore, Haute-Saône, France	1
	$\frac{13}{19}\ \frac{12}{19}$	$13.12.\overline{25}.19$	“ “ “	1
	$\frac{27}{39}\ \frac{24}{39}$	$27.24.\overline{51}.39$	“ “ “	1
	$\frac{17}{22}\ \frac{5}{11}$	$17.10.\overline{27}.22$	“ “ “	1
	$\frac{15}{19}\ \frac{8}{19}$	$15.8.\overline{23}.19$	“ “ “	1

	$\frac{11}{12}\ \frac{1}{6}$	$11.2.\overline{13}.12$	Madagascar	10
f'	16	$16\bar{7}1$	Norberg, Sweden	6
U	$\frac{1}{5}1$	$15\bar{6}5$	Pajsberg, Sweden	6
ψ	$\frac{1}{8}\ \frac{5}{8}$	$15\bar{6}8$	Dognácska, Hungary	4
j	$\frac{2}{5}\ \frac{8}{5}$	$2.8.\overline{10}.5$	" "	4
T	$\frac{2}{5}\ \frac{6}{5}$	$26\bar{8}5$	Pajsberg, Wermland, Sweden	6
Ξ	$\frac{1}{4}\ \frac{3}{4}$	$13\bar{4}4$	Minas Geraes, Brazil	2
	$\frac{2}{5}\ \frac{4}{5}$	$24\bar{6}5$	Binnenthal, Switzerland	3
	$\frac{3}{8}\ \frac{5}{4}$	$3.10.\overline{13}.8$	Montdore, Haute-Saône, France	1
	$\frac{35}{59}\ \frac{48}{59}$	$35.48.\overline{83}.59$	" " "	1
	$\frac{8}{15}\ \frac{11}{15}$	$8.11.\overline{19}.15$	Minas Geraes, Brazil	2
	$\frac{4}{9}\ \frac{7}{9}$	$4.7.\overline{11}.9$	" " "	2

1.—F. Gonnard, 1898, Compt. rend., CXXVI, p. 1048.
2.—Dufet, 1903, Bull. Soc. fr. Min., XXVI, p. 60.
3.—R. W. Harre, 1906, Zeitschr. f. Kryst., XLII, p. 280.
4.—E. Kleinfeldt, 1907, Neues Jahrb. f. Min., B.-B., XXIV, p. 325.
5.—H. Ungemach, 1910, Bull. Soc. fr. Min., XXXIII, p. 375.
6.—G. Flink, 1910, Ark. Min. o. Geol., III, p. 1.
7.—H. Ungemach, 1912, Ann. Soc. Géol. Belg., Mém., XXXIX, p. 5.
8.—L. Cuccia, 1913, Rend. Accad. Linc., (5) XXII, p. 587.
9.—K. Zimanyi, 1913, Földt. Közlöny, XLIII, p. 511.
10.—H. Ungemach, 1916, Bull. Soc. fr. Min., XXXIX.

Herderite

$a:b:c = 0.63075:1:0.42742 \quad \beta = 89° 54'$

c	0	001	Paris, Maine	1
a	$\infty 0$	100	" "	1
b	0∞	010	" "	1
m	∞	110	" "	1
l_1	$\infty\frac{37}{20}$	20.37.0	Epprechtstein, Bavaria, Ger.	3
l	$\infty 2$	120	Paris, Maine	1
μ	$\infty 3$	130	" "	1
u	01	011	Stoneham, Maine	1
t	$0\frac{3}{2}$	032	Paris, Maine	1
v	03	031	" "	1
S	06	061	" "	1
E	80	801	Epprechtstein, Bavaria, Ger.	2
ϵ	—80	$\bar{8}01$	" " "	
$\mathfrak{d}$	—30	$\bar{3}01$	Auburn, Maine	1
e	$\frac{3}{2}0$	302	Stoneham, Maine	1
$\mathfrak{e}$	$-\frac{3}{2}0$	$\bar{3}02$	" "	1
d	10	101	" "	1

δ	—10	$\bar{1}01$	Epprechtstein, Bavaria, Ger.	2
f	—$\frac{2}{3}$0	$\bar{2}03$	" " "	3
r	$\frac{1}{2}$	112	Auburn, Maine	1
p	1	111	Stoneham, Maine	1
π	—1	$\bar{1}11$	Epprechtstein, Bavaria, Ger.	3
g	$\frac{3}{4}$	334	" " "	3
$\mathfrak{g}$	—$\frac{3}{4}$	$\bar{3}34$	" " "	3
q	$\frac{3}{2}$	332	Stoneham, Maine	1
$\mathfrak{q}$	—$\frac{3}{2}$	$\bar{3}32$	" "	1
n	3	331	" "	1
$\mathfrak{n}$	—3	$\bar{3}31$	" "	1
o	4	441	" "	1
p_{24}	—24	$\overline{24}.24.1$	Epprechtstein, Bavaria, Ger.	3
r	—12	$\bar{1}21$	Greenwood, Maine	1
g	—1$\frac{4}{3}$	$\bar{3}43$	Auburn, "	4
k	$\frac{1}{2}$1	122	Paris, "	1
w	$\frac{3}{4}$3	3.12.4	" "	1
h	$\frac{3}{5}$ $\frac{9}{5}$	395	Epprechtstein, Bavaria, Ger.	3
z	—$\frac{3}{4}$ $\frac{9}{4}$	$\bar{3}94$	Greenwood, Maine	1
$\mathfrak{p}$	39	391	" "	1
x	$\frac{3}{2}$3	362	" "	1
$\mathfrak{i}$	24	241	Epprechtstein, Bavaria, Ger.	3
h	—63	$\bar{6}31$	Auburn, Maine	4

1.—S. L. Penfield, 1894, Amer. Journ. Sci., XLVII, p. 329.
2.—V. Dürrfeld, 1909, Zeitschr. f. Kryst., XLVII, pp. 242, 248.
3.—V. Dürrfeld, 1910, Zeitschr. f. Kryst., XLVIII, p. 236.
4.—W. E. Ford, 1911, Amer. Journ. Sci., XXXII, p. 283.

Hessite

s	$\frac{5}{2}$	552	Botés, Siebenburgen, Hungary	1
r	4	441	" " "	1

1.—V. Rosický, 1908, Abh. d. böhm. Akad., XIII, No. 28.

Heulandite

w	0$\frac{3}{2}$	032	Scotland	1
	50	501	East Greenland	2
n	1	111	Scotland	1

1.—J. G. Goodchild, 1903, Trans. Geol. Soc., Glasgow, XII.
2.—O. B. Böggild, 1905, Medd. om Grönland, XXVIII, p. 120.

HIBBENITE

a: b: c=0.589:1:0.488

a	∞0	100	Salmo, B. C.	1
b	0∞	010	" "	1
s	∞2	120	" "	1
d	10	101	" "	1
p	1	111	" "	1

1.—A. H. PHILLIPS, 1916, Amer. Journ. Sci., XLII, p. 275.

HIBSCHITE

Isometric

d	10	101	Marienberg, Bohemia	1
o	1	111	" "	1

1.—F. CORNU, 1905, Min. Mitth., XXIV, p. 327; 1906, idem, XXV, p. 249.

HINSDALITE

Hexagonal Rhombohedral *a: c*=1:1.2677

c	0	0001	Lake City, Hinsdale Co., Calif.	1
r	10	$10\bar{1}1$	" " " " "	1
	—10	$01\bar{1}1$	" " " " "	1

1.—E. S. LARSEN AND W. T. SCHALLER, 1911, Amer. Journ. Sci., XXXII, p. 251.

HODGKINSONITE

a: b: c=1.538.1:1.1075 β=84° 35′

c	0	001	Franklin Furnace, N. J.	1
l	2∞	210	" " "	1
m	∞	110	" " "	1
s	01	011	" " "	1
o	02	021	" " "	1
x	$-\frac{3}{5}0$	$\bar{3}05$	" " "	1
v	$-\frac{4}{3}0$	$\bar{4}03$	" " "	1
w	—20	$\bar{2}01$	" " "	1
t	—40	$\bar{4}01$	" " "	1
p	1	111	" " "	1
u	$-\frac{3}{2}$	$\bar{3}22$	" " "	1
r	2	221	" " "	1
q	$\frac{5}{2}$	552	" " "	1
n	—31	$\bar{3}11$	" " "	1

1.—C. PALACHE AND W. T. SCHALLER, 1913, Journ. Wash. Acad. Sci., III, p. 474; 1914, idem, IV, p. 153.

Hoegbonite

Hexagonal Trigonal $a:c=1:1.156$

c	0	0001	Kvikkjokk, Norrbotten, Sweden	1
	10	$10\bar{1}1$	" " "	1
	20	$20\bar{2}1$	" " "	1

1.—A. Gavelin, 1916, Bull. Geol. Univ. Upsala, XV, p. 289.

Hopeite

$a:b:c=0.5703:1:0.4720$ (Walker)

	2∞	210	Broken Hill, Rhodesia, Africa	3
	$\infty\frac{6}{7}$	670	Salmo, British Columbia	4
i	$\infty\frac{11}{5}$	5.11.0	Broken Hill, Rhodesia, Africa	2
	$\infty 2$	120	" " " "	3
	$\infty 3$	130	Moresnet, Belgium	1
	$\infty\frac{11}{3}$	3.11.0	Salmo, British Columbia	4
	$0\frac{2}{5}$	025	Broken Hill, Rhodesia, Africa	3
	$0\frac{5}{6}$	056	" " " "	3
	$0\frac{5}{4}$	054	" " " "	3
	$0\frac{3}{2}$	032	" " " "	3
	02	021	Salmo, British Columbia	4
	$\frac{1}{9}$	119	Broken Hill, Rhodesia, Africa	3
	$\frac{1}{7}$	117	" " " "	3
	$\frac{1}{6}$	116	" " " "	3
	$\frac{1}{4}$	114	" " " "	3
	$\frac{3}{11}$	3.3.11	" " " "	3
	$\frac{3}{10}$	3.3.10	" " " "	3
	12	121	" " " "	3
q	$\frac{2}{3}1$	233	" " " "	2
t	$\frac{1}{3}1$	133	" " " "	2
	$\frac{1}{2}\frac{3}{2}$	132	" " " "	3
	$\frac{1}{2}2$	142	" " " "	3

1.—H. Buttgenbach, 1906, Ann. Soc. Géol. Belg., XXXIII, p. M9
2.—L. J. Spencer, 1908, Min. Mag., XV, p. 5.
3.—H. Ungemach, 1910, Bull. Soc. fr. Min., XXXIII.
4.—T. L. Walker, 1916, Journ. Wash. Acad. Sci., VI, p. 685.

Hügelite

$a:b:c=0.48954:1:0.38372 \quad \beta=60° 12'$

c	0	001	Reichenbach, Baden, Ger.	1
m	∞	100	" " "	1
n	01	011	" " "	1

1.—V. Dürrfeld, 1912, Zeitschr. f. Kryst., LI, p. 276; 1913, idem, LIII, p. 183.

HULSITE

a: b: c=0.5501:1:? (Orthorhombic?)

c	0	001	Seward Peninsula, Alaska	1
a	∞0	100	" " "	1
b	0∞	010	" " "	1
m	∞	110	" " "	1

1.—A. KNOPF AND W. T. SCHALLER, 1908, Amer. Journ. Sci., XXV, p. 325.

HUMBOLDTINE

a: b: c=0.7730:1:1.1039

0	001	Capo d'Arco, Elba, Italy	1
∞0	100	" " " "	1
∞	110	" " " "	1
10	101	" " " "	1

1.—MANASSE, 1910, Rend. Accad. Linc., XIX (2), p. 138.

HUMITE GROUP, CHONDRODITE

$\frac{1}{5}$	115	Nordmark, Sweden	1
$-\frac{1}{5}$	$\bar{1}15$	" "	1
$-\frac{1}{2}$	$\bar{1}12$	" "	1
$-1\frac{1}{2}$	$\bar{2}12$	" "	1
$\frac{3}{7}\ \frac{2}{7}$	327	" "	1
$\frac{3}{11}\ \frac{2}{11}$	3.2.11	" "	1

1.—H. SJÖGREN, 1892, Geol. Fören. Förh., XIV, p. 423.

HUMITE GROUP, PROLECTITE

a: b: c=1.0803:1:1.8862 $\beta=90°$

A	0	001	Nordmark, Sweden	1
B	0∞	010	" "	1
	∞	110	" "	1
	$0\frac{1}{4}$	014	" "	1
	$0\frac{1}{2}$	012	" "	1
	$\frac{1}{3}0$	103	" "	1
	$\frac{5}{3}0$	503	" "	1
	$-\frac{4}{9}0$	$\bar{4}09$	" "	1
	$\frac{3}{7}$	337	" "	1
	-1	$\bar{1}11$	" "	1
	$-\frac{2}{3}$	$\bar{2}23$	" "	1
	$-\frac{2}{7}$	$\bar{2}27$	" "	1
	$-\frac{2}{9}$	$\bar{2}29$	" "	1

—12	$\bar{1}21$	Nordmark, Sweden		1
12	121	"	"	1
31	322	"	"	1

1.—H. Sjögren, 1894, Bull. Geol. Inst., Upsala.

Hutchinsonite

a: b: c=1.6343:1:0.7549

c	0	001	Binnenthal, Switzerland		1
a	∞0	100	"	"	1
b	0∞	010	"	"	1
	$\frac{16}{5}$∞	16.5.0	"	"	1
H	$\frac{8}{3}$∞	830	"	"	2
G	$\frac{7}{3}$∞	730	"	"	2
	$\frac{16}{7}$∞	16.7.0	"	"	1
F	2∞	210	"	"	1
l	$\frac{7}{4}$∞	740	"	"	1
k	$\frac{3}{2}$∞	320	"	"	1
i	$\frac{5}{4}$∞	540	"	"	1
m	∞	110	"	"	1
h	∞$\frac{4}{3}$	340	"	"	1
f	∞2	120	"	"	1
k	∞$\frac{5}{2}$	250	"	"	2
g	∞4	140	"	"	1
	01	011	"	"	1
Z	60	601	"	"	2
Y	50	501	"	"	1
w	40	401	"	"	1
v	30	301	"	"	1
X	$\frac{7}{3}$0	703	"	"	2
ω	20	201	"	"	1
W	$\frac{3}{2}$0	302	"	"	1
d	10	101	"	"	1
V	$\frac{3}{4}$0	304	"	"	2
U	$\frac{1}{2}$0	102	"	"	1
p	1	111	"	"	1
A	$\frac{3}{2}$	332	"	"	2
N	2	221	"	"	2
n	12	121	"	"	2
O	$\frac{1}{4}$1	144	"	"	2
r	$\frac{1}{2}$1	122	"	"	1

q	$\frac{3}{2}$1	322	Binnenthal, Switzerland	1
o	21	211	" "	1
P	$\frac{5}{2}$1	522	" "	2
Q	31	311	" "	1
R	41	411	" "	2
x	$\frac{5}{4}\frac{1}{2}$	524	" "	2
C	$\frac{3}{2}\frac{1}{2}$	312	" "	2
S	$\frac{1}{2}$2	142	" "	2
t	$\frac{3}{2}$2	342	" "	2
T	$\frac{7}{2}$2	742	" "	2

1.—R. H. Solly, 1905, Min. Mag., XIV, p. 72.
2.—G. F. H. Smith and G. T. Prior, 1907, Min. Mag., XIV, p. 284.

Hyalophane

	$\infty\frac{8}{3}$	380	Binnenthal, Switzerland	1
	—1$\frac{1}{2}$	$\bar{2}12$	" "	1
	—21	$\bar{2}11$	" "	1

1.—R. H. Solly, 1904, Min. Mag., XIV, p. 17.

Hydrocerussite

Hexagonal *a: c*=1:1.4188

c	0	0001	Långban, Sweden	1
p	10	$10\bar{1}1$	" "	1
o	$\frac{1}{2}$0	$10\bar{1}2$	" "	1

1.—G. Flink, 1901, Bull. Geol. Inst. Upsala, V, p. 94.

Ilmenite

δ	2∞	$21\bar{3}0$	Quincy, Mass.	4
h	4∞	$41\bar{5}0$	Binnenthal, Switzerland	3
d	$\frac{1}{2}$0	$10\bar{1}2$	" "	3
φ	$\frac{4}{7}$0	$40\bar{4}7$	Val Devero, Piedmont, Italy	5
Γ	40	$40\bar{1}4$	Binnenthal, Switzerland	3
g	—$\frac{3}{11}$0	$0.3.\bar{3}.11$	Quincy, Mass.	4
	—$\frac{3}{10}$0	$0.3.\bar{3}.10$	" "	4
	—$\frac{4}{11}$0	$0.4.\bar{4}.11$	Beaume (Dora Riparia), Piedmont, Italy	1
α	—$\frac{7}{20}$0	$0.7.\bar{7}.20$	Binnenthal, Switzerland	3
Ψ	—$\frac{2}{7}$0	$02\bar{2}7$	Beaume (Dora Riparia), Piedmont, Italy	1

Λ	$-\frac{4}{5}0$	$04\bar{4}5$	Quincy, Mass.	4
λ	$-\frac{5}{2}0$	$05\bar{5}2$	" "	4
β	$\frac{5}{24}$	$5.5.\overline{10}.24$	Binnenthal, Switzerland	3
	$\frac{1}{2}$	$11\bar{2}2$	Beaume (Dora Riparia), Piedmont, Italy	1
χ	$\frac{4}{3}$	$44\bar{8}3$	Binnenthal, Switzerland	3
χ^1	$-\frac{4}{3}$	$8\overline{44}3$	Val Devero, Piedmont, Italy	5
y	$\frac{3}{2}\ \frac{1}{2}$	$31\bar{4}2$	Eichamwand, Prägratem, Tyrol	2
γ	$\frac{1}{2}1$	$12\bar{3}2$	Binnenthal, Switzerland	3
δ	$\frac{2}{7}\ \frac{4}{7}$	$24\bar{6}7$	" "	3
q	24	$24\bar{6}1$	" "	3
κ	12	$12\bar{3}1$	" "	3

1.—G. PIOLTE, 1902, Atti. Acc. Sci. Turin, XXXVII.
2.—P. P. SUSTSCHINSKY, 1902, Zeitschr. f. Kryst., XXXVIII, p. 60.
3.—R. H. SOLLY, 1905, Min. Mag., XIV, p. 184.
4.—C. PALACHE AND C. H. WARREN, 1911, Amer. Journ. Sci., XXXI, p. 553.
5.—L. MAGISTRETTI, 1912, Rend. Accad. Linc., XXI, p. 261.

ILVAITE

γ	∞6	160	Tunugdliarfik-Fjord, S. Greenland	1
σ	08	081	" "	1
f	04	041	" "	1
i	40	401	" "	1
ξ	3	331	" "	1
m	62	621	" "	1
ε	43	431	" "	1

1.—O. B. BÖGGILD, 1902, Medd. om Grönland, XXV, p. 45.

INESITE

k	$-\frac{11}{12}0$	$\overline{11}.0.12$	Durango, Mexico	2
f	—30	$\bar{3}01$	Nordmark, Sweden	1
s	$-\frac{3}{2}\ \frac{2}{3}$	$9\bar{4}6$	Durango, Mexico	2

1.—A. HAMBERG, 1894, Geol. Fören. Förh., XVI, p. 323.
2.—O. C. FARRINGTON, 1900, Field Col. Mus. Pub., I (VII), p. 221.

INYOITE

$a: b: c = 0.9408:1:0.6665 \quad \beta = 62° 37'$

c	0	001	Death Valley, Calif.	1
b	0∞	010	" " "	1

m	∞	100	Death Valley, Calif.	1
p	1	111	" " "	1

1.—W. T. Schaller, 1916, U. S. Geol. Surv., Bull. DCX, p. 37.

Iodyrite

z	$\frac{3}{2}0$	$30\bar{3}2$?	Tonopah, Nevada	1
r	$\frac{7}{4}0$	$70\bar{7}4$?	" "	1
s'	$\frac{15}{8}0$	$15.0.\overline{15}.8$?	" "	1
t	$\frac{7}{3}0$	$70\bar{7}3$?	" "	1
w	$\frac{9}{2}0$	$90\bar{9}2$?	" "	1
w'	$-\frac{9}{2}0$	$90\bar{9}\bar{2}$?	" "	1
x	70	$70\bar{7}1$?	" "	1
y	90	$90\bar{9}1$?	" "	1
y'	—90	$90\bar{9}\bar{1}$?	" "	1

1.—E. H. Kraus and C. W. Cook, 1909, Amer. Journ. Sci., XXVII, p. 210.

Iolite

$\infty\frac{5}{3}$	350	Montavon Valley, Switzerland	1
∞2	120	" " "	1
∞6	160	" " "	1
50	501	" " "	1
$1\frac{1}{2}$	212	" " "	1
35	351	" " "	1
26	261	" " "	1
$\frac{4}{3}4$	4.12.3	" " "	1
28	281	" " "	1
3.18	3.18.1	" " "	1
$\frac{1}{4}\,\frac{3}{2}$	164	" " "	1
$\frac{1}{8}\,\frac{3}{4}$	168	" " "	1

1.—H. Gemböck, 1898, Zeitschr. f. Kryst., XXIX, p. 305.

Jamesonite

$a:b:c = 0.8316:1:0.4260 \quad \beta = 91°\ 24'$

c	0	001	Kasejovic, Bohemia	1
a	∞0	100	" "	1
b	0∞	010	" "	1
l	2∞	210	" "	1
m	∞	110	" "	1
n	∞2	120	" "	1
f	$0\frac{1}{2}$	012	" "	1

g	$0\frac{3}{2}$	032?	Kasejovic, Bohemia		1
e	01	011	"	"	1
d	—10	$\bar{1}01$	"	"	1
r	$-\frac{1}{2}$	$\bar{1}12$	"	"	1
o	—1	$\bar{1}11$	"	"	1
q	$-1\frac{1}{2}$	$\bar{2}12$	"	"	1
s	$-1\frac{3}{2}$	$\bar{2}32$	"	"	1

1.—O. Hofmann and F. Slavic, 1913, Abh. d. böhm. Akad., XIX, p. 21.

Ježekite

$a:b:c = 0.8959:1:1.0241 \quad \beta = 105° \ 31\frac{1}{2}'$

c	0	001	Ehrenfriedersdorf, Saxony		1
a	∞0	100	"	"	1
b	0∞	010	"	"	1
m	∞	110	"	"	1
r	$0\frac{1}{2}$	012	"	"	1
q	01	011	"	"	1
g	$\frac{1}{4}0$	104	"	"	1
d	$\frac{1}{2}0$	102	"	"	1
e	—10	$\bar{1}01$	"	"	1

1.—F. Slavic, 1914, Abh. d. böhm. Akad., XX.

Johannite

$a:b:c = 1.0527:1:1.395 \quad \beta = 95° \ 42'$

c	0	001	Joachimsthal, Bohemia		1
n	∞2	120	"	"	1
f	$\frac{15}{8}0$	15.0.8	"	"	1
d	20	201	"	"	1
p	$\frac{1}{4}\ \frac{1}{2}$	124	"	"	1

1.—B. Ježek, 1915, Abh. d. böhm. Akad., XXI.

Jordanite

c	0	001	Binnenthal, Switzerland		1
a	∞0	100	"	"	1
b	0∞	010	"	"	1
	5∞	510	"	"	2
4*s*	4∞	410	"	"	1
	3∞	310	"	"	2
2*s*	2∞	210	"	"	1
r	∞	110	"	"	1

$\frac{7}{6}r$	$\infty\frac{7}{6}$	670	Binnenthal, Switzerland	1
$\frac{5}{4}r$	$\infty\frac{5}{4}$	450	" "	1
	$\infty\frac{4}{3}$	340	" "	2
$\frac{3}{2}r$	$\infty\frac{3}{2}$	230	" "	1
$2r$	$\infty 2$	120	" "	1
$\frac{27}{12}r$	$\infty\frac{27}{12}$	12.27.0	" "	1
$\frac{7}{3}r$	$\infty\frac{7}{3}$	370	" "	1
$\frac{5}{2}r$	$\infty\frac{5}{2}$	250	" "	1
$\frac{11}{4}r$	$\infty\frac{11}{4}$	4.11.0	" "	1
$3r$	$\infty 3$	130	" "	1
$\frac{24}{7}r$	$\infty\frac{24}{7}$	7.24.0	" "	1
$\frac{7}{2}r$	$\infty\frac{7}{2}$	270	" "	1
$\frac{32}{9}r$	$\infty\frac{32}{9}$	9.32.0	" "	1
$4r$	$\infty 4$	140	" "	1
$\frac{49}{12}r$	$\infty\frac{49}{12}$	12.49.0	" "	1
$\frac{9}{2}r$	$\infty\frac{9}{2}$	290	" "	1
$5r$	$\infty 5$	150	" "	1
$\frac{11}{2}r$	$\infty\frac{11}{2}$	2.11.0	" "	1
$\frac{15}{2}r$	$\infty\frac{15}{2}$	2.15.0	" "	1
$8r$	$\infty 8$	180	" "	1
$\frac{7}{2}k$	$0\frac{7}{2}$	072	" "	1
$3k$	03	031	" "	1
$\frac{5}{2}k$	$0\frac{5}{2}$	052	" "	1
$2k$	02	021	" "	1
$\frac{3}{2}k$	$0\frac{3}{2}$	032	" "	1
k	01	011	" "	1
$\frac{1}{2}k$	$0\frac{1}{2}$	012	" "	1
$-5h$	50	501	" "	1
$-3h$	30	301	" "	1
$-2h$	20	201	" "	1
$-h$	10	101	" "	1
h	—10	$\bar{1}01$	" "	1
$2h$	—20	$\bar{2}01$	" "	1
$3h$	—30	$\bar{3}01$	" "	1
$5h$	—50	$\bar{5}01$	" "	1
p	1	111	" "	1
$-p$	—1	$\bar{1}11$	" "	1
$-3p$	3	331	" "	1
$3p$	—3	$\bar{3}31$	" "	1
$\frac{28}{3}t$	$-1\frac{3}{28}$	$\overline{28}.3.28$	" "	1

—2*t*	$1\frac{1}{2}$	212	Binnenthal,	Switzerland	1
2*t*	$—1\frac{1}{2}$	$\bar{2}12$	"	"	1
	$1\frac{3}{2}$	232	"	"	2
—2*q*	12	121	"	"	1
2*q*	—12	$\bar{1}21$	"	"	1
	$—1\frac{5}{2}$	$\bar{2}52$	"	"	2
—3*q*	13	131	"	"	1
3*q*	—13	$\bar{1}31$	"	"	1
$—\frac{7}{2}q$	$1\frac{7}{2}$	272	"	"	1
$\frac{7}{2}q$	$—1\frac{7}{2}$	$\bar{2}72$	"	"	1
—4*q*	14	141	"	"	1
4*q*	—14	$\bar{1}41$	"	"	1
	$1\frac{9}{2}$	292	"	"	2
—5*q*	15	151	"	"	1
5*q*	—15	$\bar{1}51$	"	"	1
	$1\frac{11}{2}$	2.11.2	"	"	2
—6*q*	16	161	"	"	1
6*q*	—16	$\bar{1}61$	"	"	1
—7*q*	17	171	"	"	1
7*q*	—17	$\bar{1}71$	"	"	1
—8*q*	18	181	"	"	1
8*q*	—18	$\bar{1}81$	"	"	1
—9*q*	19	191	"	"	1
9*q*	—19	$\bar{1}91$	"	"	1
—10*q*	1.10	1.10.1	"	"	1
10*q*	—1.10	$\bar{1}$.10.1	"	"	1
12*q*	—1.12	$\bar{1}$.12.1	"	"	1
	—1.13	$\bar{1}$.13.1	"	"	2
	—1.14	$\bar{1}$.14.1	"	"	2
—17*q*	1.17	1.17.1	"	"	1
	—1.17	$\bar{1}$.17.1	"	"	2
18*q*	—1.18	$\bar{1}$.18.1	"	"	1
—3*w*	31	311	"	"	1
3*w*	—31	$\bar{3}11$	"	"	1
—2*w*	21	211	"	"	1
2*w*	—21	$\bar{2}11$	"	"	1
—6*x*	36	361	"	"	1
6*x*	—36	$\bar{3}61$	"	"	1
—5*x*	35	351	"	"	1
5*x*	—35	$\bar{3}51$	"	"	1

—7*x*	37	371	Binnenthal, Switzerland	1
—8*x*	38	381	" "	1
—4*x*	34	341	" "	1
4*x*	—34	$\bar{3}41$	" "	1
3*z*	—23	$\bar{2}31$	" "	1
$\frac{5}{2}z$	$—2\frac{5}{2}$	$\bar{4}52$	" "	1
	$2\frac{3}{2}$	432	" "	2
—5*v*	52	521	" "	1
—3*v*	32	321	" "	1
3*v*	—32	$\bar{3}21$	" "	1
—2*y*	$2\frac{1}{2}$	412	" "	1
2*y*	$—2\frac{1}{2}$	$\bar{4}12$	" "	1

1.—H. Baumhauer, 1891, Sitz. Ber. Akad., pp. 697, 915.
2.—R. H. Solly, 1901, Zeitschr. f. Kryst., XXXV, p. 321.

Kainite

u	5∞	510	Stassfurt, Germany	1
f	$\infty\frac{4}{3}$	340	" "	1
g	$\infty\frac{3}{2}$	230	" "	1
h	∞3	130	" "	1
i	02	021	" "	1
w′	—31	$\bar{3}11$	" "	1

1.—C. Busz, 1906, Ber. Med.-naturw. Ges., Münster.

Kaolinite

	02	021	Silverton, Colo.	1

1.—A. Johnsen, 1911, Centralb. f. Min., p. 23.

Kentrolite

e	$\frac{1}{2}0$	102	Jacobsberg, Sweden	1
u	$\frac{1}{4}$	114	" "	1
v	$\frac{1}{5}$	115	" "	1
z	$\frac{3}{10}\ \frac{3}{2}$	3.15.10	" "	1

1.—G. Nordenskiöld, 1894, Geol. Fören. Förh., XVI, p. 153.

Kermesite

$a:b:c=4.6448:1.1717:1 \quad \beta=90°$

α	$\frac{2}{5}0$	205	Pernec, Hungary	1
β	$\frac{1}{2}0$	102	" "	1
γ	$\frac{2}{3}0$	203	" "	1

ϵ	$\frac{9}{8}0$	908	Pernec, Hungary	1
κ	$\frac{7}{4}0$	704	" "	1
μ	$\frac{5}{2}0$	502	" "	1
τ	80	801	" "	1

1.—Pjatnitzky, 1892, Zeitschr. f. Kryst., XX, p. 422.

Kieserite

$a: b: c = 0.9046:1:1.7739 \quad \beta = 88° 55\frac{1}{2}'$

c	0	001	Westeregln, Saxony	1
y	$\frac{3}{5}$	335	" "	1

1.—H. Bücking, 1895, Sitz. Ber. Akad., p. 533.

Kleinite

Hexagonal $a: c = 1:1.6642$

c	0	0001	Terlingua, Texas	1
m	$\infty 0$	$10\bar{1}0$	" "	1
a	∞	$11\bar{2}0$	" "	1
p	10	$10\bar{1}1$	" "	1
x	$\frac{1}{2}0$	$10\bar{1}2$	" "	2

1.—A. Sachs, 1905, Sitz. Ber. Akad., p. 1091.
2.—W. F. Hillebrand and W. T. Schaller, 1909, U. S. Geol. Surv., Bull. CDV.

Knopite

Isometric

	$\infty 0$	100	Alno, Sweden	1
	1	111	" "	1
	$\frac{9}{2}0$	920	" "	1
	91	911	" "	1

1.—P. J. Holmquist, 1894, Geol. Fören. Förh., XVI, p. 73.

Koechlinite

$a: b: c = 0.9774:1:1.0026$

a	$\infty 0$	100	Schneeberg, Saxony	1
b	0∞	010	" "	1
k	2∞	210	" "	1
h	$\frac{4}{3} \infty$	430	" "	1
m	∞	110	" "	1
j	$\infty \frac{5}{4}$	450	" "	1
n	$\infty \frac{3}{2}$	230	" "	1
l	$\infty 3$	130	" "	1

p	1	111	Schneeberg, Saxony	1
u	13	131	" "	1
r	$\frac{3}{2}$1	322	" "	1
s	$\frac{5}{3}$1	533	" "	1
x	$\frac{3}{2}$3	362	" "	1

1.—W. T. Schaller, 1916, U. S. Geol. Surv., Bull. DCX, p. 10.

Krennerite

$a:b:c=0.9369:1:0.5068$

K	3∞	310	Nagyag, Hungary	1
L	$\frac{5}{2}$∞	520	" "	1
M	$\frac{6}{5}$∞	650	" "	1
N	∞$\frac{4}{3}$	340	" "	1
j	∞4	140	" "	1
J	∞6	160	" "	1
δ	0$\frac{4}{3}$	043	" "	1
Θ	0$\frac{5}{4}$	054	" "	1
μ	$\frac{1}{4}$0	104	" "	1
Π	$\frac{5}{2}$0	502	" "	1
π	40	401	" "	1
λ	90	901	" "	1
β	14	141	" "	1
φ	1$\frac{4}{3}$	343	" "	1
χ	$\frac{1}{4}$1	144	" "	1
Ψ	$\frac{3}{4}$1	344	" "	1
ξ	41	411	" "	1
γ	58	581	" "	1
f	23	231	" "	1
α	$\frac{5}{2}$3	562	" "	1
r	$\frac{1}{2}$2	142	" "	1
x	$\frac{3}{2}$2	342	" "	1
R	$\frac{5}{2}$2	542	" "	1

1.—G. F. Herbert-Smith, 1903, Min. Mag., XIII, p. 264.

Kröhnkite

$a:b:c=0.5229:1:0.4357 \quad \beta=56° 17'$

a	∞0	100	Chuquicamata, Chile	1
b	0∞	101	" "	1
h	∞2	120	" "	1
k	∞3	130	" "	1

e	01	011	Chuquicamata, Chile	1
d	02	021	" "	1
f	03	031	" "	1
t	—10	$\bar{1}01$	" "	1
u	—$\frac{3}{2}$0	$\bar{3}02$	" "	1
v	—30	$\bar{3}01$	" "	1
p	1	111	" "	1
q	—1	$\bar{1}11$	" "	1
x	—2	$\bar{2}11$	" "	1
z	—3	$\bar{3}11$	" "	1
i	—5	$\bar{5}11$	" "	1
o	—10	$\overline{10}.10.1$	" "	1
r	12	121	" "	1
s	—12	$\bar{1}21$	" "	1
y	—1$\frac{3}{2}$	$\bar{2}32$	" "	1
w	—21	$\bar{2}11$	" "	1
n	—$\frac{1}{2}$ $\frac{3}{2}$	$\bar{1}32$	" "	1

1.—C. Palache and C. H. Warren, 1908, Amer. Journ. Sci., XXVI, p. 342.

Lacroixite

a: b: c=0.82:1:1.60 *β*=?

b	0∞	010	Ehrensfriedersdorf, Saxony	1
m	∞	110	" "	1
p	1	111	" "	1

1.—F. Slavic, 1914, Abh. d. böhm. Akad., No. VI.

Långbanite

Hexagonal Rhombohedral *a: c*=1:1.4407

c	0	0001	Långban, Sweden	1
m	∞0	$10\bar{1}0$	" "	1
σ	—2∞	$3\bar{1}\bar{2}0$	" "	1
s	2∞	$21\bar{3}0$	" "	1
n	∞	$11\bar{2}0$	" "	1
k	$\frac{2}{9}$	$22\bar{4}9$	" "	1
π	$\frac{1}{3}$	$11\bar{2}3$	" "	1
p	—$\frac{1}{3}$	$2\bar{1}\bar{1}3$	" "	1
o	$\frac{2}{3}$	$22\bar{4}3$	" "	1
ω	—$\frac{2}{3}$	$4\bar{2}\bar{2}3$	" "	1
d	$\frac{4}{3}$	$44\bar{8}3$	" "	1
e	$\frac{1}{3}$0	$10\bar{1}3$	" "	1

f	$\frac{2}{3}0$	$20\bar{2}3$	Långban, Sweden	1
g	$\frac{4}{3}0$	$40\bar{4}3$	" "	1
γ	$0\frac{4}{3}$	$04\bar{4}3$	" "	1
φ	$0\frac{2}{3}$	$02\bar{2}3$	" "	1
ε	$0\frac{1}{3}$	$01\bar{1}3$	" "	1
l	$\frac{4}{3}\frac{2}{3}$	$42\bar{6}3$	" "	1
i	$\frac{2}{3}\frac{1}{3}$	$21\bar{3}3$	" "	1
h	$\frac{8}{3}\frac{2}{3}$	8.2.10.3	" "	1

1.—G. Flink, 1910, Ark. Kemi. Min. Geol., III, p. 1.

Langbeinite

Isometric Tetartohedral

a	∞0	100	Saxony, Anhalt, Brunswick, Ger.	1
y	$\frac{9}{2}$∞	920	" " " "	1
f	3∞	310	" " " "	1
e	2∞	210	" " " "	1
d	∞	110	" " " "	1
o	1	111	" " " "	1
o_1	—1	$\bar{1}11$	" " " "	1
p_1	—2	$2\bar{2}1$	" " " "	1
n	—21	$2\bar{1}1$	" " " "	1

1.—O. Luedecke, 1898, Zeitschr. f. Kryst., XXIX, p. 255.

Laurionite

a: *b*: *c* = 0.7385:1:0.8346

o	$\frac{1}{2}$	112	Laurium, Greece	1
q	2	221	" "	1
u	$1\frac{3}{2}$	232	" "	1
r	$\frac{1}{2}\frac{3}{2}$	132	" "	1
s	$\frac{1}{2}2$	142	" "	1
t	$\frac{1}{2}\frac{5}{2}$	152	" "	1

1.—G. F. Herbert-Smith, 1900, Min. Mag., XII, p. 102.

Lautite

a: *b*: *c* = 0.69124:1:1.0452

c	0	001	Markirch, Alsace	1
o	$\infty\frac{3}{2}$	230	" "	1
v	$0\frac{3}{2}$	032	" "	1
f	$\frac{3}{5}0$	305	" "	1

e	10	101	Narkirch, Alsace	1
x	2	221	" "	1
t	$\frac{10}{13}$	10.10.13	" "	1
v	$1\frac{1}{4}$	414	" "	1
l	$1\frac{2}{3}$	323	" "	1
g	$1\frac{3}{2}$	232	" "	1
u	$\frac{1}{2}1$	112	" "	1
r	$2\frac{2}{3}$	623	" "	1
n	$2\frac{4}{3}$	643	" "	1
k	$\frac{5}{4}\ \frac{5}{6}$	15.10.12	" "	1
s	$\frac{25}{16}\ \frac{45}{32}$	50.45.32	" "	1
h	$\frac{2}{3}\ \frac{4}{3}$	243	" "	1
i	$\frac{9}{20}\ \frac{3}{2}$	9.30.20	" "	1
μ	$\frac{2}{3}\ \frac{10}{9}$	6.10.9	" "	1
ζ	$\frac{3}{10}3$	3.30.10	" "	1

1.—V. Dürrfeld, 1909, Mitth. d. geol. Land. Els.-Lothr., VII, p. 121.

Lawsonite

a: *b*: *c*=0.6652:1:0.7385

	o	001	Tiburon Peninsula, Calif.	1
	∞	110	" " "	1
	01	011	" " "	1
	04	041	" " "	1
r	2	221	" " "	2
s	3	331	" " "	2

1.—F. L. Ransome, 1895, Bull. Univ. Calif. (Geol.), I, p. 301.
2.—W. T. Schaller and W. F. Hillebrand, 1904, Amer. Journ. Sci., XVII, p. 195.

Leadhillite

a: *b*: *c*=0.8742:1:1.1122 *β*=89° 30′

j	4∞	410	Searchlite, Lincoln Co., Nev.	2
L	$\frac{4}{3}\infty$	430	Sardinia	1
v	$0\frac{1}{4}$	014	Tintic Dist., Utah	2
χ	$0\frac{1}{3}$	013	" " "	2
η	$0\frac{2}{3}$	023	" " "	2
Γ	$0\frac{3}{4}$	034	" " "	2
π	$0\frac{5}{3}$	053	" " "	2
φ	02	021	" " "	2
Ψ	$0\frac{5}{2}$	052	" " "	2
Λ	03	031	" " "	2

y	40	401	Sardinia	1
z	$\frac{3}{2}0$	302	“	1
C	$\frac{4}{3}0$	403	Searchlite, Lincoln Co., Nev.	2
f	-10	$\bar{1}01$	Sardinia	1
E	$-\frac{2}{3}0$	$\bar{2}03$	Tintic Dist., Utah	2
β	$\frac{1}{3}$	113	Sardinia	1
P	$-\frac{1}{2}$	$\bar{1}12$	Tintic Dist., Utah	2
x	-2	$\bar{2}21$	“ “ “	2
ϑ	$1\frac{3}{4}$	434	Sardinia	1
I	$1\frac{5}{2}$	252	Searchlite, Lincoln Co., Nev.	2
K	13	131	“ “ “	2
A	$-1\frac{5}{2}$	$\bar{2}52$	Tintic Dist., Utah	2
G	-13	$\bar{1}31$	“ “ “	2
S	-14	$\bar{1}41$	Searchlite, Lincoln Co., Nev.	2
V	$-1\frac{9}{2}$	$\bar{2}92$	“ “ “	2
Y	-21	$\bar{2}11$	Tintic Dist., Utah	2
τ	$-\frac{4}{7}1$	$\bar{4}77$	Sardinia	1
γ	$3\frac{1}{2}$	612	“	1
ζ	$-2\frac{1}{2}$	$\bar{4}12$	“	1
W	$-2\frac{3}{2}$	$\bar{4}32$	Tintic Dist., Utah	2
M	$-2\frac{5}{2}$	$\bar{4}52$	“ “ “	2
Z	-23	$\bar{2}31$	Searchlite, Lincoln Co., Nev.	2
R	-24	$\bar{2}41$	Tintic Dist., Utah	2
Σ	$-\frac{3}{2}\frac{1}{4}$	$\bar{6}14$	Searchlite, Lincoln Co., Nev.	2
σ	$-\frac{2}{3}\frac{1}{2}$	$\bar{4}36$	Sardinia	1
δ	$\frac{1}{2}\frac{1}{8}$	418	“	1
ϵ	$\frac{1}{2}\frac{1}{4}$	214	“	1
N	$\frac{1}{2}\frac{5}{8}$	458	Tintic Dist., Utah	2
Ψ	$\frac{1}{2}\frac{3}{4}$	234	Searchlite, Lincoln Co., Nev.	2
Ω	$\frac{1}{2}\frac{3}{2}$	132	“ “ “	2
μ	$-\frac{1}{2}\frac{1}{8}$	$\bar{4}18$	Sardinia	1
Q	$-\frac{1}{2}\frac{3}{4}$	$\bar{2}34$	Tintic Dist., Utah	2
T	$-\frac{1}{2}\frac{5}{4}$	$\bar{2}54$	“ “ “	2
U	$-\frac{1}{3}\frac{1}{2}$	$\bar{2}36$	“ “ “	2
Φ	$\frac{1}{3}\frac{5}{6}$	256	Searchlite, Lincoln Co., Nev.	2
λ	$-\frac{1}{3}\frac{1}{12}$	$\bar{4}.1.12$	Sardinia	1
B	$-\frac{1}{3}\frac{2}{3}$	$\bar{1}23$	Tintic Dist., Utah	2
O	$-\frac{7}{8}\frac{3}{4}$	$\bar{7}68$	Searchlite, Lincoln Co., Nev.	2

1.—E. Artini, 1890, Giorn. d. Min., I, p. 1.
2.—C. Palache and L. LaForge, 1909, Proc. Amer. Acad. Sci., XLIV, pp. 435, 452.

LEONITE

$a:b:c = 1.03855:1:1.23365 \quad \beta = 84° 50'$

c	0	001	Westeregeln, Leopoldshall, Ger.	1
b	0∞	010	" " "	1
μ	∞2	120	" " "	1
o	0⅓	013	" " "	1
n	01	011	" " "	1
w	10	101	Leopoldshall, Ger.	2
d	½0	102	Westeregeln, Leopoldshall, Ger.	1
δ	—½0	$\bar{1}02$	" " "	1
q	⅓	113	" " "	1
p	1	111	" " "	1
π	—1	$\bar{1}11$	" " "	1
	—21	$\bar{2}11$	Leopoldshall, Ger.	2

1.—C. A. Tenne, 1896, Zeitschr. Geol. Ges., XLVIII, p. 632.
2.—J. E. Strandmark, 1902, Zeitschr. f. Kryst., XXXVI, p. 461.

LEUCOPHOENICITE

$a:b:c = 1.1045:1:2.3155 \quad \beta = 76° 44'$

c	0	001	Franklin Furnace, N. J.	1
a	∞0	100	" " "	1
b	0∞	010	" " "	1
m	∞	110	" " "	1
s	∞2	120	" " "	1
o	01	011	" " "	1
f	0½	012	" " "	1
e	10	101	" " "	1
f	½0	102	" " "	1
x	⅓0	103	" " "	1
y	—⅓0	$\bar{1}03$	" " "	1
i	—½0	$\bar{1}02$	" " "	1
r	—10	$\bar{1}01$	" " "	1
l	12	121	" " "	1
n	—12	$\bar{1}21$	" " "	1
u	—½1	$\bar{1}22$	" " "	1
d	⅓ ⅔	123	" " "	1
h	—⅓ ⅔	$\bar{1}23$	" " "	1
q	¼ ½	124	" " "	1

1.—C. Palache, 1910, Amer. Journ. Sci., XXIX, p. 186.

Leucosphenite

$a:b:c = 0.5813:1:0.8501 \quad \beta = 86° 37'$

c	0	001	Narsarsuk, Greenland	1
a	∞0	100	" "	1
b	0∞	010	" "	1
m	∞	110	" "	1
n	∞3	130	" "	1
x	01	011	" "	1
d	10	101	" "	1
s	$\frac{1}{2}$	112	" "	1
p	—1	$\bar{1}11$	" "	1
g	$\frac{1}{3}1$	133	" "	1
r	$\frac{2}{3}2$	263	" "	1

1.—G. Flink, 1898, Medd. om Grönland, XIV, p. 236; 1901, idem, XXIV, p. 137.

Lewisite

Isometric

o	1	111	Minas Geraes, Brazil	1

1.—E. Hussak and G. T. Prior, 1895, Min. Mag., XI, p. 80.

Linarite

δ	$\frac{10}{9}0$	10.0.9	Eureka, Utah	3
φ	$-\frac{9}{10}0$	$\bar{9}.0.10$	" "	3
f	21	211	Broken Hill, N. S. Wales	4
φ	31	311	" " "	4
	$\frac{7}{8}\frac{1}{8}$	718	Sardinia	1
i	$-\frac{12}{11}\frac{2}{11}$	$\overline{12}.2.11$	Cumberland, Eng.	2
f	$\frac{5}{3}\frac{2}{3}$	523	Eureka, Utah	3

1.—L. Brugnatelli, 1897, Zeitschr. f. Kryst., XXVII, p. 307.
2.—G. Cesàro, 1905, Bull. Acad. Roy. Belg., p. 328.
3.—O. C. Farrington and E. W. Tillotson, 1908, Field Col. Mus. (Geol.), III, p. 148.
4.—A. Ondrej, 1910, Abh. d. böhm. Akad., XIX, No. 37.

Lorandite

$a:b:c = 1.329:1:1.0780 \quad \beta = 52° 27'$

c	0	001	Allchar, Macedonia	1
a	∞0	100	" "	1
b	0∞	010	" "	1
q	2∞	210	" "	1
ε	$\frac{3}{2}$∞	320	" "	1

m	∞	110	Allchar, Macedonia	1
e	∞2	120	" "	1
μ	∞3	130	" "	1
u	∞4	140?	" "	1
α	$0\frac{3}{4}$	034	" "	1
h	$0\frac{5}{4}$	054	" "	1
w	02	021	" "	1
β	$-\frac{2}{5}0$	$\bar{2}05$	" "	1
d	—10	$\bar{1}01$	" "	1
κ	—20	$\bar{2}01$	" "	1
v	$\frac{1}{2}$	112	" "	1
s	$-\frac{1}{2}$	$\bar{1}12$	" "	1
z	—1	$\bar{1}11$	" "	1
f	$1\frac{1}{2}$	212	" "	1
p	$-1\frac{1}{2}$	$\bar{2}12$	" "	1
n	$-1\frac{2}{5}$	$\bar{5}25$	" "	1
l	$\frac{1}{2}1$	122	" "	1
k	$-\frac{3}{2}1$	$\bar{3}22$	" "	1
r	—21	$\bar{2}11$	" "	1
g	$\frac{4}{5}\ \frac{2}{5}$	425	" "	1
γ	$\frac{7}{8}\ \frac{1}{2}$	748	" "	1
j	$\frac{5}{6}\ \frac{1}{2}$	536	" "	1
i	$\frac{3}{4}\ \frac{1}{2}$	324?	" "	1
y	$-\frac{3}{2}\ \frac{1}{2}$	$\bar{3}12$	" "	1
ζ	$-\frac{3}{4}\ \frac{1}{2}$	$\bar{3}24$	" "	1
η	$-\frac{1}{5}\ \frac{1}{2}$	$\bar{2}$.5.10?	" "	1
δ	$\frac{1}{8}\ \frac{13}{8}$	1.13.8	" "	1

1.—V. Goldschmidt, 1898, Zeitschr. f. Kryst., XXX, p. 272.

Lorenzenite

a: *b*: *c*=0.6042:1:0.3592

a	∞0	100	Narsarsuk, Greenland	1
b	0∞	010	" "	1
m	∞	110	" "	1
n	∞2	120	" "	1
x	∞12	1.12.0	" "	1
p	1	111	" "	1
o	23	231	" "	1

1.—G. Flink, 1898, Medd. om Grönland, XIV, p. 250; 1901, idem, XXIV, p. 130.

LUCINITE

$a:b:c = 0.8729:1:0.9788$

c	0	001	Lucin, Boxelder Co., Utah	1
a	∞0	100	" " "	1
d	∞2	120	" " "	1
e	$0\frac{1}{2}$	012	" " "	1
r	$\frac{1}{3}$	113	" " "	1
i	$\frac{1}{2}$	112	" " "	1
p	1	111	" " "	1
s	12	121	" " "	1

1.—W. T. Schaller, 1916, U. S. Geol. Surv., Bull. DCX, p. 56.

MAGNETITE

	$\frac{5}{2}\infty$	520	Acquacetosa, Italy	1
Ψ	$\frac{1}{7}$	117	Split Rock, Essex Co., N. Y.	3
r	$\frac{7}{3}$	773	Gammalkroppa, Sweden	2
	3	331	Acquacetosa, Italy	1
t	5	551	Gammalkroppa, Sweden	2
	43	431	Val Malenco, Lombardy, Italy	4
	13.9	1.39.1	" " "	4

1.—F. Zambonini, 1898, Riv. Min. Ital., XXI, p. 21.
2.—G. Flink, 1910, Ark. Kemi. Min. Geol., III. p. 1.
3.—H. P. Whitlock, 1910, N. Y. State Mus., Bull. CXL, p. 199.
4.—E. Tacconi, 1911, Mem. Acc. Linc., VIII, p. 736.

MALACHITE

$-\frac{4}{3}\ \frac{2}{3}$	$\bar{4}23$	Katanga, Belgian Congo, Africa	1
$-\frac{6}{5}\ \frac{4}{5}$	$\bar{6}45$	" " " "	2

1.—G. Cesàro, 1904, Bull. Ac. Belg., p. 1206
2.—V. Dürrfeld, 1912, Zeitschr. f. Kryst., XL, p. 582.

MANGANAXINITE

$a:b:c = 0.7797:1:0.9764 \quad \alpha = 91° 55' \quad \beta = 81° 51' \quad \gamma = 102° 53'$

𝔘	$1\frac{5}{4}$	454	Franklin Furnace, N. J.	1

*1.—G. Aminoff, 1919, Ark. Kemi. Min., Geol., VII, No. 17.

MANGANITE

$a:b:c = 0.8612:1:0.56289$

E	$\frac{3}{2}\infty$	320	Ilefeld, Harz, Ger.	1
L	$\frac{9}{4}\infty$	940	" " "	1

R	$\infty\frac{6}{5}$	560	Ilefeld, Harz, Ger.	1
U	$\infty\frac{9}{5}$	590	" " "	1
N	$\infty\frac{7}{2}$	270	Långban, Sweden	2
U	$\frac{1}{3}0$	103	Bölet, "	2
P	$\frac{1}{3}1$	133	" "	2
Q	$\frac{4}{3}3$	493	" "	2

1.—F. Zambonini, 1901, Zeitschr. f. Kryst., XXXIV, p. 225.
2.—G. Flink, 1910, Ark. Kemi. Min. Geol., III, No. 35, p. 96.

Mangantantatite

G	$\infty 2$	120	Amelia, Virginia	1
M	$\infty\frac{5}{2}$	250	" "	1
Z	$\infty 4$	140	" "	1
D	$\infty 9$	190	" "	1
B	$\infty 13$	1.13.0	" "	1
I	$\frac{3}{2}0$	302	" "	1
U	$\frac{4}{3}$	443	" "	1
N	$2\frac{3}{2}$	432	" "	1
X	26	261	" "	1

1.—O. I. Lee and E. T. Wherry, 1919, Amer. Miner., VII, p. 80.

Marrite

$a: b: c = 0.57634:1:0.47389 \quad \beta = 88° \, 45'$

c	0	001	Binnenthal, Switzerland	1
a	$\infty 0$	100	" "	1
b	0∞	010	" "	1
	$\frac{7}{2}\infty$	720	" "	1
	3∞	310	" "	1
	2∞	210	" "	1
	$\frac{3}{2}\infty$	320	" "	1
	∞	110	" "	1
	$\infty\frac{3}{2}$	230	" "	1
	$\infty 2$	120	" "	1
	$\infty 3$	130	" "	1
	$\infty 4$	140	" "	1
	$\infty 5$	150	" "	1
	$\infty 7$	170	" "	1
	$0\frac{1}{3}$	013	" "	1
	$0\frac{1}{2}$	012	" "	1
	$0\frac{2}{3}$	023	" "	1

	01	011	Binnenthal, Switzerland	1
	02	021	" "	1
	$0\frac{7}{3}$	073	" "	1
$\frac{8}{3}k$	$0\frac{8}{3}$	083	" "	1
	$0\frac{7}{2}$	072	" "	1
$4k$	04	041	" "	1
	20	201	" "	1
	1	111	" "	1
	$-\frac{1}{2}$	$\bar{1}12$	" "	1
	$-\frac{2}{3}$	$\bar{2}23$	" "	1
	—1	$\bar{1}11$	" "	1
$-5q$	15	151	" "	1
$-3q$	13	131	" "	1
	12	121	" "	1
	$1\frac{1}{2}$	212	" "	1
	—12	$\bar{1}21$	" "	1
	21	211	" "	1
	—21	$\bar{2}11$	" "	1
	$-\frac{2}{3}1$	$\bar{2}33$	" "	1
$-v$	$\frac{3}{2}\,\frac{1}{2}$	312	" "	1
$-w$	27	271	" "	1

1.—R. H. SOLLY, 1905, Min. Mag., XIV, p. 76; 1906, idem, XIV, p. 184.

MAUCHERITE

Tetragonal $a:c=1.1{:}078$

c	0	001	Eisleben, Thuringia, Ger.	1
t	$\frac{2}{3}$	223	" " "	1
v	$\frac{4}{3}$	443	" " "	1
l	2	221	" " "	1
g	$\frac{5}{2}$	552	" " "	1
h	3	331	" " "	1
b	4	441	" " "	1
q	6	661	" " "	1

1.—A. ROSATI, 1913, Rend. Accad. Linc., (V) XXII, p. 243.

MAUZELLITE

Isometric

a	∞0	100	Jacobsberg, Sweden	1
o	1	111	" "	1
m	31	311	" "	1

1.—HJ. SJÖGREN, 1895, Geol. Fören. Förh., XVII, p. 313.

Melanotekite

$a:b:c = 0.6338:1:0.9127$

a	∞0	100	Pajsberg, Sweden	1
b	0∞	010	Hillsboro, N. Mexico	2
m	∞	110	Pajsberg, Sweden	1
n	∞3	130	Hillsboro, N. Mexico	2
k	∞5	150	" "	2
d	10	101	Pajsberg, Sweden	1
o	1	111	" "	1
s	2	221	" "	1

1.—G. Nordenskiöld, 1894, Geol. Fören. Förh., XVI, p. 158.
2.—C. H. Warren, 1898, Amer. Journ. Sci., VI, p. 116.

Melanterite

l	∞2	120	Leona Heights, Alemeda Co., Calif.	1
d	$\frac{1}{2}$0	102	" " " "	1
k	$\frac{2}{3}$0	203	" " " "	1
x	$\frac{3}{2}$0	302	" " " "	1
q	20	201	" " " "	1
j	$\frac{9}{4}$0	904	" " " "	1
B	$\frac{3}{2}$	332	" " " "	1

1.—W. T. Schaller, 1903, Bull. Univ. Calif. (Geol.), III, p. 195.

Melilite

	20	201	Vesuvius, Italy	1

1.—Kaiser, 1899, Zeitschr. f. Kryst., XXXI, p. 24.

Meyerhofferite

$a:b:c = 0.7923:1:0.7750$ $\alpha = 89° 32'$ $\beta = 79° 19'$ $\gamma = 86° 52'$

c	0	001	Death Valley, Inyo Co., Calif.	1
a	∞0	100	" " " "	1
b	0∞	010	" " " "	1
r	8∞	810	" " " "	1
B	5∞	510	" " " "	1
s	3∞	310	" " " "	1
n	$\frac{5}{2}$∞	520	" " " "	1
q	2∞	210	" " " "	1
m	∞	110	" " " "	1
j	∞$\frac{5}{4}$	450	" " " "	1

A	$\infty\frac{5}{3}$	350	Death Valley, Inyo Co., Calif.	1
l	$\infty 2$	120	" " " "	1
k	$\infty\frac{7}{3}$	370	" " " "	1
h	-3∞	$\bar{3}10$	" " " "	1
w	$-\frac{4}{3}\infty$	$\bar{4}30$	" " " "	1
M	$-\infty$	$\bar{1}10$	" " " "	1
v	$-\infty\frac{5}{3}$	$\bar{3}50$	" " " "	1
t	10	101	" " " "	1
d	$\frac{12}{11}0$	12.0.11	" " " "	1
e	$\frac{7}{6}0$	706	" " " "	1
f	$\frac{6}{5}0$	605	" " " "	1
g	$\frac{5}{4}0$	504	" " " "	1
i	$\frac{7}{5}0$	705	" " " "	1
x	$\frac{3}{2}0$	302	" " " "	1
z	120	12.0.1	" " " "	1
y	-10	$\bar{1}01$	" " " "	1
p	1	111	" " " "	1

1.—W. T. SCHALLER, 1916, U. S. Geol. Surv., Bull. DCX, p. 41.

MIARGYRITE

T	$-\frac{1}{6}0$	$\bar{1}06$	Zacatecas, Mexico	1
W	$\frac{1}{12}0$	1.0.12	" "	1
V	$-\frac{1}{12}0$	$\bar{1}.0.12$	" "	1
U	$-\frac{1}{30}0$	$\bar{1}.0.30$	" "	1
K	$\frac{1}{2}$	112	" "	1
τ	$-1\frac{1}{8}$	$\bar{8}18$	Braunsdorf	2
Γ	$\frac{1}{3}1$	133	Přibram, Bohemia	2
j	$\frac{5}{3}1$	533	" "	2
Y	$\frac{11}{5}1$	11.5.5	" "	2
Q	$\frac{7}{3}1$	733	" "	2
Θ	$-\frac{5}{2}1$	$\bar{5}22$?	" "	2
H	41	411	Zacatecas, Mexico	1
P	$\frac{15}{2}1$	15.2.2	" "	1
Ω	$\frac{2}{5}\,\frac{3}{5}$	235?	Felsöbánya, Hungary	2
Φ	$-\frac{1}{3}\,\frac{1}{9}$	$\bar{3}19$	Braunsdorf	2
Z	$-3\frac{1}{3}$	$\bar{9}13$	Zacatecas, Mexico	1

1.—A. S. EAKLE, 1899, Zeitschr. f. Kryst., XXXI, p. 209.
*2.—V. ROSICKY, 1912, Abh. d. böhm. Akad., No. 1, p. 50.

Miersite

Isometric Tetrahedral

o	1	111	Broken Hill, N. S. Wales	1
o_1	—1	$\bar{1}11$	" " "	1

1.—L. J. Spencer, 1898, Nature, XLVII, p. 574.

Millerite

a: *c* = 1:0.3274

d	$\frac{7}{2}\infty$	$72\bar{9}0$	Orford, Quebec, Can.	1
f	$\frac{9}{4}\infty$	$9.4.\overline{13}.0$?	" " "	1
g	$\frac{31}{13}\infty$	$31.13.\overline{44}.0$?	" " "	1
p	02	$02\bar{2}1$	" " "	1
l	09	$90\bar{9}1$?	" " "	1
m	0.18	$0.18.\overline{18}.1$?	" " "	1
h	30	$30\bar{3}1$?	" " "	1
x	40	$40\bar{4}1$?	" " "	1
j	50	$50\bar{5}1$?	" " "	1
s	21	$21\bar{3}1$	" " "	1
u	$-\frac{4}{3}\,\frac{1}{3}$	$14\bar{5}3$	" " "	1
o	$\frac{7}{9}\,\frac{4}{9}$	$7.4.\overline{11}.9$?	" " "	1
q	$\frac{3}{2}\,\frac{1}{2}$	$61\bar{7}4$?	" " "	1
n	$\frac{5}{6}\,\frac{1}{3}$	$52\bar{7}6$?	" " "	1
w	$\frac{4}{5}\,\frac{2}{5}$	$42\bar{6}5$?	" " "	1

1.—C. Palache and H. O. Wood, 1904, Amer. Journ. Sci., XVIII, p. 343.

Mimetite

a: *c* = 1:0.7275

α	$\frac{3}{2}0$	$30\bar{3}2$	Tintic Dist., Utah	1
z	30	$30\bar{3}1$	" " "	1

1.—E. T. Wherry, 1918, Proc. U. S. Nat. Mus., LIV, p. 373.

Molybdenite

a: *c* = 1:1.9077

c	0	0001	Frankfort, Pa.	1
m	$\infty 0$	$10\bar{1}0$	" "	1
q	30	$30\bar{3}1$	" "	1
p	20	$20\bar{2}1$	" "	1
r	$\frac{5}{4}0$	$50\bar{5}4$	Kingston, Ont., Can.	2
o	10	$10\bar{1}1$	Frankfort, Pa.	1

t	$\frac{2}{3}0$	$20\bar{2}3$	Warren, N. H.	2
s	$\frac{2}{5}0$	$20\bar{2}5$	Kingston, Ont., Can.	2
u	$\frac{1}{4}0$	$10\bar{1}4$	Okanogan Co., Wash.	2

1.—A. P. Brown, 1896, Proc. Acad. Nat. Sci. Phila., p. 210.
2.—A. J. Moses, 1904, Amer. Journ. Sci., XVII, p. 359.

Monazite

g	$\infty\frac{3}{2}$	230		3
μ	$\infty 3$	130	Tintagel, Cornwall	1
ρ	$-\frac{1}{3}0$	$\bar{1}03$	Trundle, (Condobolin), N. S. Wales	2
	$-\frac{3}{2}0$	$\bar{3}02$?	King's Bluff, Olary, S. Australia	2
σ	-30	$\bar{3}01$	California Creek, Queensland	2
	$-\frac{1}{2}$	$\bar{1}12$		4
	$-\frac{1}{3}$	$\bar{1}13$		4
λ	$1\frac{1}{2}$	212	King's Bluff, Olary, S. Australia	2
	$\frac{1}{2}1$	122		4
Θ	$-\frac{1}{2}1$	$\bar{1}22$	Tintagel, Cornwall	1
η	$-\frac{1}{2}\frac{3}{2}$	$\bar{1}32$	" "	1

1.—A. S. Bowman, 1900, Min. Mag., XII, p. 349.
2.—C. Anderson, 1909, Rec. Austr. Mus., VII, p. 280; 1910, idem, VIII, p. 128.
3.—J. Scheielig, 1913, Norsk. Geol. Tidskrift, II, (III), p. 38.
4.—H. Ungemach, 1916, Bull. Soc. fr. Min., XXXIX.

Montroydite

$a: b: c = 0.6375:1:1.1977$

a	$\infty 0$	100	Terlingua, Texas	1
b	0∞	010	" "	1
Φ	5∞	510	" "	2
j	4∞	410	" "	2
ξ	3∞	310	" "	2
f	$\frac{3}{2}\infty$	320	" "	2
m	∞	110	" "	1
C	$\infty\frac{3}{2}$	230	" "	2
k	$\infty\frac{5}{3}$	350	" "	2
h	$\infty 2$	120	" "	2
l	$\infty 10$	1.10.0	" "	2
v	$0\frac{1}{2}$	012	" "	2
y	$0\frac{2}{3}$	023	" "	2
K	$0\frac{4}{5}$	045	" "	2
z	01	011	" "	2
G	$0\frac{3}{2}$	032	" "	2
L	02	021	" "	2

β	06	061	Terlingua, Texas	2
E	$\frac{1}{3}0$	103	" "	2
g	$\frac{1}{2}0$	102	" "	2
M	$\frac{2}{3}0$	203	" "	2
d	10	101	" "	1
n	$\frac{3}{2}0$	302	" "	2
q	20	201	" "	2
μ	30	301	" "	2
A	$\frac{1}{4}$	114	" "	2
B	$\frac{1}{3}$	113	" "	2
S	$\frac{1}{2}$	112	" "	1
D	$\frac{2}{3}$	223	" "	2
o	1	111	" "	1
i	2	221	" "	2
x	3	331	" "	1
δ	5	551	" "	2
s	$1\frac{3}{2}$	232	" "	2
Δ	$1\frac{1}{3}$	313	" "	2
α	$\frac{1}{3}1$	133	" "	2
t	$\frac{1}{2}1$	122	" "	1
π	$1\frac{2}{3}$	323	" "	2
U	$\frac{3}{4}1$	344	" "	2
r	21	211	" "	1
w	31	311	" "	1
W	41	411	" "	2
O	$\frac{2}{3}\frac{4}{3}$	243	" "	2
ξ	$\frac{2}{5}\frac{6}{5}$	265	" "	2
e	$\frac{1}{2}\frac{3}{2}$	132	" "	1
N	$\frac{2}{3}3$	263	" "	2
Z	$\frac{1}{2}\frac{7}{6}$	176	" "	2
Q	$\frac{2}{9}\frac{1}{3}$	239	" "	2
V	$\frac{1}{2}\frac{2}{5}$	5.4.10	" "	2
γ	$\frac{5}{2}2$	542	" "	2
P	$\frac{1}{2}\frac{1}{3}$	326	" "	2
φ	$3\frac{3}{2}$	632	" "	2
λ	$\frac{3}{7}\frac{1}{7}$	317	" "	2
ρ	$\frac{7}{13}\frac{3}{13}$	7.3.13	" "	2
ω	$\frac{5}{6}\frac{1}{12}$	10.1.12	" "	2

1.—A. J. Moses, 1903, Amer. Journ. Sci., XVI, p. 253.

*2.—W. F. Hillebrand and W. T. Schaller, 1909, U. S. Geol. Surv., Bull. XLVII, p. 405.

Mosesite

Isometric

$\infty 0$	100	Terlingua, Texas	2
1	111	" "	1
$\frac{1}{2}$	112	" "	2
$\frac{1}{4}$	114	" "	2
$\frac{1}{6}$	116	" "	2

1.—F. A. Canfield, W. F. Hillebrand and W. T. Schaller, 1910, Amer. Journ. Sci., XXX, p. 202.
2.—F. A. Canfield, 1913, School of Mines Quar., XXXIV, p. 276.

Mossite

Tetragonal $a: c = 1:0.6438$

c	0∞	001	Moss, Norway	1
a	$\infty 0$	100	" "	1
m	∞	110	" "	1
y	$\frac{3}{5}0$	305	" "	1
	10	101	" "	1
v	30	301	" "	1
o	1	111	" "	1
φ	$\frac{3}{5}\frac{9}{10}$	6.9.10	" "	1

1.—W. C. Brögger, 1897, Vidensk. Skrift., Math.-Nat. Klasse, No. 7.

Muscovite

o	—1	$\bar{1}11$	Mitchell Co., N. C.	1
ϵ	$-\frac{4}{7}$	$\bar{4}47$	" " "	1
$\dot{e}$	—3	$\bar{3}31$	" " "	1
v	—5	$\bar{5}51$	" " "	1
τ	$\frac{10}{3}$	10.10.3	" " "	1
	$\frac{29}{30}$	29.29.30	" " "	1
Θ	$-\frac{11}{3}$	$\overline{11}.11.3$	" " "	1
η	$-\frac{23}{6}$	$\overline{23}.23.6$	" " "	1

1.—H. Baumhauer, 1899, Zeitschr. f. Kryst., XXXII, p. 164.

Narsarsukite

Tetragonal $a: c = 1:0.52352$

c	0	001	Narsarsuk, Greenland	1
a	$\infty 0$	100	" "	1
n	2∞	210	" "	1

m	∞	110	Narsarsuk, Greenland	1
p	1	111	" "	1

1.—G. Flink, 1898, Medd. om Grönland, XIV, p. 234.

Nasonite

Hexagonal $a:c=1:1.3167$

m	$\infty 0$	$10\bar{1}0$	Franklin Furnace, N. J.	1
a	∞	$11\bar{2}0$	" " "	1
p	10	$10\bar{1}1$	" " "	1
x	$\frac{9}{2}0$	$90\bar{9}2$	" " "	1

1.—C. Palache, 1910, Amer. Journ. Sci., XXIX, p. 181.

Natrochalcite

$a:b:c=1.423:1:1.214 \quad \beta=61° 17'$

c	0	001	Chuquicamata, Chile	1
b	0∞	010	" "	1
m	∞	110	" "	1
p	1	111	" "	1
q	—1	$\bar{1}11$	" "	1
v	$\frac{1}{2}$	112	" "	1
u	2	221	" "	1
w	3	331	" "	1
x	—2	$\bar{2}21$	" "	1

1.—C. Palache and C. H. Warren, 1908, Amer. Journ. Sci., XXIV, p. 345.

Natro-davyne

Hexagonal $a:c=1:0.8360$

c	0	0001	Vesuvius, Italy	1
m	$\infty 0$	$10\bar{1}0$	" "	1
d	3∞	$31\bar{4}0$	" "	1
n	2∞	$21\bar{3}0$	" "	1
a	∞	$11\bar{2}0$	" "	1
g	$\frac{2}{5}0$	$20\bar{2}5$	" "	1
q	$\frac{1}{2}0$	$10\bar{1}2$	" "	1
u	$\frac{4}{7}0$	$40\bar{4}7$	" "	1
t	$\frac{2}{3}0$	$20\bar{2}3$	" "	1
p	10	$10\bar{1}1$	" "	1
f	$\frac{4}{3}0$	$40\bar{4}3$	" "	1
z	20	$20\bar{2}1$	" "	1
v	30	$30\bar{3}1$	" "	1

i	$\frac{10}{3}0$	$10.0.\overline{10}.3$	Vesuvius, Italy	1
x	40	$40\bar{4}1$	" "	1
y	60	$60\bar{6}1$	" "	1
l	80	$80\bar{8}1$	" "	1
r	10.0	$10.0.\overline{10}.1$	" "	1
s	1	$11\bar{2}1$	" "	1

1.—F. Zambonini, 1910, Mem. R. Accad. d. Sc. Napoli, XIV, p. 188.

Natrojarosite

Hexagonal Rhombohedral $a: c = 1:1.104$

c	0	0001	Esmeralda Co., Nev.	1
r	10	$10\bar{1}1$	" " "	1
s	—20	$02\bar{2}1$	" " "	1

1.—W. F. Hillebrand and S. L. Penfield, 1905, Zeitschr. f. Kryst., XXXVI, p. 546.

Natrolite

j	$\frac{1}{2}$	112	Langesundfjord, Norway	1
k	$\frac{3}{5}$	335	" "	1
g	$\frac{3}{4}$	334	" "	1
ξ	$\frac{16}{17}$	16.16.17	" "	1
α	$1\frac{3}{5}$	535	San Benito Co., Calif.	2
p	36	361	Langesundfjord, Norway	1
ε	$\frac{4}{3}\,\frac{1}{2}$	836	" "	1

1.—F. Zambonini, 1901, Zeitschr. f. Kryst., XXXIV, p. 549.
2.—B. Ježek, 1909, Abh. d. böhm. Akad.

Nephelite

	51	5161	Vesuvius, Italy	1

1.—E. Kaiser, 1899, Zeitschr. f. Kryst., XXXI, p. 28.

Neptunite

$a: b: c = 1.3164:1:0.8076 \quad \beta = 64° \, 22'$

c	0	001	Narsarsuk, Greenland	1
a	∞0	100	" "	1
b	0∞	010	" "	1
m	∞	110	" "	1
f	—10	$\bar{1}01$	Julianehaab, "	2
e	—20	$\bar{2}01$	Narsarsuk, "	1
d	—30	$\bar{3}01$	" "	1
s	1	111	" "	1

h	$\frac{8}{7}$	887	San Benito Co., Calif.	6
v	2	221	Julianehaab, Greenland	2
i	$-\frac{1}{2}$	$\bar{1}12$	" "	2
o	—1	$\bar{1}11$	Narsarsuk, "	1
r	—2	$\bar{2}21$	Julianehaab, "	2
x	31	311	" "	2
p	—31	$\bar{3}11$	" "	3
γ	$-\frac{5}{2}1$	$\bar{5}22$	San Benito Co., Calif.	5
g	—21	$\bar{2}11$	" " "	4
u	$-\frac{5}{2}\frac{1}{2}$	$\bar{5}12$	Narsarsuk, Greenland	1
q	$-\frac{7}{2}\frac{1}{2}$	$\bar{7}12$	Julianehaab, "	3

1.—G. Flink, 1893, Geol. Fören. Förh., XV, p. 196.
2.—G. Flink, 1898, Medd. om Grönland, XIV, p. 232.
3.—A. Wallenstrom. 1905, Geol. Fören. Förh., XXVII, p. 149.
4.—W. E. Ford, 1909, Amer. Journn. Sci., XXVII, p. 235.
5.—C. Hlawatach, 1909, Min. Mitth., XXVIII, p. 293.
*6.—W. T. Schaller, 1911, Zeitschr. f. Kryst., XLVII, p. 556.

Niccolite

$a : c = 1 : 0.9508$

a	∞	$11\bar{2}0$	Mansfield, Saxony, Ger.	1
n	∞7	$17\bar{8}0$	Riechelsdorf, Hesse, "	2
π	$\frac{1}{5}0$	$10\bar{1}5$	Mansfield, Saxony, "	1
w	$\frac{3}{5}0$	$30\bar{3}5$	" " "	1
x	$\frac{3}{4}0$	$30\bar{3}4$	Riechelsdorf, Hesse, "	2
o	$\frac{5}{3}0$	$50\bar{5}3$	Mansfield, Saxony, "	1
z	$\frac{17}{10}0$	$17.0.\overline{17}.10$	" " "	1
s	$\frac{9}{5}0$	$90\bar{9}5$	" " "	1
l	20	$20\bar{2}1$	Artificial	3
α	$\frac{23}{10}0$	$23.0.\overline{23}.10$	Mansfield, Saxony, Ger.	1
q	$\frac{12}{5}0$	$12.0.\overline{12}.5$	" " "	1
f	$\frac{8}{3}0$	$80\bar{8}3$	Artificial	3
u	30	$30\bar{3}1$	Mansfield, Saxony, Ger.	1
t	$\frac{16}{5}0$	$16.0.\overline{16}.5$	" " "	1
v	40	$40\bar{4}1$	" " "	1
γ	$\frac{22}{5}0$	$22.0.\overline{22}.5$	" " "	1
y	$\frac{9}{2}0$	$90\bar{9}2$	Riechelsdorf, Hesse, Ger.	2
v	$-\frac{9}{2}0$	$09\bar{9}2$	" " "	2
ς	$-\frac{3}{2}0$	$03\bar{3}2$	" " "	2
ξ	$-\frac{3}{4}0$	$03\bar{3}4$	" " "	2

1.—A. SACHS, 1902, Sitz. Ber. Akad., p. 856.
2.—V. DÜRRFELD, 1911, Zeitschr. f. Kryst., XLIX, p. 477.
3.—A. ROSATI, 1913, Rend. Accad. Linc., (5) XXII, (II), p. 243.

NORTHUPITE

Isometric

o	1	111	Borax Lake, San Bernardino Co., Calif.	1

1.—W. M. FOOTE, 1895, Amer. Journ. Sci., L, p. 480.

OCTAHEDRITE

G	$\frac{1}{4}0$	104		7
R	$\frac{3}{10}0$	3.0.10	Binnenthal, Switzerland	6
	$\frac{1}{2}0$	102	Unknown Locality	15
E	$\frac{2}{3}0$	203?	Binnenthal, Switzerland	6
	$\frac{5}{43}$	5.5.43	" "	8
	$\frac{5}{29}$	5.5.29	" "	8
	$\frac{2}{11}$	2.2.11	Pregratten, "	3
Δ	$\frac{2}{9}$	229	Binnenthal, "	13
M	$\frac{3}{8}$	338	Binnenthal, Switzerland and Jequilinhuaha Riv., Brazil	10+11
	$\frac{4}{9}$	449	Mt. St. Vincent, Brabant, Belgium	9
T	$\frac{7}{13}$	7.7.13		14
	$\frac{9}{10}$	9.9.10	Votawa, Pisek, Bohemia	2
U	$\frac{7}{6}$	776		14
Φ	$\frac{4}{3}$	443	Binnenthal, Switzerland	13
	$\frac{5}{3}$	553	" "	5
H	$\frac{3}{2}$	332	" "	6
	$\frac{11}{3}$	11.11.3	" "	4
	5	551	" "	4
S	$\frac{13}{2}$	13.13.2		14
W	$\frac{19}{2}$	19.19.2		14
	$\frac{1}{3}\frac{1}{6}$	216	Unknown Locality	15
σ	$\frac{1}{5}\frac{1}{10}$	2.1.10	Pregratten. Switzerland	3
s	$\frac{5}{19}\frac{1}{19}$	5.1.19	" "	3
T	$\frac{11}{12}\frac{1}{6}$	11.2.12	Binnenthal, "	6
L	$5\frac{11}{5}$	25.11.5	" "	6
	$\frac{1}{3}\frac{1}{10}$	10.3.30	Beaume, Oulix, Piedmont, Italy	12
σ	$\frac{1}{4}\frac{3}{44}$	11.3.44?	Bourg d'Oisans, Isère, France	1
	$\frac{9}{10}\frac{18}{25}$	45.36.50	Binnenthal, Switzerland	8

	$\frac{9}{2}\,\frac{3}{14}$	63.3.14	Binnenthal, Switzerland	8
	$9\frac{3}{20}$	180.3.20	" "	8
	$7\frac{3}{5}$	35.3.5	" "	5
	$8\frac{3}{5}$	40.3.5	" "	5
	$\frac{24}{7}2$	24.14.7	" "	5

1.—K. Busz, 1892, Zeitschr. f. Kryst., XX, p. 529.
2.—Krejci, 1904, Abh. d. böhm. Akad., No. 3, p. 13.
3.—O. Pohl, 1902, Min. u. petro. Mitth., XXII, p. 473.
4.—H. Baumhauer, 1903, Centralb. f. Min., p. 672.
5.—R. W. Solly, 1904, Min. Mag., XIV, p. 16.
6.—F. Millosevich, 1905, Rend. Accad. Linc., XIV, p. 92.
7.—C. Hintze, 1906, Handbuch Min., I, p. 1563.
8.—R. W. Harre, 1906, Zeitschr. f. Kryst., XLII, p. 280.
9.—W. Prinz, 1907, Bull. Ac. Belg., p. 706.
10.—G. Cesàro, 1907, Bull. Ac. Belg., p. 336.
11.—O. C. Farrington and E. W. Tillotson, 1908, Field Col. Mus. (Geol.), III, No. 7, p. 150.
12.—L. Colomba, 1909, Riv. Min. Ital., XXXVIII, p. 50.
13.—N. Henglein, 1909, Verh. d. Ver. Heidelberg, N. F., X, p. 48.
14.—J. Schetelig, 1913, Norsk. Geol. Tidsskrift, II (III), p. 38.
15.—H. Buttgenbach, 1913, Bull. Soc. Géol. Belg., XL, p. 378.

Olivenite

d	$0\frac{2}{5}$	025	Tintic Dist., Utah	1
s	$0\frac{3}{4}$	034	" " "	1

1.—O. C. Farrington and E. W. Tillotson, 1908, Field Col. Mus. (Geol.), III, p. 152.

Orpiment

$a : b : c = 0.5962 : 1 : 0.6650 \quad \beta = 90° 41'$

a	$\infty 0$	100	Alchar, Macedonia	1
b	0∞	010	" "	1
s	$\frac{3}{2}\infty$	320	" "	1
m	∞	110	" "	1
u	$\infty 2$	120	" "	1
g	$\infty 3$	130	" "	1
h	$\infty 6$	160	" "	1
l	$0\frac{2}{3}$	023	Mercur, Utah	2
	$\frac{1}{3}0$	103	Alchar, Macedonia	1
o	10	101	" "	1
d	$-\frac{1}{3}0$	$\bar{1}03$	Mercur, Utah	2
q	$-\frac{4}{9}$	$\bar{4}49$	Alchar, Macedonia	1
x	$-1\frac{2}{3}$	$\bar{3}23$	" "	1

ν	$-1\frac{4}{3}$	$\bar{3}43$	Alchar, Macedonia	1
β	$-1\frac{3}{2}$	$\bar{2}32$	“ “	1
y	$-1\frac{8}{5}$	$\bar{5}85$	“ “	1
f	$-1\frac{5}{2}$	$\bar{2}52$	“ “	1
v	-12	$\bar{1}21$	“ “	1
n	$-\frac{1}{3}1$	$\bar{1}33$	Mercur, Utah	2
	$\frac{1}{3}\frac{4}{3}$	143	Alchar, Macedonia	1
i	$\frac{2}{3}\frac{4}{3}$	243	“ “	1
Q	$\frac{1}{3}\frac{1}{2}$	236	“ “	1
z	$\frac{5}{3}\frac{2}{3}$	523	“ “	1
k	$-\frac{1}{3}\frac{2}{3}$	$\bar{1}23$	“ “	1
t	$-7\frac{20}{3}$	$\overline{21}.20.3$	“ “	1
χ	$-\frac{4}{3}\frac{2}{3}$	$\bar{4}23$	“ “	1

1.—S. Stephanović, 1904, Zeitschr. f. Kryst., XXXIX, p. 14.
2.—O. C. Farrington and E. W. Tillotson, 1908, Field Col. Mus. (Geol.), III, p. 154.

Orthoclase

	3∞	310	Elba, Italy	2
ζ	2∞	210	Schwartzenstein, Tyrol	1
	$\frac{7}{4}\infty$	740	Elba, Italy	2
	$\infty\frac{20}{7}$	7.20.0	“ “	2
ω	$0\frac{1}{7}$	017	Schwartzenstein, Tyrol	1
	$-\frac{5}{6}0$	$\bar{5}06$	Elba, Italy	2
	$-\frac{14}{15}0$	$\overline{14}.0.15$	“ “	2
χ	$-\frac{39}{38}0$	$\overline{39}.0.38$	Schwartzenstein, Tyrol	1
	$-\frac{13}{12}0$	$\overline{13}.0.12$	Elba, Italy	2
	$-\frac{16}{13}0$	$\overline{16}.0.13$	“ “	2
	-12.0	$\overline{12}.0.1$	“ “	2
a_x	3	331	Montalban, Nice, France	3
	$-\frac{5}{11}$	$\bar{5}.5.11$	Elba, Italy	2
	$-\frac{14}{15}$	$\overline{14}.14.15$	“ “	2
	$-1\frac{3}{7}$	$\bar{7}37$	“ “	2
b_y	$\frac{3}{2}\frac{9}{2}$.	392	Montalban, Nice, France	3
	$-\frac{11}{10}\frac{1}{10}$	$\overline{11}.1.10$	Elba, Italy	2
	-97	$\bar{9}71$	“ “	2

1.—A. Cathrein, 1888, Min. u. petro. Mitth., X, p. 524.
2.—G. Bartalini, 1901, Acc. Soc. Med. Ferrara.
3.—A. Rosati, 1915, Rend. Accad. Linc., XXIV, p. 39.

Parahopeite

$a : b : c = 0.7729 : 1 : 0.7124 \quad \alpha = 93° 22' \quad \beta = 91° 12' \quad \gamma = 91° 22'$

0	001	Broken Hill, Rhodesia, Africa	1
∞0	100	" " " "	1
0∞	010	" " " "	1
3∞	310	" " " "	1
∞	110	" " " "	1
∞2	120	" " " "	1
∞6	160	" " " "	1
—∞	$1\bar{1}0$	" " " "	1
—∞2	$1\bar{2}0$	" " " "	1
—∞6	$1\bar{6}0$	" " " "	1
02	021	" " " "	1
01	011	" " " "	1
$0\frac{2}{3}$	023	" " " "	1
—01	$0\bar{1}1$	" " " "	1
$—0\frac{1}{2}$	$0\bar{1}2$	" " " "	1
$\frac{2}{3}0$	203	" " " "	1
1	111	" " " "	1
$1\bar{1}$	$1\bar{1}1$	" " " "	1
$\bar{1}1$	$\bar{1}11$	" " " "	1
$\bar{1}$	$\bar{1}\bar{1}1$	" " " "	1
$\frac{1}{2}\,\bar{\frac{1}{2}}$	$1\bar{1}2$	" " " "	1
13	131	" " " "	1
$\bar{1}\bar{3}$	$\bar{1}\bar{3}1$	" " " "	1
$1\bar{2}$	$1\bar{2}1$	" " " "	1
$\bar{1}2$	$\bar{1}21$	" " " "	1
$\frac{3}{2}1$	322	" " " "	1
23	231	" " " "	1
$\frac{4}{3}\,\frac{2}{3}$	423	" " " "	1
$\frac{5}{2}\,\bar{\frac{1}{2}}$	$5\bar{1}2$	" " " "	1
$\frac{1}{3}\,\bar{\frac{4}{3}}$	$1\bar{4}3$	" " " "	1
$\frac{1}{2}\bar{3}$	$1\bar{6}2$	" " " "	1
$\bar{2}7$	$\bar{2}71$	" " " "	1

1.—A. Ledoux, T. L. Walker, and A. C. Wheatley, 1917, Min. Mag., XVIII, p. 101.

Paralaurionite

$a : b : c = 2.7036 : 1 : 1.8019 \quad \beta = 62° 47'$

c	0	001	Laurium, Greece	1
a	∞0	100	" "	1

	0∞	010	Sierra Gorda, Chile [Rafaelite (010)]	2
m	∞	110	Laurium, Greece	1
	40	410	Sierra Gorda, Chile [Rafaelite (201)]	2
	20	210	“ “ “ [“ (101)]	2
d	10	101	Laurium, Greece	1
	$-\frac{2}{3}0$	$\bar{2}03$	Sierra Gorda, Chile [Rafaelite ($\bar{1}03$)]	2
h	—20	$\bar{2}01$	Laurium, Greece	1
k	—40	$\bar{4}01$	“ “	1
l	—60	$\bar{6}01$	“ “	1
p	1	111	“ “	1
	41	411	Sierra Gorda, Chile [Rafaelite (432)]	2

1.—G. F. Herbert-Smith, 1899, Min. Mag., XII, pp. 108, 183.
2.—A. Arzruni, 1899, Zeitschr. f. Kryst., XXXI, p. 229.

Paratacamite

Hexagonal Rhombohedral $a:c=1:1.0248$

c	0	0001	Sierra Gorda, San Cristobal, Chile	1
a	∞	$11\bar{2}0$	“ “ “ “ “	1
ω	$\frac{2}{5}0$	$20\bar{2}5$	“ “ “ “ “	1
w	$\frac{4}{7}0$	$40\bar{4}7$	“ “ “ “ “	1
v	$\frac{7}{13}0$	$\bar{7}.0.\bar{7}.13$	“ “ “ “ “	1
r	10	$10\bar{1}1$	“ “ “ “ “	1
e	$-\frac{1}{2}0$	$01\bar{1}2$	“ “ “ “ “	1
f	—20	$02\bar{2}1$	“ “ “ “ “	1
l	24	$24\bar{6}1$	“ “ “ “ “	1

1.—G. F. Herbert-Smith, 1906, Min. Mag., XIV, p. 120.

Parisite

Hexagonal Rhombohedral $a:c=1:1.9363$

b	$\frac{4}{15}$	$4.4.\bar{8}.15$	Quincy, Mass.	3
i	$\frac{1}{3}$	$11\bar{2}3$	“ “	3
l	$\frac{11}{27}$	$11.11.\overline{22}.27$	“ “	3
n	$\frac{5}{12}$	$5.5.\overline{10}.12$	“ “	3
t	$\frac{4}{9}$	$44\bar{8}9$	“ “	3
u	$\frac{5}{9}$	$5.5.\overline{10}.9$	“ “	3
r	$\frac{2}{3}$	$22\bar{4}3$	Narsarsuk, Greenland	1
	$\frac{5}{6}$	$5.5.\overline{10}.6$	Muso, Colombia, S. America	2
s	$\frac{4}{3}$	$44\bar{8}3$	Narsarsuk, Greenland	1
	$\frac{5}{3}$	$5.5.\overline{10}.3$	Muso, Colombia, S. America	2
A	$\frac{1}{4}0$	$10\bar{1}4$	Quincy, Mass.	3

B	$\frac{4}{15}0$	$4.0.\bar{4}.15$	Quincy, Mass.	3
C	$\frac{3}{11}0$	$3.0.\bar{3}.11$	" "	3
D	$\frac{3}{10}0$	$3.0.\bar{3}.10$	" "	3
E	$\frac{5}{16}0$	$5.0.\bar{5}.16$	" "	3
F	$\frac{1}{3}0$	$10\bar{1}3$	" "	3
G	$\frac{5}{13}0$	$5.0.\bar{5}.13$	" "	3
H	$\frac{2}{5}0$	$20\bar{2}5$	" "	3
i	$\frac{8}{11}0$	$8.0.\bar{8}.11$	" "	3
J	$\frac{7}{8}0$	$70\bar{7}8$	" "	3
	$\frac{6}{5}0$	$60\bar{6}5$		4
L	$\frac{5}{4}0$	$50\bar{5}4$	Quincy, Mass.	3
M	$\frac{4}{3}0$	$40\bar{4}3$	" "	3
N	$\frac{11}{6}0$	$11.0.\overline{11}.6$	" "	3
P	$\frac{11}{4}0$	$11.0.\overline{11}.4$	" "	3
Q	$\frac{10}{3}0$	$10.0.\overline{10}.3$	" "	3
R	40	$40\bar{4}1$	" "	3
T	50	$50\bar{5}1$	" "	3
V	60	$60\bar{6}1$	" "	3
β	$-\frac{4}{15}0$	$0.4.\bar{4}.15$	" "	3
γ	$-\frac{2}{7}0$	$02\bar{2}7$	" "	3
δ	$-\frac{3}{10}0$	$0.3.\bar{3}.10$	" "	3
ϵ	$-\frac{9}{25}0$	$0.9.\bar{9}.25$	" "	3
ζ	$-\frac{1}{2}0$	$01\bar{1}2$	" "	3
θ	$-\frac{5}{8}0$	$05\bar{5}8$	" "	3
η	$-\frac{6}{5}0$	$06\bar{6}5$	Muso, Colombia, S. America	2
λ	$-\frac{5}{4}0$	$05\bar{5}4$	Quincy, Mass.	3
h	$-\frac{3}{2}0$	$03\bar{3}2$	Muso, Colombia, S. America	2
μ	-20	$02\bar{2}1$	" " "	2
π	$-\frac{5}{2}0$	$05\bar{5}2$	" " "	3
σ	-30	$03\bar{3}1$	" " "	3
φ	$-\frac{7}{2}0$	$07\bar{7}2$	" " "	3
ρ	-40	$04\bar{4}1$	" " "	3
ψ	-50	$05\bar{5}1$	" " "	3
ω	-60	$06\bar{6}1$	" " "	3
	-80	$08\bar{8}1$		4
y	$\frac{4}{11}\ \frac{2}{11}$	$4.2.\bar{6}.11$	Quincy, Mass.	3

1.—G. Flink, 1898, Medd. om Grönland, XIV, p. 236.
2.—G. Cesàro, 1907, Bull. Ac. Belg., p. 321.
3.—C. Palache and C. H. Warren, 1911, Amer. Journ. Sci., XXXI, p. 533.
4.—H. Ungemach, 1916, Bull. Soc. fr. Min., p. 39.

PEARCEITE

$a : b : c = 1.7309:1:1.6199 \quad \beta = 89° 51'$

c	0	001	Marysvale, Mont.	1
a	∞0	100	" "	1
b	0∞	010	" "	1
l	3∞	310	" "	1
m	∞	110	" "	1
h	∞3	130	" "	1
k	02	021	" "	1
d	$\frac{1}{2}0$	102	" "	1
n	10	101	" "	1
t	20	201	" "	1
e	40	401	" "	1
f	60	601	" "	1
f°	—60	$\bar{6}01$	" "	1
e°	—40	$\bar{4}01$	" "	1
t°	—20	$\bar{2}01$	" "	1
n°	—10	$\bar{1}01$	" "	1
Δ	$-\frac{2}{3}0$	$\bar{2}03$	" "	1
o	$\frac{1}{4}$	114	" "	1
r	$\frac{1}{2}$	112	" "	1
p	1	111	" "	1
v	$\frac{3}{2}$	332	" "	1
s	2	221	" "	1
u	3	331	" "	1
u°	—3	$\bar{3}31$	" "	1
s°	—2	$\bar{2}21$	" "	1
v°	$-\frac{3}{2}$	$\bar{3}32$	" "	1
p°	—1	$\bar{1}11$	" "	1
r°	$-\frac{1}{2}$	$\bar{1}12$	" "	1
q°	$-\frac{1}{3}$	$\bar{1}13$	" "	1
o°	$-\frac{1}{4}$	$\bar{1}14$	" "	1
y	$1\frac{1}{3}$	313	" "	1
x	31	311	" "	1
z	$\frac{1}{4}\ \frac{1}{12}$	3.1.12	" "	1

1.—S. L. PENFIELD, 1896, Amer. Journ. Sci., II, p. 17.

Pectolite

h	$\frac{5}{4}\infty$	540	Bergen Hill, N. J.	1
y	$\frac{1}{25}0$	1.0.25	" " "	1
x	$\frac{1}{2}0$	102	" " "	1

1.—A. J. Moses, 1901, Amer. Journ. Sci., XII, p. 99.

Penfieldite

Hexagonal $a:c=1:0.8967$

c	0	0001	Laurium, Greece	1
m	$\infty 0$	$10\bar{1}0$	" "	1
p	$\frac{1}{2}$	$11\bar{2}2$	" "	1

1.—S. L. Penfield, 1894, Amer. Journ. Sci., XLVIII, p. 114.

Phenacite

$a:c=1:0.6611$

d_1	$\frac{1}{2}0$	$10\bar{1}2$	Minas Geraes, Brazil	3
y_1	$-\frac{1}{5}1$	$15\bar{6}5$	East Africa	1
γ	$-\frac{1}{2}\,\frac{7}{2}$	$17\bar{8}2$	Minas Geraes, Brazil	4
f'	$-\frac{5}{9}\,\frac{13}{18}$	$10.13.\overline{23}.18$	" " "	2
b	$\frac{3}{4}\,\frac{1}{2}$	$32\bar{5}4$	" " "	2
b_1	$-\frac{1}{2}\,\frac{3}{4}$	$23\bar{5}4$	" " "	2
e	$\frac{4}{7}\,\frac{3}{7}$	$43\bar{7}7$	" " "	2
v_1	$\frac{2}{3}$	$22\bar{4}3$r	" " "	3

1.—L. J. Spencer, 1906, Min. Mag., XIV, p. 178.
2.—K. Zimanyi, 1909, Zeitschr. f. Kryst., XLVII, p. 97.
3.—F. Slavic, 1909, Bull. Ac. Böhm., XIV.
4.—V. Goldschmidt and P. Schröder, 1909, Zeitschr. f. Kryst., XLVI, p. 465.

Phosgenite

ϵ	$\frac{1}{2}0$	102	Monteponi, Sardinia	1
	21	211	San Giovanni, "	2
	$\frac{13}{3}\,\frac{7}{3}$	13.7.3	" "	2

1.—F. Millosevich, 1909, Rend. Accad. Linc., XVIII, (2) p. 116.
2.—G. Cesàro, 1912, Bull. Acad. Roy. Belg., p. 381.

Piedmontite

m_x	$\frac{1}{2}0$	102	St. Marcel, Piedmont, Italy	1
	$-\frac{1}{7}0$	$\bar{1}07$	" " "	1
l	-20	$\bar{2}01$	" " "	1

1.—F. Zambonini. 1902, Zeitschr. f. Kryst., XXXVIII, p. 15.

Pisanite

a	∞0	100	Leona Heights, Almeda Co., Calif.	1
h	2∞	210	" " " "	1
f	$\frac{3}{2}$∞	320	" " " "	1
l	∞2	120	" " " "	1
v	10	101	" " " "	1
r	1	111	" " " "	1
E	—$\frac{2}{3}$	$\bar{2}23$	" " " "	1
D	—2	$\bar{2}21$	" " " "	1
σ	—12	$\bar{1}21$	" " " "	1

1.—W. T. Schaller, 1903, Bull. Univ. Calif. (Geol), III, p. 199.

Pirssonite

a: b: c = 0.5662:1:0.3019

b	0∞	010	Borax Lake, San Bernardino Co., Calif.	1
m	∞	110	Borax Lake, San Bernardino Co., Calif.	1
p	1	111	Borax Lake, San Bernardino Co., Calif.	1
p_1	—1	$11\bar{1}$	Borax Lake, San Bernardino Co., Calif.	1
e	13	131	Borax Lake, San Bernardino Co., Calif.	1
x	31	311	Borax Lake, San Bernardino Co., Calif.	1

1.—J. H. Pratt, 1896, Amer. Journ. Sci., II, p. 126.

Plagionite

a: b: c = 1.1305:1:0.8422 β = 107° 15′

b	0∞	010	Wolfsberg, Harz Germany	1
γ	3∞	310	Oruro, Bolivia	2
m	∞	110	Wolfsberg, Harz, Germany	1
ξ	0$\frac{2}{3}$	023	Oruro, Bolivia	2
ζ	0$\frac{4}{5}$	045	" "	2
Ω	01	011	" "	2
η	0$\frac{4}{3}$	043	" "	2
u	10	101	" "	2
f	—10	$\bar{1}01$	Wolfsberg, Harz, Germany	1

g	—20	$\bar{2}01$	Wolfsberg, Harz, Germany	1
	—$\frac{7}{3}$0	$\bar{7}03$?	" " "	1
	—70	$\bar{7}01$?	" " "	1
L	$\frac{1}{3}$	113	Oruro, Bolivia	2
L_1	$\frac{4}{11}$	4.4.11	Wolfsberg, Harz, Germany	1
l	$\frac{2}{3}$	223	" " "	1
	—$\frac{1}{4}$	$\bar{1}14$	" " "	1
	—$\frac{2}{5}$	$\bar{2}25$	" " "	1
t	—$\frac{4}{5}$	$\bar{4}45$	" " "	1
k	—1	$\bar{1}11$	" " "	1
N	—$\frac{4}{3}$	$\bar{4}43$	Oruro, Bolivia	2
S	10.1	10.1.1	" "	2
σ	—31	$\bar{3}11$	" "	2
τ	—51	$\bar{5}11$	" "	2
α	$\frac{3}{2}$ $\frac{1}{2}$	312	" "	2
β	2$\frac{2}{3}$	623	" "	2
Ψ	62	621	" "	2
Ξ	—62	$\bar{6}21$	" "	2
v	84	841	" "	2
ω	—$\frac{8}{3}$ $\frac{4}{3}$	$\bar{8}43$	" "	2
V	$\frac{2}{7}$ $\frac{6}{7}$	267	" "	2
ε	—10.2	$\overline{10}.2.1$	" "	2

1.—L. J. Spencer, 1897, Min. Mag., XI, p. 192.
2.—F. Zambonini, 1912, Riv. Min. Ital., XLI, p. 38.

Plumbojarosite

Hexagonal Rhombohedral $a: c = 1:1.216$

c	0	0001	Cooks Peak, N. Mex.	1
r	10	$10\bar{1}1$	" " "	1
s	—20	$02\bar{2}1$	" " "	1

1.—W. F. Hillebrand and W. T. Schaller, 1905, U. S. Geol. Surv., Bull. CCLXII, p. 35.

Podolite (Dahllite?)

Hexagonal $a: c = ?$

c	0	0001	Uschitza River, Podolien, Russia	1
m	∞0	$10\bar{1}0$	" " " "	1

1.—W. Tschirwinsky, 1907, Centralbl. f. Min., p. 279.

Polybasite

$a : b : c = 1.7309 : 1 : 1.5796 \quad \beta = 90°$

c	0	001	Ouray, Colo.	1
l	3∞	310	" "	1
m	∞	110	" "	1
n	10	101	" "	1
Δ	$-\frac{2}{3}0$	$\bar{2}03$	" "	1
$n°$	—10	$\bar{1}01$	" "	1
π	$-\frac{4}{3}0$	$\bar{4}03$	" "	1
$t°$	—20	$\bar{2}01$	" "	1
o	$\frac{1}{4}$	114	" "	1
r	$\frac{1}{2}$	112	" "	1
p	1	111	" "	1
o	$\frac{4}{3}$	443	Tonopah, Nev.	2
s	2	221	Ouray, Colo.	1
u	3	331	" "	1
$o°$	$-\frac{1}{4}$	$\bar{1}14$	" "	1
$r°$	$-\frac{1}{2}$	$\bar{1}12$	" "	1
$p°$	—1	$\bar{1}11$	" "	1

1.—S. L. Penfield, 1896, Amer. Journ. Sci., II, p. 17.
2.– A. S. Eakle, 1912, Univ. Calif. Pub., VII, p. 1.

Polyhalite

$a : b : c = 0.9314 : 1 : 0.8562 \quad \alpha = 92° 29' \quad \beta = 123° 4' \quad \gamma = 88° 21'$

P	0	001	Stassfurt, Germany	1
a	∞0	100	" "	1
M	0∞	010	" "	1
τ	$\infty\frac{5}{2}$	250	" "	1
ν	$\infty\frac{3}{2}$	230	" "	1
μ	2∞	210	" "	1
ξ	4∞	410	" "	1
λ	6∞	610	" "	1
l	—6∞	$\bar{6}10$	" "	1
m	—2∞	$\bar{2}10$	" "	1
n	$-\infty\frac{3}{2}$	$2\bar{3}0$	" "	1
t	$-\infty\frac{5}{2}$	$2\bar{5}0$	" "	1
π	01	011	" "	1
p	—01	$0\bar{1}1$	" "	1
o	—02	$0\bar{2}1$	" "	1
v	—03	$0\bar{3}1$	" "	1

w	—04	$0\bar{4}1$	Stassfurt, Germany	1
x	—01	$\bar{1}01$	" "	1
h	$\bar{2}2$	$\bar{2}21$	" "	1
δ	$\bar{1}\frac{3}{2}$	$\bar{2}32$	" "	1
d	$\bar{1}\bar{\frac{3}{2}}$	$\bar{2}\bar{3}2$	" "	1
ε	$\bar{1}\frac{1}{2}$	$\bar{2}12$	" "	1
e	$\bar{1}\bar{\frac{1}{2}}$	$\bar{2}\bar{1}2$	" "	1
r	$\bar{2}1$	$\bar{2}11$	" "	1
s	$\bar{2}\bar{1}$	$\bar{2}\bar{1}1$	" "	1
f	$\bar{\frac{1}{2}}\ \bar{\frac{1}{4}}$	$\bar{2}\bar{1}4$	" "	1
g	$\bar{\frac{1}{2}}\ \bar{\frac{3}{4}}$	$\bar{2}\bar{3}4$	" "	1
i	$\bar{\frac{1}{3}}\ \bar{\frac{1}{6}}$	$\bar{2}\bar{1}6$	" "	1

1.—R. Grögey, 1914, Wein Akad. Wiss. Math.-naturw., III, p. 3.

Powellite

e	10	101	South Hecla Mine, Haughton, Mich.	1
p	1	111	" " " " "	1
h	$\frac{1}{3}1$	133	" " " " "	1
j	$\frac{3}{11}1$	3.11.11	" " " " "	1
k	$\frac{1}{5}1$	155	" " " " "	1
l	$\frac{1}{11}1$	1.11.11	" " " " "	1

1.—C. Palache, 1899, Amer. Journ. Sci., VII, p. 367.

Prehnite

	4∞	410	Josvas Mine, Greenland	3
g	2∞	210	Scotland	2
e	$0\frac{1}{2}$	012	"	2
x	$\frac{1}{4}0$	104	"	2
φ	$\frac{2}{7}0$	207	Tafatal, Horn, Austria	4
	30	301	Josvas Mine, Greenland	3
	50	501	Garés Valley, Piedmont, Italy	1
	70	701	" " " "	1

1.—E. Billows, 1901, Riv. Min. Ital., XXVII.
2.—J. G. Goodchild, 1903, Trans. Geol. Soc. Glasgow, XII, Sup.
3.—O. B. Böggild, 1905, Min. om Grönland, p. 291.
4.—A. Himmelbauer, 1913, Min. Mitth., XXXII, p. 140.

Preslite

$a: b: c = 0.9974:1:0.8215$. $\beta = 81° 44'$

a	∞0	100	Tsumeb, Southwest Africa	1
d	10	101	" " "	1

o	—10	$\bar{1}01$	Tsumeb, Southwest Africa	1
p	1	111	" " "	1
n	2	221	" " "	1
s	$\frac{3}{2}1$	322	" " "	1
r	$\frac{9}{4}\ \frac{5}{2}$	9.10.4	" " "	1

1.—V. Rosický, 1913, Zeitschr. f. Kryst., LI, p. 521.

Proustite

$a : c = 1 : 0.8038$

	10.0	$10.0.\overline{10}.1$	Bolivia	2
	13.0	$13.0.\overline{13}.1$	"	2
	—60	$06\bar{6}1$	"	2
Θ	$\frac{5}{9}\ \frac{2}{9}$	$52\bar{7}9$	Chile	1
Ψ	$\frac{4}{7}\ \frac{3}{7}$	$43\bar{7}7$	"	1
Φ	$\frac{5}{4}\ \frac{5}{12}$	$15.5.\overline{20}.12$	"	1
n^1	$4\frac{3}{2}$	$8.3.\overline{11}.2$	Markirch, Alsace, France	1

1.—H. A. Miers, 1888, Min. Mag., VIII, p. 37.
2.—E. E. Lamplough, 1903, Min. Mag., XIII, p. 294.

Pyrargyrite

$a : c = 1 : 0.7892$

h'	$\frac{5}{2}\infty$	$52\bar{7}0$	Ratiboric, Bohemia	5
f	3∞	$31\bar{4}0$	Andreasberg, Harz, Germany	1
	$\frac{9}{2}\infty$	$9.2.\overline{11}.0$	Nagybánya and Bojcza, Hungary	3+4
p''	$\frac{1}{6}$	$11\bar{2}6$	Mexico	2
π	$\frac{3}{2}0$	$30\bar{3}2$	Andreasberg, Harz, Germany	1
π'	$\frac{7}{19}\ \frac{6}{19}$	$7.6.\overline{13}.19$	" " "	1
Γ'	$\frac{2}{5}\ \frac{3}{10}$	4.3.[illegible].10	" " "	1
φ	$\frac{2}{3}\ \frac{1}{6}$	$41\bar{5}6$	" " "	1
G'	$\frac{7}{9}\ \frac{1}{9}$	$71\bar{8}9$	" " "	1
w'	$\frac{5}{4}\ \frac{1}{4}$	$51\bar{6}4$	" " "	1
ψ	$\frac{3}{2}\ \frac{1}{2}$	$31\bar{4}2$	" " "	1
s'	$\frac{7}{4}\ \frac{3}{4}$	$7.3.\overline{10}.4$	" " "	1
	$\frac{5}{3}\ \frac{2}{3}$	52[illegible]3	Nagybánya, Hungary	4
Δ'	$\frac{17}{4}\ \frac{13}{4}$	$17.13.\overline{30}.4$	Freiberg, Germany	1
z	54	$54\bar{9}1$	Locality unknown	1
N'	$\frac{17}{2}\ \frac{15}{2}$	$17.15.\overline{32}.2$	Andreasberg, Harz, Germany	1
ρ	$\frac{2}{7}1$	$27\bar{9}7$	Locality unknown	1
B	$\frac{2}{3}\ \frac{1}{2}$	$43\bar{7}6$	Andreasberg, Harz, Germany	1

S	$\frac{2}{7}\ \frac{13}{7}$	$2.13.\overline{15}.7$	Freiberg, Germany	1
L	$\frac{5}{6}\ \frac{1}{2}$	$53\overline{8}6$	" "	1
m′	$\frac{6}{7}\ \frac{5}{7}$	$6.5.\overline{11}.7$	Braunsdorf, "	1
F′	$\frac{11}{12}\ \frac{1}{2}$	$11.6.\overline{17}.12$	Andreasberg, Harz, Germany	1
Ω	14	$14\overline{5}1$	" " "	
D	1.12	$1.12.\overline{13}.1$	Braunsdorf, Germany	1
Λ′	$\frac{1}{6}\ \frac{13}{6}$	$1.13.\overline{14}.6$	Příbram, Bohemia	5
Q	$\frac{14}{13}\ \frac{4}{13}$	$14.4.\overline{18}.13$	Andreasberg, Harz, Germany	1
C	$\frac{11}{10}\ \frac{2}{5}$	$11.4.\overline{15}.10$	" " "	1
V	$\frac{6}{5}\ \frac{1}{2}$	$12.5.\overline{17}.10$	" " "	1
p′	17.1	$17.1.\overline{18}.1$	" " "	1
o	$\frac{1}{6}\ \frac{5}{12}$	$2.5.\overline{7}.12$	Nagybánya, Hungary and Ratibaric, Bohemia	4+5

*1.—H. A. Miers, 1888, Min. Mag., VII, p. 37.
2.—K. Busz, 1892, Zeitschr. f. Kryst., XX, p. 529.
3.—V. Toborffy, 1910, Földt. Közlöny, XL, p. 435.
4.—K. Zimanyi, 1911, Ann. Mus. Nat. Hung., IX, p. 251.
5.—L. Kaplanova, 1912, Abh. d. böhm. Akad., No. 17.

Pyrite

I	21 ∞	21.1.0	Ötösbánya, Zips, Hungary	13
$\mathfrak{p}$	17 ∞	17.1.0	" " "	13
U	15 ∞	15.1.0	" " "	13
H	14 ∞	14.1.0	" " "	13
G	12 ∞	12.1.0	" " "	13
A	10 ∞	10.1.0	Spanish Peaks, Colo.	15
B	8 ∞	810	Ötösbánya, Zips, Hungary	13
J	$\frac{11}{2}$ ∞	11.2.0	" " "	13
C	$\frac{16}{3}$ ∞	16.3.0	" " "	13
	5 ∞	510	Valgioie, Piedmont, Italy	7
A	$\frac{11}{3}$ ∞	11.3.0	Ötösbánya, Zips, Hungary	13
e_b	$\frac{16}{5}$ ∞	16.5.0	Gilpin Co., Colo.	18
$\mathfrak{D}$	$\frac{8}{3}$ ∞	830	Porkura, Siebenburgen, Hungary	11
$\mathfrak{E}$	$\frac{12}{5}$ ∞	12.5.0	" " "	11
O	$\frac{7}{3}$ ∞	730	Sajoháza, Gömör, Hungary	22
	$\frac{11}{5}$ ∞	11.5.0	Belábánya, Honter, Hungary	3
	$\frac{13}{7}$ ∞	13.7.0	Czehorszag, Bohemia	1
i	$\frac{9}{5}$ ∞	950	Belábánya, Honter, Hungary	3
	$\frac{7}{4}$ ∞	740	Spanish Peaks, Colo.	15
	$\frac{13}{9}$ ∞	13.8.0	Belábánya, Honter, Hungary	3

χ	$\frac{8}{5}\infty$	850	Ötösbánya, Zips, Hungary	13
	$\frac{13}{9}\infty$	13.9.0	Belábánya, Honter, Hungary	3
	$\frac{10}{7}\infty$	10.7.0	" " "	3
	$\frac{15}{11}\infty$	15.11.0	" " "	3
e	$\frac{13}{10}\infty$	13.10.0	Gilpin Co., Colo.	18
Ξ	$\frac{19}{14}\infty$	19.14.0	Spanish Peaks, Colo.	26
$\dot{j}$	$\frac{9}{7}\infty$	970	Belábánya, Honter, Hungary	3
	$\frac{17}{14}\infty$	17.14.0	Porkura, Siebenburgen, Hungary	11
Λ	$\frac{11}{10}\infty$	11.10.0	Ötösbánya, Zips, Hungary	13
	$\infty\frac{14}{13}$	13.14.0	Dognácska, Krasso-Szörény, Hun.	29
	$\infty\frac{15}{11}$	11.15.0	Belábánya, Honter, Hungary	3
D	$\infty\frac{7}{5}$	570	Spanish Peaks, Colo.	15
	$\infty\frac{11}{7}$	7.11.0	Belábánya, Honter, Hungary	3
	$\infty\frac{13}{8}$	8.13.0	" " "	3
	$\frac{6}{5}$	665	Cornwall, Pa.	16
	$\frac{5}{4}$	554	Valgioie, Piedmont, Italy	7
	$\frac{4}{3}$	443	Arnave, Haute-Garonne, France	2
	$\frac{7}{5}$	775	Valgioie, Piedmont, Italy	7
	$\frac{5}{3}$	553	" " "	7
	$\frac{7}{4}$	774	Cornwall, Pa.	16
	$\frac{7}{3}$	773	" "	16
	$\frac{5}{2}$	552	" "	16
	$\frac{11}{14}$	11.11.14	" "	16
s	71	711	Sajóháza, Gömör, Hungary	14
	$\frac{11}{3}1$	11.3.3	Muso, Colombia, S. America	6
	$\frac{7}{2}1$	722	Dognácska, Krasso-Szörény, Hun.	24
ψ_1	$\frac{8}{3}1$	833	Kasejovic, Bohemia	30
	$\frac{7}{3}1$	733	Langeac, Haute-Loire, France	31
	$\frac{15}{8}1$	15.8.8	Pokura, Siebenburgen, Hungary	19
	$\frac{11}{6}1$	11.6.6	Dognácska, Krasso-Szörény, Hun.	27
	$\frac{9}{5}1$	955	" " "	27
	$\frac{5}{3}1$	533	Pokura, Siebenburgen, Hungary	11
	$\frac{8}{5}1$	855	Valgioie, Piedmont, Italy	7
	$\frac{10}{7}1$	10.7.7	" " "	7
	$\frac{5}{4}1$	544	Pokura, Siebenburgen, Hungary	11
	$\frac{7}{6}1$	766	Dognácska, Krasso-Szörény, Hun.	27
	$\frac{15}{14}1$	15.14.14	Pokura, Siebenburgen, Hungary	11
χ	$\frac{7}{3}\frac{1}{6}$	14.1.6	Gilpin Co., Colo.	31
	82	821	Porkura, Siebenburgen, Hungary	11
ρ	$6\frac{3}{2}$	12.3.2	Elba, Italy	20

φ	$\frac{11}{6}\ \frac{4}{6}$	11.4.6	Chamonix, Switzerland	31
σ	$4\frac{3}{2}$	832	Elba, Italy	20
	$4\frac{7}{4}$	16.7.4	Dognácska, Krasso-Szörény, Hun.	24
	52	521	Porkura, Siebenburgen, Hungary	8
	16.8	16.8.1	Dognácska, Krasso-Szörény, Hun.	29
	$9\frac{9}{2}$	18.9.2	Porkura, Siebenburgen, Hungary	11
	63	631	" " "	11
	$\frac{16}{3}\ \frac{8}{3}$	16.8.3	Isère, France	31
	$5\frac{5}{2}$	10.5.2	Porkura, Siebenburgen, Hungary	11
	$\frac{5}{2}\ \frac{5}{4}$	10.5.4	Bald Mt., Boulder Co., Colo.	32
ω	$\frac{20}{13}\ \frac{10}{13}$	20.10.13	Gilpin Co., Colo.	31
ψ	$\frac{10}{9}\ \frac{5}{9}$	10.5.9		31
Γ	$\frac{2}{5}\ \frac{1}{5}$	215	Porkura, Siebenburgen, Hungary	8
$\mathfrak{h}$	13.7	13.7.1	Ötösbánya, Zips, Hungary	13
	95	951	" " "	13
	$\frac{9}{2}\ \frac{5}{2}$	952	Cornwall, Pa.	16
$\mathfrak{U}$	$\frac{18}{5}\ \frac{10}{5}$	18.10.5	Fojnica, Herzegovina	12
α	$\frac{23}{2}\ \frac{13}{2}$	23.13.2	Steinbach, Thann, Alsace, France	31
	16.9	16.9.1	Belabánya, Siebenburgen, Hun.	3
$\mathfrak{j}$	74	741	Dognácska, Krasso-Szörény, Hun.	24
	$\frac{10}{3}2$	10.6.3?	" " "	25
	$\frac{25}{6}\ \frac{5}{2}$	25.15.6	Ötösbánya, Zips, Hungary	13
$\mathfrak{d}$	$4\frac{5}{2}$	852	" " "	13
	$\frac{16}{5}2$	16.10.5?	Dognácska, Krasso-Szörény, Hun.	25
	$\frac{8}{3}\ \frac{5}{3}$	853	Auriol, Bouches-du-Rhône, France	31
	$\frac{12}{5}\ \frac{3}{2}$	24.15.10	Porkura, Siebenburgen, Hungary	11
	$\frac{11}{5}\ \frac{7}{5}$	11.7.5	" "	11
	$\frac{11}{6}\ \frac{7}{6}$	11.7.6	Almásel, Hungary	19
	$\frac{14}{3}3$	14.9.3	Cornwall, Pa.	16
$\ddot{u}$	$\frac{7}{2}\ \frac{9}{4}$	14.9.4	Sajóháza, Gömör, Hungary	22
	64	641	Langeac, Haute-Loire, France	31
C	$\frac{9}{4}\ \frac{3}{2}$	964	Porkura, Siebenburgen, Hungary	10
	$2\frac{4}{3}$	643	Monzoni, Fassathal, Tyrol	9
ρ	10.7	10.7.1	Bingham, Utah	21
	$\frac{5}{2}\ \frac{7}{4}$	10.7.4	New York City	32
	$\frac{14}{5}2$	14.10.5	Langeac, Haute-Loire, France	31
	$\frac{7}{3}\ \frac{5}{3}$	753	Cornwall, Pa.	16
	$\frac{7}{4}\ \frac{5}{4}$	754	Monzoni, Fassathal, Tyrol	9
	$\frac{11}{5}\ \frac{8}{5}$	11.8.5	Porkura, Siebenburgen, Hungary	11
	$\frac{15}{7}\ \frac{11}{7}$	15.11.7	" " "	11

φ	12.9	12.9.1	Bingham, Utah	21
ω	43	431	Spanish Peaks, Colo.	15
	$\frac{8}{3}2$	863	Almásel, Hungary	19
𝔢	$\frac{14}{8}\ \frac{11}{8}$	14.11.8	Ötösbánya, Zips, Hungary	13
𝔷	54	541	Montana	4
	$\frac{5}{2}2$	542	Cornwall, Pa.	16
	$\frac{9}{4}\ \frac{9}{5}$	45.36.20	Porkura, Siebenburgen, Hungary	11
	$\frac{5}{3}\ \frac{4}{3}$	543	" " "	11
𝔞	$\frac{11}{7}\ \frac{9}{7}$	11.9.7	Ötösbánya, Zips, Hungary	13
𝔇	$\frac{3}{2}\ \frac{5}{4}$	654	Fojnica, Herzegovina	12
	$2\frac{7}{4}$	874	Bald Mt. Boulder Co., Colo.	32
	$\frac{4}{3}\ \frac{7}{6}$	876	Cornwall, Pa.	16
	$\frac{9}{7}\ \frac{8}{7}$	987	Almásel, Hungary	19
	$\frac{10}{3}3$	10.9.3	Nagolny-Krjasch, Russia	17
η	$\frac{11}{5}2$	11.10.5	Gilpin Co., Colo.	31
	$\frac{6}{5}\ \frac{11}{10}$	12.11.10	Cornwall, Pa.	16
	$\frac{5}{3}2$	563	Dognácska, Krasso-Szörény, Hun.	27
𝔅	$\frac{5}{4}\ \frac{3}{2}$	564	Fojnica, Herzegovina	12
r′	$\frac{8}{5}2$	8.10.5	Bingham, Utah	21
	$\frac{4}{3}2$	463	Dognácska, Krasso-Szörény, Hun.	24
	36	361	Merivaux, Belgium	5
𝔴	$\frac{11}{7}\ \frac{22}{7}$	11.22.7	Otösbánya, Zips, Hungary	13
	$\frac{4}{3}\ \frac{8}{3}$	483	Dognácska, Krasso-Szörény, Hun.	24
o	37	371	Bingham, Utah	21
	$\frac{5}{2}10$	5.20.2	Dognácska, Krasso-Szörény, Hun.	24

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PYROAURITE

Hexagonal $a: c = 1:1.6557$

c	0	0001	Moss Mine, Moss, Norway	1
m	∞0	$10\bar{1}0$	" " " "	1
h	2∞	$21\bar{3}0$	" " " "	1
r	10	$10\bar{1}1$	" " " "	1
g	40	$40\bar{4}1$	" " " "	2
f	—20	$02\bar{2}1$	" " " "	2

1.—HJ. SJÖGREN, 1895, Bull. Geol. Inst. Upsala, II, p. 59.
2.—G. FLINK, 1900, Bull. Geol. Inst. Upsala, V, p. 81.

PYROBELONITE

$a: b: c = 0.80402:1:0.65091$

c	0	001	Långban, Sweden	1
a	∞0	100	" "	1
m	∞	110	" "	1
n	∞2	120	" "	1
d	01	011	" "	1
f	03	031	" "	1
e	20	201	" "	1
p	1	111	" "	1
o	2	221	" "	1

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PYROCHROITE

p	$\frac{1}{4}0$	$10\bar{1}4$	Långban, Sweden	1
o	$\frac{1}{2}0$	$10\bar{1}2$	" "	2
q	$\frac{3}{4}0$	$30\bar{3}4$	" "	2

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2.—G. FLINK, 1910, Ark. Kemi. Min. Geol., III, p. 1.

Pyrolusite

$a:b:c = 0.8612:1:0.5629$

A	$0\frac{1}{8}$	018	Powells Fort, Shenandoah Co., Va.	1
B	$0\frac{1}{4}$	014	" " " "	1
C	$0\frac{1}{3}$	013	" " " "	1
D	$0\frac{1}{2}$	012	" " " "	1
F	$0\frac{3}{2}$	032	" " " "	1
Z	$\frac{5}{6}1$	566	" " " "	1
X	$\frac{3}{2}\frac{5}{4}$	654	" " " "	1

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Pyromorphite

h	2∞	$21\bar{3}0$	Ems, Nassau, Germany	3
ϵ	$\frac{3}{4}0$	$30\bar{3}4$	Moye Dist. B. Col.	2
	$\frac{15}{4}0$	$15.0.\overline{15}.4$	New Caledonia	1
	90	$90\bar{9}1$	" "	1
u	21	$21\bar{3}1$	Broken Hill, N. S. Wales	3

1.—A. Lacroix, 1894, Bull. Soc. fr. Min., XVII, p. 120.
2.—O. Bowles, 1909, Amer. Journ. Sci., XXVIII, p. 40.
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Pyrosmaltite

Hexagonal $a:c = 1:0.5308$

c	0	0001	Nordmark, Sweden	1
m	$\infty 0$	$10\bar{1}0$	" "	1
t	$\frac{1}{2}0$	$10\bar{1}2$	" "	1
r	10	$10\bar{1}1$	" "	1
s	20	$20\bar{2}1$	" "	1
z	—10	$01\bar{1}1$	" "	1

1.—G. Flink, 1917, Ark. Kemi. Min. Geol., VI, No. 21.

Pyroxene Group

𝔉	10∞	10.1.0	Zillerthal, Tyrol	4
ℭ	7∞	710	Arany Mts., Piski, Siebenburgen, Hungary	4
ϒ	$\frac{5}{3}\infty$	530	Waimea Canyon, Hawaii	12
ℌ	$\frac{7}{5}\infty$	750	Zillerthal, Tyrol	4
θ	$\infty\frac{3}{2}$	230	Waimea Canyon, Hawaii	12
	$\infty\frac{5}{3}$	350	Salzburg, Germany	1
𝔎	$\infty 4$	140	Zillerthal, Tyrol	4

$\mathfrak{M}$	$\infty 6$	160	Nordmark, Sweden	4
$\mathfrak{N}$	$0\frac{11}{5}$	0.11.5	Achmatovsk, Ural Mts., Russia	4
$\mathfrak{h}$	03	031	New York City	11
	$\frac{1}{3}0$	103	Yoneyama, Echigo, Japan	6
	40	401	Ala, Tyrol	10
	$-\frac{2}{3}0$	$\bar{2}03$	Yoneyama, Echigo, Japan	6
$\mathfrak{B}$	$-\frac{6}{5}0$	$\bar{6}05$	Canale Monterano, Rome, Italy	8
	$-\frac{3}{2}0$	$\bar{3}02$	Prinzgau	2
u_1	$\frac{6}{5}$	665	Sau Alp, Tyrol	9
h'	5	551	Achmatovsk, Ural Mts., Russia	3
	-4	$\bar{4}41$	Prinzgau	2
λ_2	$-\frac{5}{2}$	$\bar{5}52$	Zillerthal, Tyrol	9
	$-\frac{4}{3}$	$\bar{4}43$	" "	9
$\mathfrak{B}$	-16	$\bar{1}61$	Capo di Bove, Rome, Italy	5
	-14	$\bar{1}41$	" " "	5
$\mathfrak{d}$	$-1\frac{4}{3}$	$\bar{3}43$	Ala, Tyrol	5
$\mathfrak{S}$	$-1\frac{1}{4}$	$\bar{4}14$	Arany Mts. Piski, Siebenburgen, Hungary	4
B	41	411	Ala, Tyrol	10
$\mathfrak{w}$	14.1	14.1.1	" "	5
v	$-\frac{1}{3}1$	$\bar{1}33$	" "	9
G	-3.12	$\bar{3}.12.1$	Capo di Bove, Rome, Italy	5
F	-36	$\bar{3}61$	" " "	5
	$-\frac{1}{10}\frac{1}{5}$	$\bar{1}.2.10$	Prinzgau	2
$\mathfrak{n}$	-23	$\bar{2}31$	Crestmore, Riverside Co., Calif.	13
$\mathfrak{i}$	-32	$\bar{3}21$	New York City	11
$\mathfrak{U}$	43	431	Lacher See, Germany	7
$\mathfrak{M}$	-53	$\bar{5}31$	Achmatovsk, Ural Mts., Russia	4
$\mathfrak{B}$	-42	$\bar{4}21$	" " "	4
$\mathfrak{H}$	-62	$\bar{6}21$	Capo di Bore, Rome, Italy	5

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QUARTZ

	46.0	$46.0.\overline{46}.1$	Bourge d'Oisans, Dauphiné, France	8
	20.0	$20.0.\overline{20}.1$	Nagolnij Krjasch, Don Cossacks, Russia	11
	$\frac{16}{3}0$	$16.0.\overline{16}.3$	Wurmthal, Harz, Germany	6
Ψ.	11.0	$11.0.\overline{11}.1$	Hancock, Mich.	10
	$\frac{14}{3}0$	$14.0.\overline{14}.3$	Val Malenco, Lombardy, Italy	3
	$\frac{41}{11}0$	$41.0.\overline{41}.11$	Meylan, Isère, France	7
η:	$\frac{7}{2}0$	$70\overline{7}2$	Alexander Co., N. C.	13
θ	$\frac{10}{3}0$	$10.0.\overline{10}.3$	" "	13
	$\frac{23}{7}0$	$23.0.\overline{23}.7$	Carrara, Tuscany, Italy	12
ω'	$\frac{5}{2}0$	$50\overline{5}2$	Alexander Co., N. C.	13
	$\frac{8}{5}0$	$80\overline{8}5$	Meylan, Isère, France	7
	$\frac{7}{5}0$	$70\overline{7}5$	Zillerthal, Tyrol	2
	$\frac{13}{10}0$	$13.0.\overline{13}.10$	Wurmthal, Harz, Germany	6
u	$\frac{9}{7}0$	$90\overline{9}7$	Hancock, Mich.	10
	$\frac{16}{13}0$	$16.0.\overline{16}.13$	Wurmthal, Harz, Germany	6
	$\frac{7}{6}0$	$70\overline{7}6$	Val Malenco, Lombardy, Italy	3
	$\frac{8}{7}0$	$80\overline{8}7$	Carrara, Tuscany, Italy	12
x	$\frac{4}{5}0$	$40\overline{4}5$	Herkimer, N. Y.	10
ϵ.	$\frac{1}{3}0$	$10\overline{1}3$?	" "	10
v	$\frac{1}{5}0$	$10\overline{1}5$?	" "	10
y:	$-\frac{3}{5}0$	$03\overline{3}5$?	" "	10
w	$-\frac{3}{4}0$	$03\overline{3}4$	" "	10
x:	$-\frac{4}{5}0$	$04\overline{4}5$	" "	10
	$-\frac{11}{10}0$	$0.11.\overline{11}.10$	Meylan, Isère, France	7
Φ	$-\frac{9}{7}0$	$09\overline{9}7$	Alexander, Co., N. C.	13
	$-\frac{23}{16}0$	$0.23.\overline{23}.16$	Wurmthal, Harz, Germany	6
	$-\frac{11}{7}0$	$0.11.\overline{11}.7$	Meylan, Isère, France	7
	$-\frac{5}{3}0$	$05\overline{5}3$	Wurmthal, Harz, Germany	6
	$-\frac{19}{11}0$	$0.19.\overline{19}.11$	Meylan, Isère, France	7
	$-\frac{7}{4}0$	$07\overline{7}4$	Grindelwald, Switzerland	5
	$-\frac{13}{7}0$	$0.13.\overline{13}.7$	Wurmthal, Harz, Germany	6
	$-\frac{13}{6}0$	$0.13.\overline{13}.6$	" " "	6
θ	$-\frac{10}{3}0$	$0.10.\overline{10}.3$	Alexander Co., N. C.	13
μ	$-\frac{11}{2}0$	$0.11.\overline{11}.2$	Sanarka, Ural Mts., Russia	14
	$\frac{1}{2}$	$11\overline{2}2$	Grindelwald, Switzerland	5
	$1\frac{1}{11}$	$11.1.\overline{12}.11$	Val Malenco, Lombardy, Italy	3
W'	$1\frac{1}{8}$	$81\overline{9}8$	Hancock, Mich.	10
	$1\frac{3}{22}$	$22.3.\overline{25}.22$	Meylan, Isère, France	7

	$1\frac{1}{7}$	$\left\{\begin{matrix}71\bar{8}7\\8\bar{1}\bar{7}7\end{matrix}\right\}$	Val Malenco, Lombardy, Italy	1
	$1\frac{6}{11}$	$11.6.\overline{17}.11$	Meylan, Isère, France	7
	$1\frac{25}{26}$	$26.15.\overline{41}.26$	" " "	7
	$1\frac{5}{8}$	$\left\{\begin{matrix}8.5.\overline{13}.8\\13.\bar{5}.\bar{8}.8\end{matrix}\right\}$	Val Malenco, Lombardy, Italy	1
	$1\frac{15}{19}$	$19.\overline{15}.\overline{34}.19$	Meylan, Isère, France	7
	$1\frac{30}{41}$	$41.30.\overline{71}.41$	" " "	7
	$1\frac{7}{6}$	$\left\{\begin{matrix}7.6.\overline{13}.7\\13.\bar{6}.\bar{7}.7\end{matrix}\right\}$	Val Malenco, Lombardy, Italy	1
n:	$\frac{10}{3}1$	$10.3.\overline{13}.3$	Alexander Co., N. C.	13
y'	$\frac{22}{5}1$	$\overline{22}.5.\overline{27}.5$	Baveno, Piedmont, Italy	9
	23.1	$23.1.\overline{24}.1$	Carrara, Tuscany, Italy	12
		$24.1.\overline{23}.1$	Alexander Co., N. C.	13
	35.1	$35.1.\overline{36}.1$	Carrara, Tuscany, Italy	12
	$\frac{4}{7}\ \frac{3}{7}$	$43\bar{7}7$	Meylan, Isère, France	7
	$\frac{5}{8}\ \frac{3}{8}$	$53\bar{8}8$	" " "	7
b:	$\frac{6}{13}\ \frac{3}{13}$	$6.3.\bar{9}.13$	Herkimer, N. Y.	10
	$\frac{32}{47}\ \frac{15}{47}$	$32.15.\overline{47}.47$	Meylan, Isère, France	7
c:	$\frac{9}{7}\ \frac{3}{7}$	$9.3.\overline{12}.7$?	Herkimer, N. Y.	10
	$\frac{13}{16}\ \frac{3}{16}$	$13.3.\overline{16}.16$	Meylan, Isère, France	7
Q:	$\frac{2}{3}\ \frac{1}{9}$	$61\bar{7}9$	Herkimer, N. Y.	10
F	$\frac{13}{21}\ \frac{3}{7}$	$22.9.\overline{13}.21$	Baveno, Piedmont, Italy	9
	$\frac{4}{5}\ \frac{1}{10}$	$8.1.\bar{9}.10$	Zillerthal, Tyrol	2
	$\frac{37}{9}\ \frac{1}{9}$	$37.1.\overline{38}.9$	Gärde, Sweden	4
	$\frac{44}{9}\ \frac{1}{9}$	$44.1.45.9$	" "	4
	$\frac{7}{8}\ \frac{1}{4}$	$9\bar{2}\bar{7}8$	Zillerthal, Tyrol	2
	$\frac{17}{12}\ \frac{5}{4}$	$32.\overline{15}.\overline{17}.12$	Grindelwald, Switzerland	5
	$-1\frac{1}{29}$	$\bar{1}.30.\overline{29}.29$	Meylan, Isère, France	7
U:	$-1\frac{5}{9}$	$\bar{9}.\bar{5}.14.9$	Herkimer, N. Y.	10
V:	$-1\frac{8}{15}$	$\overline{15}.\bar{8}.23.15$	" "	10
T:	$-1\frac{7}{12}$	$\overline{12}.\bar{7}.19.12$	" "	10
L:	$-1\frac{5}{3}$	$\bar{3}\bar{2}53$	" "	10
K:	$-1\frac{7}{4}$	$\bar{4}\bar{3}74$	" "	10
	$-\frac{9}{8}1$	$\bar{8}.17.\bar{9}.8$	Val Malenco, Lombardy, Italy	1
	$-\frac{5}{4}1$	$\left\{\begin{matrix}\bar{4}9\bar{5}4\\45\bar{9}4\end{matrix}\right\}$	" " "	1
	$-\frac{4}{3}1$	$\left\{\begin{matrix}37\bar{4}3\\34\bar{7}3\end{matrix}\right\}$	" " "	1

	$-\frac{7}{5}1$	$\bar{5}.12.\bar{7}.5$ $5.7.\overline{12}.5$	Val Malenco, Lombardy, Italy	1
	$-\frac{15}{7}1$	$\bar{7}.22.\overline{15}.7$ $7.15.\overline{22}.7$	" " "	1
𝔘..	$-\frac{9}{4}1$	$\bar{4}.13.\bar{9}.4$	Sanarka, Ural Mts., Russia	14
	$-\frac{12}{5}1$	$\bar{5}.12.\bar{7}.5$	Carrara, Tuscany, Italy	12
	$-\frac{5}{2}1$	$\bar{2}7\bar{5}2$ $25\bar{7}2$	Val Malenco, Lombardy, Italy	3
𝔫.	$-\frac{10}{3}1$	$\overline{10}.\bar{3}.13.3$	Alexander Co., N. C.	13
ℭ.	$-\frac{9}{2}1$	$\bar{2}.11.\bar{9}.2$	Sanarka, Ural Mts., Russia	14
ℌ.	-61	$\bar{1}7\bar{6}1$	" " "	14
	-12.1	$13.\overline{12}.\bar{1}.1$	Gärde, Sweden	4
	-27.1	$28.\overline{27}.\bar{1}.1$	" "	4
	$-\frac{6}{5}\frac{1}{10}$	$\bar{1}.13.\overline{12}.10$ $1.12.\overline{13}.10$	Val Malenco, Lombardy, Italy	1
	$-\frac{12}{11}\frac{2}{11}$	$\bar{2}.14.\overline{12}.11$ $2.12.\overline{14}.11$	" " "	1
T:	$-\frac{11}{12}\frac{2}{3}$	$\overline{11}.\bar{8}.19.12$	Herkimer, N. Y.	10
β:	$-\frac{4}{11}\frac{3}{11}$	$\bar{4}.\bar{3}.7.11$	" "	10
𝔷:	$-\frac{7}{16}\frac{1}{8}$	$\bar{7}.\bar{2}.9.16$	" "	10
α:	$-\frac{9}{11}\frac{1}{11}$	$\bar{9}.\bar{1}.10.11$	" "	10
	$-\frac{15}{16}\frac{1}{16}$	$1.15.\overline{16}.16$	Meylan, Isère, France	7
	$-\frac{15}{17}\frac{2}{17}$	$2.15.\overline{17}.17$	" " "	7
	$-\frac{6}{7}\frac{1}{7}$	$16\bar{7}7$	" " "	7
	$-\frac{20}{21}\frac{4}{21}$	$4.20.\overline{24}.21$	Val Malenco, Lombardy, Italy	1
	$-\frac{5}{7}\frac{2}{7}$	$25\bar{7}7$	Meylan, Isère, France	7

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8.—F. Gonnard, 1901, Zeitschr. f. Kryst., XXXIV, p. 279.
9.—F. Gonnard, 1902, Bull. Soc. fr. Min., XXV, p. 90.
*10.—G. Lincio, 1904, Neues Jahrb. f. Min., B.-B., XVIII, p. 155.
11.—J. Samojloff, 1906, Mater. z. geol. Russl., XXIII.
12.—P. Aloisi, 1909, Att. Soc. Tosc., Mem., XXV, p. 87.
13.—J. E. Pogue and V. Goldschmidt, 1912, Amer. Journ. Sci., XXXIV, p. 414.
14.—G. Aminoff, 1919, Ark. Kemi. Min. Geol., VII, No. 17.

Raspite

$a:b:c = 1.34497:1:1.11468 \quad \beta = 72° 23'$

c	0	001	Broken Hill, N. S. Wales	1
a	∞0	100	" " "	1
b	0∞	010	" " "	1
m	∞	100	" " "	1
d	01	011	" " "	1
e	—10	$\bar{1}01$	" " "	1
f	—$\frac{1}{2}$0	$\bar{1}02$	" " "	1
p	$\frac{1}{2}$1	122	" " "	1
δ	$\frac{1}{12}$1	1.12.12	" " "	1

1.—C. Hlawatsch, 1897, Zeitschr. f. Kryst., XXIX, p. 137; 1906, idem, XLII, p. 587.

Rathite

$a:b:c = 1.5869:1:1.0698 \quad \beta = 79° 16'$

c	0	001	Binnenthal, Switzerland	1
A	∞0	100	" "	1
	0∞	010	" "	2
	20∞	20.1.0	" "	2
	$\frac{27}{2}$∞	27.2.0	" "	2
	$\frac{33}{4}$∞	33.4.0	" "	2
	$\frac{15}{2}$∞	15.2.0	" "	2
	$\frac{27}{4}$∞	27.4.0	" "	1
	6∞	610	" "	1
	$\frac{11}{2}$∞	11.2.0	" "	1
	$\frac{21}{4}$∞	21.4.0	" "	2
Θ	5∞	510	" "	1
ρ	$\frac{9}{2}$∞	920	" "	1
	$\frac{17}{4}$∞	17.4.0	" "	1
	4∞	410	" "	2
	$\frac{7}{2}$∞	720	" "	1
l	3∞	310	" "	1
	$\frac{11}{4}$∞	11.4.0	" "	1
ψ	$\frac{5}{2}$∞	520	" "	1
	$\frac{9}{4}$∞	940	" "	2
r	2∞	210	" "	1
	$\frac{15}{8}$∞	15.8.0	" "	2
	$\frac{7}{4}$∞	740	" "	2
	$\frac{27}{16}$∞	27.16.0	" "	1

	$\frac{21}{16}\infty$	21.16.0	Binnenthal, Switzerland	2
з	$\frac{3}{2}\infty$	320	" "	1
	$\frac{5}{4}\infty$	540	" "	1
	$\frac{6}{5}\infty$	650	" "	3
m	∞	110	" "	1
ω	$\infty\frac{4}{3}$	340	" "	1
	$\infty\frac{32}{21}$	21.32.0	" "	1
f	$\infty 2$	120	" "	1
α	$\infty\frac{5}{2}$	250	" "	3
	$\infty\frac{8}{3}$	380	" "	2
	$\infty 4$	140	" "	1
	$\infty\frac{16}{3}$	3.16.0	" "	2
	$\infty 6$	160	" "	1
	$\infty\frac{28}{3}$	3.28.0	" "	2
	$\infty\frac{32}{3}$	3.32.0	" "	2
γ	$0\frac{1}{2}$	012	" "	3
n	01	011	" "	2
	$0\frac{3}{2}$	032	" "	2
	$\frac{3}{8}0$	308	" "	2
	$\frac{19}{44}0$	19.0.44	" "	1
φ	$\frac{1}{2}0$	102	" "	2
	$\frac{3}{4}0$	304	" "	2
d	10	101	" "	1
	$\frac{17}{16}0$	17.0.16	" "	2
	$\frac{11}{10}0$	11.0.10	" "	2
s	$\frac{3}{2}0$	302	" "	1
	$\frac{7}{4}0$	704	" "	2
t	20	201	" "	2
	$\frac{19}{8}0$	19.0.8	" "	2
	$\frac{7}{2}0$	702	" "	2
h	30	301	" "	3
	40	401?	" "	3
	50	501	" "	2
	11.0	11.0.1	" "	2
y	—20	$\bar{2}01$	" "	3
χ	$-\frac{3}{2}0$	$\bar{3}02$	" "	3
z	—10	$\bar{1}01$	" "	3
u	$-\frac{2}{3}0$	$\bar{2}03$	" "	3
w	$-\frac{1}{2}0$	$\bar{1}02$	" "	3
Σ	$\frac{1}{2}$	112	" "	3

g	1	111	Binnenthal, Switzerland	2
p	—1	$\bar{1}11$	" "	3
Δ	$-\frac{1}{2}$	$\bar{1}12$	" "	3
α	$\frac{1}{2}1$	122	" "	2
τ	$\frac{3}{4}1$	344	" "	3
e	$\frac{3}{2}1$	322	" "	2
δ	21	211	" "	2
k	$\frac{5}{2}1$	522	" "	2
	$\frac{13}{4}1$	13.4.4	" "	2
	$-\frac{1}{10}1$	$\bar{1}$.10.10	" "	2
o	$-\frac{1}{2}1$	$\bar{1}22$	" "	3
x	$-\frac{3}{2}1$	$\bar{3}22$	" "	3
λ	—21	$\bar{2}11$	" "	3
k	$-\frac{5}{2}1$	$\bar{5}22$	" "	3
i	—31	$\bar{3}11$	" "	3
	$\frac{1}{2}2$	142	" "	2
	$\frac{3}{2}\,\frac{1}{2}$	312	" "	2
μ	$-\frac{3}{2}\,\frac{1}{2}$	$\bar{3}12$	" "	3
η	$-\frac{5}{4}\,\frac{1}{2}$	$\bar{5}24$	" "	3
π	$-1\frac{1}{2}$	$\bar{2}12$	" "	3
ε	$-\frac{3}{4}\,\frac{1}{2}$	$\bar{3}24$	" "	3

1.—H. Baumhauer, 1896, Zeitschr. f. Kryst., XXVI, p. 593.
2.—R. H. Solly, 1901, Min. Mag., XIII, p. 77.
*3.—W. J. Lewis, 1912, Min. Mag., XVI, p. 197.

Realger

a: *b*: *c* = 0.7203:1:0.4858 β = 66° 16′

ζ	$\infty\frac{5}{4}$	450	Alchar, Macedonia	3
s	$\infty\frac{5}{2}$	250	Bosnia	1
u	$0\frac{6}{5}$	065?	Felsöbánya, Hungary	4
C	$-1\frac{1}{3}$	$\bar{3}13$?	Monte Amiata, Tuscany, Italy	2
o	—32	$\bar{3}21$	Felsöbánya, Hungary	4

1.—C. Vrba, 1889, Zeitschr. f. Kryst., XV, p. 449.
2.—G. Grattarola, 1890, Giorn. d. Min., I, p. 278.
3.—V. Hackmann, 1896, Zeitschr. f. Kryst., XXVII, p. 608.
4.—M. Löw, 1912, Zeitschr. f. Kryst., LI, p. 132.
*5.—V. Goldschmidt, 1904, Zeitschr. f. Kryst., XXXIX, p. 113.

Retzian

a: *b*: *c* = 0.4414:1:0.7269

b	0∞	010	Moss Mine, Nordmark, Sweden	1
m	∞	110	" " " "	1

n	∞3	130	Moss Mine, Nordmark, Sweden	1
k	07	071	" " " "	1
d	10	101	" " " "	1

1.—H. Sjögren, 1894, Bull. Geol. Inst. Upsala, II, p. 54.

Rhodonite

a: b: c = 1.0737:1:0.62115 $\alpha = 103° 18'$ $\beta = 108° 44'$ $\gamma = 81° 39'$

A	$0\frac{1}{3}$	013	Broken Hill, N. S. Wales	3
B	$-0\frac{1}{5}$	$0\bar{1}5$	" " "	3
C	$-0\frac{1}{4}$	$0\bar{1}4$	" " "	3
Θ	$-0\frac{1}{3}$	$0\bar{1}3$	Pajsberg, Vermland, Sweden	2
E	$-0\frac{3}{7}$	$0\bar{3}7$	Broken Hill, N. S. Wales	3
V	—04	$0\bar{4}1$	Franklin Furnace, N. J.	4
ε	20	201	" " "	1
G	$\frac{2}{7}0$	207	Broken Hill, N. S. Wales	3
F	$\frac{1}{3}0$	103	" " "	3
	$-\frac{4}{3}0$	$\bar{4}03$	Franklin Furnace, N. J.	6
H	—20	$20\bar{1}$	Broken Hill, N. S. Wales	3
K	$\frac{\bar{1}}{3}\frac{\bar{1}}{3}$	$11\bar{3}$	" " "	3
L	$\frac{\bar{1}}{2}\frac{\bar{1}}{2}$	$11\bar{2}$	" " "	3
ε	$\bar{2}\bar{2}$	$22\bar{1}$	Långban, Sweden	5
	$2\bar{2}$	$2\bar{2}1$	Franklin Furnace, N. J.	6
s	$\bar{3}\bar{3}$	$33\bar{1}$	Långban, Sweden	5
	$\frac{4}{3}\frac{2}{3}$	423	Pajsberg, Vermland, Sweden	2

1.—L. V. Pirsson, 1890, Amer. Journ. Sci., XL, p. 484.
2.—A. Hamberg, 1891, Geol. Fören. Förh., XIII, p. 539.
3.—C. Anderson, 1908, Rec. Austr. Mus., VII, p. 129.
4.—W. E. Ford and R. D. Crawford, 1911, Amer. Journ. Sci., XXXII, p. 289.
5.—G. Flink, 1905, Ark. Kemi. Min. Geol., V, No. 10.
6.—Lazard Cahn, 1919, Privately contributed.

Rhonite

Triclinic Isomorphous with Aenigmite

c	0	001	Bruckenau, Rhön, Germany	1
a	∞0	100	" " "	1
b	0∞	010	" " "	1
m	∞	110	" " "	1
μ	—∞	$\bar{1}10$	" " "	1
k	11	111	" " "	1
r	$\bar{1}\bar{1}$	$\bar{1}\bar{1}\bar{1}$	" " "	1

v	$1\bar{3}$	$1\bar{3}1$	Bruckenau, Rhön, Germany	1
i	$\bar{1}3$	$\bar{1}31$	" " "	1

1.—J. SOELLNER, 1907, Neues Jahrb. f. Min., Beil.-B., XXIV, p. 475.

REIBECKITE

a: b: c = 0.5475:1:0.2925 β = 76° 10′

c	0	001	East Coast of Ireland	1
b	0∞	010	" "	1
m	∞	110	" "	1
z	∞5	150	" "	1
Z	02	021	" "	1
t	—20	$\bar{2}01$	" "	1
r	—1	$\bar{1}11$	" "	1

1.—W. J. SOLLAS, 1895, Proc. R. Irish. Acad., III, p. 516.

RINNEITE

Hexagonal Rhombohedral *a: c* = 1:0.576—

	0	0001	Hildesheim, Hannover, Germany	1
	∞	$11\bar{2}0$	" " "	1
	10	$10\bar{1}1$	" " "	1

1.—BOEKE, 1909, Neues Jahrb. f. Min., II, p. 19.

ROMEITE

Isometric

a	∞0	100	Minas Geras, Brazil	3
d	∞	110	San Marcel, Valle d'Aosta, Italy	1
o	1	111	" " "	1
m	31	311	" " "	1
n	21	211	" " "	1
v	$\frac{1}{3}$	113	Minas Gereas, Brazil	2

1.—A. PELLOUX,, 1913, Mus. civ. historia-nat. Genova, Ann., VI, p. 22.
2.—R. SCHRÖDER, 1913, Goldschmidt's Atlas d. Krystallf., I, p. 121.
3.—W. T. SCHALLER, 1916, U. S. Geol. Surv., Bull. DCX, p. 95.

ROSCHÉRITE

a: b: c = 0.94:1:0.88 β = 99° 50′

c	0	001	Ehrensfriedersdorf, Saxony, Ger.	1
a	∞0	100	" " "	1
b	0∞	010	" " "	1
m	∞	110	" " "	1
d	—10	$\bar{1}01$	" " "	1

1.—F. SLAVIC, 1914, Abh. d. böhm. Akad., No. 4.

RUTILE

M	$\frac{9}{2}\infty$	920	Minas Geraes, Brazil	1
•*K*	$\frac{7}{2}\infty$	720	Bahia, Brazil	3
F	$\frac{5}{2}\infty$	520	" "	3
E	$\frac{8}{3}\infty$	830	" "	3
L	$\frac{11}{5}\infty$	11.5.0	" "	3
D	$\frac{37}{20}\infty$	37.20.0	" "	3
K	$\frac{5}{4}\infty$	540	Minas Geraes, Brazil	1
ϵ	$\frac{1}{7}$	117	Hörsjoberg, Sweden	2

1.—J. Krizsó, 1909, Földt. Közlöny, XXXIX, p. 497.
2.—G. Flink, 1910, Ark. Kemi. Min. Geol., III.
3.—P. Siedel, 1915, Neues Jahrb. f. Min., Beil-B., XXXVIII, p. 784.

SAFFLORITE

$a: b: c = 0.59101:1:1.149$ (Flink)

c	0	001	Ko Mine, Nordmark, Sweden	1
a	$\infty 0$	100	" " "	1
m	∞	110	" " "	1
d	01	011	" " "	1
o	1	111	" " "	1

1.—H. Sjögren, 1894, Bull. Geol. Inst. Upsala, II, p. 68.
2.—G. Flink, 1908, Ark. Kemi. Min. Geol., III, No. 11, p. 71.

SAMIRÉSITE

Isometric

	1	111	Antsirabe, Madagascar	1

1.—A. Lacroix, 1912, Bull. Soc. fr. Min., XXXV, p. 84.

SAMSONITE

$a: b: c = 1.2777:1:0.819 \quad \beta = 92° 42'$

c	0	001	Samson Vein, Andreasberg, Harz, Ger.	1
a	$\infty 0$	100	" " " " "	2
b	0∞	010	" " " " "	1
l	2∞	210	" " " " "	2
m	∞	110	" " " " "	2
	$\infty\frac{5}{4}$	450	" " " " "	1
	$\infty 2$	120	" " " " "	1
	$\infty 3$	130?	" " " " "	3
	$\infty 4$	140	" " " " "	1
q	$\infty 8$	180	" " " " "	2
i	01	011	" " " " "	1

	10	101	Samson Vein, Andreasberg, Harz, Ger.	1
	20	201	" " " " "	1
	—10	$\bar{1}01$	" " " " "	1
	—$\frac{2}{3}$0	$\bar{2}03$	" " " " "	1
p	1	111	" " " " "	3
π	—1	$\bar{1}11$	" " " " "	1
	—1$\frac{1}{2}$	$\bar{2}12$	" " " " "	1
	—$\frac{4}{3}$ $\frac{7}{3}$	$\bar{4}73$	" " " " "	2
α	$\frac{1}{6}$ $\frac{7}{3}$	1.14.6	" " " " "	2

1.—W. Bruhns, 1911, Abh. d. naturh. Ges. Hannover, p. 2.
2.—F. Slavic, 1911, Abh. d. böhm. Akad., XVI, No. 20, p. 9.
3.—F. Kolbeck and V. Goldschmidt, 1912, Zeitschr. f. Kryst., L, p. 455.

Sartorite

$a : b : c = 1.27552 : 1 : 1.19487 \quad \beta = 77° \ 48'$

c	0	001	Binnenthal, Switzerland	1
a	∞0	100	" "	1
b	0∞	010	" "	1
	20∞	20.1.0	" "	1
	$\frac{11}{2}$∞	11.2.0	" "	1
	5∞	510	" "	1
	$\frac{9}{2}$∞	920	" "	1
	4∞	410	" "	1
	$\frac{7}{2}$∞	720	" "	1
	3∞	310	" "	1
	$\frac{11}{4}$∞	11.4.0	" "	1
	$\frac{5}{2}$∞	520	" "	1
	$\frac{9}{4}$∞	940	" "	1
	$\frac{11}{5}$∞	11.5.0	" "	1
	2∞	210	" "	1
	$\frac{11}{7}$∞	11.7.0	" "	1
	$\frac{3}{2}$∞	320	" "	1
	$\frac{4}{3}$∞	430	" "	1
	$\frac{5}{4}$∞	540	" "	1
	∞	110	" "	1
	∞2	120	" "	1
	∞3	130	" "	1
	∞4	140	" "	1
	∞$\frac{13}{2}$	2.13.0	" "	1
α	0$\frac{2}{3}$	023	" "	1

κ	$0\frac{4}{5}$	045	Binnenthal, Switzerland	1
i	01	011	" "	1
y	$0\frac{6}{5}$	065	" "	1
l	$0\frac{8}{5}$	085	" "	1
w	04	041	" "	1
	40	401	" "	1
	$\frac{4}{3}0$	403	" "	1
	$\frac{7}{6}0$	706	" "	1
	10	101	" "	1
	$\frac{11}{12}0$	11.0.12	" "	1
	$\frac{3}{4}0$	304	" "	1
	$\frac{2}{7}0$	207	" "	1
	$-\frac{2}{7}0$	$\bar{2}07$	" "	1
	$-\frac{4}{7}0$	$\bar{4}07$	" "	1
	$-\frac{2}{3}0$	$\bar{2}03$	" "	1
	$-\frac{7}{10}0$	$\bar{7}.0.10$	" "	1
	$-\frac{19}{20}0$	$\overline{19}.0.20$	" "	1
	-10	$\bar{1}01$	" "	1
	$-\frac{5}{4}0$	$\bar{5}04$	" "	1
	$-\frac{4}{3}0$	$\bar{4}03$	" "	1
	$-\frac{3}{2}0$	$\bar{3}02$	" "	1
	$-\frac{8}{5}0$	$\bar{8}05$	" "	1
	$-\frac{9}{5}0$	$\bar{9}05$	" "	1
	-20	$\bar{2}01$	" "	1
	$-\frac{5}{2}0$	$\bar{5}02$	" "	1
	$-\frac{8}{3}0$	$\bar{8}03$	" "	1
	-40	$\bar{4}01$	" "	1
	$-\frac{21}{5}0$	$\overline{21}.0.5$	" "	1
	$-\frac{9}{2}0$	$\bar{9}02$	" "	1
	-80	$\bar{8}01$	" "	1
	-90	$\bar{9}01$	" "	1
ρ	$\frac{1}{3}$	113	" "	1
Δ	$\frac{4}{5}$	445	" "	1
r	1	111	" "	1
m	$\frac{4}{3}$	443	" "	1
z	2	221	" "	1
o	4	441	" "	1
e	-1	$\bar{1}11$	" "	1
γ	-4	$\bar{4}41$	" "	1
p	$\frac{1}{2}1$	122	" "	1

n	$\frac{3}{2}1$	322	Binnenthal, Switzerland	1
υ	21	211	" "	1
V	$\frac{7}{2}1$	722	" "	1
N	41	411	" "	1
C	12.1	12.1.1	" "	1
δ	$-\frac{1}{6}1$	$\bar{1}66$	" "	1
h	$-\frac{1}{2}1$	$\bar{1}22$	" "	1
H	$-\frac{7}{9}1$	$\bar{7}99$	" "	1
τ	$-\frac{3}{2}1$	$\bar{3}22$	" "	1
x	—21	$\bar{2}11$	" "	1
π	$-\frac{7}{2}1$	$\bar{7}22$	" "	1
η	—61	$\bar{6}11$	" "	1
β	—12	$\bar{1}21$	" "	1
A	$\frac{5}{8}\,\frac{5}{4}$	5.10.8	" "	1
μ	$\frac{2}{3}\,\frac{4}{3}$	243	" "	1
q	24	241	" "	1
R	$-\frac{4}{3}\,\frac{8}{3}$	$\bar{4}83$	" "	1
v	—24	$\bar{2}41$	" "	1
ε	$-\frac{2}{5}\,\frac{4}{5}$	$\bar{2}45$	" "	1
g	$-\frac{2}{3}\,\frac{4}{3}$	$\bar{2}43$	" "	1
u	$-\frac{1}{3}\,\frac{2}{3}$	$\bar{1}23$	" "	1
σ	$\frac{6}{5}\,\frac{4}{5}$	645	" "	1
s	$2\frac{4}{3}$	643	" "	1
t	32	321	" "	1
D	—64	$\bar{6}41$	" "	1
Y	$7\frac{14}{3}$	21.14.3	" "	1

1.—C. O. Trechmann, 1907, Min. Mag., XIV, p. 212.

Scheelite

a: c=1:1.53798

ν	$\frac{4}{7}0$	407?	Traversella, Italy	1
λ	$\frac{5}{7}0$	507	" "	1
u	30	301		3
s	$\frac{2}{7}$	227	Traversella, Italy	1
μ	$\frac{3}{8}$	338	" "	1
	$\frac{8}{5}$	885	" "	2
	$1\frac{3}{2}$	232	" "	2
	$1\frac{2}{3}$	323?	" "	2
	$\frac{7}{4}\,\frac{1}{4}$	714	" "	2
	$\frac{7}{5}\,\frac{3}{5}$	735	" "	2

	$\frac{7}{6}\,\frac{5}{6}$	756	Traversella, Italy	2
	$\frac{21}{11}\,\frac{1}{11}$	21.1.11?	" "	2

1.—F. Zambonini, 1906, Rend. Accad. Linc., (5) XV, p. 558.
2.— L. Colomba, 1906, Rend. Accad. Linc., (5) XV, p. 281.
3.—P. Berberich, 1914, Jahrb. f. Berg.-u. Hutt. Sach., p. 48.

Schizolite

$a: b: c = 1.10613:1:1.98629 \quad \alpha = 90° \, 11' \quad \beta = 94° \, 46' \quad \gamma = 103° \, 7'$

c	0	001	Julianehaab, Greenland	1
a	∞0	100	" "	1
b	0∞	010	" "	1
o	$\frac{5}{3}$∞	530	" "	1
m	∞	110	" "	1
P	∞$\frac{3}{2}$	230	" "	1
M	—∞	$1\bar{1}0$	" "	1
l	—∞2	$1\bar{2}0$	" "	1
r	—$\frac{1}{2}$0	$\bar{1}02$	" "	1
n	—10	$\bar{1}01$	" "	1
s	—20	$\bar{2}01$	" "	1
e	$\bar{1}1$	$\bar{1}11$	" "	1
g	$\overline{11}$	$\overline{11}1$	" "	1
f	$\overline{14}$	$\overline{14}1$	" "	1

1.—O. B. Böggild, 1903, Medd. om Grönland, XXVI, p. 93.

Scolecite

5∞	510		1
∞$\frac{7}{4}$	570		1
4	441		1
3	331		1
$\frac{12}{5}$	12.12.5		1
—5	$\bar{5}51$		1
1$\frac{7}{4}$	474		1

1.—G. Flink, 1888, Bihang. k. Ver. Akad. Handl., (2) XIII, p. 8.

Scorodite

f	01	011	Lölling, Carinthia, Austria	1

1.—K. Busz, 1892, Zeitschr. f. Kryst., XX, p. 555.

Seligmanite

$a:b:c = 0.92332:1:0.87338$

c	0	001	Binnenthal, Switzerland[1]		1
a.	$\infty 0$	100	"	"	1
b	0∞	010	"	"	1
E	6∞	610	"	"	2
q	5∞	510	"	"	1
A	4∞	410	"	"	1
η	3∞	310	"	"	2
e	2∞	210	"	"	1
l	$\frac{3}{2}\infty$	320	"	"	2
k	$\frac{5}{4}\infty$	540	"	"	3
m	∞	110	"	"	1
μ	$\infty\frac{6}{5}$	560	"	"	3
ψ	$\infty\frac{5}{4}$	450	"	"	3
f	$\infty 2$	120	"	"	1
i	$\infty 3$	130	"	"	1
Φ	$\infty 4$	140	"	"	3
α	$\infty 6$	160	"	"	3
Θ	$\infty 8$	180	"	"	3
x	$0\frac{1}{3}$	013	"	"	1
	$0\frac{2}{5}$	025	"	"	2
n	01	011	"	"	1
z	02	021	"	"	1
Σ	03	031	"	"	1
F	06	061	"	"	2
B	07	071	"	"	1
Δ	$\frac{1}{5}0$	105	"	"	2
t	$\frac{1}{4}0$	104	"	"	2
ϵ	$\frac{1}{3}0$	103	"	"	2
x	$\frac{1}{2}0$	102	"	"	2
h	$\frac{2}{3}0$	203	"	"	2
	10	101	"	"	1
I	20	201	"	"	2
H	$\frac{7}{3}0$	703	"	"	2
G	60	601	"	"	2
	$\frac{2}{9}$	229	"	"	2
φ	$\frac{1}{3}$	113	"	"	2

[1]Legenbach Quarry, Binnenthal, Switzerland.

u	$\frac{1}{2}$	112	Binnenthal, Switzerland[1]		1
y	1	111	"	"	1
	3	331	"	"	2
	4	441	"	"	2
β	18	181	"	"	3
K	16	161	"	"	2
L	13	131	"	"	2
ρ	12	121	"	"	1
N	$1\frac{2}{3}$	323	"	"	2
S	$1\frac{1}{2}$	212	"	"	2
O	$1\frac{1}{3}$	313	"	"	2
M	$\frac{2}{3}1$	233	"	"	2
D	$\frac{3}{2}1$	322	"	"	2
R	$\frac{5}{3}1$	533	"	"	2
v	21	211	"	"	1
Q	$\frac{7}{3}1$	733	"	"	2
C	31	311	"	"	1
P	61	611	"	"	2
O	$\frac{1}{2}5$	1.10.2	"	"	1
Z	26	261	"	"	2
ξ	34	341	"	"	3
ζ	45	451	"	"	3
λ	78	781	"	"	3
J	65	651	"	"	3
γ	54	541	"	"	3
π	$\frac{9}{2}\frac{7}{2}$	972	"	"	3
W	43	431	"	"	1
δ	$\frac{7}{2}\frac{5}{2}$	752	"	"	3
i	$\frac{2}{3}\frac{1}{3}$	213	"	"	1
Y	$\frac{3}{2}\frac{1}{2}$	312	"	"	2
U	$\frac{4}{3}\frac{1}{3}$	413	"	"	2
X	$\frac{7}{3}\frac{1}{2}$	14.3.6	"	"	2
T	$2\frac{1}{3}$	613	"	"	2
S	$\frac{7}{3}\frac{1}{3}$	713	"	"	2
V	$6\frac{1}{2}$	12.1.2	"	"	2

1.—H. Baumhauer, 1901, Ber. Ak. Berlin, p. 110.
2.—R. H. Solly, 1903, Min. Mag., XIII, p. 336; 1906, idem., XIV, p. 184.
3.—R. H. Solly, 1912, Min. Mag., XVI, p. 282.

[1]Legenbach Quarry, Binnenthal, Switzerland.

Senaite

Hexagonal Trirhombohedral $a: c = 1:0.997$

c	0	0001	Diamentia, Minas Geraes, Brazil	1
r	10	$10\bar{1}1$	" " " "	1
s	20	$20\bar{2}1$	" " " "	1
z	40	$40\bar{4}1$	" " " "	1

1.—E. Hussak and G. T. Prior, 1898, Min. Mag., XII, p. 30.

Siderite

	$\frac{1}{2}0$	$10\bar{1}2$	Pontgibaud, Puy-de-Dôme, France	2
	$\frac{3}{4}0$	$30\bar{3}4$	Chateauneuf-sur-les-Baines, Puy-de-Dôme, France	2
l	$\frac{7}{5}0$	$70\bar{7}5$	Frostburg, Md.	3
k	$\frac{5}{2}0$	$50\bar{5}2$	" "	3
l	30	$30\bar{3}1$	Cornwall, England	4
	$-\frac{3}{2}0$	$03\bar{3}2$	Chateauneuf-sur-les-Baines, Puy-de-Dôme, France	2
Δ	$-\frac{7}{2}0$	$07\bar{7}2$	Cornwall, England	4
y	32	$32\bar{5}1$	Frostburg, Md.	3
	—42	$24\bar{6}1$	Algeria	1

1.—G. Cesàro, 1891, Ann. Soc. Géol. Belg., XVIII, Bull, p. 82.
2.—F. Gonnard, 1895, Bull. Soc. fr. Min., XVIII, p. 382.
3.—W. T. Schaller, 1906, Amer. Journ. Sci., XXI, p. 364.
4.—M. Henglein, 1907, Zeitschr. f. Kryst., XLIII, p. 575.

Sillimanite

$a: b: c = 0.9696:1:0.7046$

q	$0\frac{5}{2}$	052	Chester, Conn.	1

1.—E. Taubert, 1906, Centralbl. f. Min., p. 372.

Skutterudite

e	2∞	210	Turtmannthal, Switzerland	1

1.—L. Staudenmair, 1892, Zeitschr. f. Kryst., XX, p. 468.

Smithite

$a: b: c = 0.9696:1:0.7046$

c	0	001	Binnenthal, Switzerland[1]	1
a	∞0	100	" "	1
l	$\frac{3}{2}$∞	320	" "	2

[1]Legenbach Quarry, Binnenthal, Switzerland.

	01	011	Binnenthal, Switzerland[1]	1
h	½0	102	" "	2
e	10	101	" "	1
d	—10	$\bar{1}01$	" "	1
p	1	111	" "	1
P	—1	$\bar{1}11$	" "	1
	⅗1	355	" "	1
	$\frac{3}{2}$1	322	" "	1
q	21	211	" "	1
r	31	311	" "	1
	41	411	" "	1
Q	—21	$\bar{2}11$	" "	1
R	—31	$\bar{3}11$	" "	2
	—41	$\bar{4}11$	" "	1
	—51	$\bar{5}11$	" "	1
	—1½	$\bar{2}12$	" "	1

1.—R. H. Solly, 1905, Min. Mag., XIV, p. 72.
2.—G. F. Herbert-Smith and G. T. Prior, 1907, Min. Mag., XIV, p. 293.

Smithsonite

—⅕0	$01\bar{1}5$	San Amiceto, Almaden, Spain	1

1.—H. Buttgenbach, 1906, Bull. Soc. fr. Min., XXIX, p. 190.

Sodalite

32	321	Vesuvius, Italy	1

1.—F. Zambonini, 1906, Rend. Accad. Linc., XV, p. 235.

Sousmansite

Tetragonal $a: c = 1:0.7672$

∞0	100	Montebras, Creuse, France	1
1	111	" " "	1

1.—A. Lacroix, 1910, Min. de France, IV, p. 541.

Spencerite

$a: b: c = 1.0125:1:1.0643$ $\beta = 63° 13'$

0	001	Salmo, British Columbia	1
∞0	100	" " "	1
0∞	010	" " "	1

[1]Lengenbach Quarry, Binnenthal, Switzerland.

$\frac{5}{2}\infty$	520	Salmo, British Columbia	1
∞	110	" " "	1
$\infty\frac{3}{2}$	230	" " "	1
$\infty 2$	120	" " "	1
$0\frac{2}{3}$	023	" " "	1
02	021	" " "	1
$-\frac{1}{4}0$	$\bar{1}04$	" " "	1
$-\frac{1}{2}0$	$\bar{1}02$	" " "	1
$-\frac{3}{4}0$	$\bar{3}04$	" " "	1
—10	$\bar{1}01$	" " "	1
—20	$\bar{2}01$	" " "	1
—1	$\bar{1}11$	" " "	1
—2	$\bar{2}21$	" " "	1
12	121	" " "	1
—12	$\bar{1}21$	" " "	1
$\frac{1}{2}\ \frac{2}{3}$	346	" " "	1
—24	$\bar{2}41$	" " "	1

1.—T. L. WALKER, 1917, Journ. Wash. Acad. Sci., VII, p. 456.

SPERRYLITE

Isometric Pyritohedral

a	$\infty 0$	100	Vermillion Mine, Ontario, Can.	1
a	3∞	310	" " " "	3
g	$\frac{5}{2}\infty$	520	" " " "	3
e	2∞	210	" " " "	1
h	$\frac{5}{3}\infty$	530	" " " "	3
b	$\frac{3}{2}\infty$	320	" " " "	3
d	∞	110	" " " "	1
o	1	111	" " " "	1
u	2	221	" " " "	3
k	41	411	" " " "	3
m	31	311	" " " "	3
q	21	211	" " " "	3
B	$\frac{5}{3}1$	533	" " " "	3
A	$5\frac{5}{2}$	10.5.2?	" " " "	2
D	$3\frac{3}{2}$	632?	" " " "	3
ψ	42	421	" " " "	3
x	32	321	" " " "	3
z	53	531?	" " " "	3

1.—S. L. PENFIELD, 1889, Amer. Journ. Sci., XXXVII, p. 71.
2.—T. L. WALKER, 1896, Amer. Journ. Sci., I, p. 110.
3.—V. GOLDSCHMIDT AND W. NICOL, 1903, Amer. Journ. Sci., XV, p. 450.

SPHALERITE

	10	10.10.1	Kis-Almás, Hungary	3
y	4	441	Mies, Bohemia	6
	$\frac{7}{5}$	775	Galena, Ill.	2
e.[2]	$-\frac{5}{3}$	$5\bar{5}3$	Harz Mts., Germany	4
σ	$\frac{8}{3}1$	833?	Galena, Kansas	5
k	$-\frac{17}{6}1$	$17.\bar{6}.6$	Joplin, Mo.	7
t[2]	$-\frac{7}{3}1$	$7\bar{3}3$	Harz Mts., Germany	4
	$-3\frac{3}{2}$	$6\bar{3}2$	Traversella, Italy	8
	$-\frac{1}{2}\frac{1}{6}$	$3\bar{1}6$	Binnenthal, Switzerland	1
	$-\frac{3}{4}\frac{1}{8}$	$6\bar{1}8$	" "	1

1.—G. CESÁRO, 1893, Bull. Ac. Belg., XXV, p. 88.
2.—W. H. HOBBS, 1895, Bull. Univ. Wis., I, p. 134.
3.—A. FRANZENAU, 1896, Zeitscrh. f. Kryst., XXVII, p. 95.
4.—O. LEUDECKE, 1896, Min. d. Harzes, p. 53.
5.—A. F. ROGERS, 1900, Amer. Journ. Sci., IX, p. 134.
6.—A. MÜHLHAUSER, 1901, Min. u. petro. Mitth., XX, p. 83.
7.—A. F. ROGERS, 1904, Univ. Geol. Surv. Kansas, VIII, p. 453.
8.—L. COLOMBA, 1906, Rend. Accad. Linc., XV, p. 640.

SPODIOSITE

$a: b: c = 0.8944 : 1 : 1.5836$

c	0	001	Nordmark, Sweden	1
a	∞0	100	" "	1
b	0∞	010	" "	1
m	∞	110	" "	1
e	02	021	" "	1
d	$\frac{1}{2}0$	102	" "	1
p	1	111	" "	1
q	$\frac{1}{2}\frac{5}{4}$	254?	" "	1
r	$2\frac{5}{4}$	854?	" "	1

1.—G. NORDENSKIÖLD, 1893, Geol. Fören. Förh., XV, p. 460.

SPODUMENE

A	$\infty\frac{5}{3}$	350	Pala, San Diego Co., Calif.	1
	1	111	Rincon, San Diego Co., Calif.	2

1.—W. T. SCHALLER, 1903, Univ. Calif. Bull. Geol., III, p. 265.
2.—A. F. ROGERS, 1910, School of Mines Quar., XXXI, p. 208.
*3.—F. ZAMBONINI, 1909, Zeitschr. f. Kryst., XLVI, p. 1.

Stannite

Tetragonal Sphenohedral *a: c* = 1:0.9823±

c	0	001	Bolivia	1
a	∞0	100	"	1
m	∞	110	"	1
e	10	101	"	1
z	20	201	"	1
d	$\frac{1}{4}$	114	"	1
n	$\frac{1}{2}$	112	"	1
p	1	111	"	1
t	2	221	"	1
—*n*	—$\frac{1}{2}$	$1\bar{1}2$	"	1
—*p*	—1	$1\bar{1}1$	"	1
u	$\frac{4}{3}\ \frac{2}{3}$	423	"	1

1.—J. L. Spencer, 1901, Min. Mag., XIII, p. 54.

Steenstrupine

Hexagonal Rhombohedral *a: c* = 1:1.0842

c	0	0001	Kangerdlaarsuk	Greenland	1
a	∞	$11\bar{2}0$	"	"	1
ρ	$\frac{5}{9}$0	$50\bar{5}9$	"	"	1
r	10	$10\bar{1}1$	"	"	1
z	40	$40\bar{4}1$	"	"	1
ε	—$\frac{1}{3}$0	$01\bar{1}3$	"	"	1
e	—$\frac{1}{2}$0	$01\bar{1}2$	"	"	1
f	—$\frac{4}{5}$0	$04\bar{4}5$	"	"	1
d	—20	$02\bar{2}1$	"	"	1
ξ	—80	$08\bar{8}1$	"	"	1

1.—J. C. Moberg, 1898, Zeitschr. f. Kryst., XXIX, p. 386.

Stellerite

a: b: c = 0.98:1:0.76 ±

a	∞0	100	Copper Island, Commander Islands Kamscatka	1
b	0∞	010	Copper Island, Commander Islands, Kamscatka	1
l	2∞	210	Copper Island, Commander Islands, Kamscatka	1
m	∞	110	Copper Island, Commander Islands, Kamscatka	1

o	1	111	Copper Island, Commander Islands, Kamscatka	1

1.—J. Morozewics, 1909, Bull. Ac. Sc. Cracovic, p. 344.

Stelznerite

$a: b: c = 0.50368:1:0.70585$

c	0	001	Remolinos, Valliner, Chile	1
b	0∞	010	" " "	1
m	∞	110	" " "	1
o	01	011	" " "	1
p	1	111	" " "	1

1.—A. Arzuni and K. Thaddéeff, 1899, Zeitschr. f. Kryst., XXXI, p. 229.

Stephanite

	5∞	510	Sarrabus, Sardinia	1
	$\infty\frac{4}{3}$	340	Přibram, Bohemia	4
	$\infty\frac{3}{2}$	230	Sarrabus, Sardinia	1
	$\infty\frac{10}{3}$	3.10.0	Přibram, Bohemia	4
	∞4	140	" "	4
	∞6	160	" "	4
	∞15	1.15.0	Guanajuato, Mexico	6
	$0\frac{2}{7}$	027	Sarrabus, Sardinia	5
	$0\frac{3}{8}$	038	Sarrabus, Sardinia and Pribram, Bohemia	4+5
	$0\frac{5}{11}$	0.5.11	Sarrabus, Sardinia	1
	$0\frac{3}{5}$	035	Přibram, Bohemia	5
	$0\frac{5}{6}$	056	" "	5
	$0\frac{8}{7}$	087	" "	4
	04	041	Sarrabus, Sardinia	5
	06	061	" "	5
	$\frac{1}{7}$	117	Sonora, Mexico	6
	$\frac{1}{6}$	116	" "	6
	$\frac{10}{13}$	10.10.13	Chile	3
	$\frac{7}{6}$	776	Sarrabus, Sardinia	5
	$\frac{5}{3}$	553	Přibram, Bohemia	4
	$\frac{8}{5}$	885	Sarrabus, Sardinia	5
	$\frac{11}{5}$	11.11.5	Přibram, Bohemia	4
	$\frac{8}{3}$	883	" "	4
N	$\frac{5}{2}$	552	" "	2
	$\frac{7}{2}$	772	Sarrabus, Sardinia	5

r	4	441	Přibram, Bohemia	2
	5	551	Sarrabus, Sardinia	5
	$\frac{17}{3}$	17.17.3	Přibram, Bohemia	4
	6	661	Guanajuato, Mexico	6
	$1\frac{1}{8}$	818	Sarrabus, Sardinia	1
	14	141	“ “	1
	16	161	“ “	1
	$\frac{13}{4}1$	13.4.4	“ “	1
	$\frac{18}{5}1$	18.5.5	“ “	1
	51	511	Chile	3
	$\frac{3}{7}\ \frac{27}{7}$	3.27.7	Sarrabus, Sardinia	5
	2.10	2.10.1	“ “	1
	$\frac{1}{30}\ \frac{1}{6}$	1.5.30	“ “	5
	$\frac{1}{23}\ \frac{4}{23}$	1.4.23	“ “	5
	$\frac{1}{20}\ \frac{1}{5}$	1.4.20	“ “	5
	$\frac{5}{9}\ \frac{17}{9}$	5.17.9	Přibram, Bohemia	4
t_3	$\frac{1}{2}\ \frac{33}{16}$	8.13.16?	“ “	2
	$\frac{1}{19}\ \frac{3}{19}$	1.3.19	“ “	5
	$\frac{1}{17}\ \frac{3}{17}$	1.3.17	“ “	5
N	$\frac{3}{2}5$	3.10.2	Guanajuato, Mexico	6
	25	251	Přibram, Bohemia	7
	$\frac{3}{2}\ \frac{7}{2}$	372	Sarrabus, Sardinia	1
	$\frac{4}{5}\ \frac{8}{5}$	485	“ “	5
	$\frac{7}{9}\ \frac{11}{9}$	7.11.9	“ “	1
Z	9.11	9.11.1	Guanajuato, Mexico	6
X	57	571	“ “	6
h_2	$\frac{1}{2}\ \frac{13}{18}$	9.13.18?	Přibram, Bohemia	2

1.—E. Artini, 1891, Giorn. d. Min., II, p. 241.
2.—V. Nejdl, 1895, Ber. böhm. Ges., No. 6.
3.—L. J. Spencer, 1897, Min. Mag., XI, p. 192.
4.—F. Slavic, 1901, Abh. d. böhm. Akad., XVI.
5.—G. d'Achiardi, 1901, Att. Soc. Tosc., Mem., XVIII, p. 96.
6.—H. Ungemach, 1910, Bull. Soc. fr. Min., XXXIII.
7.—H. Ungemach, 1912, Ann. Soc. Géol. Belg., Mém., XXXIX, p. 5.

Stibiotantalite

Orthorhombic Hemimorphic $a: b: c: = 0.8879:1:2.1299$

0	001	Mesa Grande, San Diego Co., Calif.	1
0∞	010	“ “ “ “ “ “	2
∞	110	“ “ “ “ “ “	1
$0\frac{1}{2}$	012	“ “ “ “ “ “	1

01	011	Mesa Grande, San Diego Co., Calif.	2
02	021	" " " " " "	1
$\frac{1}{9}0$	109	" " " " " "	2
$\frac{1}{7}0$	107	" " " " " "	2
$\frac{1}{5}0$	105	" " " " " "	2
$\frac{1}{3}0$	103	" " " " " "	1
10	101	" " " " " "	1
$\frac{1}{7}$	117	" " " " " "	2
1	111	" " " " " "	1
$\frac{1}{3}1$	133	" " " " " "	2
$\frac{1}{3}\,\frac{2}{3}$	123	" " " " " "	2

1.—S. L. PENFIELD AND W. E. FORD, 1906, Amer. Journ. Sci., XXII, p. 6.
2.—H. UNGEMACH, 1909, Bull. Soc. fr. Min., XXXII, p. 92.

STIBNITE

	$\infty\frac{8}{3}$	308	Val de Ville, Alsace, France	2
l	$\infty 8$	180	" " "	2
P	$\frac{2}{11}$	2.2.11	Iyo, Japan	4
Ψ_1	$\frac{4}{27}\,\frac{17}{27}$	4.17.27	Příbram, Bohemia	3
Γ_1	$\frac{1}{3}\,\frac{1}{2}$	236	" "	3
$\mathfrak{x}$	$\frac{5}{4}\,\frac{5}{3}$	15.20.12	" "	3
$\mathfrak{S}$	$\frac{1}{12}\,\frac{1}{6}$	1.2.12	" "	3
$\mathfrak{r}$	$\frac{5}{3}2$	563	Schlaining, Eisenburg, Hungary	1
$\mathfrak{w}$	$4\frac{19}{3}$	12.19.3	" " "	1
$\mathfrak{U}$	$\frac{2}{3}\,\frac{3}{5}$	10.9.15	" " "	1
$\mathfrak{s}$	$4\frac{19}{10}$	40.19.10	" " "	1
	$\frac{11}{2}\,\frac{5}{2}$	11.5.2	Iyo, Japan	3

1.—A. SCHMIDT, 1898, Zeitschr. f. Kryst., XXIX.
2.—H. UNGEMACH, 1906, Bull. Soc. fr. Min., XXIX, p. 264.
3.—Z. JARÖS, 1907, Abh. d. böhm. Akad., XVI, No. 14.
4.—G. AMINOFF, 1919, Ark. Kemi. Min. Geol., VII, No. 17, p. 6..

STOKESITE

$a:b:c = 0.3462:1:0.8037$

c	0	001	St. Just, Cornwall, England	1
b	0∞	010	" " "	1
m	∞	110	" " "	1
s	$1\frac{6}{5}$	565	" " "	1
v	12	121	" " "	1
t	$\frac{1}{2}1$	122	" " "	1

1.—A. HUTCHINSON, 1900, Min. Mag., XII, p. 274.

STOLZITE

a	$\infty 0$	100	Broken Hill, N. S. Wales, Australia	2
	$\infty 2$	120	Laudville, Mass.	1
	$\infty 3$	130	" "	1
Ω	$\frac{1}{10}0$	1.0.10	Broken Hill, N. S. Wales, Australia	2
ω	$\frac{1}{9}0$	109	" " " "	2
τ	$\frac{1}{3}0$	103	" " " "	2
o	$\frac{1}{2}0$	102	" " " "	2
η	$\frac{2}{3}0$	203	" " " "	2
h	$\frac{3}{4}0$	304	" " " "	2
ε	20	201	" " " "	2
	$\frac{1}{9}$	119	Ozieri, Sardinia	3
	$\frac{1}{7}$	117	" "	3
	$\frac{1}{5}$	115	" "	3
	$\frac{1}{3}$	113	" "	3
	$1\frac{1}{3}$	131	Laudville, Mass.	1
	$\frac{2}{3}1$	233	Ozieri, Sardinia	3
	$\frac{3}{4}1$	344?	" "	3
	$\frac{4}{5}1$	455?	" "	3
	$\frac{8}{9}1$	899?	" "	3
	$\frac{3}{2}2$	243	Laudville, Mass.	1

1.—B. K. EMERSON, 1895, U. S. Geol. Surv., Bull. CXXVI, p. 163.
2.—C. HLAWATSCH, 1897, Zeitschr. f. Kryst., XXIX, p. 130.
3.—E. ARTINI, 1905, Rend. Inst. Lomb. Milan, XXXVIII, p. 373.

STRONTIANITE

v	03	031	Althalen, Westphalia, Germany	2
f	05	051	Münsterland, Westphalia, Ger.	3
μ	07	071	" " "	3
ν	0.11	0.11.1	" " "	3
n	$\frac{1}{5}$	115	Brixlegg, Tyrol	1
r	$\frac{11}{4}$	11.11.4	Münsterland, Westphalia, Ger.	3
d	6	661	Brixlegg, Tyrol	1
θ	10	10.10.1	Münsterland, Westphalia, Ger.	3
π	24	24.24.1	" " "	3
Ψ	36	36.36.1	" " "	3

1.—A. GATHREIN, 1888, Zeitschr. f. Kryst., XIV, p. 366.
2.—C. VRBA, 1889, Zeitschr. f. Kryst., XV, p. 449.
3.—J. BEYKIRCH, 1901, Neues Jahrb. f. Min., Beil.-B., p XIII, p. 389.

Strüverite

Tetragonal $a: c = 1:0.6456$

a	∞0	100	Val Vigesso, Piedmont, Italy	1
m	∞	110	" " "	1
s	1	111	" " "	1

1.—G. T. Prior and F. Zambonini, 1908, Min. Mag., XV, p. 78.

Stylotypite

$a: b: c = 1.9202:1:1.0355$ $\beta = 90° \pm$

a	∞0	100	"Candalosa.Costrovirroyna," Peru	1
μ	3∞	310	" " "	1
n	2∞	210	" " "	1
m	∞	110	" " "	1
d	0$\frac{3}{2}$	032	" " "	1
r	10	101	" " "	1
t	$\frac{3}{2}$0	302	" ' "	1
s	40	401	" " "	1
x	1	111	" " "	1
y	$\frac{3}{2}$	332	" " "	1
q	1$\frac{1}{3}$	313	" " "	1
o	31	311	" " "	1

1.—S. Stevanovic, 1902, Zeitschr. f. Kryst., XXXVII, p. 235.

Sulphoborate

$a: b: c = 0.6191:1:0.8100$

c	0	001	Westeregeln, Saxony, Germany	1
b	0∞	010	" " "	1
m	∞	110	" " "	1
r	10	101	" " "	1
o	1	111	" " "	1

1.—H. Bücking, 1893, Ber. Ak. Berlin, p. 967.

Sulphur

	0$\frac{4}{3}$	043	Corphalie, Belgium	4
	$\frac{1}{2}$0	102	" " '	4
φ	$\frac{3}{5}$0	305	Buggeru, Sardinia	3
	20	201	Corphalie, Belgium	4
	$\frac{1}{6}$	116	" "	4
	$\frac{3}{16}$	3.3.16	" "	4

	$\frac{2}{9}$	229?	Corphalie, Belgium	4
	$\frac{2}{7}$	227	" "	4
η	$\frac{5}{3}$	553	Bassick, Custer Co., Colo.	1
f	15	151	Roisdorf, (Bonn), Germany	1
λ	$\frac{1}{5}1$	155	Buggeru, Sardinia	3
k_o	$\frac{1}{2}1$	122	Allchar, Macedonia	2
μ	$\frac{1}{3}\ \frac{1}{9}$	319	Buggeru, Sardinia	3

1.—K. Busz, 1892, Zeitschr. f. Kryst., XX, p. 529.
2.—A. Pelikan, 1892, Min. u. petro. Mitth., XII, p. 344.
3.—F. Millosevich, 1898, Riv. Min. Ital., XXI, p. 43.
4.—H. Buttgenbach, 1898, Ann. Soc. Géol. Belg., XXV, p. 73.

Sylvanite

U	6∞	610	Nágyag, Hungary	4
L	$\frac{3}{2}\infty$	320	" "	4
T	$\frac{1}{3}0$	103	Cripple Creek, Colo.	3
H_1	$\frac{1}{2}0$	102	" " "	3
q	$\frac{2}{3}0$	203	" " " (Goldschmidtite)	1
x	$\frac{4}{3}0$	403	" " " "	1
L	$-\frac{2}{3}0$	$\bar{2}03$	" " "	3
G	$-\frac{3}{2}0$	$\bar{3}02$	Nagyag, Hungary	4
l	16	161	Cripple Creek, Colo. (Goldschmidtite)	1
t	$1\frac{9}{2}$	292	Cripple Creek, Colo. (Goldschmidtite)	1
w	$1\frac{4}{3}$	343	Cripple Creek, Colo.	2
v	$1\frac{2}{5}$	525	" " "	2
η	$\frac{5}{3}\ \frac{2}{3}$	523	Nagyag, Hungary	4
j	52	521	Cripple Creek, Colo.	2
u	$\frac{7}{3}\ \frac{2}{3}$	723	" " "	2
T	$-\frac{3}{2}\ \frac{1}{2}$	$\bar{3}12$	Nagyag, Hungary	4
ϵ	$-\frac{5}{3}\ \frac{4}{3}$	$\bar{5}43$	" "	4

1.—W. H. Hobbs, 1899, Amer. Journ. Sci., VII, p. 357.
2.—C. Palache, 1900, Amer. Journ. Sci., X, p. 419.
3.—A. J. Moses, 1905, Amer. Journ. Sci., XX, p. 282.
4.—C. Vrba, 1908, Zeitschr. f. Kryst., XLIV, p. 69.

Sylvite

$\frac{4}{3}1$	433	Kalusz, Galicia	1
$\frac{8}{5}1$	855	" "	1
31	311	" "	1

	91	911	Kalusz, Galicia	1
	$2\frac{9}{2}$	492	" "	1
	48	481	" "	1
	84	841		
	$2\frac{7}{2}$	472	" "	1
	$\frac{7}{2}2$	742		
	23	231	" "	1
	$\frac{5}{3}3$	563	" "	1
	$\frac{7}{2}\frac{1}{2}$	721	" "	1
	$\frac{5}{2}\frac{3}{2}$	532	" "	1

1.—St. Kreutz, 1912, Zeitschr. f. Kryst., LI, p. 209.

Tainiolite

$a : b : c = 0.5774 : 1 : 3.2743 \quad \beta = 90°$

c	0	001	Narsarsuk, Greenland	1
b	0∞	010	" "	1
θ	$0\frac{2}{7}$	027	" "	1
e	$0\frac{2}{3}$	023	" "	1
μ	—1	$\bar{1}11$	" "	1

1.—G. Flink, 1898, Medd. om Grönland, XIV, p. 234; 1901, idem, XXIV, p. 115.

Tantalite

d	$\frac{7}{3}\infty$	730	Black Hills, S. Dak.	2
γ	61	611	Pisek, Bohemia	1
d	31	311	" "	1
w	$\frac{3}{4}1$	344	" "	1
σ	$\frac{1}{3}1$	133	" "	1

1.—C. Vrba, 1889, Zeitschr. f. Kryst., XV, p. 194.
2.—W. P. Blake, 1891, Amer. Journ. Sci., XLI, p. 403.

Tarbuttite

$a : b : c = 0.9583 : 1 : 1.3204 \quad \alpha = 102° 37' \quad \beta = 123° 52' \quad \gamma = 87° 25'$

c	0	001	Broken Hill, N. W. Rhodesia	1
a	$\infty 0$	100	" " "	1
b	0∞	010	" " "	1
m	∞	110	" " "	1
n	$-\infty 2$	$\bar{1}20$	" " "	2
l	02	021	" " "	1
p	$0\frac{5}{2}$	052	" " "	2
u	—01	$0\bar{1}1$	" " "	1

h	—02	$0\bar{2}1$	Broken Hill, N. W. Rhodesia	1
f	—10	$\bar{1}01$	" " "	1
s	$-\frac{1}{2}0$	$\bar{1}02$	" " "	1
t	$-\frac{1}{3}0$	$\bar{1}03$	" " "	1
K	—1	$\bar{1}11$?	" " "	2
D	$\frac{1}{5}\ \bar{\frac{1}{5}}$	$1\bar{1}5$	" " "	2
C	$\frac{4}{5}\ \bar{\frac{4}{5}}$	$4\bar{4}5$?	" " "	2
G	$\bar{\frac{5}{4}}\ \frac{5}{4}$	$\bar{5}54$	" " "	2
e	$\bar{2}2$	$\bar{2}21$	" " "	1
y	$\bar{\frac{2}{5}}\ \bar{\frac{2}{5}}$	$\bar{2}\bar{2}5$?	" " "	2
L	$\bar{\frac{4}{9}}\ \bar{\frac{4}{9}}$	$\bar{4}\bar{4}9$?	" " "	2
x	$\bar{\frac{1}{2}}\ \bar{\frac{1}{2}}$	$\bar{1}\bar{1}2$?	" " "	2
d	$\bar{\frac{2}{3}}\ \bar{\frac{2}{3}}$	$\bar{2}\bar{2}3$	" " "	1
k	11	$\bar{1}\bar{1}1$	" " "	1
z	$\bar{\frac{5}{2}}\ \bar{\frac{5}{2}}$	$\bar{5}\bar{5}2$	" " "	2
o	$1\bar{2}$	$1\bar{2}1$	" " "	1
g	$\bar{2}1$	$\bar{2}11$?	" " "	1
B	$\bar{\frac{1}{3}}\bar{1}$	$\bar{1}\bar{3}3$	" " "	2
i	$\bar{\frac{1}{2}}\bar{1}$	$\bar{1}\bar{2}2$	" " "	1
H	$\bar{\frac{1}{3}}3$	$\bar{1}93$	" " "	2
W	$\bar{\frac{3}{2}}6$	$\bar{3}.12.2$	" " "	2
N	$\bar{2}6$	$\bar{2}61$	" " "	2
P	$\bar{3}2$	$\bar{3}21$	" " "	2
F	$\bar{4}2$	$\bar{4}21$	" " "	2
E	$\frac{3}{4}\bar{2}$	$3\bar{8}4$	" " "	2
r	$\bar{\frac{2}{3}}\ \bar{\frac{4}{3}}$	$\bar{2}\bar{4}3$	" " "	1
M	$\bar{\frac{8}{5}}\ \bar{\frac{2}{5}}$	$\bar{8}\bar{2}5$	" " "	2

1.—L. J. Spencer, 1908, Min. Mag., XV, p. 22.
2.—V. Rosický, 1913, Abh. d. böhm. Akad., No. 35, p. 11.

Tellurite

h	$\frac{5}{2}\infty$	520	Cripple Creek, Colo.	1
l	2∞	210	" " "	1

1.—W. T. Schaller, 1905, U. S. Geol. Surv., Bull., CCLXII, p. 127.

Terlinguaite

$a : b : c = 1.6050 : 1 : 2.0245 \quad \beta = 74° 23'$

c	0	001	Terlingua, Texas	1
a	$\infty 0$	100	" "	1
b	0∞	010	" "	1

𝔢	6∞	610	Terlingua, Texas	2
𝔡	$\frac{8}{3}\infty$	830	" "	2
𝔴	$\frac{5}{2}\infty$	520	" "	2
δ	2∞	210	" "	1
B	$\frac{3}{2}\infty$	320	" "	2
m	∞	110	" "	1
𝔳	$\infty\frac{3}{2}$	230	" "	2
j	$\infty 2$	120	" "	2
𝔩	$0\frac{1}{7}$	017	" "	2
h	$0\frac{1}{5}$	015	" "	1
f	$0\frac{1}{3}$	013	" "	1
𝔟	$0\frac{2}{5}$	025	" "	2
𝔞	$0\frac{4}{9}$	049	" "	2
𝔥	$0\frac{1}{2}$	012	" "	2
𝔤	$0\frac{3}{5}$	035	" "	2
𝔣	$0\frac{4}{5}$	045	" "	2
d	01	011	" "	1
D	03	031	" "	2
𝔫	$\frac{1}{5}0$	105	" "	2
𝔬	$\frac{1}{4}0$	104	" "	2
𝔭	$\frac{1}{3}0$	103	" "	2
j	$\frac{3}{8}0$	308	" "	2
t	$\frac{1}{2}0$	102	" "	1
𝔯	$\frac{2}{3}0$	203	" "	2
𝔑	$\frac{3}{4}0$	304	" "	2
y	10	101	" "	1
𝔰	$\frac{4}{3}0$	403	" "	2
F	$\frac{5}{3}0$	503	" "	2
w	30	301	" "	1
G	40	401	" "	2
y	90	901	" "	2
𝔨	12.0	12.0.1	" "	2
M	$-\frac{1}{7}0$	$\bar{1}07$	" "	2
L	$-\frac{1}{4}0$	$\bar{1}04$	" "	2
𝔚	$-\frac{1}{3}0$	$\bar{1}03$	" "	2
n	$-\frac{1}{2}0$	$\bar{1}02$	" "	1
χ	$-\frac{3}{5}0$	$\bar{3}05$	" "	2
N	$-\frac{2}{3}0$	$\bar{2}03$	" "	2
𝔶	$-\frac{3}{4}0$	$\bar{3}04$	" "	2
R	$-\frac{4}{5}0$	$\bar{4}05$	" "	2

u	—10	$\bar{1}01$	Terlingua, Texas		1
π	—$\frac{6}{5}$0	• $\bar{6}05$	"	"	2
P	—$\frac{4}{3}$0	$\bar{4}03$	"	"	2
Q	—$\frac{3}{2}$0	$\bar{3}02$	"	"	2
𝔅	—$\frac{5}{3}$0	$\bar{5}03$	"	"	2
x	—20	$\bar{2}01$	"	"	1
𝔈	—$\frac{5}{2}$0	$\bar{5}02$	"	"	2
z	—30	$\bar{3}01$	"	"	1
S	—40	$\bar{4}01$	"	"	2
θ	—50	$\bar{5}01$	"	"	2
𝔷	—70	$\bar{7}01$	"	"	2
ℑ	—12.0	$\overline{12}$.0.1	"	"	2
λ	$\frac{1}{5}$	115	"	"	1
O	$\frac{1}{3}$	113	"	"	2
𝔅	$\frac{3}{7}$	337	"	"	2
π	$\frac{1}{2}$	112	"	"	1
k	$\frac{3}{4}$	334	"	"	1
p	1	111	"	"	1
β	—$\frac{1}{5}$	$\bar{1}15$	"	"	1
H	—$\frac{1}{4}$	$\bar{1}14$	"	"	2
ρ	—$\frac{1}{3}$	$\bar{1}13$	"	"	2
Ξ	—$\frac{3}{4}$	$\bar{3}34$	"	"	2
e	—1	$\bar{1}11$	"	"	1
Λ	13	131	"	"	2
θ	12	121	"	"	2
I	—13	$\bar{1}31$	"	"	2
Ω	—12	$\bar{1}21$	"	"	2
a	—1$\frac{1}{3}$	$\bar{3}13$	"	"	1
Υ	—1$\frac{1}{5}$	$\bar{5}15$	"	"	2
𝔈	$\frac{1}{10}$1	1.10.10	"	"	2
τ	$\frac{1}{8}$1	188	"	"	2
ℌ	$\frac{1}{6}$1	166	"	"	2
𝔮	$\frac{1}{5}$1	155	"	"	2
𝔰	$\frac{1}{4}$1	144	"	"	2
ε	$\frac{1}{3}$1	133	"	"	2
z	$\frac{1}{2}$1	122	"	"	2
v	$\frac{3}{5}$1	355	"	"	1
Y	$\frac{2}{3}$1	233	"	"	2
ℜ	$\frac{3}{4}$1	344	"	"	2
r	$\frac{4}{3}$1	433	"	"	1

χ	$\frac{3}{2}1$	322	Terlingua,	Texas	2
𝔐	$\frac{5}{3}1$	533	"	"	2
i	21	211	"	"	1
s	31	311	"	"	1
𝔇	41	411	"	"	2
σ	$-\frac{1}{5}1$	$\bar{1}55$	"	"	2
φ	$-\frac{1}{4}1$	$\bar{1}44$	"	"	2
x	$-\frac{1}{3}1$	$\bar{1}33$	"	"	2
𝔏	$-\frac{2}{5}1$	$\bar{2}55$	"	"	2
ψ	$-\frac{1}{2}1$	$\bar{1}22$	"	"	2
ω	$-\frac{3}{5}1$	$\bar{3}55$	"	"	2
Δ	$-\frac{2}{3}1$	$\bar{2}33$	"	"	2
Γ	$-\frac{3}{4}1$	$\bar{3}44$	"	"	2
ℑ	$-\frac{6}{7}1$	$\bar{6}77$	"	"	2
l	$-\frac{4}{3}1$	$\bar{4}33$	"	"	1
ℜ	$-\frac{3}{2}1$	$\bar{3}22$	"	"	2
g	-21	$\bar{2}11$	"	"	1
𝔖	$-\frac{5}{2}1$	$\bar{5}22$	"	"	2
o	-31	$\bar{3}11$	"	"	1
γ	-41	$\bar{4}11$	"	"	1
𝔠	$\frac{3}{7}\frac{1}{7}$	317	"	"	2
U	$-\frac{3}{11}\frac{1}{11}$	$\bar{3}.1.11$	"	"	2
V	$-\frac{1}{3}\frac{1}{9}$	$\bar{3}19$	"	"	2
q	$-\frac{3}{5}\frac{1}{5}$	$\bar{3}15$	"	"	1
𝔗	$\frac{1}{2}\frac{1}{3}$	326	"	"	2
𝔓	$\frac{3}{8}\frac{1}{4}$	328	"	"	2
α	$\frac{3}{14}\frac{2}{7}$	3.4.14	"	"	2
Σ	$\frac{1}{4}\frac{1}{2}$	124	"	"	2
𝔛	$\frac{1}{6}\frac{1}{3}$	126	"	"	2
Φ	$\frac{1}{8}\frac{1}{4}$	128	"	"	2
W	$3\frac{3}{2}$	632	"	"	2
T	$\frac{2}{3}\frac{1}{3}$	213	"	"	2
𝔫	$\frac{2}{5}\frac{1}{5}$	215	"	"	2
𝔷	$-\frac{3}{4}\frac{1}{2}$	$\bar{3}24$	"	"	2
ι	$-\frac{1}{4}\frac{1}{2}$	$\bar{1}24$	"	"	2
J	$-\frac{3}{5}\frac{1}{15}$	$\bar{6}.1.15$	"	"	2
K	-63	$\bar{6}31$	"	"	2
μ	$-3\frac{3}{2}$	$\bar{6}32$	"	"	2
𝔪	$-\frac{6}{5}\frac{3}{5}$	$\bar{6}35$	"	"	2
ξ	$-\frac{2}{3}\frac{1}{3}$	$\bar{2}13$	"	"	2

t	$-\frac{2}{5}\frac{1}{5}$	$\bar{2}15$	Terlingua, Texas	2
𝔲	$-\frac{1}{3}\frac{1}{6}$	$\bar{2}16$	" "	2
A	$-\frac{2}{7}\frac{1}{7}$	$\bar{2}17$	" "	2
C	$-\frac{4}{3}\frac{1}{3}$	$\bar{4}13$	" "	2
𝔇	$-\frac{4}{5}\frac{1}{5}$	$\bar{4}15$	" "	2
𝔲	$-\frac{4}{11}\frac{1}{11}$	$\bar{4}.1.11$	" "	2
𝔈	$-\frac{4}{5}\frac{3}{5}$	$\bar{4}35$	" "	2
E	$-\frac{5}{3}\frac{1}{3}$	$\bar{5}13$	" "	2
𝔲	$-\frac{5}{9}\frac{1}{9}$	$\bar{5}19$	" "	2
𝔔	$-\frac{5}{4}\frac{1}{2}$	$\bar{5}24$	" "	2
𝔉	$-2\frac{1}{4}$	$\bar{8}14$	" "	2.

1.—A. J. Moses, 1903, Amer. Journn. Sci., XVI, p. 225.
2.—W. F. Hillebrand and W. T. Schaller, 1909, U. S. Geol. Surv., Bull, CDV, p. 83.

Tetrahedrite

5∞	510	Servoz, Haute Savoie, France	9
4∞	410	Val de Ville, Alsace, France	6
$\frac{5}{3}\infty$	530	" " "	6
76.1	76.1.1	Imfeld, Binnenthal, Switzerland	2
34.1	34.1.1	Binnenthal, Switzerland	2
30.1	30.1.1	" "	3
28.1	{28.1.1	Imfeld, Binnenthal, Switzerlan d	2
-28.1	$28.\bar{1}.1$}	" " "	2
24.1	24.1.1	Binnenthal, Switzerland	3
18.1	18.1.1	" "	3
16.1	16.1.1	Imfeld, Binnenthal, Switzerland	2
12.1	12.1.1	" " "	2
10.1	{10.1.1	" " "	2
—10.1	$10.\bar{1}.1$}	Servoz, Haute-Savoie, France	9
91	911	Imfeld, Binnenthal, Switzerland	2
81	811	" " "	2
$\frac{37}{5}1$	37.5.5	" " "	2
71	711	" " "	2
$\frac{13}{2}1$	13.2.2	" " "	2
$\frac{31}{5}1$	31.5.5	Val de Ville, Alsace, France	6
$\frac{29}{5}1$	29.5.5	" " "	6
$\frac{17}{3}1$	17.3.3?	" " "	6
$\frac{11}{2}1$	11.2.2	Imfeld, Binnenthal, Switzerland	2
51	511	" " "	2
$\frac{47}{10}1$	47.10.10	" " "	2

	$\frac{23}{5}1$	23.5.5	Val de Ville, Alsace, France	6
	$\frac{9}{2}1$	922	Imfeld, Binnenthal, Switzerland	2
	$\frac{22}{5}1$	22.5.5	Val de Ville, Alsace, France	6
	$\frac{21}{5}1$	21.5.5	" " "	6
	$\frac{19}{5}1$	19.5.5	Imfeld, Binnenthal, Switzerland	2
	$\frac{18}{5}1$	18.5.5	Val de Ville, Alsace, France	6
	$\frac{7}{2}1$	722	Imfeld, Binnenthal, Switzerland	2
	$\frac{17}{5}1$	17.5.5	Val de Ville, Alsace, France	6
	$\frac{16}{5}1$	16.5.5	Imfeld, Binnenthal, Switzerland	2
	$\frac{19}{6}1$	19.6.6	Binnenthal, Switzerland	3
	$\frac{29}{10}1$	29.10.10	" "	10
	$\frac{17}{6}1$	17.6.6	" "	10
	$\frac{14}{5}1$	14.5.5	Imfeld, Binnenthal, Switzerland	2
	$\frac{27}{10}1$	27.10.10	" " "	2
	$\frac{8}{3}1$	833	Binnenthal, Switzerland	10
	$\frac{13}{5}1$	13.5.5	Imfeld, Binnenthal, Switzerland	2
	$\frac{5}{2}1$	522	" " "	2
	$\frac{9}{4}1$	944	Val de Ville, Alsace, France	6
	$\frac{12}{5}1$	12.5.5	Imfeld, Binnenthal, Switzerland	2
	$\frac{11}{5}1$	11.5.5	Val de Ville, Alsace, France	6
	$\frac{21}{10}1$	21.10.10	Imfeld, Binnenthal, Switzerland	2
	$\frac{19}{10}$	19.10.10	Binnenthal, Switzerland	2
	$\frac{15}{8}1$	15.8.8	Val de Ville, Alsace, France	6
	$\frac{9}{5}1$	955	Imfeld, Binnenthal, Switzerland	2
	$\frac{13}{7}1$	13.7.7	Val de Ville, Alsace, France	6
	$\frac{7}{4}1$	744	" " "	6
	$\frac{17}{10}1$	17.10.10	Imfeld, Binnenthal, Switzerland	2
	$\frac{17}{9}1$	17.9.9	Brixlegg, Tyrol	1
	$\frac{5}{3}1$	533	Val de Ville, Alsace, France	6
	$\frac{8}{5}1$	855	Imfeld, Binnenthal, Switzerland	2
	$\frac{7}{5}1$	755	Binnenthal, Switzerland	2
	$\frac{13}{10}1$	13.10.10	Val de Ville, Alsace, France	6
π	$\frac{6}{5}1$	655	Botes, Berge, Hungary	5
	$\frac{7}{6}1$	766	Val de Ville, Alsace, France	6
	$\frac{9}{8}1$	988	" " "	6
	$\frac{21}{20}1$	21.20.20	Framont, " "	4
	62	62.62.1?	Val de Ville, " "	6
	35	35.35.1	" " "	6
	30	30.30.1	Imfeld, Binnenthal, Switzerland	2
	14	14.14.1?	Val de Ville, Alsace, France	6

	12	12.12.1	Imfeld, Binnenthal, Switzerlamd	2
	9	991	Val de Ville, Alsace, France	6
	8	881	" " "	6
	—8	$8\bar{8}1$	" " "	6
	$\frac{5}{2}$	552	Imfeld, Binnenthal, Switzerland	2
	$\frac{7}{3}$	773	Val de Ville, Alsace, France	6
	$\frac{9}{4}$	994	Imfeld, Binnenthal, Switzerland	2
	$\frac{11}{5}$	11.11.5	Binnenthal, Switzerland	2
	$\frac{9}{5}$	995	Val de Ville, Alsace, France	6
	$\frac{8}{5}$	885	Imfeld, Binnenthal, Switzerland	2
	$-\frac{8}{5}$	$8\bar{8}5$	Binnenthal, Switzerland	2
	$\frac{7}{5}$	775	Val de Ville, Alsace, France	6
	$\frac{13}{10}$	13.13.10	" " "	6
	$\frac{4}{3}$	443	" " "	6
	$\frac{7}{6}$	776	Urbeis, Alsace, France	7
	$\frac{18}{17}$	18.17.17	Val de Ville, Alsace, France	6
	—7	$7\bar{7}1$	Framont, Alsace, France	4
	$-\frac{13}{2}$	$13.\overline{13}.2$	Imfeld, Binnenthal, Switzerland	2
	$-\frac{11}{2}$	$11.\overline{11}.2$	Framont, Alsace, France	4
	—4	$4\bar{4}1$	Imfeld, Binnenthal, Switzerland	2
	—3	$3\bar{3}1$	Binnenthal, Switzerland	2
	$-\frac{5}{2}$	$5\bar{5}2$	" "	2
	$-\frac{6}{5}$	$6\bar{6}5$	Val de Ville, Alsace, France	6
	$-\frac{29}{25}$	$29.\overline{29}.25$	" " "	6
	$-\frac{26}{25}$	$26.\overline{26}.25$	" " "	6
ν	52	521	Servoz, Haute-Savoie, France	9
	—52	$5\bar{2}1$	Urbeis, Alsace, France	8
	$\frac{23}{11}\ \frac{12}{11}$	23.12.11	Imfeld, Binnenthal, Switzerland	2
λ	$\frac{9}{2}\ \frac{5}{2}$	952	Servoz, Haute-Savoie, France	9
	$\frac{5}{2}\ \frac{3}{2}$	532	Urbeis, Alsace, France	7
	$-\frac{5}{2}\ \frac{3}{2}$	$5\bar{3}2$	Val de Ville, Alsace, France	6
	$2\frac{4}{3}$	643?	Urbeis, Alsace, France	7
	$\frac{5}{4}\ \frac{9}{8}$	10.9.8	" " "	7
	$\frac{6}{5}\ \frac{17}{15}$	18.17.15	" " "	7

1.—A. Cathrein, 1888, Min. u. petro. Mitth., X, p. 524.
2.—C. O. Trechmann, 1893, Min. Mag., X, p. 220.
3.—H. Baumhauer, 1893, Zeitschr. f. Kryst., XXI, p. 202.
4.—A. Brunlechner, 1895, Zeitschr. f. Kryst., XXIV, p. 628.
5.—K. Zimányi, 1901, Zeitschr. f. Kryst., XXXIV, p. 78.
6.—H. Ungemach, 1906, Bull. Soc. fr. Min., XXIX, p. 194.
7.—H. Ungemach, 1909, Bull. Soc. fr. Min., XXXII, p. 368.

8.—V. Dürfeld, 1909, Geol. Surv. Els.-Lothr., VII, p. 115.
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10.—H. Baumhauer, 1913, Zeitschr. f. Kryst., LII, p. 580.

Thalénite

a: b: c = 1.154:1:0.602 9 = 80° 12′

c	0	001	Österby, Dalecalia, Sweden	1
a	∞0	100	" " "	1
b	0∞	010	" " "	1
m	∞	110	" " "	1
f	02	021	" " "	1
e	1	111	" " "	1
d	—1	1$\bar{1}$1	" " "	1
h	31	311	" " "	1

1.—C. Benedicks, 1898, Geol. Fören. Förh., XX, p. 308.

Thaumasite

Hexagonal *a: c* = 1:0.931 ± .003

c	0	0001	West Paterson, N. J.	1
m	∞0	10$\bar{1}$0	" " "	1
a	∞	11$\bar{2}$0	" " "	2
e	$\frac{1}{2}$0	10$\bar{1}$2	" " "	2
f	$\frac{2}{3}$0	20$\bar{2}$3	" " "	2
p	10	10$\bar{1}$1	" " "	1
q	$\frac{3}{2}$0	30$\bar{3}$2	" " "	2

1.—W. T. Schaller, 1916, U. S. Geol. Surv., Bull. DCX, p. 131.
2.—E. T. Wherry, 1918, Proc. U. S. Nat. Mus., LIV, p. 373.

Thenardite

a: b: c = 0.570:1:1.2541

u	∞3	130	Aussee, Steiermark, Germany	1
v	$\frac{1}{3}$	113	" " "	1

1.—A. Pelíkan, 1891, Min. u. petro. Mitth., XII, p. 476.

Thomsonite

	∞ $\frac{10}{9}$	9.10.0	Mte. Somma, Vesuvius, Italy	2
	60	601	East Greenland	1

1.—O. B. Böggild, 1905, Medd. om Grönland, XXVIII, p. 109.
2.—G. Cesàro—1907, Bull. Ac. Belg., p. 334.

THORIANITE

Isometric

	$\infty 0$	100	Balangoda, Ceylon	1

1.—W. R. DUNSTAN AND G. S. BLAKE, 1905, Proc. Roy. Soc., A, p. 74.

THORTVEITITE

$a: b: c = 0.7456:1:1.4912$

m	∞	110	Iveland, Sätersdalen, Norway	1
s	2	221	" " "	1
o	1	111	" " "	1
u	$\frac{1}{2}$	112?	" " "	1

1.—J. SCHETELIG, 1911, Centralbl. Min., p. 721; 1912, idem, p. 64.

TILASITE

Monoclinic Clinohedral? $a: b: c = 0.7503:1:0.08391$ $\beta = 59° 30'$

a	$-\infty 0$	$\bar{1}00$	Kajlidongri, Jhabua, India	1
b	0∞	010	" " "	1
m	∞	110	" " "	1
m_1	$-\infty$	$\bar{1}10$	" " "	1
g	02	021	" " "	1
e	-10	$\bar{1}01$	" " "	1
p	1	111	" " "	1
p_1	$\bar{1}1$	$\bar{1}1\bar{1}$	" " "	1
x	$\overline{11}$	$11\bar{1}$	" " "	1
r_1	33	331	" " "	1
r	$\bar{3}3$	$\bar{3}3\bar{1}$	" " "	1
y	$\frac{\bar{1}}{2}\frac{\bar{1}}{2}$	$11\bar{2}$	" " "	1
o	$\bar{1}3$	$\bar{1}31$	" " "	1
z	$\frac{\bar{1}}{2}\frac{5}{2}$	152	" " "	1
δ	$\frac{\bar{1}}{5}\frac{\bar{6}}{5}$	$1\overline{65}$	" " "	1

1.—G. F. HERBERT-SMITH AND G. T. PRIOR, 1911, Min. Mag., XVI, p. 84.

TITANITE

$a: b: c = 0.4271:1:0.5676$ $\beta = 85° 27'$

o_1	6∞	610	Čáslav, Bohemia	10
	$\infty\frac{6}{5}$	560	Greenland	1
g	$0\frac{1}{3}$	013	Nordmark, Sweden	9
	$-\frac{1}{4}0$	$\bar{1}04$	Greenland	1
	$-\frac{3}{2}0$	$\bar{3}02$	"	1
	-20	$\bar{2}01$	Pian Real Mt., Piedmont, Italy	4

	$-\frac{1}{11}$	$\bar{1}.1.11$	Valley of Gava, Voltri, Italy	11
	$-\frac{3}{20}$	$\bar{3}.3.20$	Lauvital, Isère, France	2
R	$-\frac{1}{3}$	$\bar{1}13$	Skaatö, Kragerö, Norway	6
	$\frac{8}{3}$	883	Lauvital, Isère, France	2
h	—13	$\bar{1}31$	Nordmark, Sweden	9
	14	141	Watitz, Bohemia	3
	—21	$\bar{2}11$	Rauris, Tyrol	7
g	$-\frac{1}{2}12$	$\bar{1}.24.2$	Watitz, Bohemia	3
	$\frac{1}{3}\frac{8}{3}$	183	Rauris, Tyrol	7
e	$\frac{4}{3}5$	4.15.3	Watitz, Bohemia	3
	$-\frac{2}{5}\frac{7}{5}$	$\bar{2}75$	Rauris, Tyrol	7
	$-\frac{1}{9}\frac{1}{3}$	$\bar{1}39$	Greenland	1
	$-\frac{5}{11}\frac{6}{11}$	$\bar{5}.6.11$	Rauris, Tyrol	7
g	$\frac{1}{5}\frac{1}{7}$	7.5.35	Switzerland	5
	—43	$\bar{4}31$	Greenland	1
u_1	$-\frac{1}{3}\frac{2}{9}$	$\bar{3}29$	Switzerland	5
u_2	$-\frac{1}{3}\frac{1}{6}$	$\bar{2}16$	"	5
c'	$\frac{3}{50}\frac{1}{50}$	3.1.50	Val Giuf, Isivizzera, Italy	8
Λ	$\frac{3}{7}\frac{1}{7}$	317	" " "	8
u_3	$-\frac{1}{3}\frac{1}{9}$	$\bar{3}19$	Switzerland	5
	$-\frac{3}{4}\frac{1}{4}$	$\bar{3}14$	Rauris, Tyrol	7
N	$-\frac{1}{3}\frac{13}{20}$	$\overline{20}.39.60$	Watitz, Bohemia	3

1.—G. Flink, 1893, Geol. Fören. Förh., XV, p. 467.
2.—P. Ternier, 1896, Bull. Soc. fr. Min., XIX, p. 81.
3.—A. Krejci, 1898, Ber. böhm. Ges. Wiss., IX.
4.—B. Boeris, 1902, Att. Soc. Milano, XLI, p. 357.
5.—O. Hugo, 1904, Centralbl. f. Min., p. 464.
6.—F. Slavik, 1904, Zeitschr. f. Kryst., XXXIX, p. 301.
7.—H. Scisser, 1910, Zeitschr. f. Kryst., XLVII, p. 321.
8.—F. Ranfaldi, 1913, Mem. Accad. Linc., (5) IX, p. 23.
9.—A. Hadding, 1914, Geol. Fören. Förh., XXXVI, p. 319.
10.—B. Je7ik, 1914, Zeitschr. d. böhm. Mus., Sept.-Abdr., p. 6.
11.—E. Repossi, 1918, Att. Soc. Ital. Sci. Nat., LVII, p. 131.

Topaz

$a:b:c=0.52854:1:0.95338$

h^6	$\frac{7}{5}\infty$	750	Zacatecas, Mexico	11
	$\frac{9}{7}\infty$	970	Minas Geraes, Brazil	14
	$\infty\frac{18}{17}$	17.18.0	" " "	14
	$\infty\frac{16}{15}$	15.16.0	" " "	14
	$\infty\frac{15}{14}$	14.15.0?	Ilmen Mts., Russia	2

	$\infty\frac{14}{13}$	13.14.0	Bahia, Brazil	15
	$\infty\frac{11}{10}$	10.11.0	Minas Geraes, Brazil	14
	$\infty\frac{15}{13}$	13.15.0?	Bahia, Brazil	15
	$\infty\frac{7}{6}$	670	Minas Geraes, Brazil	14
	$\infty\frac{9}{7}$	790	“ “ “	14
	$\infty\frac{17}{13}$	13.17.0	“ “ “	14
	$\infty\frac{18}{13}$	13.18.0	Bahia, Brazil	15
	$\infty\frac{7}{5}$	570?	“ “	15
	$\infty\frac{8}{5}$	580	Ilmen Mts., Russia	2
	$\infty\frac{13}{8}$	8.13.0	Minas Geraes, Brazil	14
	$\infty\frac{5}{3}$	350	“ “ “	14
	$\infty\frac{11}{6}$	6.11.0	“ “ “	14
	$\infty\frac{15}{7}$	7.15.0	“ “ “	14
	$\infty\frac{13}{6}$	6.13.0	“ “ “	14
	$\infty\frac{9}{4}$	490	“ “ “	14
	$\infty\frac{7}{3}$	370	“ “ “	14
	$\infty\frac{12}{5}$	5.12.0	“ “ “	14
	$\infty\frac{13}{5}$	5.13.0	“ “ “	14
	$\infty\frac{17}{6}$	6.17.0	“ “ “	14
	$\infty\frac{11}{4}$	4.11.0	Japan	3
	$\infty\frac{11}{3}$	3.11.0	Minas Geraes, Brazil	14
	$\infty\frac{9}{2}$	290	Ilmen Mts., Russia	2
	$\infty 16$	1.16.0?	“ “	2
	$0\frac{9}{8}$	098	Minas Geraes, Brazil	14
	$0\frac{5}{4}$	054	“ “ “	14
	$0\frac{11}{9}$	0.11.9	“ “ “	14
	$0\frac{16}{13}$	0.16.13	Bahia “	15
W	$0\frac{4}{3}$	043	Minas Geraes, “	8
	$0\frac{8}{5}$	085	Bahia “	5
Γ	$0\frac{8}{3}$	083	Minas Geraes, “	8
𝔴:	06	061	“ “ “	13
	0.18	0.18.1	“ “ “	14
	$\frac{1}{7}0$	107		6
j	50	501	Parkenham, Victoria, Australia	7
	$\frac{1}{6}$	116?	Ilmen Mts., Russia	2
	$\frac{2}{9}$	229	Bahia, Brazil	15
	$\frac{3}{8}$	338	Ilmen Mts., Russia	4
	$\frac{7}{17}$	7.7.17	Bahia, Brazil	15
	$\frac{7}{16}$	7.7.16		1
	$\frac{4}{9}$	449	Bahia, Brazil	15

	$\frac{9}{20}$	9.9.20	Fichtelgebirge, Saxony, Germany	5
	$\frac{7}{13}$	7.7.13	Minas Geraes, Brazil	14
	$\frac{4}{7}$	447	" " "	14
a:	$\frac{2}{3}$	223	" " "	10
o:	$\frac{4}{5}$	445	" " "	13
e	4	441	Japan	11
	$\frac{1}{32}$ 1	1.32.32?	Ilmen Mts., Russia	2
	$\frac{1}{14}$ $\frac{13}{14}$	1.13.14	Minas Geraes, Brazil	14
	$\frac{10}{41}$ $\frac{31}{41}$	10.31.14?	Ilmen Mts., Russia	2
b:	$\frac{2}{5}$ $\frac{3}{5}$	235	Minas Geraes, Brazil	9
	$\frac{40}{97}$ $\frac{57}{97}$	40.57.97?	Ilmen Mts., Russia	2
	$\frac{20}{47}$ $\frac{27}{47}$	20.27.47?	" "	2
	$\frac{10}{23}$ $\frac{13}{23}$	10.13.23?	" "	2
	$\frac{4}{9}$ $\frac{5}{9}$	459?	" "	2
	$\frac{8}{15}$ $\frac{7}{15}$	8.7.15	" "	2
	$\frac{20}{3}$ $\frac{17}{3}$	20.17.3?	" "	2
	$\frac{4}{7}$ $\frac{3}{7}$	437?	" "	2
	$\frac{11}{10}$ $\frac{8}{10}$	11.8.10	Elba, Italy	12
i:	$\frac{1}{3}$ $\frac{1}{9}$	319	Japan	10
	$\frac{5}{7}$ $\frac{8}{35}$	25.8.35?	Ilmen Mts., Russia	2
	$\frac{10}{13}$ $\frac{3}{13}$	10.3.13	" "	2
	$\frac{4}{5}$ $\frac{1}{5}$	415	" "	2
	$\frac{11}{13}$ $\frac{2}{13}$	11.2.13?	" "	2

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5.—H. Bucking, 1896, Ber. Senckenberg Ges., p. 147.
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14.—D. Fenner, 1913, Neues Jahrb. f. Min., Beil.-B., XXXVI, p. 204.
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Tourmaline

25 ∞	$25.1.\overline{26}.0$	Brazil	4
15 ∞	$15.1.\overline{16}.0$	"	4

	$\frac{40}{3}\infty$	$40.3.\overline{43}.0$	Brazil	4
	10∞	$10.1.\overline{11}.0$	Ceylon	5
	8∞	$81\overline{9}0$	"	5
	$\frac{13}{2}\infty$	$13.2.\overline{15}.0$	Bahia, Brazil	7
	6∞	$61\overline{7}0$	Brazil	4
	$\frac{11}{2}\infty$	$11.2.\overline{13}.0$	"	4
	$\frac{11}{3}\infty$	$11.3.\overline{14}.0$	"	4
	$\frac{7}{2}\infty$	$72\overline{9}0$	"	4
	$\frac{10}{3}\infty$	$10.3.\overline{13}.0$	"	4
	$\frac{7}{3}\infty$	$7.3.\overline{10}.0$	"	4
	$\frac{20}{9}\infty$	$20.9.\overline{29}.0$	Bahia, Brazil	7
	$\frac{17}{8}\infty$	$17.8.\overline{25}.0$	Minas Geraes, Brazil	3
	$\frac{11}{7}\infty$	$11.7.\overline{18}.0$	Bahia, Brazil	7
	$\frac{10}{9}\infty$	$10.9.\overline{19}.0$	Brazil	4
	$\frac{25}{23}\infty$	$25.23.\overline{48}.0$	Bahia, Brazil	7
	$-\frac{11}{8}\infty$	$\overline{11}.\overline{8}.\overline{19}.0$	Ceylon	2
	$-\frac{10}{7}\infty$	$\overline{10}.\overline{7}.\overline{17}.0$	"	2
	$-\frac{5}{4}\infty$	$\overline{459}0$	"	2
	$-\frac{6}{5}\infty$	$\overline{6}.\overline{5}.\overline{11}.0$	"	2

ANTILOGOUS POLE

	$\frac{1}{9}$	$11\overline{2}9$	Ceylon	2
	$\frac{2}{11}$	$2.2.\overline{4}.11$	"	2
	$\frac{5}{14}$	$5.5.\overline{10}.14$	"	2
	$\frac{5}{12}$	$5.5.\overline{10}.12$	"	2
τ	$\frac{2}{3}$	$22\overline{4}3$	"	2
	2	$22\overline{4}1$	"	2
	$\frac{2}{11}0$	$2.0.\overline{2}.11$	"	2
η	$\frac{2}{5}0$	$20\overline{2}5$	"	2
	$\frac{4}{7}0$	$40\overline{4}7$	"	2
	$\frac{2}{3}0$	$20\overline{2}3$	"	2
	$\frac{5}{4}0$	$50\overline{5}4$	"	2
	$\frac{10}{7}0$	$10.0.\overline{10}.7$	"	2
l	$\frac{9}{5}0$	$90\overline{9}5$	"	5
i	20	$20\overline{2}1$	"	2
	$\frac{14}{5}0$	$14.0.\overline{14}.5$	"	2
F	30	$30\overline{3}1$	"	2
m	$\frac{13}{4}0$	$13.0.\overline{13}.4$	"	2
	$\frac{9}{2}0$	$90\overline{9}2$	"	2
	$\frac{11}{2}0$	$11.0.\overline{11}.2$	"	2

P	70	$70\bar{7}1$	Ceylon	2
	130	$13.0.\overline{13}.1$	"	2
	$-\frac{1}{5}0$	$01\bar{1}5$	"	2
	$-\frac{1}{4}0$	$01\bar{1}4$	"	2
	$-\frac{1}{3}0$	$01\bar{1}3$	"	2
	$-\frac{4}{9}0$	$04\bar{4}9$	"	2
	$-\frac{5}{8}0$	$05\bar{5}8$	"	2
	$-\frac{5}{7}0$	$05\bar{5}7$	"	2
ϵ	$-\frac{4}{5}0$	$04\bar{4}5$	"	2
	$-\frac{13}{14}0$	$0.13.\overline{13}.14$	"	2
	$-\frac{8}{7}0$	$08\bar{8}7$	"	2
Δ	$-\frac{3}{2}0$	$03\bar{3}2$	"	2
ψ	-30	$03\bar{3}1$	"	2
$\mathfrak{r}$	$-\frac{17}{3}0$	$0.17.\overline{17}.3$	"	5
$\mathfrak{k}$	$-\frac{20}{3}0$	$0.20.\overline{20}.3$	"	5
$\mathfrak{H}$	-80	$08\bar{8}1$	"	2
$\mathfrak{n}$	$-\frac{17}{2}0$	$0.17.\overline{17}.2$	"	5
$\mathfrak{o}$	-10.0	$0.10.\overline{10}.1$	"	5
$\mathfrak{p}$	-17.0	$0.17.\overline{17}.1$	"	5
		Analogous Pole		
	$-\frac{11}{10}0$	$0.\overline{11}.11.\overline{10}$	Ceylon	2
N'	$-\frac{5}{2}0$	$0\bar{5}5\bar{2}$	"	2
	$-\frac{11}{4}0$	$0.\overline{11}.11.\bar{4}$	"	2
π'	-70	$0\bar{7}7\bar{1}$	"	2
	$-\frac{19}{2}0$	$0.\overline{91}.19.\bar{2}$	"	2
		Antilogous Pole		
	51	$51\bar{6}1$	Elba, Italy	2
β	$\frac{11}{8}\ \frac{3}{8}$	$11.3.\overline{14}.8$	Ceylon	2
	$\frac{14}{9}\ \frac{5}{9}$	$14.5.\overline{19}.9$	"	2
	$\frac{17}{10}\ \frac{7}{10}$	$17.7.\overline{24}.10$	"	2
	$\frac{13}{6}\ \frac{7}{6}$	$13.7.\overline{20}.6$	"	2
	$\frac{7}{3}\ \frac{4}{3}$	$7.4.\overline{11}.3$	"	2
h	$\frac{5}{2}\ \frac{3}{2}$	$53\bar{8}2$	"	2
y	$\frac{7}{2}\ \frac{5}{2}$	$7.5.\overline{12}.2$	"	2
	$\frac{15}{4}\ \frac{11}{4}$	$15.11.\overline{26}.4$	"	2
	$\frac{9}{2}\ \frac{7}{2}$	$9.7.\overline{16}.2$	"	2
	54	$54\bar{9}1$	"	2
	$\frac{15}{2}\ \frac{13}{2}$	$15.13.\overline{28}.2$	"	2
Σ	13.12	$13.12.\overline{25}.1$	"	2

$\mathfrak{ch}$	20.19	$20.19.\overline{39}.1$	Ceylon	2
$\mathfrak{K}$	$\frac{1}{4}\ \frac{3}{8}$	$23\bar{5}8$	"	2
Q	$\frac{1}{5}\ \frac{2}{5}$	$12\bar{3}5$	"	2
$\mathfrak{L}$	$\frac{1}{6}\ \frac{5}{12}$	$2.5.\bar{7}.12$	"	2

Analogous Pole

	$\frac{16}{15}\ \frac{1}{15}$	$\overline{16}.\bar{1}.17.\overline{15}$	Ceylon	2
	$\frac{12}{11}\ \frac{1}{11}$	$\overline{12}.\bar{1}.13.\overline{11}$	"	2
$\mathfrak{M}'$	$\frac{10}{9}\ \frac{1}{9}$	$\overline{10}.\bar{1}.11.\bar{9}$	"	2
ρ'	$\frac{6}{5}\ \frac{1}{5}$	$\bar{6}\bar{1}7\bar{5}$	"	2
f'	$\frac{4}{3}\ \frac{1}{3}$	$\bar{4}\bar{1}5\bar{3}$	"	2
β	$\frac{11}{8}\ \frac{3}{8}$	$\overline{11}.\bar{3}.14.\bar{8}$	"	2
$\mathfrak{c}'$	$\frac{10}{7}\ \frac{3}{7}$	$\overline{10}.\bar{3}.13.\bar{7}$	"	2
	$\frac{17}{10}\ \frac{7}{10}$	$\overline{17}.\bar{7}.24.\overline{10}$	"	2
	$\frac{11}{6}\ \frac{5}{6}$	$\overline{11}.\bar{5}.16.\bar{6}$	"	2
	$\frac{9}{4}\ \frac{5}{4}$	$\bar{9}.\bar{5}.14.\bar{4}$	"	2
	$\frac{7}{3}\ \frac{4}{3}$	$\bar{7}.\bar{4}.11.\bar{3}$	"	2
y'	$\frac{7}{2}\ \frac{5}{2}$	$\bar{7}.\bar{5}.12.2$	"	2
H'	43	$\bar{4}\bar{3}7\bar{1}$	"	2
J'	54	$\bar{5}\bar{4}9\bar{1}$	"	2
	76	$\bar{7}.\bar{6}.13.\bar{1}$	"	2
L'	$\frac{15}{2}\ \frac{13}{2}$	$\overline{15}.\overline{13}.28.\bar{2}$	"	2
Σ'	13.12	$\overline{13}.\overline{12}.25.\bar{1}$	"	2
T'	18.17	$\overline{18}.\overline{17}.35.\bar{1}$	"	2
	$-\frac{3}{8}\ \frac{1}{4}$	$\bar{2}\bar{3}5\bar{8}$	"	2

Antilogous Pole

	$\frac{11}{12}\ \frac{1}{6}$	$11.2.\overline{13}.12$	Ceylon	2
	$\frac{9}{10}\ \frac{1}{5}$	$9.2.\overline{11}.10$	"	2
	$\frac{7}{8}\ \frac{1}{4}$	$72\bar{9}8$	"	2
	$\frac{9}{11}\ \frac{4}{11}$	$9.4.\overline{13}.11$	"	2
	$\frac{4}{5}\ \frac{2}{5}$	$42\bar{6}5$	"	2
w	$\frac{3}{4}\ \frac{1}{2}$	$32\bar{5}4$	"	2
	$-\frac{8}{7}\ \frac{3}{7}$	$3.8.\overline{11}.7$	"	2
	$-\frac{5}{4}\ \frac{3}{8}$	$3.10.\overline{13}.8$	"	2
M	$-\frac{4}{3}\ \frac{1}{3}$	$14\bar{5}3$	"	2
$\mathfrak{e}$	$-\frac{7}{5}\ \frac{3}{10}$	$3.14.\overline{17}.10$	"	2
	$-\frac{8}{5}\ \frac{1}{5}$	$18\bar{9}5$	"	2
$\mathfrak{g}$	$-\frac{5}{2}\ \frac{1}{2}$	$15\bar{6}2$	"	2
$\ddot{u}$	$-\frac{17}{4}\ \frac{9}{4}$	$9.17.\overline{26}.4$	"	2
Z	-75	$5.7.\overline{12}.1$	"	2

D	—86	6.8.$\overline{14}$.1	Ceylon	2
𝔇	$\frac{8}{3}\ \frac{2}{3}$	8.2.$\overline{10}$.3	"	2
X	$\frac{9}{2}\ \frac{1}{2}$	9.1.$\overline{10}$.2	"	2
E	51	51$\bar{6}$1	Elba, Italy	1
K	62	62$\bar{8}$1	Ceylon	2
	—2$\frac{3}{7}$	3.14.$\overline{17}$.7	"	2
𝔓	—2$\frac{3}{5}$	3.10.$\overline{13}$.5	"	2
𝔐	—2$\frac{2}{3}$	26$\bar{8}$3	"	2
B	—21	12$\bar{3}$1	"	2
T	—2$\frac{7}{2}$	34$\bar{7}$2	"	2
	52	52$\bar{7}$1	"	2
	$\frac{15}{2}$2	15.4.$\overline{19}$.2	"	2
j	—1$\frac{1}{4}$	14$\bar{5}$4	"	2
	—1$\frac{1}{7}$	17$\bar{8}$7	"	2
	—1$\frac{1}{9}$	$\bar{2}$9$\bar{7}$9	"	2
	—$\frac{11}{4}\ \frac{3}{4}$	3.11.$\overline{14}$.4	Madagascar	6

ANALOGOUS POLE

	$\frac{5}{7}\ \frac{4}{7}$	$\bar{5}\bar{4}$9$\bar{7}$	Ceylon	2
x'	—1$\frac{1}{2}$	$\bar{1}\bar{2}$3$\bar{2}$	"	2
C'	—1$\frac{20}{7}$	$\overline{20}$.$\bar{7}$.27.$\bar{7}$	"	2

1.—G. D'ARCHIARDI, 1894, Att. Soc. Tosc. Mem. Pisa, XII, p. 229.
*2.—V. VONWOROBIEFF, 1900, Zeitschr. f. Kryst., XXXIII, p. 263.
3.—A. H. WESTERGÅRD, 1906, Zeitschr. f. Kryst., XLII, p. 276.
4.—G. REIMANN, 1907, Neues Jahrb. f. Min. Beil.-B., XXIII, p. 91.
5.—A. ONDŘEF, 1909, Abh. d. böhm. Akad.
6.—H. UNGEMACH, 1912, Bull. Soc. fr. Min., XXXV.
7.—P. SIEDEL, 1915, Neues Jahrb. f. Min. Beil.-B., XXXVIII, p. 792.

TRECHMANNITE

Hexagonal Trirhombohedral $a:c=1:0.6530$

o	0	0001	Binnenthal,	Switzerland[1]	1
b	∞0	10$\bar{1}$0	"	"	1
f	∞7	17$\bar{8}$0	"	"	1
F	∞4	14$\bar{5}$0	"	"	2
d	∞3	13$\bar{4}$0	"	"	1
a	∞	11$\bar{2}$0	"	"	1
r	10	10$\bar{1}$1	"	"	1
α	40	40$\bar{4}$1	"	"	2

[1]Lengenbach Quarry, Binnenthal, Switzerland.

H	$-\frac{1}{5}0$	$01\bar{1}5$	Binnenthal, Switzerland[1]	2
G	$-\frac{2}{7}0$	$02\bar{2}7$	" "	2
e	$-\frac{1}{2}0$	$01\bar{1}2$	" "	2
s	—20	$02\bar{2}1$	" "	2
φ	—50	$05\bar{5}1$	" "	2
p	$\frac{1}{3}$	$11\bar{2}3$	" "	2
v	21	$21\bar{3}1$	" "	2
χ	43	$43\bar{7}1$	" "	2
V	62	$62\bar{8}1$	" "	2
s	53	$53\bar{8}1$	" "	2
β	$\frac{3}{4}\,\frac{1}{2}$	$32\bar{5}4$	" "	2
n	$-\frac{4}{3}\,\frac{1}{3}$	$14\bar{5}3$	" "	2
x	—31	$13\bar{4}1$	" "	1
z	—42	$24\bar{6}1$	" "	1
θ	$-\frac{29}{9}\,\frac{2}{9}$	$2.29.\overline{31}.9$	" "	2
k	$-\frac{11}{8}\,\frac{1}{8}$	$1.11.\overline{12}.8$	" "	2
λ	$-\frac{11}{5}\,\frac{1}{5}$	$1.11.\overline{12}.5$	" "	2
σ	$-\frac{9}{4}1$	$4.9.\overline{13}.4$	" "	2
ε	$-\frac{13}{8}\,\frac{3}{4}$	$6.13.\overline{19}.4$	" "	2
g	$-\frac{5}{4}\,\frac{3}{4}$	$35\bar{8}4$	" "	2
γ	$-\frac{5}{2}2$	$45\bar{9}2$	" "	2
η	$-\frac{3}{5}\,\frac{2}{5}$	$23\bar{5}5$	" "	2

1.—R. H. Solly, 1905, Min. Mag., XIV, p. 75.
2.—G. F. Herbert-Smith and G. T. Prior, 1907, Min. Mag., XIV, p. 300.

Trögerite

Tetragonal? *a*: *c* = 1:2.16

o	0	001	Schneeberg, Saxony, Germany	1
n	0∞	010	" " "	1
Σ	∞2	120	" " "	1
y	$0\frac{1}{2}$	012	" " "	1
P	01	011	" " "	1
h	$0\frac{3}{2}$	032	" " "	1
i	02	021	" " "	1
t	1	111	" " "	1
u	3	331	" " "	1

1.—V. Goldschmidt, 1899, Zeitschr. f. Kryst., XXXI, p. 468.

[1]Legenbach Quarry, Binnenthal, Switzerland.

Trona

t	—$\frac{1}{2}$0	$\bar{1}$02	Vesuvius, Italy	1

1.—F. Zambonini, 1908, Att. R. Acc. Sc. Napoli, XIII.

Tscheffkinite

$a:b:c = 0.9238:1:0.4900$

0	001	Betroku, Madagascar	1
0∞	010	" "	1
$\frac{7}{2}$∞	720	" "	1
$\frac{5}{2}$∞	520	" "	1
∞	110	" "	1
10	101	" "	1
1	111	" "	1

1.—H. Ungemach, 1916, Bull. Soc. fr. Min., XXXIX.

Tsumebite

$a:b:c = 0.977:1:0.879$

c	0	001	Tsumeb, Otavi, S. W. Africa	1
d	10	101	" " " "	1
e	20	201	" " " "	1
p	1	111	" " " "	1
n	12	121	" " " "	1

1.—V. Rosicky, 1912, Zeitschr. f. Kryst., LI, p. 521.

Turquois

$a:b:c = 0.7910:1:0.6051$ $\alpha = 92° 50'$ $\beta = 93° 30'$ $\gamma = 107° 41'$

a	∞0	100	Lynch Station, Campbell Co., Va.	1
b	0∞	010	" " " "	1
m	∞	110	" " " "	1
M	—∞	1$\bar{1}$0	" " " "	1
k	—01	0$\bar{1}$1	" " " "	1

1.—W. T. Schaller, 1912, Amer. Journ. Sci., XXXIII, p. 35.

Tychite

Isometric

o	1	111	Borax Lake, Calif.	1

1.—S. L. Penfield and G. S. Jamieson, 1905, Amer. Journ. Sci., XX, p. 217.

Uhligite

Isometric

	$\infty 0$	100	Magad Lake, East Africa	1
	1	101	" " " "	1

1.—O. Hauser, 1909, Zeitschr. Anorg. Chem., LXIII, p. 340.

Uranophane

$a:b:c = 0.6257:1:0.5943$ $\alpha = 87° 41'$ $\beta = 58° 18'$ $\gamma = 96° 31'$

C	0	001	Saxony and Bohemia[1]	1
A	$\infty 0$	100	" " "	1
B	0∞	010	" " "	1
r	-6∞	$6\bar{1}0$	" " "	1
l	2∞	210	" " "	1
u	$\infty 6$	160?	" " "	1
o	$\infty 7$	170?	" " "	1
t	$\infty 12$	1.12.0?	" " "	1
ω	$\infty 20$	1.20.0?	" " "	1
T	01	011?	" " "	1
D	10	101?	" " "	1
p	1	111?	" " "	1
s	$1\bar{1}$	$1\bar{1}1$?	" " "	1
π	$\frac{\bar{1}}{3}1$	$\bar{1}33$?	" " "	1
Θ	$\frac{\bar{1}}{3}\bar{1}$	$\bar{1}\bar{3}3$?	" " "	1
Σ	$1\frac{\overline{20}}{11}$	$11.\overline{20}.11$?	" " "	1
σ	$\frac{\overline{20}}{9}1$	$\overline{20}.9.9$?	" " "	1
α	17.1	17.1.1?	" " "	1
μ	$\overline{11}.1$	$\overline{11}.1.1$?	" " "	1
β	$10.\bar{1}$	$10.\bar{1}.1$?	" " "	1
γ	$\overline{10}.\bar{1}$	$\overline{10}.\bar{1}.1$?	" " "	1
ϵ	$8\bar{1}$	$8\bar{1}1$?	" " "	1
σ	$7\bar{1}$	$7\bar{1}1$?	" " "	1

1.—P. Pjatnitzki, 1892, Zeitschr. f. Kryst., XXI, p. 74.

Valentinite

0.3936:1:0.4339 (Ungemach)

c	0	001	La Nurra, Sardinia	1
g^3	$\infty 2$	120	Sensa, "	3
g^2	$\infty 3$	130	" "	3

[1]Schneeberg Saxony and Joachimsthal, Bohemia.

e^2	$0\frac{1}{2}$	012	Sensa, Sardinia	3
b'	$\frac{1}{2}$	112	" "	3
	1	111	Tatasi, Bolivia	2
*b*⅛	4	441	Sensa, Sardinia	3
α	13	131	" "	3
t	$\frac{1}{3}1$	133[4.6.31]	La Nurra, Sardinia	1

1.—A. Pelloux, 1904, Rend. Accad. Linc., XIII, (2), p. 34.
2.—L. J. Spencer, 1907, Min. Mag., XIV, p. 328.
*3.—H. Ungemach, 1912, Bull. Soc. fr. Min., XXXV, p. 539.

Vanadinite

f	5∞	$51\bar{6}0$	Hillsboro, New Mex.	1
g	3∞	$31\bar{4}0$	" "	1
d	$\frac{5}{3}\infty$	$53\bar{8}0$	Yuma Co., Ariz.	2
k	$\frac{3}{4}0$	$30\bar{3}4$	" "	2
o	$\frac{7}{6}0$	$70\bar{7}6$	" "	2
δ	$\frac{5}{4}0$	$50\bar{5}4$	Hillsboro, New Mex.	1
γ	$\frac{4}{3}0$	$40\bar{4}3$	" "	1
u	$\frac{7}{5}0$	$70\bar{7}5$	Yuma Co., Ariz.	2
α	$\frac{3}{2}0$	$30\bar{3}2$	Hillsboro, New Mex.	1
B	$\frac{5}{3}0$	$50\bar{5}3$	" "	1
A	$\frac{7}{4}0$	$70\bar{7}4$	Yuma Co., Ariz.	2
H	$\frac{7}{2}0$	$70\bar{7}2$	" "	2
K	$\frac{11}{3}0$	$11.0.\overline{11}.3$	" "	2
π	40	$40\bar{4}1$	Hillsboro, New Mex.	1
η	$\frac{3}{2}$	$33\bar{6}2$	Cutter and Kelly, New Mex.	3
σ	2	$22\bar{4}1$	" " " "	3
ξ	$1\frac{1}{4}$	$41\bar{5}4$	Hillsboro, New Mex.	1
p	$2\frac{1}{2}$	$41\bar{5}2$?	" "	1
t	$\frac{5}{2}1$	$52\bar{7}2$	" "	1
i	$1\frac{1}{2}$	$21\bar{3}2$	" "	1
c	$1\frac{2}{3}$	$32\bar{5}3$	" "	1
l	$1\frac{3}{2}$	$32\bar{5}2$	" "	1

1.—V. Goldschmidt, 1900, Zeitschr. f. Kryst., XXXII, p. 561.
2.—W. T. Schaller, 1905, U. S. Geol. Surv., Bull. CCLXII, p. 135.
3.—F. P. Paul, 1912, Zeitschr. f. Kryst., L, p. 600.

Varisite

$a : b : c = 0.8944 : 1 : 1.0919$

c	0	001	Lucin, Utah	2
a	$\infty 0$	100	" "	1

b	0∞	010	Lucin, Utah	1
f	$\frac{5}{2}\infty$	520	" "	2
q	2∞	210	" "	2
m	∞	110	" "	1
h	$\infty\frac{4}{3}$	340	" "	2
d	$\infty 2$	120	" "	2
j	$\infty\frac{5}{2}$	250	" "	2
l	$\infty 3$	130	" "	2
e	$0\frac{1}{2}$	012	" "	1
g	$0\frac{3}{2}$	032	" "	2
t	$\frac{1}{2}0$	102	" "	2
p	1	111	" "	2

1.—W. T. Schaller, 1912, Proc. Nat. Mus., XLI, p. 413.
2.—W. T. Schaller, 1916, U. S. Geol. Surv., Bull. DCX, p. 69.

Vesuvianite

	3∞	310	Tennberg, Delecarlia, Sweden	2
	$\frac{9}{4}\infty$	940	Vesuvius	4
	$\frac{6}{5}\infty$	650	Tennberg, Delecarlia, Sweden	2
T	$\frac{1}{6}0$	106	Monte Somma, Italy	1
S	$\frac{2}{9}$	229	" " "	1
V	$\frac{5}{2}$	552	" " "	1
W	$\frac{14}{5}$	14.14.5	" " "	1
	$\frac{13}{4}$	13.13.4?	Zermatt, Switzerland	1
D	$\frac{18}{5}1$	18.5.5	Monte Somma, Italy	1
K	$\frac{7}{2}1$	722	" " "	1
n	$\frac{5}{4}\frac{1}{4}$	514	Crestmore, Riverside Co., Calif.	5
	$\frac{19}{2}\frac{5}{2}$	19.5.2	Vesuvius	4
	63	631	Monzoni, Tyrol	3
	84	841	Vesuvius	4
	75	751	"	4
	$2\frac{8}{5}$	10.8.5	"	4
	$\frac{5}{2}2$	542	"	4

1.—J. Boecker, 1892, Zeitschr. f. Kryst., XX, p. 225.
2.—M. Weibull, 1895, Zeitschr. f. Kryst., XXV, p. 1.
3.—H. Buttgenbach, 1898, Ann. Soc. Géol. Belg., XXV, p. 106.
4.—A. Rosati, 1910, Rend. Accad. Linc., XIX, (2). p. 75.
5.—A. S. Eakle, 1917, Univ. Calif. Pub. (Geol.), X, p. 338.

VILATÉITE

$a:b:c = 1.69581:1:0.88864 \quad \beta = 89° 27'$

c	0	001	La Valate, Haute Vienne, France	1
b	0∞	010	" " "	1
m	∞	110	" " "	1
e	01	011	" " "	1
o	30	301	" " "	1
u	—31	$\bar{3}11$	" " "	1
θ	—34	$\bar{3}41$	" " "	1

1.—A. LACROIX, 1910, Min. de France, IV, p. 477.

VIVIANITE

	$\frac{3}{2}\infty$	320	Leadville, Colo.	2
	$\frac{5}{4}\infty$	540	" "	2
h	$\infty\frac{5}{2}$	250	Tatasi, Bolivia	1
	∞3	130	Tasna, Bolivio	1
	∞4	140	" "	1
	14.0	14.0.1	Leadville, Colo.	2
	$—\frac{3}{2}0$	$\bar{3}02$	" "	2
	$—\frac{5}{2}0$	$\bar{5}02$	" "	2
	$—1\frac{3}{8}$	$\bar{8}38$	Tasna, Bolivia	1

1.—L. J. SPENCER, 1907, Min. Mag., XIV, p. 324.
2.—H. UNGEMACH, 1912, Ann. Soc. Géol. Belg., Mém., XXXIX, p. 6.

VRBAITE

$a:b:c = 0.5659:1:0.4836$

c	0	001	Allchar, Macedonia	1
a	∞0	100	" "	1
b	0∞	010	" "	1
f	$0\frac{3}{5}$	035	" "	1
e	02	021	" "	1
d	04	041	" "	1
q	$\frac{1}{2}$	112	" "	1
p	1	111	" "	1
o	3	331	" "	1
r	13	131	" "	1

1.—B. JEZEK, 1912, Zeitschr. f. Kryst., LI, p. 365.

Wavellite

$a:b:c=0.55774:1:0.4572$

	3∞	310	Montbras, Creuse, France	1
	$\frac{3}{2}\infty$	320	Cly, York Co., Pa.	1
	$\frac{4}{3}\infty$	430	" " "	1

1.—H. Ungemach, 1912, Bull. Soc. fr. Min., XXXV, p. 536.

Wellsite

$a:b:c=0.678:1:1.245 \quad \beta=53° 27'$

c	0	001	Buck Creek, Clay Co., N. C.	1
a	$\infty 0$	100	" " " "	1
b	0∞	010	" " " "	1
m	∞	110	" " " "	1

1.—J. H. Pratt and H. W. Foote, 1897, Amer. Journ. Sci., III, p. 443.

Whewellite

a	$\infty 0$	100	Burgh (Dux), Bohemia	1
	$\frac{5}{4}\infty$	540	Urbeis, Alsace, France	3
n	$\infty\frac{9}{7}$	790	Schlan, Bohemia	2
	$\infty\frac{7}{4}$	470	Urbeis, Alsace, France	3
ν	$\infty\frac{5}{2}$	250	Freiberg and Zwickau, Saxony	1
F	$\infty 9$	190	Kopitz, Bohemia	4
O	$0\frac{1}{3}$	013	Burgh, (Dux), Bohemia	4
d	$0\frac{3}{2}$	032	" " "	1
α	03	031	" " "	1
N	$\frac{2}{3}0$	203	" " "	4
μ_1	$\frac{5}{7}0$	507	Schlan, Bohemia	2
ϵ	$-\frac{1}{4}$	$\bar{1}14$	Freiberg, Saxony	1
g	1	111	Burgh (Dux), Bohemia	1
	-1	$\bar{1}11$	Urbeis, Alsace, France	3
H	$1\frac{7}{5}$	575	Kopitz, Bohemia	4
	12	121	Urbeis, Alsace, France	3
β	13	131	Burgh (Dux), Bohemia	1
γ	$\frac{1}{2}1$	122	" " "	1
η	21	211	Zwickau, Saxony	1
s	-21	$\bar{2}11$	" "	1
δ	$\frac{1}{4}\frac{3}{8}$	238	Burgh (Dux), Bohemia	1
B	34	341	" " "	1
	$\frac{3}{2}2$	342	Urbeis, Alsace, France	3
	$\frac{1}{2}\frac{5}{8}$	458	" " "	3

S	$\frac{5}{8}\ \frac{5}{16}$	10.5.16	Burgh, (Dux), Bohemia	4
T	$\frac{4}{3}\ \frac{2}{3}$	423	" " "	4
Q	$-\frac{3}{17}\ \frac{7}{17}$	$\bar{3}.7.17$	" " "	4
V	$-\frac{3}{8}\ \frac{5}{8}$	$\bar{3}58$	" " "	4
C	—65	$\bar{6}51$	" " "	1
R	$-\frac{3}{10}\ \frac{9}{40}$	$\overline{12}.9.40$	" " "	4
A	—32	$\bar{3}21$	" " "	1

1.—F. Kolbeck and V. Goldschmidt, 1908, Centralbl. f. Min., p. 659.
2.—F. Slavic, 1909, Abh. d. böhm. Akad., XIV.
3.—H. Ungemach, 1909, Bull. Soc. fr. Min., XXXII, p. 20.
*4.—B. Jezek, 1911, Abh. d. böhm. Akad., XVI, No. 2, p. 9.

Wilkeite

Hexagonal $a: c = 1:0.730\pm$

∞0	$10\bar{1}0$	Crestmore, Riverside Co., Calif.	1
∞	$11\bar{2}0$	" " "	1
10	$10\bar{1}1$	" " "	1

1.—A. S. Eakle and A. F. Rogers, 1914, Amer. Journ. Sci., XXXVII, p. 262.

Willemite

$a: c = 1:0.6679$

h	3∞	$31\bar{2}0$	Franklin Furnace, N. J.	1
	$\frac{5}{2}$∞	$52\bar{7}0$	Musartut, Greenland	2
z	—10	$01\bar{1}1$	Merritt Mine, New Mex.	1
n	—20	$02\bar{2}1$	Franklin Furnace, N. J.	3
s	$\frac{1}{3}$	$11\bar{2}3$	" " "	1
u	$\frac{1}{3}$	$2\bar{1}\bar{1}3$	Merritt Mine, New Mex.	1
x	21	$31\bar{2}1$	Franklin Furnace, N. J.	1
i	43	$43\bar{7}1$?	" " "	3
j	34	$34\bar{7}1$	" " "	3
v	$-\frac{2}{5}\ \frac{1}{5}$	$\bar{1}3\bar{2}5$	" " "	1
d	$-1\frac{1}{2}$	$12\bar{3}2$	" " "	3
D	$-1\frac{1}{2}$	$\bar{1}3\bar{2}2$	" " "	3
k	$-\frac{3}{2}\ \frac{1}{2}$	$13\bar{4}2$	" " "	3
q	—31	$13\bar{4}1$	" " "	3
o	$-\frac{4}{3}\ \frac{1}{3}$	$14\bar{5}3$	" " "	3
l	—51	$15\bar{6}1$	" " "	3

1.—S. L. Penfield, 1894, Amer. Journ. Sci., XLVII, p. 305.
2.—O. B. Böggild, 1905, Min. Grönland, p. 180.
3.—C. Palache, and R. P. D. Graham, 1913, Amer. Journ. Sci., XXXVI, p. 639.

Wolframite

v	$-\frac{1}{2}1$	$\bar{1}22$	Tonopah, Nev.	1

1.—A. S. Eakle, 1912, Univ. Cal. Pub., (Geol), VII, p. 19.

Wollastonite

l	$\frac{7}{4}\infty$	740	Crestmore, Riverside Co., Calif.	1
$\mathfrak{m}$	$\infty 4$	140	" " "	1
τ	$\frac{1}{4}0$	104	" " "	1
θ	$-\frac{1}{4}0$	$\bar{1}04$	" " "	1
p	1	111	" " "	1
$\mathfrak{p}$	$\frac{7}{4}1$	744	" " "	1
o	$\frac{3}{4}1$	344	" " "	1
n	$\frac{1}{4}1$	144	" " "	1
u	$-\frac{1}{4}1$	$\bar{1}44$	" " "	1
i	$-\frac{3}{4}1$	$\bar{3}44$	" " "	1
$\mathfrak{d}$	$-\frac{7}{4}1$	$\bar{7}44$	" " "	1
ω	$\frac{1}{2}2$	142	" " "	1
ϵ	$-\frac{1}{2}2$	$\bar{1}42$	" " "	1

1.—A. S. Eakle, 1913, Univ. Cal. Pub., (Geol), X, p. 334.

Wulfenite

p	-20	$\bar{2}01$	Jarilla Mts., Doña Ana Co., N. Mex.	1
θ	$\frac{1}{12}$	1.1.12	Loudville, Mass.	2
γ	$\frac{3}{4}$	443	" "	2
π	$1\frac{1}{3}$	313	Jarilla Mts., Doña Ana Co., N. Mex.	1
λ	13	131	Loudville, Mass.	2
	$\frac{1}{15}\,\frac{1}{75}$	5.1.17	Val Seriana, Italy	3

1.—C. A. Ingersoll, 1894, Amer. Journ. Sci., XLVIII, p. 193.
2.—B. K. Emerson, 1895, U. S. Geol. Surv., Bull. CXXVI, p. 176.
3.—E. Artnini, 1896, Riv. Min. Ital., XVI, p. 25.

Wurtzite

	$\frac{7}{4}0$	$70\bar{7}4$	Nordmark, Sweden	1

1.—G. Flink, 1908, Ark. Kemi. Min. Geol., III, No. 11, p. 20.

Xanthoconite

$a:b:c = 1.9187:1:1.0152 \quad \beta = 88° 47'$

c	0	001	Freiberg, Saxony, Germany	1
a	$\infty 0$	100	" " "	1
m	∞	110	" " "	1

n	$0\frac{5}{3}$	053	Freiberg, Saxony, Germany	1
f	$\frac{3}{2}0$	302	St. Kreuz, Lebertal, Alsace, France	2
D	50	501	Freiberg, Saxony, Germany	1
d	—50	$\bar{5}01$	“ “ “	1
e	—2	$\bar{2}01$	St. Kreuz, Lebertal, Alsace, France	2
f	$\frac{1}{5}$	115	Freiberg, Saxony, Germany	1
r	$\frac{1}{2}$	112	“ “ “	1
t	$\frac{2}{3}$	223	“ “ “	1
h	$\frac{3}{4}$	334	“ “ “	1
p	1	111	“ “ “	1
y	$\frac{4}{3}$	443	“ “ “	1
ρ	$\frac{3}{2}$	332	“ “ “	1
q	5	551	“ “ “	1
Q	—5	$\bar{5}51$	“ “ “	1
Y	$—\frac{4}{3}$	$\bar{4}43$	“ ‘ “	1
P	—1	$\bar{1}11$	“ “ “	1
R	$—\frac{1}{2}$	$\bar{1}12$	“ “ “	1

1.—H. A. Miers, 1893, Min. Mag., X, p. 185.
2.—H. Bücking, 1913, Mitth. d. geol. Land. Els.-Lothr., VIII, p. 201.

Zincite

o	$\frac{2}{3}0$	$20\bar{2}3$	Franklin Furnace, N. J.	1
α	$\frac{4}{5}0$	$40\bar{4}5$?	“ “ “	2
β	$\frac{5}{4}0$	$50\bar{5}4$?	“ “ “	2

1.—P. Grosser, 1892, Zeitschr. f. Kryst., XX, p. 354.
2.—A. J. Moses, 1895, School of Mines Quar., XVI, p. 226.

Zinkenite

c	0	001	Wolfsberg, Harz, Germany	1
a	∞0	100	“ “ “	1
ϵ	$\frac{1}{2}0$	102	“ “ “	1

1.—L. J. Spencer, 1897, Min. Mag., XI, p. 188.

Zinnwaldite

	$0\frac{1}{7}$	017	Narsarsuk, Greenland	1
	$—\frac{1}{11}$	$\bar{1}.1.11$	“ “	1
	$—\frac{1}{4}$	$\bar{1}14$	“ “	1
	—2	$\bar{2}21$	“ “	1

1.—G. Flink, 1898, Medd. om Grönland, XIV, p. 232.

Zircon

w	50	501	Ilmen Mts., Russia	1
u	70	701	" "	1
ρ	$1\frac{4}{5}$	545	" "	1
r	$\frac{7}{6}1$	766	" "	1
π	$2\frac{4}{3}$	643	" "	1

1.—P. Jeremejew, 1895, Verh. Russ. Min. Ges., XXXIII, p. 429.

Zirkelite

Hexagonal $a:c = 1:1.1647$

c	0	0001	Sabaragamuwa, Ceylon	1
m	∞	$10\bar{1}0$	" "	1
d	$\frac{1}{2}0$	$10\bar{1}2$	" "	1
e	$\frac{2}{3}0$	$20\bar{2}3$	" "	1
r	10	$10\bar{1}1$	" "	1
s	20	$20\bar{2}1$	" "	1

1.—G. F. Herbert-Smith, 1913, Min. Mag., XVI, p. 309.

Zoisite

g	5 ∞	510	Chester, Mass.	1
h	4 ∞	410	" "	1
i	$\frac{9}{5}$ ∞	950	" "	1
j	$\frac{5}{4}$ ∞	540	" "	1
	$0\frac{3}{2}$	032		2
y	2	221	Chester, Mass.	1
A	$1\frac{1}{2}$	212	" "	1
	$1\frac{7}{4}$	474		2
B	14	141	Chester, Mass.	1

1.—C. Palache, 1908, Zeitschr. f. Kryst., XLIV, p. 20.
2.—J. Schetelig, 1913, Norsk. Geol. Tidsskrift., II, (3) , p. 38.