TABLE 3

TABLE TO SHOW METHOD OF CALCULATION OF ANGLES
(See *Winkeltabellen*, pp. 18, 19 & 19a).

Mineral Higginsite Elements $p_0 = 1.272$ $\lg p_0 = 010449$ $q_0 = .7940$ $\lg q_0 = 989982$	Let. Symb. pq	1	2	3	4
		lg p	lg q	$\lg x = \lg pp_0$ $1 + \lg p$	$\lg y = \lg qq_0$ $2 + \lg q$
	o 1	0	0	010449	989982
	$p\frac{1}{2}1$	969897	0	980346	989982
	$r\frac{3}{2}2$	017609	030103	028058	020085

5	6	7	8	9	10
$\lg \frac{pp_0}{qq_0} = \lg \tan \varphi$ $3 - 4$	$\lg \sin \varphi$ from 8	$\lg \cos \varphi$ from 8	φ from 5	$\lg \frac{pp_0}{\sin \varphi} = \lg \frac{qq_0}{\cos \varphi} = \lg \tan \rho$ $3 - 6 = 4 - 7$	ρ from 9
020467	992858	972381	58°02′	017591 017601	56°18′
990364	979605	989233	38 42	000741 000749	45 30
007973	988573	980595	50 14	039485 039490	68 04

LISTS OF THE ORTHORHOMBIC MINERALS INCLUDED IN GOLDSCHMIDT'S WINKELTABELLEN. EDGAR T. WHERRY. *Washington, D. C.*—As the prism zone is on the whole most characteristic of orthorhombic crystals, it has seemed desirable to arrange the minerals of this system in the order of increasing values of axis *a*.

ORTHORHOMBIC MINERALS

	a	*c*	Page
Uranophanite	0.31	1.01	355
Polycrasite (Polykras)	0.35	0.31	271
Euxenite	0.36	0.30	137
Molybdite	0.39	0.47	243
Columbite	0.40	0.36	101
Oanneroedite (Annerödit)	0.40	0.36	45
Flinkite	0.41	0.74	147
Monticellite	0.43	0.58	253
Fayalite	0.46	0.58	252
Tephroite	0.46	0.59	254
Hjelmite	0.46	1.03	177
Olivine	0.47	0.59	251
Ardennite	0.47	0.31	53
Chrysoberyl	0.47	0.58	97
Aeschynite	0.48	0.67	31
Diaphorite	0.49	0.73	115
Pyrostilpnite (Feuerblende)	0.50	0.70	145
Wavellite [old data]	0.50	0.38	362
Topaz	0.53	0.95	346
Pucherite	0.53	1.17	274
Phosphosiderite	0.53	0.88	266
Jordanite	0.54	1.02	191
Yttrotantalite	0.54	1.13	371
Rammelsbergite	0.54	——	291
Samarskite	0.55	0.52	309
Struvite	0.55	0.62	332
Mascagnite	0.56	0.73	232
Bertrandite	0.57	0.60	64
Hopeite	0.57	0.47	180
Beryllonite	0.57	0.55	66
Mica (Glimmer)	0.58	3.29	161
Dyscrasite (Antimonsilber)	0.58	0.67	49
Argentopyrite (Silberkies)	0.58	0.55	318
Stromeyerite	0.58	0.97	330
Chalcocite (Kupferglanz)	0.58	0.97	205
Sternbergite	0.58	0.84	329

Caracolite	0.58	0.42	88
Iolite (Cordierit)	0.59	0.56	103
Niter (Kalisalpeter)	0.59	0.70	194
Bromlite (Alstonit)	0.59	0.74	34
Cotunnite	0.59	1.19	105
Fischerite	0.59	——	147
Carnallite	0.60	1.39	88
Frieseite	0.60	0.74	153
Thenardite	0.60	1.25	341
Orpiment (Auripigment)	0.60	0.67	57
Witherite	0.60	0.73	365
Euchroite	0.61	1.04	133
Strontianite	0.61	1.04	331
Cerussite	0.61	0.72	89
Schrockingerite	0.61	——	313
Zoisite	0.62	0.34	379
Aragonite	0.62	0.72	51
Stephanite (Melanglanz)	0.63	0.69	233
Kentrolite	0.63	0.90	197
Descloizite	0.64	0.80	113
Polyhalite	0.64	——	270
Variscite	0.65	——	358
Nesquehonite	0.65	0.46	248
Atacamite(Atakamit)	0.66	0.75	56
Lawsonite	0.67	0.74	216
Ilvaite (Lievrit)	0.67	0.44	220
Loellingite (Löllingit)	0.67	1.23	223
Lithargite (Bleioxyd)	0.67	0.98	72
Sundtite	0.68	0.45	333
Arsenopyrite (Arsenkies)	0.68	1.19	55
Glaucodotite (Glaukodot)	0.69	1.19	160
Acanthite (Akanthit)	0.69	0.99	32
Erythrosiderite	0.69	0.72	132
Staurolite	0.69	0.98	327
Epigenite	0.69	——	131
Tungstite	0.70	1.61	352
Hydrocyanite	0.71	1.26	186
Polymignite	0.71	0.51	271
Harstigite	0.71	1.01	171
Laurionit	0.73	0.83	214
Alloclasite (Alloklas)	0.74	0.55	34
Klaprothite	0.74	——	199
Marcasite (Markasit)	0.76	1.21	232
Euchlorite	0.76	1.88	133
Fluellite	0.77	1.87	148
Eosphorite	0.78	0.52	128
Brochantite	0.78	0.49	393
Childrenite	0.78	0.53	93
Celestite (Cölestin)	0.78	1.28	98
Calamine, Hemimorphite (Kieselzinkerz)	0.78	0.48	197
Lecontite	0.78	1.53	218
Valentinite	0.79	1.41	357
Anglesite	0.79	1.29	42
Langite	0.79	0.42	212
Daviesite	0.79	0.48	112
Hambergite	0.80	0.73	169
Chalcostibite (Wolfsbergit)	0.80	0.63	367
Mendipite	0.80	——	237
Sulfur (Schwefel)	0.81	1.91	313
Barite (Baryt)	0.82	1.31	60
Bismite [trigonal?]	0.82	1.60	70
Jamesonite	0.82	——	187
Thermonatrite	0.83	0.81	341
Pinakiolite	0.83	0.59	267
Haidingerite	0.84	0.99	168
Prehnite	0.84	1.12	272
Brookite	0.84	0.94	80
Manganite	0.84	0.54	230
Kornerupite	0.85	——	200
Serpierite	0.86	1.36	316
Prismatite	0.86	0.83	273
Mazapilite	0.86	0.99	233
Strengite	0.87	0.98	330
Scorodite (Skorodit)	0.87	0.96	321
Triphylite	0.87	1.05	350
Enargite	0.87	0.82	127
Dufrenite (Kraurit)	0.87	0.43	201
Pseudobrookite	0.87	0.89	274
Nadorite	0.89	1.39	245
Zinkosite	0.89	1.41	374
Anhydrite	0.89	1.01	44
Spodiosite	0.89	1.58	325
Zinckenite	0.90	1.14	372
Ochrolite	0.91	2.01	250
Hemafibrite (Hämafibrit)	0.91	1.74	68
Reddingite	0.91	1.05	293
Tellurite	0.92	0.93	339
Caledonite	0.92	1.41	87
Danburite	0.92	0.88	108
Goethite (Göthit)	0.92	0.61	162
Cosalite	0.92	1.46	104
Synadelphite	0.92	1.72	337
Gerhardtite	0.92	1.16	156
Stilbite (Desmin)	0.93	0.76	113
Diasporite	0.94	0.60	116
Bournonite	0.94	0.90	76
Dufrenoysite	0.94	1.53	120
Krennerite	0.94	0.51	202
Stylotypite	0.94	——	331
Meneghinite	0.95	0.69	238
Olivenite	0.95	0.68	251
Lanthanite	0.95	0.90	213
Uranothallite	0.95	0.78	355
Newberyite	0.95	0.94	249
Sartorite (Skleroklas)	0.96	0.77	320
Libethenite	0.96	0.70	220
Emplectite (Emplektit)	0.96	0.77	126
Bismuthinite (Wismuthglanz)	0.97	0.99	364
Adamite	0.97	0.72	30

Patrinite	0.97	——	258
Sillimanite	0.97	——	319
Andorite	0.98	0.87	41
Goslarite (Zinkvitriol)	0.98	0.56	375
Natrolite	0.98	0.35	246
Morenosite (Nickelvitriol)	0.98	0.57	249
Nagyagite	0.98	1.78	245
Gismondite	0.99	0.94	157
Andalusite	0.99	0.70	40
Guarinite	0.99	0.74	166
Epsomite	0.99	0.57	132
Astrophyllite	0.99	4.70	55
Stibnite (Antimonglanz)	0.99	1.02	47
Thomsonite	0.99	1.01	342
Leucophanite (Leukophan)	0.99	0.67	219
Ludwigite	0.99	——	224
Cerite	1.0–	0.81	89
Uranospinite	1.0–	1.46	355
Geocronite (Geokronite)	1.01	0.58	156
Enstatite [group]	1.03	0.59	281
Hydromagnesite	1.04	0.47	186
Kermesite (Antimonblende)	1.32	0.85	46
Polybasite	1.73	1.58	270
Epididymite	1.74	1.85	128
Humite	2.20	1.08	181

REPRESENTATIVES OF CLASSES WITH DIMINISHED SYMMETRY

CLASS HEMIMORPHIC

Struvite	0.55	0.62	Calamine, hemimorphite	0.78	0.48
Bertrandite	0.57	0.60	Prehnite	0.84	1.12

CLASS SPHENOIDAL

Epsomite	0.99	0.57
Leucophanite	0.99	0.67
Edingtonite	1.0–	0.95

PERI-ORTHORHOMBIC

Mica group	Monoclinic
Polybasite	Monoclinic

NOTES AND NEWS

A CALCIUM PHOSPHATE WITH RATIOS BETWEEN THOSE OF TRIPLITE AND SARCOPSIDE. EDW. F. HOLDEN. *Hillsboro, N. H.*— In the writer's note on sarcopside in the May number of this magazine (pages 99–102), the formula-types of the various fluo-phosphates and related minerals were compared, in table 3; it was also noted in discussing that table that a ferrous fluophosphate from Stoneham, Maine, has been found to show a composition lying approximately midway between the sarcopside and apatite ratios, R:(F, OH):(PO_4) = 12 : 3 : 7. The purpose of the present note is to call attention to another apparently intermediate mineral, also from Stoneham, the analysis of which is given (as a peculiar "apatite") in *U. S. Geol. Survey Bull* **591**, p. 349. The ratio derivable from this analysis is 11 : 6 : 4, which is $\frac{2}{3}$ of the way from sarcopside to triplite (7 : 2 : 4 + 2 × (2 : 1 : 1) = 11 : 6 : 4). The chief base in this mineral is calcium, so the member of the triplite group concerned is spodiosite; but the properties of the Stoneham mineral are so unlike those ascribed to spodiosite as to make its distinctness seem at least possible. Studies of the optical properties, with special reference to homogeneity, of minerals appearing to occupy intermediate positions in the series are necessary, however, before their status can be settled.