	c	Page		c	Page
Aphthitalite (Glaserit)	1.2839	158	Parisite	1.6822	257
Bismuth (Wismut)	1.3035	364	Pyrosmalite	1.8380	280
Antimony	1.3236	46	Tachydrite (Tachyhydrit)	1.9000	338
Tellurium	1.3300	338	Quartz (Quarz)	1.9051	288
Hematite, specularite (Eisenglanz)	1.3623	123	Cinnabarite (Zinnober)	1.9837	377
Corundum (Korund)	1.3636	200	Eudialyte	2.1116	134
Ilmenite (Titaneisen)	1.3846	343	Ice (Eis)	2.4294	122
Graphite	1.3860	165	Chalcophyllite (Kupferglimmer)	2.5540	206
Pyrochroite	1.4002	280	Coquimbite	2.7098	103
Arsenic	1.4013	54	Tetradymite	3.1730	340
Iridium, osmium (Osmiridium)	1.4105	256	Chlorite group (Chloritgruppe)	3.3890	95
Brucite	1.5208	81	Chalcophanite	3.5267	92

Representatives of Classes with other than Rhombohedral Symmetry

Class Trigonal-hemimorphic

Tourmaline	0.45−
Pyrargyrite	0.79
Proustite	0.80
Ice	2.43

Class Rhombohedral-tetartohedral

Phenacite	0.66
Willemite, troostite	0.67
Dolomite	0.83
Dioptasite	1.06
Ilmenite	1.38+

Class Trapezohedral

Quartz	1.91−
Cinnabarite	1.98

Peri-trigonal

Chlorite (group)	3.39

BOOK REVIEW

MICROSCOPIC EXAMINATION OF THE ORE MINERALS. W. Myron Davy and C. Mason Farnham. 154 pages. McGraw-Hill Book Co., New York. $2.50.

This book represents in a sense a new edition of Murdoch's "*Microscopical determination of the opaque minerals*" which was reviewed in this magazine in February, 1917. It represents, however, a great advance over that work, in that the methods originally proposed by Murdoch have been tried out by the two new authors on a large number of specimens, and modifications have been made in accordance with the experience obtained. The principal changes are these: The fine distinctions in color values have been found to be impracticable, and have been discarded as a basis of primary classification. Microchemical methods have been found to vary so much from one specimen to another of the same mineral, or even on different crystal faces on the same specimen, that little dependence is now placed upon their details. The number of reagents has been brought within practicable limits. And blowpipe reactions have been added, because they are of considerable confirmative value. It seems to the reviewer that all of these changes are distinct improvements.

There are also several valuable new features. The chapter on photomicrography of polished sections is unusually full and helpful. There are, in addition to the regular determinative tables, in which the minerals are one by one eliminated until the one under study is identified, a few tables of special properties. In one the colors of about 20 minerals showing others than shades of white or gray in reflected light are listed; in another, there is a similar list of those yielding colored internal reflections; and in a third, a corresponding list of colors of powders. Then there is novel classification of minerals according to their electrical conductivity, the method of determining which is given in the text. While this method is of definite application in but few cases, it is noteworthy that distinctions can be quite certainly made by it between such similar minerals as stromeyerite and argentite, tennantite and tetrahedrite, pentlandite and chalmersite, etc. Finally the chemical elements are separately taken up, and lists of the minerals containing, and the tests applicable to, each of them are presented.

TABLE OF CORRECTIONS (See page 154).

Name	Formulas		Remarks
	Given	Correct	
Aguilarite.....	$Ag_2S.Ag_2Se$	$Ag_2(S, Se)$	An isomorphous series (Quercigh).
Andorite......	$PbAgSb_3S_6$	?	A mixture (Murdoch)
Boulangerite...	$3PbS.Sb_2S_3$	$5PbS.2Sb_2S_3$	Sjögren, G.F.F., 1897.
Chilenite......	Ag_6Bi	$Ag_{11}Bi$	Contains 85% Ag; calculate it out.
Chiviatite.....	$Pb_2Bi_2S_{11}$	$Pb_2Bi_6S_{11}$	Obvious when expanded into $2PbS.3Bi_2S_3$.
Delafossite.....	$CuO.Fe_2O_3$	$Cu_2O.Fe_2O_3$	Rogers, *Am. J. Sci.*, [4], **35**, 290, 1913.
Guanajuatite ..	Bi_2Se_3	Bi_2SSe_2	In part: Dana, *System*, ed. 6, p. 39.
Guejarite......	$Cu_2Sb_4S_7$	$CuSbS_2$	Dana, *Appendix* I, 16, 1899.
Jamesonite....	$2PbS.Sb_2S_3$	$5(Pb, Fe)S.3Sb_2S_3$	Schaller, *U. S. G. S. Bull.* **490**, 27, 1911.
Limonite......	$2Fe_2O_3.3H_2O$	$FeO(OH)+Aq.$	(Posnjak and Merwin).
Melonite......	Ni_2Te_3	$NiTe_2$	Dana, *Appendix* II, 68, 1909.
Pearcite.......	Ag_9AsS_6	$Ag_{16}As_2S_{11}$	Van Horn and Cook, *Am. J. Sci.*, [4], **31**, 518, 1911.
Polybasite.....	Ag_9SbS_6	$Ag_{16}Sb_2S_{11}$	Isomorphous with preceding.
Polydymite....	Ni_4S_5	Ni_3S_4	Isomorphous with linneite (Zambonini.)
Psilomelane....	H_4MnO_5	$MnO_2+X+aq.$	A colloid containing adsorbed substances.
Pyrrhotite.....	$FeS(S)_x$	$FeS_{1-1.2}$	
Rathite.......	$Pb(As, Sb)S$	$Pb_3As_4S_9$	Solly and Jackson, *Min., Mag.*, **12**, 287, 1900.
Rezbanyite....	$4PbS.5Bi_2S_3$	$2PbS.3Bi_2S_3$	Corresponds to the analyses cited by Dana.
Semseyite.....	$7PbS.3Sb_2S_3$	$9PbS.4Sb_2S_3$	Spencer, *Min. Mag.*, **12**, 55, 1900.
Sternbergite ...	$AgFe_2S_3$	$AgFe_2S_{3-4}$	
Sylvanite......	$AuAgTe_2$	$AuAgTe_4$	Contains 60% Te; calculate it out.
Tapalpaite.....	$3Ag_2(S, Te).Bi_2(S, Te)_3$	?	A mixture (Murdoch).
Whitneyite....	Cu_9As	?	A mixture (Borgström).

While this work can be recommended highly to the student of determinative mineralogy, there is one direction in which a word of caution is necessary, and that is in connection with mineral formulas. In the first place, it seems to the reviewer confusing and undesirable to give some formulas in condensed and some in expanded form; for instance, on page 63, emplectite is given as $CuBiS_2$, chiviatite as $Pb_2Bi_2S_{11}$, aikinite as $3(Pb, Cu_2)S.Bi_2S_3$ and boulangerite as $3PbS.Sb_2S_3$. Both of these methods of statement have some points in their favor, but the expanded form makes the relationships between minerals so much more obvious that the reviewer would favor it as the one to be followed uniformly. Emplectite would then appear as $Cu_2S.Bi_2S_3$, and chiviatite as $2PbS.3Bi_2S_3$, whereupon it can be readily seen that the first is a meta and the second an acidic compound, those already given in expanded form being ortho compounds.

There is, in addition, a far more serious defect than mere lack of uniformity, namely, a considerable degree of inaccuracy in the statement of formulas. In discussing Murdoch's book, the reviewer took occasion to point out that several formulas were wrongly stated, having been copied from Dana's *System* or other sources without critical consideration; and in the present book not only are the same errors repeated but a number of additional ones perpetrated. While in one sense this is not a serious matter, since the object of the work is primarily to determine minerals,not to establish their formulas, yet the reviewer feels that attention should be called to some of the most noteworthy errors, so that anyone who so desires can make corrections in the text. (See table, page 153.)

If teachers using the book will caution their students concerning the above points, it should prove a valuable aid to the study of mineralogy. E. T. W.

PROCEEDINGS OF SOCIETIES

PHILADELPHIA MINERALOGICAL SOCIETY.

Wagner Free Institute of Science, June 10, 1920

A stated meeting of the Philadelphia Mineralogical Society was held on the above date with the president, Dr. Burgin, in the chair. Fourteen members and one visitor were present.

Messrs. Frankenfield and Biernbaum gave an account of a trip to the French Creek mines and Robeson, on May 29–31, with Messrs. Hagey and Gordon.

Mr. Gordon described the chromite deposits of the State line serpentines in southern Lancaster County. Details were given of the associated minerals, and the possible origin of the deposits.

SAMUEL G. GORDON, *Secretary.*

NOTES AND NEWS

Mr. Albert B. Peck, Treasurer of the Mineralogical Society of America, leaves the Bureau of Standards the end of this month to become Assistant Professor of Mineralogy in the University of Michigan, Ann Arbor. Correspondence concerning dues of the society, subscriptions, etc., should be directed to his new address.

Dr. Waldemar T. Schaller has returned to his former position in the U. S. Geological Survey, Washington D. C.