

If this has not been done, there is some doubt as to the identity of the two materials. J.A.M.

Studtite

M. Deliens and P. Piret (1982) Bijvoetite et lepersonnite, carbonates hydratés d'uranyle et des terres rares de Shinkolobwe, Zaïre. *Can. Mineral.*, 20, 231–238.

During the study which led to the discovery of lepersonnite, it was found that about half of the "studtite" found at Shinkolobwe is actually lepersonnite. The two minerals are very similar in appearance. J.A.M.

Taimyrite

V. D. Begizov, E. N. Zav'yalov, and E. G. Palov (1982) New data on taimyrite, (Pd,Cu,Pt)₃Sn, from copper-nickel ores of the Talnakh deposit. *Zapiski Vses. Mineral. Obshch.*, 111, 78–83 (in Russian).

Analyses by electron probe gave Pd 52.4,50.8,51.6,46.9,53.1, 54.0; Cu 8.6,8.7,9.4,10.3,9.7,8.6; Pt 11.2,13.2,13.0,15.4,10.0,6.3; Sn 24.5,23.8,24.7,23.8,23.4,18.7; Sb 1.8,1.9,2.5,2.5,3.4,7.4; Pb 1.4,-,-,-,2.8; sums 99.9,98.4,101.2,98.9,99.6,97.8. A general formula approximates (Pd,Cu,Pt)₃(Sn,Sb,Pb) or more simply (Pd,Cu,Pt)₃Sn.

X-ray powder study gives a pattern indexed as orthorhombic $a = 16.11(2)$, $b = 11.27(1)$, $c = 8.64(1)\text{Å}$ (Variant I) and $a = 12.57(2)$, $b = 13.40(2)$, $c = 17.09(2)\text{Å}$ (Variant II). The strongest X-ray lines (22 given) for four patterns are 2.36–2.37(3–5)(042 or 117,136), 2.29(5–6)(033,602 or 027,440), 2.15–2.16(10)(004 or 062) and 1.435–1.443(3–5)(006,570 or 753, plus 5 more).

Taimyrite occurs as rounded inclusions, sometimes vein-like up to 12 mm long but most often 0.3–0.5 mm in diameter, in the Talnakh deposit. It is found in the upper selvage of massive ore in contact with taxitic gabbro-dolerite as well as in disseminated and veinlet-disseminated ores in taxitic gabbro-dolerites and in chalcopyrite-galena concentrations in massive ores. Taimyrite is often restricted to the contact of sulfides and gangue minerals (often chlorite). It is intergrown with küstelite, electrum, cuprian gold, polarite, sperrylite, sobolevskite, galena, and sphalerite. It is characteristically coarser-grained than other platinum-group minerals of the Talnakh deposit.

Under the binocular, taimyrite is bronze-gray with a metallic

luster. The mineral is non-magnetic and cleavage was not observed. $VHN_{50} = 480(25)$ with impressions of regular form. The mineral is not etched by dilute and concentrated acids (H₂SO₄, HCl, HNO₃), browns in 30 seconds in aqua regia and blackens on longer etching. Taimyrite is light gray with a distinct rose tint in reflected light; birefringence is distinct, light-gray with a rose tint to a creamy tint. Anisotropic with color effects from dark gray with a blue tint to yellowish-gray. The mineral is optically biaxial and reflectance measurements (R₁,R₂% nm) with a pyrite standard gave 33.0,37.1(400), 37.8,41.2(430), 39.6,42.3(460), 42.3,45.2(490), 44.0,47.8(520), 45.5,49.6(550), 47.4,51.6(580), 49.7,54.0(610), 51.4,56.5(640), 53.0,59.2(670), and 54.0,61.9(700). Most taimyrite grains are polysynthetically twinned.

The name is for the locality, the Taimyr Peninsula. Samples are preserved in the Fersman Mineralogical Museum, Academy of Sciences, USSR and in the Mineralogical Museum of the Moscow Geological-Prospecting Institute.

Discussion

The mineral was approved by the I.M.A. in 1973 with quite different analyses and unit cell parameters. There remains considerable uncertainty about the true identity of this mineral. There is allusion to single crystal data, in spite of the frequent twinning, but no details are given. No mention is made of synthesis or of the known related synthetic phases Pd₂SnCu (orthorhombic), Pd₂Sn (orthorhombic), and Pd₃Sn (cubic); nor is mention made whether Cu and Pt are essential. L.J.C.

Discredited Mineral

Soumansite (= wardite)

F. Pillard, F. Fontan et F. Permingeat (1981) Un nouveau gisement de wardite en France (Ruffiac, Morbihan) et la synonymie ((soumansite)) = wardite. *Bull. Mineral.*, 104, 681–685.

Larsen and Shannon (1930) (See *Am. Min.*, 15, 307–377) compared the optical properties of type soumansite with those of wardite and concluded that the two species were identical. This study compares optical data, chemical analyses, measured and calculated densities, unit cell parameters and X-ray powder diffraction data of type soumansite and wardite. The two minerals are definitely identical and wardite has priority. J.A.M.

BOOK REVIEWS

GLOSSARY OF MINERAL SPECIES 1983. By Michael Fleischer, The Mineralogical Record, Inc., Tucson. 202 pages. \$8.00 plus 50¢ per copy postage and handling.

This is an update of the 1980 Glossary which has become a standard reference work for professional mineralogists and amateur collectors alike. 186 pages are devoted to an alphabetic listing of all mineral species, with crystal system, formula, literature reference and significant relations to other minerals, such as the mineral group to which a species might belong. The Glossary has two especially significant features for the professional mineralogist. First, it is an up-to-date compilation of all minerals and as such represents one of the most convenient sources of data on those very rare or newly described species

whose names are, at the least, obscure. Indeed, such a compilation is especially useful to those mineralogists most familiar with, and doing research on, the significant rock-forming minerals. Secondly, a recent or otherwise significant reference, usually to a paper in the *American Mineralogist*, is included with most, but not all, minerals. This provides a most valuable starting point for literature searches and the one reference is sufficient for many purposes.

At the end of the text are several pages which contain lists of minerals according to mineral "groups." In this and in several other ways within the mineral listing, Dr. Fleischer's unique expertise and encyclopedic knowledge of minerals has been put to good use in making sensible decisions on mineral relations where they may be questionable.

The Glossary, especially in the vacuum of the existence of an up-to-date compendium such as *Mineralogische Tabellen*, is extremely useful and an essential reference work for both professionals and amateurs.

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ROCK-FORMING MINERALS. VOLUME 1A. ORTHOSILICATES (Second Edition). By W. A. Deer, R. A. Howie, and J. Zussman. Longman Group Limited, London and New York, 1982. 919 pages. \$149.95.

Those of us who learned at least some of our mineralogy and petrology about 20 years ago grew up with the five-volume set of DHZ. Probably substantial chunks of at least some theses came out of DHZ. Even today the one-volume condensed DHZ is often in my hand.

I have accordingly read with anticipation through this new edition on orthosilicates. Chapters treat the olivine group (olivine, tephroite and knebelite, monticellite), the humite group (norbergite, chondrodite, humite, clinohumite), zircon, sphene, the garnet group, vesuvianite, sillimanite, mullite, andalusite, kyanite, topaz, staurolite, and chloritoid. Each chapter treats structure, including high pressure-temperature data and site occupancies; chemistry, including trace elements; cation distribution (crystal-crystal and crystal-liquid partitioning for major and trace elements); experimental work (more-or-less every phase diagram containing the mineral in question and every thermodynamic treatment); alteration; optical and physical properties (conventional properties plus habits, absorption spectra, conductivity, diffusivity, thermal expansion, elastic properties, and experimental deformation studies, where such data are available); distinguishing features (optical—the shortest sections in the book); and parageneses in igneous, metamorphic, lunar, and meteoritic rocks.

The first inclination is to compare the new DHZ with the old. The overwhelming comparison is in size: 170 pages on orthosilicates in the old compared to 919 in the new. Part of that expansion is in new subjects, such as site occupancy, spectroscopy, high pressure-temperature structure, trace-element chemistry, and cation distributions. There is, of course, more material on structure, chemical analyses, including electron microprobe analyses (which arrived since the last edition), fabrics, and deformation.

The expansion of the new DHZ by space is revealing: about

double in structure, no change in optics, about triple in major-element chemistry, about 10 times in physical properties, and about 20 times in experimental work. The expansions to a degree reflect the explosion of knowledge and the directions of research in the last 20 years. On the other hand, the authors chose to expand some sections more than others. In any case, the result is that DHZ has changed from a reference book that you comfortably took to the microscope or from which you extracted a comfortable consensus opinion to a reference book that you definitely won't take to the microscope and in which you will find no consensus of opinion at all. The greatly expanded sections, notably on experimental work, represent compendia of everything written up to about 1980. The new material is more-or-less organized, but nothing is critically reviewed or even compared. One thus finds trivial phase diagrams next to important diagrams and one set of data next to a contradictory set of data. The greatly expanded sections are useful compilations of most of the literature that you ought to know on a subject, but any critical evaluation of that literature will be in the reader's hands. Some of the important petrologic topics of the day—for instance, the relation of magmas that crystallize magnesian olivines to depths of generation of abyssal tholeiites—are bypassed due to the compendium nature of information presented.

The old DHZ was, in my opinion, a useful blend of mineralogical and petrologic data. The new DHZ, in my opinion, is a volume written for and useful for petrologists more than mineralogists, the sections on "new mineralogy" (site occupancy, spectroscopy) notwithstanding. In this regard, DHZ should be compared to the *MSA Reviews in Mineralogy*, vol. 5 on "Orthosilicates," which treats mineralogy, chemistry, and petrology of the orthosilicates in fewer pages (381 p.) (and at a lot less cost) but with at least equal and arguably better sections on structure, bonding, physical properties, and cation distributions.

Every library should definitely contain the new DHZ, but I do not foresee the sale of a tremendous number to individual geoscientists. The old DHZ fit a real need for an optics book with authoritative sections on structure and paragenesis. In the new DHZ it is rightly recognized that optics has stood still while a torrent of new analytical techniques and experimental investigations has rushed by. I stand in awe of the time and intelligence involved in compiling a record of that torrent. Unfortunately, in the compilation process the authoritativeness has been lost.

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NOTICES

33rd Annual Clay Minerals Conference September 30–October 3, 1984

The Clay Minerals Society Annual Meeting will be held at Capitol House, Baton Rouge, Louisiana, U.S.A. Field trips will include opportunities to examine Mississippi alluvial valley loess, Atchafalaya swamp and delta deposits, and Mississippi delta sediments and mudlumps. The technical program will include a symposium on clays and clay minerals in the petroleum industry and a workshop on recognition of clays using remote methods. Papers are being solicited with this announcement for

both the symposium and the general session. For further information contact: Ray E. Ferrell, Department of Geology, Louisiana State University, Baton Rouge, Louisiana 70803. Phone: 504/388-5306.

The Kinetics and Mass Transport of Silicate and Oxide Systems Meeting September 13–14, 1984

The Mineralogical Society of Great Britain, Institute of Physics, British Ceramic Society, and Polar Solids Discussion Group will hold a joint meeting at The Geological Society, London on