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Variscite from Hensbarrow china clay works, St. Austell, Cornwall

HENSBARROW china clay works is situated in the Hensbarrow granite mass, and is approximately 1 km west of the village of Stenalees in the parish of St. Austell. The pit is traversed by several NNE-SSW trending quartz-tourmaline veins (known as stent by the quarrymen) carrying a little cassiterite and wolframite, and the well known Bunny tin mine is adjacent. Wavellite occurs in these veins as delicate creamy-white fibrous crystallized crusts lining cavities, together with local infillings of turquoise and varlamoffite. Pegmatite lenses and irregular veins also occur, and these are particularly common in the eastern part of the adjoining Gunheath china clay works, where they carry quartz, tourmaline, apatite, microcline, orthoclase, zinnwaldite, gilbertite, and topaz, with small amounts of wolframite, cassiterite, stannite, arsenopyrite, columbite, varlamoffite, opal, and torbernite.

The variscite was found as aggregates of sharp pale green transparent orthorhombic crystals to 3 mm in diameter, with individual crystals being

slightly less than 1 mm in size. It occurred implanted on the top of a large radiating spray of creamy-white wavellite crystals showing transparent terminations in a cavity in quartz, with large sheaves of zinnwaldite mica and fragments of partly kaolinized granite. It was not unfortunately found *in situ*, being in an irregular pegmatite lens in a large boulder of altered granite lying loose in the bottom of the pit. It is possible that the boulder derived from the neighbouring Gunheath pit, as much overburden had recently been bulldozed from there into Hensbarrow pit.

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The determination of ferrous and ferric iron in rocks and minerals: addendum

IN a contribution earlier in this volume (Hey, 1982) I referred (p. 115) to a discussion of the rate of breakdown of ferric *o*-phenanthroline solution. The relevant section was unfortunately omitted, but is appended here.

The decay of the ferric o-phenanthroline complex. In view of the observation that, when a solution containing 2 mg Fe³⁺ as *o*-phenanthroline complex was extracted repeatedly with 1% oxine in CHCl₃, 125 µg Fe²⁺ were found in the aqueous

layer, it seemed desirable to investigate the stability of the Fe^{3+} complex further.

To 10 ml of a solution containing 2.02 mg Fe^{3+} in *N* HCl were added 5 ml 20% sodium acetate, bringing the pH to about 5, then 5 ml $\frac{1}{2}\%$ *o*-phenanthroline and the mixture bulked to 25 ml and colorimetrically at $\lambda 508$ nm at a succession of times after mixing. The initially yellow solution soon became orange and the absorption at $\lambda 508$ nm increased, owing to the formation of the ferrous complex; the observed absorbances are plotted in Hey, 1982, fig. 5, except for an additional observation after 72 hours, when the absorbance was 0.692, corresponding to the presence of $93 \mu\text{g Fe}^{2+}$ ($\frac{1}{2}\%$ of the initial ferric content).

Since the reaction involves reduction of Fe^{3+} , something must be oxidized: if this were the phenanthroline or the acetate ion, the reaction would be monomolecular in Fe^{3+} (since both these species are present in large excess); the observation at times up to 200 min fit reasonably to such a reaction, with a half-life of 5 days for the ferric complex (the straight line in Hey, 1982, fig. 5), but the absorbance after 3 days is far less than this would predict. It seems probable that the ferric complex is capable of oxidizing impurities in the solution; in this case, the reaction must stop when all the impurity is oxidized, and an equation of the form $\epsilon_t = \epsilon_\infty - (\epsilon_\infty - \epsilon_0)e^{-kt}$ (where ϵ_t is the absorbance at time t) should fit the observations. Taking

the initial absorbance as 0.162 (corresponding to an absorbance of 0.0021 for the ferric complex at $1 \mu\text{g cm}^{-2} \text{Fe}^{3+}$ and $\lambda 508$ nm), the final absorbance as 0.702 and k as 0.0035, we calculate the curve shown in Hey, 1982, fig. 5, which extrapolates to 0.702 at 72 hours.

It is clear that the absorbance of the Fe^{3+} complex at $\lambda 508$ nm is not negligible, amounting to about 1% of that of the Fe^{2+} complex; moreover, breakdown after mixing is fairly rapid, though evidently dependent on the nature and amount of oxidizable substances present, and in $\frac{1}{2}$ hours after mixing it may have doubled. Thus determination of Fe^{2+} by *o*-phenanthroline may be appreciably in error if much Fe^{3+} is present. Fortunately this does not apply to a determination of Fe^{2+} in silicates by the Riley and Williams (1958) technique: a direct test showed that the Fe^{3+} is complexed adequately by the fluoride present even with excess H_3BO_3 also present, and no Fe^{3+} colour develops.

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International Mineralogical Association: Commission on New Minerals and Mineral Names

A SUMMARY of the principal decisions of the Commission appeared in *Mineral. Mag.* **43**, 1053–5 (1980), and authors are reminded that the names there recommended must be used in papers intended for *Mineral. Mag.* Dr M. Fleischer has drawn attention to a few errors and omissions in this report:

To the list of names recommended by the Commission, add:

Churchite, not weinschenkite
 Cryptomelane, not ebelmenite
 Greigite, not melnikovite

Matildite, not schapbachite for low-temperature AgBiS_2 , with schapbachite for the high-temperature polymorph

Psilomelane, not manganomelane for hard unidentified Mn oxides

Pyrolusite, not polianite

Romanechite, not psilomelane for the specific Ba-Mn oxide

Stibarsen, not allemontite for the compound [AsSb]

Titanite, not sphene

To the list of multiple names not considered or