Cryptomelane from Mysore (India).

WHILE examining under the microscope a polished section of a specimen of manganese ore from the Kumsi area (My 15, Gange-Gowri Workings, Kumsi area, Shimoga District), I came across a very fine-grained greyish-white mineral associated with psilomelane, showing a slightly lower hardness[1] than psilomelane. Etch tests were not conclusive because of the fine-grained nature of the mineral and its intimate association with psilomelane and pyrolusite; to obtain conclusive results the X-ray powder method was used. With the help of a micro-drill, a little powder of the mineral was removed from the polished section and an X-ray photograph taken by the Debye-Sherrer method using Fe-$K\alpha$ radiation without filter.

The d spacings observed from the film, tabulated below, agree fairly well with those given by Mathieson and Wadsley (1950) for a cryptomelane from the Chindvara district.

d Å.	I.	d Å.	I.	d Å.	I.
7·03	40	2·40	100	1·38	10
4·97	30	1·83	50	1·35	20
4·32	20	1·65	60	1·19	10
3·36	40	1·54	20	1·17	10
3·14	70	1·42	10	1·15	20
2·45	10	1·39	10	1·07	20

According to Anders and Marie Byström (1950), cryptomelane, hollandite, and coronadite form an isostructural series of the general formula $A_{2-y}B_{8-z}X_{16}$, where $A = Ba^{2+}$, Pb^{2+}, K^{+}; $B = Mn^{4+}$, Fe^{3+}, Mn^{2+} (small and medium-sized ions); $X = O^{2-}$ and OH^{-}. Mathieson and Wadsley (1950) suggest the formula KMn_8O_{16} for cryptomelane.

Fleischer and Richmond (1942, 1945) report cryptomelane from Sitapur, but this is the first occurrence of cryptomelane to be recognized in the manganese ores of Mysore.

The above observation was made during a detailed study of the ore minerals of Indian manganese deposits, which study is still in progress. The work was carried on at the Laboratory of Economic Geology, Yale University. I am very grateful to Prof. Alan M. Bateman and Prof. Horace Winchell for their valuable direction and help.

Dept. of Geology,
Yale University,
New Haven, Conn., U.S.A.

B. L. SREENIVAS

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[1] Hardness determined by using an effect similar to the Becke ray used in petrography, suggested by Van der Veen, R. W., 1925, Mineragraphy and Ore Deposits, 28, The Hague.

Childrenite from the Lake District, Cumberland.

AN erroneous record of the occurrence of childrenite in Cumberland has been included in some of the mineralogical literature, as the result of a mis-statement in C. F. Rammelsberg's investigation of this mineral in 1852.[1] In this he refers to a locality 'near Callington in *Cumberland*', a mistake which seems to have passed unnoticed and become perpetuated in a shortened reference simply to 'Cumberland'. Callington is in Cornwall, and Rammelsberg's reference was almost certainly to the well-known locality of the George and Charlotte Mine, Tavistock, actually in Devon, but also *near* Callington, just over the county boundary.

We are, however, able to record a new and definite occurrence of childrenite in the Lake District in Cumberland. It was found in an unusual quartz-chlorite vein a little to the west of Causey Pike; this vein contains considerable amounts of apatite (in crystals up to an inch and more in length) and arsenopyrite, together with a little löllingite and scheelite, and is clearly of a lower-zone, higher-temperature type, with granitic affinities. Apart from this being a new locality for all of these five minerals, the position and presence here of this vein is very suggestive of and, in fact, provides strong evidence for the recent postulation by W. C. C. Rose,[2] from the occurrence of a well-defined thermal-metamorphic aureole surrounding it, of a steep-sided, stock-like (granitic) intrusion under Causey Pike.

Department of Mineralogy, University of Oxford. ARTHUR W. G. KINGSBURY

Department of Geology, University of Leeds. J. HARTLEY

[1] Ann. Phys. Chem. (Poggendorff), vol. 85, p. 435.

[2] Proc. Geol. Assoc., 1954–5, vol. 65, pp. 402–406.