III.—"*On some New Mineral Localities in Cornwall and Devon.*"

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THOUGH some of the localities and minerals are of no great importance, I cannot help thinking that an accurate record of them may be of interest to members of the Mineralogical Society. Indeed, I consider it the duty of all Cornish members to supply notes upon various new localities, so that we may arrive, as nearly as possible, at a complete list of places where minerals occur, and thus supplement the valuable labours of Mr. J. H. Collins in his "Handbook to the Mineralogy of Cornwall and Devon."

It will be most convenient to take the various minerals alphabetically.

Apatite.—About two months ago I found this mineral occurring in the form of small six-sided prisms, with cassiterite and schorl, at the 130fms. level in Wheal Kitty, St. Agnes. Wheal Kine, now included in Polberro sett, is the only locality in the parish hitherto mentioned.

Bismuthine.—The occurrence of this mineral was pointed out to me by Capt. S. Bennetts while visiting some stopes above the 60fms. level at Penhalls Mine, in October last. Small needles of bismuthine are found in *vughs* in a rich tin lode, consisting of quartz, cassiterite, chlorite, iron pyrites, and a little copper pyrites.

Chiastolite.—While looking over the rubbish heap at Bosworgey mine, in St. Erth, Mr. T. B. Provis observed some curious markings in some pieces of the killas, to which he at once called my attention. On closer examination they were found to be caused by interlacing crystals which bore much resemblance to Chiastolite, though, apparently partly converted into mica. Mr. J. H. Collins kindly cut several sections of pieces of the rock, which leave little doubt that the mineral really is Chiastolite, although now partly altered. The crystals are square prisims $\frac{1}{8}$ to $\frac{1}{4}$ in. long, and $\frac{1}{50}$ in. on the side. I believe this is the first time that this mineral has been found in Cornwall.

Fluor-spar.—Though this mineral is such a common companion of the ores of tin and copper as to render it, perhaps, scarcely necessary to name every mine where it has been found, I think notice should be invariably be taken of localities where it has occurred in sufficient quantity to be of commercial importance. I, therefore, mention Bedford United and Tamar Valley mines near Tavistock. In the former, it is one of the constituents of an East and West Copper lode, whereas, at the latter, it accompanies galena in a vein running about North and South. From Tamar Valley mine, which is now abandoned, more than 1200 tons have been sold during the last three years.

Leucopyrite.—I am indebted to Capt. W. Tregay for some specimens from Pednandrea mine, Redruth, which I think I can identify with the mineral Leucopyrite. Though I cannot determine the form of the minute brilliant crystals which are grouped into globular aggregations, the appearance of the massive part and the behaviour of the mineral with reagents are characteristic.

The fracture presents a steel-grey colour, and the blowpipe reactions resemble those quoted for leucopyrite. It certainly is not mispickel, for when heated with $H N O_3$ it yields no sulphur, but merely a little white powder (no doubt $As_2 O_3$) which dissolves on boiling.

Mispickel.—For reasons given in the case of fluor-spar, I am induced to add a few localities to the long list already supplied by Mr. Collins. The mines which made sales of arsenical pyrites in 1875 were as follows:—Creegbrawse and Penkevil, Chacewater; Emmens United (Holmbush and Kelly Bray), Callington; Duchy Great Consols, Gunnislake; Florence and Tonkin, Callington; Wheal Newton, Harrowbarrow, and West Poldice, St. Day; Bedford Consols and Bedford United, Wheal Crebor, Franco Consols, Gawton, Lady Bertha, and Tavy Consols near Tavistock; Belstone near Okehampton; Old Bottle Hill and Wheal Mary Hutchings, Plympton.

Molybdenite.—In examining a little quartz vein traversing a little fallen block of tourmaline schist, on the beach near the junction of the granite and killas, in Hanover Cove, I was fortunate enough to discover a few scales of molybdenite. As far as I am aware, it has never before been found in the St. Agnes district.

Scheelite.—Although the tungstate of iron and manganese, or wolfram, is found in a great many Cornish mines, the tungstate of

lime, Scheelite, is decidedly rare. I am, therefore, glad to be able to note its occurrence at St. Just.

Mr. A. H. James, a few days ago, kindly sent me a small specimen of the massive mineral which was found on the *burrows* of Levant mine, in that parish. It is quite possible that a diligent searcher might be rewarded by discovering some crystals.

Tourmaline.—The occurrence of this mineral has been overlooked at many mines, I believe, from a want of knowledge of the fact that the hard dark-coloured rock so often found at the sides of lodes and locally known as *capel*, is very frequently nothing else but schorl rock, or an aggregate of quartz and schorl. The presence of schorl in tin *capels* was pointed out some forty years ago,* by Mr. R. W. Fox, and I have obtained evidence leading me to infer its existence in numerous cases where no schorl can be distinguished even with the aid of a lens. Having previously, in each case, determined the absence of copper, I find that most capels give a very decided green flame when tested for boracic acid by Turner's method.

In conclusion, I will add a word or two concerning the minerals locally termed *peach* in Cornwall. It has usually been taken for granted that all *peach* is chlorite. The *green peach* of the Cornish tin mines undoubtly is chlorite, but the so-called *blue peach*, which is so large a constituent of the tin lodes of such mines as Dolcoath, Cook's Kitchen, Carn Brea, West Basset, Phœnix, and many others, is probably a bluish-grey variety of tourmaline. I have not at present made any sufficiently close microscopic examination of the specimens of the fine-grained bluish-grey rock to be able to say whether or no my surmise is correct, but I may remark that every piece of *blue peach* which I have as yet tested by Turner's method, has afforded me evidence of the presence of boron.

DISCUSSION.

MR. COLLINS said he had examined the crystals of Leucopyrite, from Pednandrea, under the microscope, but had not been able to make out their form on account of their extreme brilliancy. He had only been able to make out that there were triangular planes.

*Rep. R. Cornwall Polytechnic Soc., 1836, pp 86-7.

With regard to the sections of tin capels, exhibited by Dr. Foster, he thought the constant presence of schorl supported the theory of Von Buch and Daubrée, that the tin had been brought into the lodes as a fluoride, and accompanied by other compounds containing the element fluorine.

MR. BARNETT stated that specimens of the Scheelite, from Levant, had been mistaken for barytes.

MR. KITTO mentioned that he had lately received a good specimen of pitchblende (exhibited) from one of the agents of East Pool, which had been met with in that mine. He believed it had not been recognized there before.

MR. CUNNACK, a visitor, said he had specimens of pitchblende, from East Wheal Lovell, in Wendron, this also was a new locality.