Reviews and Notices.

On the Probable Occurrence of Herderite in Maine.

By Wm. Earl Hidden.

(Communicated in a letter dated Newark, New Jersey, December 11th, 1883.)

TO Mr. Nathan H. Perry, of South Paris, Maine, an earnest and successful collector of Maine minerals, and the discoverer of many new mineral localities in his State, I am indebted for a few specimens of a dark oil-green mica, having implanted on it clear crystals of a mineral resembling some varieties of apatite. The preliminary examination which I have made makes it probable that the mineral is the rare species *Herderite*.* The crystals are short, terminated prisms, of from 1^{mm} to 1^{cm} in length and diameter, transparent to translucent. Surfaces smooth and not highly polished, but bright. Lustre greasy-vitreous. Streak white. Colourless to faintly yellowish. Hardness 5. Sp. Grav. 3. Crystals orthorhombic, with $I \wedge I = 116°$ (hand goniometer). Among the planes already observed are *I*, *i*-$\bar{\imath}$, *O*, three macrodomes, one brachydome and three octahedral pyramids. A partial qualitative examination has shown the presence of phosphorus in large quantities. A careful analysis is now under-way by Mr. J. B. Mackintosh, E.M., of the School of Mines, New York City, and will shortly be published, with a full account of the method of occurrence and the general physical characters of the mineral.

This mineral had been previously called topaz, from its resemblance to that species in form and colour, and also from the fact of its being found at Stoneham, Maine, near the pockets that yielded the fine crystals of topaz noticed in this Journal by G. F. Kunz (III. xxv. p. 161), but the absence of the characteristic basal cleavage and of the hardness of that mineral led me to make the observations whose results have been given.

[*Note.*—Since the above notice was received from Mr. Hidden, the writer has had placed in his hands, by Professor Brush, a few crystals of the supposed *Herderite* from Maine; these specimens were sent by Mr. Perry. A partial examination of these crystals shows that they approximate closely in form to that given for *Herderite*, so that there can be but little doubt of the correctness of Mr. Hidden's determination. The crystals are prismatically developed in the direction of the brachydiagonal axis (see fig. 454, p. 546, Dana's Syst. Min.). The planes observed are: *O*

* Probably, according to trials by Plattner and Turner, an anhydrous phosphate of *alumina* and lime with fluorine, orthorhombic with $I \wedge I = 115° 53'$, G.= 2·985. Haidinger, *Phil. Mag.* IV. i. 1828. J. D. Dana's System Min., p. 546.

(001), i-$\breve{i}$ (010), I (110), $\frac{3}{2}$-$\bar{\imath}$ (302), 1-$\breve{i}$ (011), 3-$\breve{i}$ (031), 6-$\breve{i}$ (061), $\frac{3}{2}$ (322), 3 (311). Of these planes all occur on *Herderite* except $\frac{3}{2}$-$\bar{\imath}$, 3-$\breve{i}$, $\frac{3}{2}$. The angles thus far obtained are only approximations, but they serve to show a close correspondence between the Main phosphate and *Herderite*, for example:—$I \wedge I = 116\frac{1}{2}°$, for *Herderite*=115° 53′; $O \wedge 1$-$\breve{i}$=156° 40′ for *Herderite*=156° 59′; $O \wedge 3$=112° 40′ for *Herderite*=112° 35′.—E. S. Dana.]—*American Journal of Science, Jan.* 1884.

On Native Lead from Maulmain, and Chromite from the Andaman Islands.

By F. R. Mallet, *Deputy Superintendent, Geological Survey of India.*

Native Lead.—Amongst a number of ores from the neighbourhood of Maulmain, in Burma, lately sent to the Geological Survey Office by Mr. G. H. Law, is one of a somewhat unusual character. It is a carbonate of lead, breaking with a rather largely facetted crystalline fracture, and having a bright red colour due, apparently, to an intimate admixture of minium. The mineral contains small cavities lined by minute white crystals of ordinary cerussite, and some of the cavities are partly filled with metallic lead. The above-mentioned substance has the appearance of a natural product, but the precaution was taken of writing to Mr. Law on this point, and in reply he states that it is "natural and not artificial." As native lead is a mineral of rare occurrence, its discovery in a new locality is worth putting on record.

Red carbonate of lead similar to the above, except that the native metal has not been observed in association with it, has been found also in the Hazáribágh district of Chutia Nágpur.*

Chromite.—During the present month a block of ore was to be sent to the Geological Survey Office, for examination, from the Officiating Chief Commissioner of the Andaman and Nicobar Islands. Mr. M. V. Portman, Extra Assistant Superintendent, who visited the place where it was found, writes: "About 100 yards south of the village of Chuckergaon, on the bank of a small stream, was a mass of ore about 9 ins. thick and 4 ft. long. It was lying on the surface of the ground. On removing it, and digging round and underneath it, the rock appeared to be a coarse sandstone strongly impregnated with iron. No more ore was found on this spot, though it again appears in two places further down the valley in some considerable quantity, several hundredweight having been brought in. On examination of the rocks within a radius of 300 yards, I found granular and highly crystalline limestone, intersected by views of calcspar

* Records, G. S. I. Vol. VII. p. 35.

in some instances 4 ins. thick, diorite, porphyritic trap, and coarse ferruginous sandstone." Chuckergaon, the village mentioned, appears to be close to Port Blair.

The ore proved on examination to be chromite. As this mineral is usually found in serpentine, and serpentine is known to occur in the neighourhood of Port Blair, there is a strong probability that the Andamanese chromite is no exception to the general rule. "Serpentine and gabbro are found largely developed south of Port Blair and on Rutland Island, and are doubtless intrusive." A "micro-crystalline syenite" was noticed in one locality by Mr. Kurz; it is doubtless a form of the dioritic rock found locally associated with the serpentine in Pegu."* It will have been remarked that Mr. Portman observed diorite, &c., close to the place where the chromite was found.

As chrome iron ore (chromite), of average quality, is worth about £10 a ton in England, the Port Blair mineral, if obtainable in considerable quantities, is well worth attention.

[From the *Records Geol. Survey of India*, Vol. XVI., 1883.]

Obituary.

Samuel Francis Bawden, whose untimely death is deplored by many friends, to whom his warm heart and generous disposition had endeared him, was born in London of Cornish parents in the year 1854. His family is well-known and much respected in the mining district of West Cornwall, where one or more members of it have been connected with mining for several generations. His grandfather was engaged as engineer in the construction of the West Cornwall Railway, one of the oldest railways in the United Kingdom; his father was for many years connected with the Carn Brea and other mines near Redruth; one of his uncles has been for a long time purser of West Basset Tin Mine, in his native parish of Illogan; and another, now retired from active life, was for many years manager of Messrs. Vivian's Nickel and Cobalt Works at Birmingham.

His relatives being thus engaged, it was natural to Mr. Bawden to turn his attention to metallurgical chemistry. While employed in various chemical works at St. Helen's, Glasgow, and Swansea among others, he embraced such opportunities as came within his reach to add theoretical knowledge to his practical acquaintance with Chemical, Mineralogical, and Metallurgical Science. At Swansea he was for some time a teacher of chemistry under

* W. T. Blanford, Manual of the Geology of India, part 2, p. 733.