Possible or actual transmutation of base metal into precious metal is not really the important part of Hinrichs' researches, experiments and calculations. Discovery of the Philosopher's Stone is, of course, merely the romantic phase, the one that most appeals to an unthinking public. The modern and practical value is a far broader prospect. This is the establishment of the unity of matter. Surely this is making crystallography lift the veil of darkness and give insight into the nature of matter far beyond what mineralogists are accustomed to witness.

The pen of Doctor Hinrichs was as busy as his mind. The procession of his intellectual progeny spanned an interval of 75 years. Nearly half a hundred ponderous tomes attested the vigor and magnitude of his efforts and his tireless industry. Several hundreds of memoirs were published in the transactions of the learned societies. A majority of these appeared in Europe and in half a dozen languages. The 160 communications printed in Paris were already noted. Others were included in the publications of the scientific academies of Vienna, Berlin and Copenhagen. The complete bibliography of his works constituted one of the most imposing arrays of accomplishments ever produced in this country.

From a geological angle, a rather full biographical sketch of Doctor Hinrichs appeared in a recent volume of the Pan-American Geologist; and a complete bibliography of his writings in the several fields which he occupied will be printed in the forthcoming Proceedings of the Iowa Academy of Sciences.

FAMOUS MINERAL LOCALITIES: FURNACE CREEK, DEATH VALLEY

W. F. Foshag,[1] *United States National Museum*

The borax mines of Furnace Creek in the Death Valley region have been active for a number of years and are still the principal producers of borax in the United States. They are little visited by mineralogists, partly because of their comparative inaccessibility and partly because of the Pacific Coast Borax Company's policy to exclude all visitors and to allow no specimens to leave the mines.

[1] Published by permission of the Secretary of the Smithsonian Institution.

Permission to visit the deposits is seldom if ever granted and one can visit the mines only at the risk of being forcibly ejected. The deposits contain minerals of great scientific interest and such an attitude upon the part of any company is greatly to be deplored.

The deposits are separated into two districts; the Ryan District and the Mt. Blanco District. The Ryan District embraces the Biddy McCarthy, Widow, Lizzie V. Oakley, Lila C. and the Played-Out Mines. The Mt. Blanco deposits are not being exploited at present but are opened up by a number of exploration tunnels. As far as is known to the writer the mines of the Ryan District carry only colemanite, often in good crystals.

The localities can be reached only by auto, horse or burro. The most convenient route is by way of Shoshone, a station on the Tonopah and Tidewater Railroad. Hotel accommodations can be had here. From Shoshone the road passes over typical "desert" country to the Furnace Creek Wash and thence down the Wash to Ryan. Mt. Blanco is reached from Ryan by continuing down the Wash past The Tanks and taking the only road to the south leading into the clay hills flanking the Black Mountains on the north. The road leads directly to the deposits but the last mile must be made on foot. The distance from Shoshone to Mt. Blanco by this route is about 55 miles.

Another route is from Barstow to Cave Springs Wash by way of Garlic Springs to the south end of Death Valley, thence up Death Valley to Rhodes Wash, then taking the old Carbonate Mine Road back down the valley and thence up the Valley to Furnace Creek Ranch. This road is difficult of travel, over decidedly arid country and for a number of miles is below sea level and should not be attempted unless one is familiar with the region. Under no conditions should this route be taken in the summer months as the terrific heat and extremely low humidity is unbearable to all but the very hardiest. Ample supplies of water should be taken along on either route.

The Mt. Blanco deposits consist of ulexite, colemanite, inyoite, meyerhofferite and borax. The extremely rare mineral hydroboracite has also been found here. Many of the tunnels are in pure massive ulexite, partly fibrous, partly chalky.

The colemanite occurs in masses of great purity, very much honey-combed and containing large numbers of crystals that reflect the light of the candle from myriads of faces as one makes his way into the tunnels. The crystals are much smaller than those of the other districts, are prismatic in habit and generally yellowish from included buff colored clay.

The inyoite and meyerhofferite are always intimately associated. Pseudomorphs of meyerhofferite after inyoite crystals are often found. These are often 3 cm. or larger in size. The common type of meyerhofferite is parallel, reticulated masses. Another common type is radiated rosettes of closely packed needles in the cracks in calcareous shale. The inyoite forms glassy masses in the cracks in shale and also flat monoclinic crystals in the vugs. Colemanite, inyoite, meyerhofferite and ulexite all occur abundantly.

At the Russell Borax Mine, an independent producer, colemanite can be had, sometimes in groups of large crystals. One group from this mine in the United States National Museum is made up of crystals up to 12 cm. across. Nodular masses of colemanite can also be obtained here.

Near the Russell Mine, in the second small wash to the west a small prospect hole carries priceite in nodular masses in the shale. This is the only true "pandermite" (priceite) thus far found in California. The mineral ordinarily called pandermite in the borax districts is the silico-borate, howlite.

The boulders of andesitic lava about the Russell Mine and the flows to the south carry analcite in the amygdaloidal cavities. The analcite occurs in fine glassy crystals up to 1 cm. in size and makes attractive specimens. Natrolite is associated with it in radiating groups. To the south-east of the mine about 1 km. a basalt flow covers the shales unconformably and is especially rich in iddingsite.

Many of the colemanite specimens now in collections and labelled as from Death Valley come from the more accessible deposits in the Calico Hills near Barstow. This is especially true of the colemanite associated with the fine crystals of celestite.