MINING.

AN ANCIENT PLANCHA DE LA PLATA.

A prospector lately brought into Eureka Landing a "Plancha de la Plata," which he found in the hills northeast of Ehrenburg. It is oval in shape, about a foot wide and eighteen inches long and two inches thick in the thickest place. Its weight is over one hundred pounds. The Spanish name given is equivalent in English to silver bar. The prospector noticed a corner of the plancha sticking out of the dirt, and a little work soon unearthed the whole of it. It is undoubtedly many centuries old, as the Americans never had any smelting works in that country. The Aztec understood the art of smelting and also of separating silver and lead, such as this plancha is composed of. It was purchased by the Hodges Bros, who will probably sell it along with their ores. It is a pity the relic could not be saved, as it would be of great value to a historical collection.—*Yuma [Arizona] Times.*

The investigations formerly carried on by chemists with a view to extracting the precious metals from sea water have lately been revived by Herr Munster, a Scandinavian. In this pursuit, sea water was taken by him from Kristiania Fjord, 100 litres being evaporated to dryness, giving 1,830 grams of residue. This was ground and divided into portions of 300 grams, each of which was mixed with 100 grams of litharge, 100 of pure potassium-sodium carbonate, and four of carbon from starch, and the silver and gold determined; the result being nineteen milligramms of silver and six of gold per ton of average sea water. Considering these extremely small amounts of the precious metals, Herr Munster is of the opinion that no method of precipitation in tanks can possibly be successful, believing, rather, that the precipitation must be effected by the sea itself, where the water is continuously renewed by a natural current, and he points out that the copper sheating of vessels has long been known to precipitate silver under these circumstances.

METALLURGICAL SOLVENT PROCESSES.

Solvent processes for working gold ores, such as those of Plattner, Mears, Newberry & Vautin, Pollok, Rothwell, Thiess, MacArthur Forrest and others, depend for their success on certain methods of dissolving and obtaining the gold in solution and precipitating it from the solution. There are a number of chemical substances which dissolve gold, and there are others which convert it into a soluble salt.

The ordinary mechanical methods of collecting gold from sands, gravel or rock have been carried on for ages, changing slightly as to appliances, but all based on the same general principle. Early in this century the metallurgists began to search for other methods of treating complex gold ores, though with but little success. But about forty years ago, for the first time, it was proposed to treat these ores in a way similar to that carried on by natural forces, in dissolving and then depositing the gold.

There are many patents covering these solvent processes. A complete list of these is given in O'Driscoll's work on "Treatment of Gold Ores;" and in that he says: "Very little of the researches of the past generation are generally known by the present; in fact, even those who are supposed to have this knowledge possess little information on the subject; this is the only inference which can be drawn from the records of the solvent processes patented during the past forty years."

The first one in this list compiled by O'Driscoll, is the patent of Prince Pierre Bagration, in 1843, who appears to have been the first to have used cyanide of potassium as a process for dissolving gold. He refers to the older methods of Elkinton (London), who used a double cyanide of potassium and iron as a dissolving medium, and Jacobi, who used ferrous cyanide for the same purpose. Among the last patents mentioned is that of MacArthur-Forrest, 1887. After looking over this long list of solvent processes, with their complicated patent claims, etc., the question is, how have they progressed, and where are they practically applied? Mr. O'Driscoll answers this by saying that out of the long *list*, only two methods are in use to-day. One of these is the Plattner chlorination process so fully described by Kustel, and the other the Newberry-Vautin. To this may be added the MacArthur-Forrest.

It seems strange, however, that if these cyanide and other solvent processes were so well-known for so long, that they were not in use. Few are mentioned in the standard works on metallurgy in any detail. Either most of them must have been failures or mere laboratory experiments.

In fact, very few, even of the accomplished metallurgists, knew much about the use of cyanide for treating gold ores in a process. They knew of it as a solvent for gold, and knew of zinc for use by photographers in throwing gold down. But as to using these things on a large scale for working ores, no one seems to have done it until within the past few years. Either the methods adopted failed, or the matter was neglected. At all events, it has remained for the MacArthur-Forrest people to bring the system to the front in a practical way.—*Mining and Scientific Press*, July 2.