

According to the late Dr. Percy, the first mention of mercury in the metallurgy of silver is made in a treatise by one Biringuccio, an Italian, and published in 1540. The process is performed in a stone or timber basin in which a millstone revolves; the matter to be treated is ground in a mortar, washed and dried, then put into the hollow of above-mentioned basin and ground with the millstone, while being moistened with vinegar or water in which is dissolved corrosive sublimate, verdigris and common salt, the whole being covered with mercury. The millstone is then caused to revolve, stirring the material for two or three hours by hand or horse-power, according to plan adopted. When amalgamation is supposed to be completed the amalgam is separated by a sieve or washing, or passing it through a bag and then retorting or distilling, the gold, silver or copper is obtained. Dr. Percy also states that he (Biringuccio), in a prior description, mentions the use of vitriol and the bag as being made of deerskin leather. This is undoubtedly the result of a long development of the primal process in which merely the mercury was employed, and the earliest treatise extant on the amalgamation process in which "chemicals" (to use an expression common in some branches of the amalgamation process) are mentioned as being used in combination with mercury, thus marking the transition from a mere empirical operation to a scientific process, the result of experimental science. This process was restricted not solely to ores, but applicable to recovering gold or silver from the sweepings of mints, goldbeaters and goldsmiths. Schlüter mentions in his work, published in 1738, that the amalgamation process was used in treating the silver ores of Kongsberg, in Norway, as also the "sweep" of mints and goldsmiths' workshops was treated for recovery of metal by the amalgamation process in Germany when too far removed from smelting works or owing to poverty of stuff. Schlüter, seemingly, does not state how long prior to the appearance of his work the process had been in operation in Norway or Germany; but it is known—at least I find from a metallurgical work in my possession, printed last century—that the process was very unpopular in Europe, and, as I before stated, when Schlüter himself, and Wallerius, Cramer and Gellert thought it not practical on a large scale, it is not strange that Baron Inigo Born met with friction in his successful efforts last century to introduce the amalgamation process into European countries.

The Norwegian process, according to Schlüter, was conducted in mills consisting of a shallow cylinder surmounted by a tub, of which the cylinder is the bottom; the tub is constructed of wood, its inside walls being flush with inner surface of cylinder forming bottom, in the centre of the bottom of pan is a pivot, over which fits a cast iron cross, with arms almost touching side of pan, and being at right angles to one