

NOTES ON THE HISTORY OF THE AMALGAMATION PROCESS.

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The amalgamation process, although generally believed to be modern, is by no means so, but has really gradually developed through centuries of use to its present position in metallurgical science. We have reasons to believe that the ancient Egyptians were acquainted with this process. Indeed the attraction of mercury for other metals, especially gold and silver, but apparently more especially gold, appears to have been known from the most remote antiquity, and from time immemorial mercury has been used in "streaming for gold," as the process was called. Vitruvius remarks that gold might be recovered from embroidery and old clothes by the use of mercury, and Pliny mentions a process for the gilding of brass and other metals by gold amalgam, remarking that mercury dissolves gold, thus separating it from impurities, and on straining it through leather pure gold is left; to be sure it is really the gold amalgam that is left in the leather. The process called streaming was used to collect the fine gold disseminated through the sand composing the beds of streams or rivers, and consisted in first washing the sand, then triturating the residue with mercury and straining off the superfluous mercury through leather. By miners it was used in a similar manner. The gold ore was first ground and then triturated with mercury in mills; but these mills proved in the long run unsatisfactory as the residuum was found to retain a large quantity of the gold and it was necessary to subject it to a roasting, so that at the commencement of last century they were almost universally abandoned. An opinion prevailed among chemists about this time that unless both the silver and gold existed in the pure state in the substance under treatment by the amalgamation process, then the mercury would fail to dissolve them, and hence the belief, which there was sufficient reason for, that while fire treatment caused the ore to yield the whole of its gold, the amalgamation process did not. This opinion was supported by the most celebrated metallurgists of that period, such as Schlüter, Gellert, Wallerius and Cramer, the result being that the amalgamation process was relegated to that class of processes described as not applicable on the large scale. It may be added that the streaming process was, as used by different nations, exactly the same in procedure as the above.