kindly allowed him to have plaster casts made, and from these handsome metallic facsimiles were made by courtesy of the Asst. Keeper of Coins and Medals of the British Museum. Two sets were made, one of which was presented to the British Museum. These are shown in the accompanying cuts. It is believed that numbers 2 and 3 have never been described by numismatists.

They form extraordinary and tangible proofs of the sincerity of the widely prevailing belief in transmutation that existed for centuries. Full descriptions of these medals and more than forty others will be found in a paper entitled "Contributions of Alchemy to Numismatics," read before the American Numismatic and Archæological Society, Dec. 5th, 1889, and published in their journal.

METHOD OF DETERMINING INDIGOTINE FOR COMMERCIAL PURPOSES.

By F. A. Owen.

Under the above heading the author published a paper in this journal in Nov., 1888; the process as there described has been materially modified, and as now practised in the mills of the Burlington Woolen Company, at Winooski, Vt., is as follows:

From the sample shave off and coarsely powder two or three grammes, from which weigh with exactness two portions of one gramme each. In the first determine the moisture by drying in a watchglass at 100° C. and afterwards ignite this portion and determine the ash. The second portion is brushed from the scale-pan directly into a glass mortar, ground for a time dry, then water is added and the grinding is continued for some time; the pestle is rinsed into mortar and the whole allowed to settle for a minute or so, and all that will freely pour off is decanted into a glass stoppered, 200 c.c. flask. The sediment is reground with water, and

decanted as before until the whole has been transferred. Three grammes of zinc dust and 60 c. c. of commercial strong ammonia are now added ; then the flask is filled to ½ c. c. above the mark and shaken. Reduction takes place in from half an hour to two hours, during which time it should be shaken occasionally. When the reduction is complete the froth will subside and the solution become pale yellow, or, with some samples which contain chlorophyll or some non-reducible green coloring matter, greenish yellow. Then remove with a pipette 50 c. c. to a beaker or porcelain dish, add five or six drops of ether and agitate by blowing air through with the pipette, until most of the indigotine is precipitated. Acidify in moderate excess with HCl, heat to boiling, and pass through a tared filter ; dry at 100° C., and weigh. It is not necessary to take any special care to prevent absorption of moisture while weighing, only the filter paper must be, as nearly as possible, in the same condition as when tared. The results are accurate. The lots when bought and retested should show no variation from the sample except in the percentage of moisture, which will be higher than in the sample. Indigo often loses 20% in drying, and not infrequently yields 80% of indigotine, after drying.