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An Historic Platinum Still

Preserved for a great many years in the care of the Society of Chemical Industry in London, a severely damaged small platinum still was recently returned to Johnson Matthey for restoration to something like its original condition. Made for Dr. Rudolph Messel in the 1870s, it was used in the development of his process for making fuming sulphuric acid, or oleum, then much in demand by the growing British dyestuff industry. Messel, born in 1848, had originally come to London as secretary to Professor H. E. Roscoe after studying chemistry in Zürich, Heidelberg and Tübingen, but then joined William Stevens Squire of Dun Squire & Company, this firm later being succeeded by the well known acid manufacturers Spencer Chapman and Messel.

Messel's complicated process involved the heating of sulphuric acid in a platinum still to decompose it into water, sulphur dioxide and oxygen, condensing out the water and then passing the mixed gases in stoichiometric proportions—a concept later shown to be quite unnecessary—over finely divided platinum contained in a heated platinum tube to form sulphur trioxide. This was then dissolved in sulphuric acid to give oleum. This replaced the old-established lead chamber process and had the further advantage that it eliminated catalyst poisoning from the raw materials he had previously tried in his attempts to operate the



contact process originally devised by Peregrine Phillips in 1831.

A British patent, No. 3278 of 1875, was filed for the process by Messel's partner Squire, and on April 20th 1876 a short paper was read to the Chemical Society, again by Squire, "On the Manufacture of Sulphuric Anhydride".

Messel became managing director of the company in 1878, holding this position until his retirement in 1915, by which time some thousand tons a week of oleum were being produced by the process he had originally developed with this experimental still.