A STUDY OF THE CONDUCTIVITY OF SELENIUM AND ALLIED ANOMALOUS CONDUCTORS.

A Thesis

Submitted to the Faculty

of the

WORCESTER POLYTECHNIC INSTITUTE

for the

Degree of Bachelor of Science

in

The General Science Course

by

Robert Hutchings Goddard

June 4, 1908.

INTRODUCTION.

At the very beginning of the work herein described, the aim was to study the resistance of selenium under various conditions, but the work gradually expanded into a study of the conductivity of selenium, phosphorescent substances, and thence to that of powders in general.

THE CONDUCTIVITY OF SELENIUM.

The selenium cell,-sometimes called the selenium bridge, since it consists simply of a piece of selenium of any form between two wires so that a current can be sent through it- has been extensively investigated by numerous physicists, those having done most important work being Rukmer, Shrott and Robert Marc.* All have studied the changes in resistance produced by light under various conditions.

An electrical effect has been discovered with selenium by two Italian investigators, Pochettino and Trabacchi. They found that if an alternating E.M.F. be applied to a piece of selenium the resistance is found to be different after the application, and this change may persist for hours or even days, the original value of the resistance finally being attained.

---

* For reference to articles read in connection with work on this thesis, see bibliography at the end of the paper.