

**ECONOMIC SERIES-NO. X.  
GARTSIDE REPORTS ON  
INDUSTRY AND COMMERCE. NO.  
7. SOME ELECTRO-CHEMICAL  
CENTRES: A REPORT**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649502547

Economic Series-No. X. Gartside Reports on Industry and Commerce. No. 7. Some Electro-chemical Centres: A Report by J. N. Pring

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.  
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

[www.triestepublishing.com](http://www.triestepublishing.com)

**J. N. PRING**

**ECONOMIC SERIES-NO. X.  
GARTSIDE REPORTS ON  
INDUSTRY AND COMMERCE. NO.  
7. SOME ELECTRO-CHEMICAL  
CENTRES: A REPORT**



PUBLICATIONS OF THE UNIVERSITY OF MANCHESTER

ECONOMIC SERIES—No. X.

GARTSIDE REPORTS ON INDUSTRY AND COMMERCE. No. 7.

*Some Electro-Chemical Centres*

**SHERRATT & HUGHES**

**Publishers to the Victoria University of Manchester**

**Manchester: 34 Cross Street**

**London: 60 Chandos Street W.C.**

# Some Electro-Chemical Centres

A REPORT

*To the Electors of the Gartside Scholarships*

*John Norman* BY  
J. N. PRING, M.Sc.  
*Gartside Scholar*

MANCHESTER  
AT THE UNIVERSITY PRESS  
1908

UNIVERSITY OF MANCHESTER PUBLICATIONS

No. XLI.



## THE GARTSIDE REPORTS.

THE Gartside Reports are the reports made by the Gartside Scholars at the University of Manchester. The Gartside Scholarships were established in 1902 for a limited period, by John Henry Gartside, Esq., of Manchester. They are tenable for two years and about three are awarded each year. They are open to males of British nationality who at the date of the election shall be over the age of eighteen years and under the age of twenty-three years.

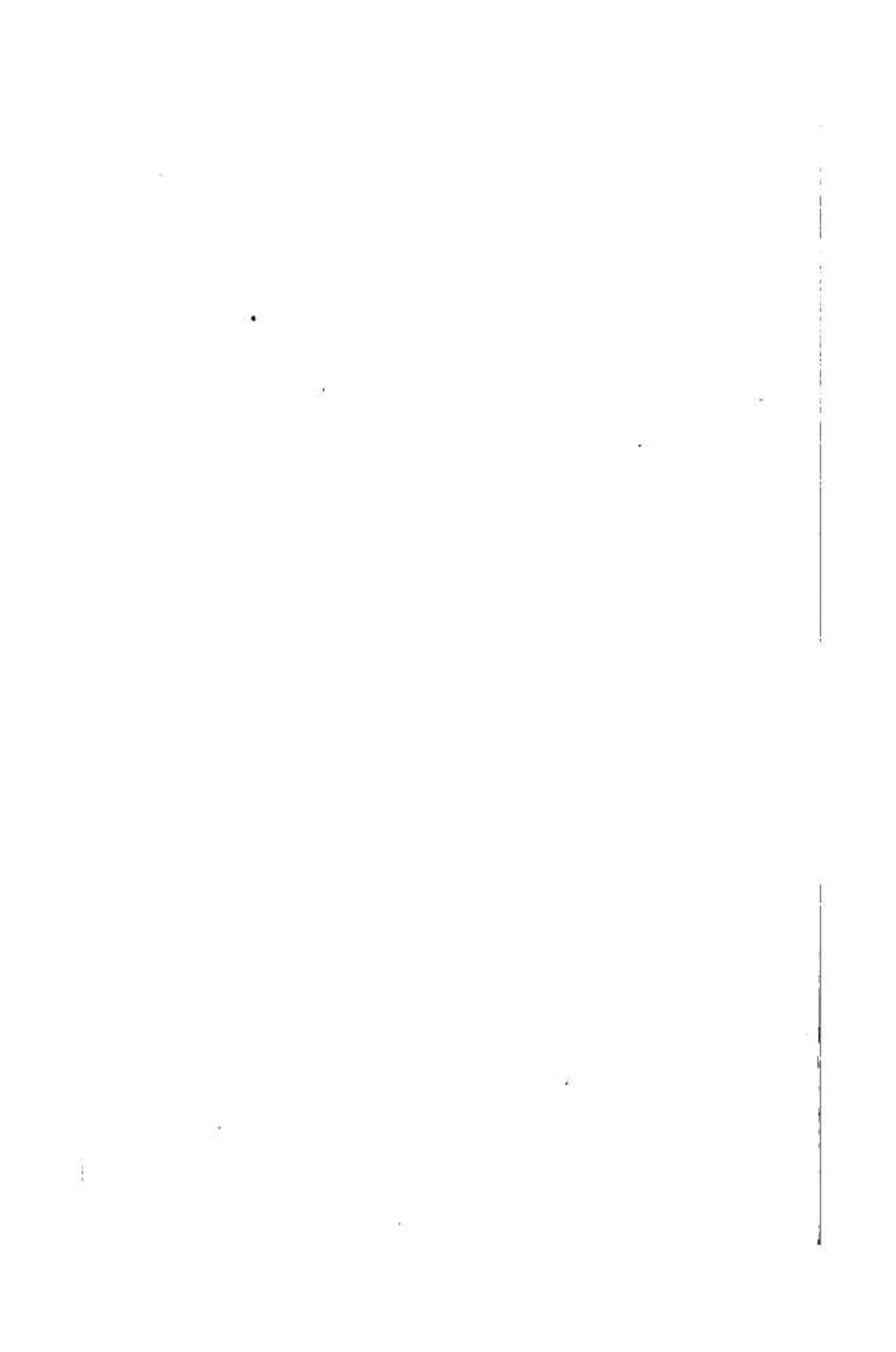
Every scholar must enter the University of Manchester for one Session for a course of study approved by the electors. The remainder of the time covered by the Scholarship must be devoted to the examination of subjects bearing upon Commerce or Industry in Germany or Switzerland, or in the United States of America, or partly in one of the above-mentioned countries and partly in others, but the electors may on special grounds allow part of this period of the tenure of the Scholarship to be spent in study and travel in some other country or countries. It is intended that each scholar shall select some industry, or part of an industry, or some business, for examination, and investigate this comparatively in the United Kingdom and abroad. The first year's work at the University of Manchester is designed to prepare the student for this investigation, and it partly takes the form of directed study, from publications and by direct investigation, of English conditions with regard to the industrial or commercial subjects upon which research will be made abroad in the second year of the scholarship. Finally, each scholar must present a report, which will as a rule be published.

The value of a Scholarship is about £80 a year for the time spent in England, £150 a year for time spent on the Continent of Europe, and about £250 a year for time spent in America.

© 5709 E.S.

Univ of Manchester 1-5-09

Ms. A. 1. 3 - 29. 38



## PREFACE.

THE following report is based principally on information acquired during visits to several countries on the Continent of Europe and to the United States and Canada, including British Columbia, during the years 1907 and 1908.

Though the electro-chemical industry is developing rapidly in many directions, the various works in this field are yet comparatively few in number and are located in widely scattered centres. For this reason, a comprehensive survey of the subject is made rather difficult. Moreover, the majority of electro-chemical works are still in a more or less experimental state, and the details of the processes are usually held in strict secrecy so that admittance is, in many cases, very difficult and often quite impossible to obtain by outsiders.

The developments of this industry, however, are well recorded in several important publications, the chief journal of this kind being the "Electro-chemical and Metallurgical Industry" (New York).

In the compiling of this report I wish to acknowledge my indebtedness to Dr. R. S. Hutton for his kind assistance throughout and for furnishing me with valuable introductions in the United States to the leading people of academic and industrial electro-chemistry, who gave me much information and kindly extended several opportunities for inspecting works. In this connection, I have specially to thank Prof. J. W. Richards, Prof. W. D. Bancroft, Prof. S. A. Tucker, Mr. E. R. Taylor, Dr. E. F. Roeber, Dr. H. N. Potter, Mr. T. A. Edison, Mr. E. A. Sperry, and Mr. G. C.