

**PHOTOGRAPHY FOR  
STUDENTS OF PHYSICS  
AND CHEMISTRY**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649670802

Photography for Students of Physics and Chemistry by Louis Derr

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PHYSICS AND CHEMISTRY

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# PHOTOGRAPHY

## FOR STUDENTS OF PHYSICS AND CHEMISTRY

BY

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New York

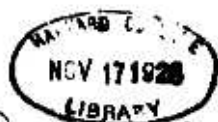
THE MACMILLAN COMPANY

LONDON: MACMILLAN & CO., LTD.

1922

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3 ms 2701.22  
FA 6660.1.31



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Set up and electrotyped. Published November, 1906.

**Norwood Press**  
J. S. Cushing Co. — Berwick & Smith Co.  
Norwood, Mass., U.S.A.



## PREFACE

AFTER the acquiring of the necessary skill in manipulation, an inquiry into the nature of a photographic process is the first step in the direction of the systematic experiment which brings such pleasure to the genuine enthusiast and has done so much to advance the science and art of photography. Good handbooks of photographic manipulation are abundant; but as the real business of a handbook is to give directions and not to explain principles, they are apt to be unsatisfactory to the thoughtful worker, interested in reasons as well as results. If he turns to complete treatises, of which there are also not a few, he is likely to find himself overwhelmed with an avalanche of detail and history, with much of which he is not at all concerned, and of no immediate interest or necessity. Neither do monographs offer great help, as a rule, for they are usually highly technical and confined to such limited portions of the photographic field that the desired information generally lies in the gaps between them.

For some years past the author has given annually an elective series of experimental lectures at the Massachusetts Institute of Technology, on the general principles and processes of photography, to students who have studied physics and chemistry, having as a rule some knowledge of photographic manipulation and interested in its scientific aspect as well as its results. The present volume is the outgrowth of these lectures. It is an attempt to present a discussion of photographic processes, so far as their theories may be expressed in elementary form, so

that the photographic worker of ordinary scientific training may obtain a clearer idea of the nature and purpose of his operations. In its preparation it has been difficult to avoid the detail that properly belongs to a handbook or an extended treatise, and still more difficult to resist the temptation to discuss disputed and important points at length; but the endeavor has been made to find a middle ground, not primarily laid out for the tyro who needs to be told that undeveloped plates may not be examined in daylight, nor on the other hand for the skilled investigator who, for example, is seeking data on the spectra of dyes to sensitize his plates for the infra-red spectrum, but rather for the class of photographic workers who take pleasure in the subject for its own sake, who prefer to mix their own solutions rather than to buy them ignorantly in ready-labelled bottles, and who desire to supplement the handbook with something less elaborate than the complete treatise and less technical than the specialized monograph.

In a general work no great claim for originality can be made, except in method of treatment; and in preparing the following pages the standard works on photographic science have been consulted freely. The author desires also to acknowledge the courtesy of the various firms mentioned in the text, for the use of electrotypes of lenses and other apparatus.

L. D.

BOSTON, June, 1906.

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