

**BURNETT LECTURES. ON LIGHT:  
SECOND COURSE, ON LIGHT AS  
A MEANS OF INVESTIGATION.  
DELIVERED AT ABERDEEN IN  
DECEMBER, 1884**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649662449

Burnett Lectures. On Light: Second Course, on Light as a Means of Investigation. Delivered at Aberdeen in December, 1884 by George Gabriel Stokes

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)

**GEORGE GABRIEL STOKES**

**BURNETT LECTURES. ON LIGHT:  
SECOND COURSE, ON LIGHT AS  
A MEANS OF INVESTIGATION.  
DELIVERED AT ABERDEEN IN  
DECEMBER, 1884**



**BURNETT LECTURES.**

---

**ON LIGHT.**

BURNETT LECTURES.

---

ON LIGHT.

*Second Course,*

ON LIGHT AS A MEANS  
OF INVESTIGATION.

DELIVERED AT ABERDEEN IN DECEMBER, 1884.

BY

GEORGE GABRIEL STOKES, M.A., F.R.S., &c.

FELLOW OF PEMBROKE COLLEGE, AND LUCASIAN PROFESSOR OF  
MATHEMATICS IN THE UNIVERSITY OF CAMBRIDGE.

London:

MACMILLAN AND CO.

1885

*[The Right of Translation and Reproduction is reserved.]*



**Cambridge:**

PRINTED BY C. J. CLAY, M.A. & SON,  
AT THE UNIVERSITY PRESS.

## CONTENTS.

### LECTURE I.

	PAGE
Subjects of the present course—Use of the mode of absorption of Light by substances as a discriminating character—Examples—Various effects produced by the action of Light incident on bodies—Phosphorescence—Epipolic dispersion of Light—Fluorescence—Its use as a means of discrimination—Phosphorescence produced by electric bombardment—Delicate test of Yttria thus afforded . . . . .	I

### LECTURE II.

Rotation of the plane of polarization of polarized light produced by various liquids—Its application to quantitative determinations, and to the study of molecular grouping—Magnetic rotation of the plane of polarization—Application to the discrimination between isomeric compounds—Bright lines in the spectra of flames—Application as chemical tests—Discovery thereby of new elements—Connexion between the powers of emission and absorption of the same substance for the same kind of Light—Conditions as to temperature which determine whether a spectral line shall appear as bright or dark . . . . .	25
--	----



## LECTURE III.

	PAGE
Inferences deduced from a study of the dark lines in the solar spectrum as to the presence of certain chemical elements in the sun, and as to the condition of that body—Spectra of the stars, including the examination of the ultra-violet region—Resulting classification of the stars—Nebulæ—Character of their spectra, and inferences thence derived as to their constitution—Examination of the star which burst out in the Northern Crown in 1866—Comets, and character of their light—Theory, in some respects new, of these bodies . . . . .	53

## LECTURE IV.

Red prominences seen about the sun in total eclipses—Inferences as to their character derived from an examination of their light—Mode of viewing them independently of an eclipse—Evidence they afford of gigantic commotion—Corona—Alteration in the pitch of sound produced by motion of the source of sound, or of the observer—Analogous alteration of the refrangibility of Light—Indications thus afforded of motions of approach or recess of the stars relatively to the earth—Indications of commotion in the sun—Application to the discrimination between dark lines of solar and of terrestrial origin in the solar spectrum—Views which we are led to entertain as to the constitution and history of the sun and stars—Conclusion . . . . .	81
---	----

ON THE NATURE OF LIGHT.

