

**EDUCATION AND  
NATIONAL PROGRESS.  
ESSAYS AND  
ADDRESSES. 1870-1905**

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Education and National Progress. Essays and Addresses. 1870-1905 by Sir Norman Lockyer & R. B. Haldane

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**SIR NORMAN LOCKYER & R. B. HALDANE**

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PROGRESS

LIST OF WORKS BY SIR NORMAN  
LOCKYER.

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PRIMER OF ASTRONOMY.  
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THE METEORITIC HYPOTHESIS.  
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AND  
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ESSAYS AND ADDRESSES

1870-1905

BY  
SIR NORMAN LOCKYER, K.C.B.

WITH AN INTRODUCTION BY THE RIGHT HONOURABLE

R. B. HALDANE, K.C., M.P.

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## INTRODUCTION.

BY

THE RIGHT HONOURABLE R. B. HALDANE, M.P.

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With the thesis which forms the text of this collection of Essays and Addresses I am wholly in agreement. What we most lack in this country is the penetration of the mass of our people by the spirit of the Higher Education. Alike in our peace and in our war organisations there is wanting the survey based on science. Without this survey, and the grasp which it yields of the relative proportion of things, a vast waste of matter and energy alike is inevitable. As a nation we possess great qualities. Individuality, initiative, courage, are distinctive of our people. We are well fitted to hold our own in the race for supremacy. But we handicap ourselves by want of the higher training. Such training requires self-submission to hard intellectual discipline, and it is in this self-submission that the majority of our young men are lacking.

None the less progress is being made, and being made rapidly. The standard of knowledge is rising, and I



think that with it the moral standard is rising. Our people are becoming more temperate, and they are insisting on a higher standard of living. They will go further, so the evidence seems to indicate, if they are well led.

For the training of the necessary leaders the Higher Education is essential, and the Universities are its only reliable source. One of the satisfactory features of our time is the large increase in the number of our Universities within the last ten years, and the generous endowment of them from private sources. That the State ought to do more than it does in the way of endowment I agree with the writer of this book. But I am not sure that I wish to see the burden transferred to the State in the wholesale fashion that is sometimes suggested. In expenditure out of taxes science is as essential as in the arts and crafts to which these Essays and Addresses refer. Probably nothing conduces more to national efficiency than frugality in the use of national resources. The private donor should be encouraged and not left to expend his generosity in regions which do not concern the State directly. In writing this I do not mean that the Government ought not to spend public money generously upon the Universities. I mean that it should not be spent unless and until a case for the necessity of such expenditure has been clearly made out.

There has been too much waste in the past over some matters connected with education, and, as the result, too much starvation over others, to make this warning superfluous. No one who has had to do with the business of Government can fail to have felt the pang of regret at the discovery that precipitate expenditure in the past, which events have shown to be misplaced, has deprived him of the money necessary to effect necessary reforms. *Festina lente* is a good maxim for a Chancellor of the Exchequer. He must remember both the words of the maxim.

With this preliminary word of caution I associate myself enthusiastically with the endeavour of my colleague in the British Science Guild. There is a saying of a recent writer which I will quote as expressing the pith and marrow of what Sir Norman Lockyer and others of us desire to preach as our gospel:—"Vom Wissen Zu Können ist immer ein Sprung; der Sprung aber ist vom Wissen und nicht vom Nicht-Wissen."

R. B. HALDANE.

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## PREFACE.

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I have brought together in the present volume several among my Essays and Addresses on educational subjects which have appeared during the last thirty-five years.

In these I endeavoured to show how vital it is, from a national point of view, that the education of everybody, from prince to peasant, should be based upon a study of things and causes and effects as well as of words, and that no training of the mind is complete which does not make it capable of following and taking advantage of the workings of natural law which dominate all human activities.

My point has in all cases been that the nation most highly educated in this manner can, if the number of combatants be equal, best hold its own in the struggle for existence both in peace and war, seeing that success in either now depends not upon muscle but upon the utilisation of the best and most numerous applications of science. If the number of combatants is unequal, then the smaller number can only hold its own if it be much more highly educated than its opponent.

The present position of Britain from this point of view shows that those of us who have endeavoured for the last thirty-five years to point out the way in which our people can survive in the struggle, have, to a large extent, been crying in the wilderness. In spite of what