

**FIFTY YEARS OF SCIENCE:  
BEING THE ADDRESS DELIVERED  
AT YORK TO THE BRITISH  
ASSOCIATION, AUGUST 1881**

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Fifty Years of Science: Being the Address Delivered at York to the British Association, August 1881 by Sir John Lubbock

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**SIR JOHN LUBBOCK**

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BEING THE ADDRESS DELIVERED AT YORK  
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AUGUST 1881

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BY

SIR JOHN LUBBOCK, BART., M.P.

PRESIDENT OF THE ASSOCIATION

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ADDRESS  
TO THE  
BRITISH ASSOCIATION, 1881.

IN the name of the British Association, which for the time I very unworthily represent, I beg to tender to you, my Lord Mayor, and through you to the City of York, our cordial thanks for your hospitable invitation and hearty welcome.

We feel, indeed, that in coming to York we are coming home. Gratefully as we acknowledge, and much as we appreciate the kindness we have experienced elsewhere, and the friendly relations which exist between this Association and most—I might even say, all—our great cities, yet Sir R. Murchison truly observed at the close of our first meeting in 1831, that to York, 'as the cradle of the Association, we shall ever look back with gratitude; and whether we meet hereafter on the banks of the Isis, the Cam, or the Forth, to this spot we shall still fondly revert.' Indeed, it would have been a matter of much regret to all of us, if we had not been able on this, our fiftieth anniversary, to hold our meeting in our mother city.

My Lord Mayor, before going further, I must express my regret, especially when I call to mind the

illustrious men who have preceded me in this chair, that it has not fallen to one of my eminent friends around me, to preside on this auspicious occasion. Conscious, however, as I am of my own deficiencies, I feel that I must not waste time in dwelling on them, more especially as in doing so I should but give them greater prominence. I will, therefore, only make one earnest appeal to your kind indulgence.

The connection of the British Association with the City of York does not depend merely on the fact that our first meeting was held here. It originated in a letter addressed by Sir D. Brewster to Professor Phillips, as Secretary to your York Philosophical Society, by whom the idea was warmly taken up. The first meeting was held on September 26, 1831, the chair being occupied by Lord Milton, who delivered an address, after which Mr. William Vernon Harcourt, Chairman of the Committee of Management, submitted to the meeting a code of rules which had been so maturely considered, and so wisely framed, that they have remained substantially the same down to the present day.

Of those who organised and took part in that first meeting, few, alas! remain. Brewster and Phillips, Harcourt and Lord Milton, Lyell and Murchison, all have passed away, but their memories live among us. Some few, indeed, of those present at our first meeting, we rejoice to see here to-day, including one of the five members constituting the original organising Committee, our venerable Vice-President, Archdeacon Creyke.

The constitution and objects of the Association were



so ably described by Mr. Spottiswoode, at Dublin, and are so well known to you, that I will not dwell on them this evening. The excellent President of the Royal Society, in the same address, suggested that the past history of the Association would form an appropriate theme for the present meeting. The history of the Association, however, is really the history of science, and I long shrank from the attempt to give even a panoramic survey of a subject so vast and so difficult; nor should I have ventured to make any such attempt, but that I knew I could rely on the assistance of friends in every department of science.

Certainly, however, this is an opportunity on which it may be well for us to consider what have been the principal scientific results of the last half-century, dwelling especially on those with which this Association is more directly concerned, either as being the work of our own members, or as having been made known at our meetings. I have, moreover, especially taken those discoveries which the Royal Society has deemed worthy of a medal. It is of course impossible within the limits of a single address to do more than allude to a few of these, and that very briefly. In dealing with so large a subject I first hoped that I might take our annual volumes as a text-book. This, however, I at once found to be quite impossible. For instance, the first volume commences with a Report on Astronomy, by Sir G. Airy; I may be pardoned, I trust, for expressing my pleasure at finding that the second was one by my father, on the Tides, prepared like the preceding at the request of the Council; then comes one on Meteorology by Forbes; Radiant Heat, by Baden

Powell ; Optics, by Brewster ; Mineralogy, by Whewell, and so on. My best course will therefore be to take our different Sections one by one, and endeavour to bring before you a few of the principal results which have been obtained in each department.

The Biological Section is that with which I have been most intimately associated, and with which it is, perhaps, natural that I should begin.

Fifty years ago it was the general opinion that animals and plants came into existence just as we now see them. We took pleasure in their beauty ; their adaptation to their habits and mode of life in many cases could not be overlooked or misunderstood. Nevertheless, the book of Nature was like some richly illuminated missal, written in an unknown tongue. The graceful forms of the letters, the beauty of the colouring, excited our wonder and admiration ; but of the true meaning little was known to us ; indeed we scarcely realised that there was any meaning to decipher. Now glimpses of the truth are gradually revealing themselves ; we perceive that there is a reason—and in many cases we know what that reason is—for every difference in form, in size, and in colour ; for every bone and every feather, almost for every hair. Moreover, each problem which is solved opens out vistas, as it were, of others perhaps even more interesting. With this important change the name of our illustrious countryman, Darwin, is intimately associated, and the year 1859 will always be memorable in science as having produced his work on ‘The Origin of Species.’ In the previous year he and Wallace had published short papers, in which

they clearly state the theory of natural selection, at which they had simultaneously and independently arrived. We cannot wonder that Darwin's views should have at first excited great opposition. Nevertheless from the first they met with powerful support, especially, in this country, from Hooker, Huxley, and Herbert Spencer. The theory is based on four axioms :—

' 1. That no two animals or plants in nature are identical in all respects.

' 2. That the offspring tend to inherit the peculiarities of their parents.

' 3. That of those which come into existence, only a small number reach maturity.

' 4. That those, which are, on the whole, best adapted to the circumstances in which they are placed, are most likely to leave descendants.'

Darwin commenced his work by discussing the causes and extent of variability in animals, and the origin of domestic varieties ; he showed the impossibility of distinguishing between varieties and species, and pointed out the wide differences which man has produced in some cases—as, for instance, in our domestic pigeons, all unquestionably descended from a common stock. He dwelt on the struggle for existence (since become a household word), which, inevitably resulting in the survival of the fittest, tends gradually to adapt any race of animals to the conditions in which it occurs.

While thus, however, showing the great importance of natural selection, he attributed to it no exclusive influence, but fully admitted that other causes—the use