

to all intents and purposes, absolutely irregular, unless a fixed relation subsist not merely between the totality of phenomena but likewise between extremely small portions of that totality, and not merely between individual concrete phenomena but between classes of phenomena.

The argument of the early work was, it is true, conducted with an *arrière pensée* in the shape of 'practical results' it was taken to yield, so far as a theistic view of the world is concerned. But, in his second book, Balfour attempted to develop the negative speculations of philosophic doubt into a constructive, if provisional, system of thought. As before, he proceeded by criticising what he here designates 'naturalism', meaning by that term virtually a purely mechanical theory of Nature, which "forces itself into the retinue of science", and "claims, as a kind of poor relation, to speak with her voice". With singular effectiveness, he sought to bring into the foreground the implications, in the spheres of ethics, aesthetics, and of rational thought generally, which this doctrine entails. In the first place, the consciousness of freedom, the sense of responsibility, the authority of conscience, —these, along with the train of beliefs and sentiments from which virtuous deeds and generous ambitions spring, evince themselves as mere devices for securing certain competitive advantages in the struggle for existence. In the second place, the persistent endeavours of æsthetic theory to show that the beautiful is a necessary and unchanging element in the general scheme of things indicate, at any rate, that mankind will not be easily reconciled to the view that beauty is but the chance occasion of a passing pleasure, and that, so far from disclosing hidden mysteries to us, poets and artists portray what, though it may be very agreeable, is seldom true and never important. "We cannot willingly assent to a theory which makes a good composer only differ from a good cook in that he deals in more complicated relations, moves in a wider circle of associations, and arouses our feelings through a different sense." In the third place, human reason, so far from being Nature's final product, is, according to the doctrine in question, no more than one of many expedients for increasing our chance of survival, and which, we may suppose, will be gradually superseded by the growth of instincts or inherited habits, by which such adjustments between the organism and its environment as now seem dependent on it will be more successfully effected.

Having thus exhibited the inherently irrational character of the naturalistic theory, Balfour attempted to sketch in outline a philosophic position which, while admittedly incomplete and suffering from gaps and rents, from loose ends and ragged edges, would yet do justice to the fact that in accepting science, as we all do, we are moved not merely by strictly logical considerations but also essentially by 'values'. A fearless examination of the grounds on which judgments about the physical world are founded will disclose, he argued, that they rest on postulates about which it is equally impossible to say that we can theoretically regard

them as self-evident, or practically treat them as doubtful. We can neither prove them nor can we give them up. Grant the same philosophic weight to values in those departments of speculation that look beyond the physical world, and naturalism will have to be abandoned once for all. The vast majority of our beliefs, of our ethical, social, and religious beliefs especially, have not been attained by any process of logical reasoning; they have been generated in us by custom, education, public opinion, by the contagious convictions of countrymen, family, and so on; and, not least, by "the 'spirit of the age', producing a certain psychological 'atmosphere' or 'climate' favourable to the life of certain modes of belief, unfavourable, and even fatal, to the life of others". Unfortunately Balfour used the misleading and inappropriate term 'authority' by which to denote the group of influences thus enumerated. But, as a discerning German critic has observed, what he really meant "may all be covered by the proposition that we men, in our higher spiritual life, are the products of history before we are its producers, and that in this double relation of ours to history the weight is permanently to be placed upon our dependence on the historical factors which surround and determine us." And it is, I take it, certain that, although he not seldom contrasted what he called 'authority' with reason, Balfour did not mean to imply that, in the last resort, the beliefs in question are 'irrational'. On the contrary, he insisted that we are driven to believe in a supreme Reason, in order to account for the presence of these factors in the human world at all. The presupposition that the world is "the work of a rational Being, who made it intelligible, and at the same time made us, in however feeble a fashion, able to understand it" is a presupposition "forced upon us by the single assumption that science is not an illusion".

I must not dwell upon Lord Balfour's further elaboration of these principles in the Gifford Lectures. Those of us who have been privileged to take part with him in philosophical discussion need not to be reminded of his invariable fairness and patience in listening to views that were opposed to his own, or of his wonderful power of quickly seizing the main points in a complicated argument, and of freeing it from irrelevancies. Nowhere will his presence be more sincerely missed than in the small gatherings of philosophic workers, where he was always so much at home.

G. DAWES HICKS.

From Sir J. J. THOMSON, O.M., F.R.S.,
Master of Trinity College, Cambridge.

It may fairly be said of Lord Balfour that no statesman ever did so much to promote the development of science or kept in closer touch with its progress. He was First Lord of the Treasury during the initial stages which led to the foundation of the National Physical Laboratory, and it was his sympathy and support which made the Laboratory possible. He was instrumental in founding the Department of Scientific and Industrial Research,

and was, as Lord President of the Council, for many years its official head. Everyone who has been connected with the Department knows the keen interest he took in its work and development and how much it owes to his advice and sympathy, on which they felt they could rely in any case of difficulty: help was never given more gracefully or more tactfully. The same is true of the Medical Research Council, in which he took deep interest.

Lord Balfour was one of the pioneers in advocating the application of research to industry. In the Sidgwick Memorial Lecture for 1908 he said of it: "That on this we must rely for the improvement of the material conditions under which societies live is in my opinion obvious, though no one would conjecture it from a historic survey of political controversy". It was not only in industry that he recognised the importance of science, for in the same lecture he said: "Science is the great instrument of social change, all the greater because its object is not change but knowledge; and its silent appropriation of this dominant function amid the din of political and religious strife is the most vital of all the revolutions which have marked the development of modern civilisation".

A liking and aptitude for science were in Lord Balfour's blood. His uncle, the late Marquis of Salisbury, was distinguished among statesmen by his interest in science, and was president of the British Association at the famous meeting at Oxford when Lord Rayleigh and Sir William Ramsay announced the discovery of argon. Lord Balfour's brother, Frank Balfour, before he was thirty, was the most distinguished morphologist in Great Britain, and his tragic death when he was but thirty-one affected Cambridge more deeply than any event I can remember.

Apart from his interest in science as a social and industrial force, Lord Balfour took a keen interest in it from the philosophical side and kept in close touch with modern developments. He had been a fellow of the Royal Society since 1888 and had served twice on its Council; he was president of the British Association at the Cambridge meeting in 1904, and gave a very characteristic address which showed a close acquaintance with the new views about the nature of matter and was illuminated by witty and weighty criticisms of their philosophic aspect. Conversation on scientific subjects with Lord Balfour was an intellectual tonic: he was so quick in seizing the points, in picking out those which were vital, and in foreseeing possible developments.

In 1919, Lord Balfour succeeded Lord Rayleigh as Chancellor of the University of Cambridge, and was most active and helpful in securing the means for the erection of a new library for the University, the most important event in its recent history. He had previously been instrumental in securing a new professorship—the Arthur Balfour professorship of genetics. A short paper he wrote in 1910 induced an anonymous benefactor to offer to found the professorship provided it was associated with the name of Arthur Balfour. His connexion with Trinity College was long and intimate: he had been a member

of the College for sixty-four years and an honorary fellow for forty-two: two brothers, Gerald and Frank, and two brothers-in-law, Lord Rayleigh and Henry Sidgwick, were fellows of the College and took an especially active part in its work, and the connexion, much prized by the College, has been continued in the younger generations of his family.

From Sir ALFRED EWING, K.C.B., F.R.S., lately Principal and Vice-Chancellor of the University of Edinburgh.

I HAVE been asked to write a note about Lord Balfour's association with universities, perhaps because I served under him as Vice-Chancellor in one of them for thirteen years. Perhaps also because a previous service under him at the Admiralty, when he was First Lord during the War, had created a personal link which the subsequent intercourse maintained and strengthened. Meeting Lord Balfour from time to time in the serene yet vigorous evening of his life, one found in him continually more and more to admire and revere and love.

Lord Balfour's connexion with universities is too big a subject for a brief note. He was Chancellor of two—Edinburgh for thirty-nine years and Cambridge for eleven. He was honorary doctor of at least sixteen, rector of two, a member of the senate of another. He had been Gifford lecturer, Romanes lecturer, and so on. Such points of established contact meant much to the universities concerned. His immense influence and authority could be invoked; his advice could be sought; his sympathetic comprehension of university affairs never failed. It was for such reasons that he undertook, in his double capacity as Chancellor of Cambridge and of Edinburgh, to lay the case for the universities before the Treasury, thereby securing a much-needed increase in the annual grants.

To Balfour himself the academic atmosphere was congenial. He was conspicuously a fine flower of university culture. He understood the ways and aims of universities, their potentialities and their difficulties. In many addresses he spoke of them with insight and affection. He praised their past, noting especially how they had served as disinterested pioneers in scientific research. He had confidence in their future. But he was acutely alive to the need of adaptation to altering conditions. He saw that the promotion of research had become a public duty, to be undertaken on a scale larger than they could handle and needing greater resources. Fortunately, it fell to him, as Lord President of the Council, to direct the development of scientific and industrial research as a national task.

Through his membership of Trinity, his brothers' fellowships there, the tenure of the Cavendish chair and, later, the Chancellorship by his brother-in-law, the late Lord Rayleigh, and the appointment of his sister, Mrs. Sidgwick, to be head of Newnham, he had many ties with Cambridge. When he was asked to become Chancellor, he had already for a long time held the like office at Edinburgh, and it was typical of his courtesy that before accepting the