



SATURDAY, AUGUST 7, 1926.

CONTENTS.

	PAGE
The State and Science	181
Bacteriophage	183
The Science of Photography. By T. S. P.	185
History and Evolution. By F. S. Marvin	187
Our Bookshelf	188
Letters to the Editor :	
Lightning.—Dr. N. Ernest Dorsey ; Dr. G. C. Simpson, C. B., F. R. S.	190
Butterfly Migration.—Frank Cramer	191
The Inheritance of Brachypterous and Macropterous Wings in <i>Sitona hispidula</i> .—Dorothy J. Jackson	192
The Stone Age of Ceylon.—E. J. Wayland	193
Equations for Thermionic Emission.—P. Freedman	193
Seasonal Sunshine in Great Britain—L. C. W. Bonacina	194
Spatial Relations in a Dream.—Dr. J. H. Kenneth	194
Television or Teleoptics?—The Right Hon. Sir Herbert Maxwell, Bart, F. R. S.	194
Rotation and Relativity.—A. Jaques and J. S. Morgan	194
Meteors and the Constitution of the Upper Air. By Prof. F. A. Lindemann, F. R. S.	195
Methods and Results of the American Museum Expedition in the Gobi Desert, 1922–25. By Prof. Henry Fairfield Osborn, For. Mem. R. S.	198
The British Association at Oxford. By F. A. D.	199
Obituary :	
Rev. T. R. R. Stebbing, F. R. S. By Dr. W. T. Calman, F. R. S.	202
News and Views	201
Our Astronomical Column	205
Research Items	206
Kammerer's Alytes. By Dr. G. K. Noble ; Dr. Hans Przibram	209
The Progress of Geological Survey in Great Britain	211
Air Pollution and its Prevention	212
University and Educational Intelligence	213
Contemporary Birthdays	213
Societies and Academies	214
Official Publications Received	216
Diary of Societies	216
SUPPLEMENT : BRITISH ASSOCIATION—	
Scientific Research and Service. By H. R. H. The Prince of Wales, K. G., D. C. L., F. R. S.	Supp. 9
Views and Reviews. SUMMARIES OF ADDRESSES OF PRESIDENTS OF SECTIONS	Supp. 15

The State and Science.

IN electing the Heir to the Throne to fill its highest office, the British Association has honoured both science and itself. Since the Prince Consort filled this position in 1859, no member of the Royal Family has presided at its functions, and in succeeding his great-grandfather, H. R. H. the Prince of Wales has followed worthily in the footsteps of one who revealed an extraordinary insight into the possibilities of science, and initiated proposals that have led not only to the wide dissemination of scientific knowledge, but also to the harmonious co-operation of Science and the State.

The British Association has long been regarded as the mother of scientific parliaments, among the most important duties of which is that of bringing home to our people the significance and value of science to human life. No more effective spokesman could have been chosen than His Royal Highness, who, by virtue of his great experience as a traveller and interest in world-affairs, and of his immense popularity among all classes of the population, is pre-eminently qualified to convey the message of science to the nation and to the Empire. The onlooker, he says, sees a great deal of the game, and his experiences of things military and naval, his contacts with industry, education, public health, land-settlement, agriculture, transport, and housing, have convinced him that the future of civilisation lies "along a road of which the foundations have been laid by scientific thought and research." He has also come to realise that the future solution of practically all our industrial and social difficulties will only be found by scientific methods.

However divergent men's views may be on the course of human progress, whether it is rectilinear, or gyrotory with frequent interruptions (like the recent traffic in Piccadilly Circus), the most pessimistic will admit that the thoughts, interests and achievements of men have appreciably expanded within modern times, and that this development has been attended by a noticeable growth in the spirit of toleration. Our universities are now open to all classes, creeds, and nationalities ; the social 'cat' can not only look at the social 'king,' but rub shoulders with him on the playing field and at charitable functions ; we no longer consign to the stake those who practise the profession of necromancy, or to the gallows those who unlawfully prey upon their fellow-citizens : instead, we give them 'space' in our popular newspapers, and leave them to the verdict of 'time.' This unfolding of the spirit of toleration is especially marked in the attitude of conservative interests towards science, and the Prince is very happy in his allusion to the Oxford Meeting of the British Association in 1832, when there was strong opposition

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to conferring honorary degrees on such distinguished men of science as Brewster, Robert Brown, Dalton, and Faraday, whom Keble stigmatised as a "hodge-podge of philosophers"; and in his reference to the memorable meeting in 1860 when Bishop Wilberforce, at his famous encounter with Huxley, displayed an attitude of mind toward science that is rarely found nowadays, although, as Tennessee has taught us, it is not yet quite extinct. Such times are happily past, and even our most ancient and orthodox institutions are doing their best to march to the syncopated strains of modern civilisation. We must not, however, forget that feeling of 'dumb hostility' toward science and its works, referred to by Prof. Lamb in his presidential address last year, and again by the Prince on the present occasion; or the even more blighting feeling of apathy which still stalks in the land. Both these negative forces are the consequences of that ignorance and lack of imagination which instigated Voltaire to remark that although we had a hundred different religions, we had only one way of cooking a potato.

The history of the relations between science and the State in Great Britain, which is one of the principal themes of the presidential address, was sketched with a masterly hand, and nothing in it is more remarkable than the long period of delay—more than eighty years—which elapsed between the conception of a State department of science and its realisation when the Department of Scientific and Industrial Research was established during the late War. The time-lag between thinking and doing is ascribed by the Prince to lack of prevision of successive Governments, and to mutual distrust between science and the State; to these causes we would add ignorance of science and its methods, and the conservative attitude of the governing classes toward any disciplines which might compete with the study of the humanities and with orthodox religion. Many of us can well remember the bitter controversies which took place during the latter part of the last century between the respective champions of individualism and collectivism, and whilst the contention of the former that the genius of our people is ill-adapted to wholesale measures of nationalisation or widespread State control, is still held by the majority, it is evident that the ultra-individualism advocated by J. S. Mill, Herbert Spencer, and others is equally unsuitable as a practical creed. At any rate, time has largely solved the problem by the parliamentary method of compromise, and if we are not 'all socialists now,' we recognise that in certain matters affecting the welfare, and even the existence of our people, there is a legitimate field of State intervention; not necessarily for the purpose of assuming control, but rather for that of rendering assistance and giving advice.

Opinions will, of course, vary concerning the nature and extent of the fields into which the State can usefully penetrate. Those leaders of modern thought who are not obsessed by the mechanical and material aspects of Western civilisation, conceive progress to lie in a sense of values, and the majority of them admit that the cultivation of science, the broad and imaginative outlook which that cultivation engenders, and the application of scientific discoveries to human ends, are among the things that really matter to-day. Security in time of war, industrial progress in time of peace, education and national health at all times, cannot be left entirely to individual effort and initiative; and the only question that arises is the nature and range of the help which the State should give. In this connexion, the views recently expressed by the Earl of Balfour to the Society of Chemical Industry, which are evidently the views of the Department of Scientific and Industrial Research, over which he presides, are of interest. Apart from allocating grants to universities and the Royal Society, Lord Balfour holds that the State should not concern itself directly with promoting or assisting fundamental research work. Nor should it travel to the other end of the scale by finding capital for building factories and acquiring markets. Its legitimate sphere lies in helping to bridge the gap between laboratory experimentation and full-scale industrial operation, and in maintaining institutions like the National Physical Laboratory and the Fuel Research Station which, among other duties, pursue investigations of fundamental problems that are common to many industries, and therefore of great national importance.

In the recent attitude of the State toward science, the Prince discerns "a definite step in human progress," which is both novel and teeming with possibilities for Great Britain, the Empire, and the relations subsisting between them. Few, if any, of us know as much about the conditions in, and the needs of, our great overseas dominions as does the Prince; and none can speak with greater prestige. His remarks on the importance of extending knowledge of our overseas territories, on the value of co-ordinating the results of research work throughout the Empire, and on the good that results from personal contact between scientific workers from its various parts, require no emphasis from us; but we would point out that much as men of science may strive to serve the needs of Empire in the manner indicated, their services can only be small compared with those rendered by H.M. the King and H.R.H. the Prince of Wales, who, by their repeated visits to the Dominions, have strengthened beyond measure the natural ties of kinship that attach the motherland to her children beyond the seas.