

in Sir Alfred Ewing's presidential address before the British Association as in the forceful address delivered by Prof. Miles Walker to Section G (Engineering), which referred frankly to the hampering of developments by vested interests and the middleman, as well as to the value of the contribution to the improvement of the lot of mankind made by those who possess the power of devoting their whole energy to the execution of sound, practical, and beneficent projects for the sake of those projects themselves and not primarily from selfish motives or in pursuance of some irrational prejudice. Long after science has shown the way to make things better for the people, unintelligent control and stupid prejudice preserve the old evils and prevent the spread of better ways. If effective action is to be taken, now that in so many fields physical science has instructed man how to control and eliminate waste, the human sciences must show him how to control the waste forces of his own nature.

As an example of the potentialities, Dr. Jacks and Prof. Miles Walker both refer to Lord Baden-Powell's discovery of how the play-hunger of the young human animal, his love of adventure and fun, his sporting instincts, and even his devilries, can be used by skilful hands for the development of self-control, self-respect, courage, loyalty, discipline, good fellowship, responsibility, and competence. This is a great discovery, to be ranked with any of the achievements of physical science, and is a token of what may be possible when we really address ourselves to the development of the social sciences. The picture Prof. Miles Walker draws of the State as controlled by the engineer, with the elimination of waste at its source, the control of production, improvement of distribution so as to secure the manufacture of things men want and their distribution in the simplest way with the minimum addition to the cost, involves drastic curtailment of competition and perhaps a profound change in our social habits and attitude towards buying and selling. In insisting on technical knowledge and administrative ability as a qualification for public office, he is, however, expounding a doctrine freely voiced in *NATURE* for many years, and the proposed experiment of a small, relatively self-supporting community is one that should not be without appeal to scientific workers. The time is opportune for courageous and adventurous experiment. The world has yet to receive an object-lesson in the high standard of life which should be possible by good organisation and modern methods, where prejudice and incompetence are no longer allowed to deny to society the benefits of leisure or material possessions with which the application of scientific discoveries would endow them.

Political Economy and Unemployment

THE confusion which exists in many minds between creative science and mechanical science is apt to obscure the contribution which creative science makes towards the solution of the unemployment problem, a contribution which, under modern conditions, is the more important because so many of the new industries, which fundamental scientific discoveries have created, minister to the increasing leisure needs

of mankind. The escape of output from limitations of human effort, resulting from power production, has economic consequences which are already so far-reaching that, in the physical sphere, creative science can do little more than mitigate the severity of unemployment, and Mr. H. R. Leech, of 10 Dale Street, Runcorn, has rightly directed our attention to the necessity for original and creative research in that most uncreative of sciences—political economy. It is only as political economy and all the related so-called human sciences are placed on a firm scientific foundation, and as scientific methods are rigorously applied to the analysis of the problems of distribution of leisure and goods with which we are confronted in the age of incredible abundance which science has given us, that we can expect to solve an unemployment problem of the present magnitude. When impartial solutions have been mapped out by scientific methods, there will still remain for scientific workers and others the moral responsibility of seeing that those solutions are applied, and that the profusion with which science has now endowed mankind is no longer permitted to exist side by side with such widespread unemployment, poverty, and distress.

Scientific Research and Industry

THE Committee appointed in March 1931 by the Economic Advisory Council to examine the project for promoting new industrial development in Great Britain by establishing a central national research organisation independent of existing Government and private organisations, has just issued its report. This gives a survey of the existing organisation of industrial research in Great Britain and an analysis of the arguments for a new national research organisation, as well as of proposals for a development fund for the Department of Scientific and Industrial Research, a compulsory levy for support of research associations, and the preparation by Government of scientific digests. The Committee is satisfied that the existing Government organisation for the promotion of industrial research is efficient and sufficiently flexible to enable it to develop along the lines required to meet the changing needs of industry. The formation of a new national research organisation would cut right across the existing organisation of the Department of Scientific and Industrial Research, and, by causing confusion of purpose and distraction of effort, would be likely to injure rather than forward the cause of scientific research in British industry.

Research Development Fund

THE Committee considers it is highly desirable that the Government should have at its disposal a small fund for research development, and that provision should be made for its continuance when the balance of the fund at the disposal of the Advisory Council for Scientific and Industrial Research is surrendered to the Exchequer at the end of the current year. The Committee refers to evidence received as to the value of the services rendered to industry by the research associations, and trusts that it will be possible for the Government to continue to provide sufficient financial assistance to secure their efficient functioning until industry

is in a position to bear the whole of their cost. At the same time it is considered that if an industry can produce a practicable scheme, Government assistance in obtaining Parliamentary powers for a compulsory levy should be forthcoming. We hope to discuss this Report in more detail in due course.

Liebig and Faraday at York

It is one of the benefits of international intercourse that visitors to a country often record in their letters and diaries their impressions and memories of men and institutions, for which we cannot be too grateful. From these records we get those glimpses of the past which often escape the historian. Thus from the memoirs of Bishop Taylor of Norwich we can picture the aged Haüy—who looked like a man picked out of a crystal—lecturing at the Jardin des Plantes, where, “as everywhere also, the utmost liberty is shown to all, but to Englishmen particularly your country is your passport”; while from the letters of Helmholtz we see Tait “a particular form of savage” at St. Andrews, where, devoted to golf, he could only be brought to talk of rational matters on a Sunday. Of all the men of science who visited England in the early days of Victoria, none was better known than Liebig, who was at York for the 1844 meeting of the British Association, and afterwards toured Great Britain in the company of Playfair, Daubeny, and Dean Buckland. After his return to Giessen, Liebig wrote a charming letter to Faraday, which was long treasured by the late George B. Buckton, and which through the kindness of Miss A. M. Buckton was published in full in the *Times* on Aug. 31. During this year’s meeting of the British Association the letter has been on exhibition, and Miss Buckton proposes to send it to General Smuts, as a contribution to the newly built Witwatersrand Library. It is stated in the *Times* that the letter has hitherto been unpublished, but perhaps it should be pointed out that it was printed in W. A. Shenstone’s “Justus von Liebig, his Life and Work”, published by Messrs. Cassell and Co. in 1901. While Liebig’s letter contains an interesting view of British science at the time, Frank Buckland has left us an equally interesting contemporary account of the happy surroundings in which Liebig lived and worked at Giessen.

Founders of the Royal College of Chemistry

THE memory of Liebig is also revived by an article, accompanied by a reproduction of a daguerreotype of five of his assistants, contemporaries in his laboratory at the University of Giessen, all of whom were pioneers of chemistry, which appears in the *Times* of Sept. 5. Three were German—Hofmann, Fresenius, and Will—and two were English—Gardner and Bullock, who were associated in 1845 in the foundation of the Royal College of Chemistry, of which Dr. Gardner was secretary and Hofmann the first professor of chemistry. That three of the chemists associated with the Royal College of Chemistry in its early days should be included in a single photograph will be of special interest to past and present students of the Royal College of Science, its lineal descendant. “Ninety years ago”, says the writer of the article,

explaining the picture, “five young men met for a solemn function. . . . They met to be photographed.” He gives a list of the distinguished chemists trained by Hofmann at the College, of whom Prof. H. E. Armstrong survives.

The Chinese Earthquake of Aug. 14

AN earthquake of considerable severity occurred in the south-west of China at about noon (Chinese time) on Aug. 14, and was registered by seismographs throughout the world. From the records at six observatories, the officials of the U.S. Coast and Geodetic Survey place the epicentre in about lat. 27° N., long. 103° E. (Wire Report of Science Service, Washington, D.C., Aug. 16). This point lies near the northern boundary of the province of Yunnan, about seven hundred miles to the south of the province of Kansu, in which the destructive earthquakes of 1920 and 1927 occurred. Kansu is a thickly populated province, and it is possible that some thousands of lives may have been lost, though weeks may elapse before news reaches us from the central district. From the beginning of the sixteenth century, it has been visited by twenty disastrous earthquakes, by one of the latest of which, in 1888, about five thousand persons were killed. According to Mr. N. F. Drake (*Amer. Seis. Soc. Bull.*, vol. 2, pp. 40-91; 1912), the province of Yunnan is one of the most important earthquake districts of China. He represents the relative seismicities of the four principal districts—Fukien, Kansu, Chihli, and Yunnan—by the numbers 100, 98, 94, and 91.

The Rubber Industry in Malaya

THE rubber industry of Malaya is passing through the most critical period which it has yet experienced, so that the issue of a special rubber number of the *Malayan Agricultural Journal* (vol. 20, part 5) is of particular interest. The recent decision against compulsory restriction of rubber growing, though a disappointment to many, has, by removing the element of uncertainty, enabled the estates to frame their policy more clearly. Under-consumption rather than over-production is the cause of the present crisis, so that it is hoped to rectify matters by more intensive production on areas actually in tapping, and by improving the liaison between the scientific investigator and both producer and consumer. Already great reductions have been effected in the cost of production. Factory improvements, such as the construction and installation of batteries of light sheeting machines in cascade or file formation instead of in line, have facilitated and accelerated the handling of the coagulum, and more rapid methods of drying and smoking have been evolved. Economy has also resulted by the use of treated hessian for packing in place of the usual wooden chests. Considerable increase in the export of latex continues, and the extended application of this form of product to new uses is a hopeful sign of development on at least one side of the industry. Every effort is being made to study the best methods for growing and manuring the crop and for controlling the various diseases and insect pests which attack the rubber plant, so that when the industry