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Science and Labour.

THE British Science Guild was happily inspired in seeking the co-operation of the National Joint Council of the Trades Union Congress and the Labour Party in the organisation of the conference on Science and Labour in the Modern State to be held at the British Empire Exhibition at the end of this month. The labours of the joint committee, presided over by Sir Richard Gregory, have now borne fruit in the published programme of the conference. Science in its widest sense has a history as old as the known world. As an active agent for the betterment of human life, for the promotion of man's joys and the alleviation of his sorrows, its history is comparatively recent. The researches of Robert Boyle, who died in 1691 and was described on his tombstone as the father of chemistry, found no immediate application in the workaday world. Sir Isaac Newton, the outstanding figure in English science, discovered the secret of the movements of the heavenly bodies ; but it cannot be said that his life-work had much effect on the great mundane movement in his own day and generation.

Sir Humphry Davy's safety lamp for miners was an early example of the application of science to the daily needs of the working man. We may surmise that this invention was hailed with joy and gratitude by the miners : but on the side of mechanical invention generally, the march of progress caused some alarm and misgiving to the working classes. They thought that their livelihood was imperilled ; and occasionally their anxiety sought a drastic remedy in smashing the new machines. That an invention obviously reducing the demand for manual labour should lead indirectly to increased employment was an idea too complex to be grasped by the uneducated populace of the early years of the industrial revolution. One of the greatest indirect services rendered by the progress of science and invention is the insistent demand it makes for higher educational standards in the community generally. The chauffeur must be better educated than the driver of the old horse omnibus. Civilisation must advance line upon line, precept upon precept, step by step and in an ordered phalanx.

The unequal contest between mechanical invention and obsolescent industrial methods soon reached its inevitable conclusion. But after a few decades, the scene of conflict was shifted from the workman's cottage to the country parsonage. The Darwinian theory raised angry protests against science from a section of the community more articulate and not less vehement, if less destructive in a physical sense. Mid-Victorian controversies between science and religion are now a fading memory ; and the reader of the history of these times is surprised and rather amused that men of

brilliant intellect such as Huxley and Gladstone should have expended so much energy on such barren themes as the miracle of the Gadarene swine. Coming to more recent times, the War provided a large-scale object lesson of the destructive power of applied science. In some minds the repercussions of the War have encouraged an atavistic mistrust of science and all its works. More generally, however, the War has quickened the sense of private and public responsibility for the development of science and its application to the needs of the community. If, as Conrad says, "we are bound to the chariot of progress," may we not hope, nevertheless, in some measure to direct its course? Or if, to change the metaphor, science is a Frankenstein monster, may we not try to set the monster to benevolent tasks? That thought, we have no doubt, was in the minds of the promoters of the conference, which will serve a most useful purpose if it helps to reconcile all classes of the community to the claims and progress of science and its applications, and to increase public appreciation of the value of science in all departments of modern life.

These somewhat discursive remarks may serve as a preamble to an examination of the programme of the conference, which has the merit of being coherent and comprehensive. Priority in the list of subjects is given to the Place of Science in Government, the discussion of which is to be opened by Mr. Sidney Webb, president of the Board of Trade. The art of government is popularly supposed to be based on a few simple principles such as counting heads. "Let us talk of the state of the nation," Squire Western said, "or something that everybody understands." Mr. Sidney Webb, as a life-long student of the subject, will not be expected to endorse this view. We cannot doubt that he will admit the increasing complexity of government and administration in the modern state, and the pressing need both for formal study of the subject by men and women of scientific training and experience and for their active co-operation in the work. For the discussion of Scientific Research in Relation to Industry, the conference committee has been fortunate in securing an excellent combination of speakers in Sir Oliver Lodge, whose brilliant researches in abstract physics have contributed to practical results of the highest value, and in Mr. Hugo Hurst, who has established a great research department in connexion with the General Electric Company which he directs. The promotion of scientific research, pure and applied, bristles with difficult problems in the selection of the workers and of the problems they are to attack, and in securing for them the best conditions of work, spiritual as well as material. The well-intentioned efforts of the Government in promoting scientific research will, no

doubt, be passed under review. The Co-operation of Science and Labour in Production, the subject of the third meeting, also raises difficult questions. Is it possible, under present-day industrial conditions, to secure for the worker opportunities for the development of his personality and pleasure in his work and a contented outlook on life, undaunted by possible changes which scientific discovery and invention may render necessary? Can the worker expect to be safeguarded against economic, and even fiscal, changes which may render his acquired skill a useless asset?

Science and the Human Factor is the subject to be discussed at the fourth meeting, when the preservation of physical health and the principles and applications of that comparatively new science—applied psychology—will be under consideration. There is a suspicion in some sections of the working classes that the efforts of the experts in these subjects are directed primarily towards increasing the profits of the capitalist. We may hope that men of the calibre of Sir Arthur Newsholme and Dr. C. S. Myers will be able to dispel this suspicion. The worker surely stands to benefit by improved conditions of sanitation, lighting, heating and ventilation, and by the reduction of fatigue and discomfort which is rendered possible by a scientific study of the organisation of manual labour. He should gain also by the methods of vocational selection and guidance which ascertain the tasks best adapted to his temperament and mentality.

At the final session, the subject is Science and Educational Organisation. Possibly no department of public life is more encumbered by tradition and obscurantism than our educational system. A new scientific approach is urgently needed. Education must be recognised as a process of continuous intellectual development in which statutory age limits are almost irrelevant. We must look beyond the ambit of the class-room and the school for stimulating educational influences. If we may conclude by striking an Imperial note, appropriate for a conference to be held in the British Empire Exhibition, it will be to quote Sir James Barrie's suggested motto for the British Empire, "That every child born into the British Empire should get an equal chance." The ideal expressed in this motto will not be realised by sitting in the shade. It is one of the ironies of public life that whereas, thanks to the struggles and sacrifices of our forefathers, positions of influence in government are now freely open to talent, the same cannot be said of many other professions and industries. The present Government should be peculiarly sympathetic to an educational policy which will deal with this question by scientific methods, without fear or favour, and with fairness and impartiality to all classes of the community.

T. L. H.