

futile, it is positively mischievous, for it raises an ideal which for the ordinary man is quite inappropriate during his preparation for a life of serious practical endeavour." The remarkable development of chemical industry in Germany has resulted much more from the large command of chemists and engineers of sound professional training and ability than from the possession also of an even larger supply of research chemists of mediocre ability.

Sir William Lever's paper is a weighty contribution to what is at the present crisis a very serious problem. One of the most distressing features of the times is the widespread unrest in the labour world concerning the division of the profits arising from the remarkable activity of certain industries connected with the war. So far it has not extended to any marked extent to the chemical industries, probably because these are not subjected to the same disturbing influences as, say, the coal-miners. But Sir William Lever's paper is a timely account, judicious, impartial, and dispassionate, of the working of a system which is pursued with signal advantage and success in the great organisation which he controls, and as such it may be commended to the thoughtful consideration of all employers of labour.

#### THE ROYAL GEOGRAPHICAL SOCIETY'S WORK ON THE ONE-MILLION MAP.

MR. A. R. HINKS, secretary of the Royal Geographical Society, described at a recent meeting of the society the work which has been carried out, and is still in progress, on a map on the scale 1/1,000,000. It is well known that, before the outbreak of war, conferences of representatives of the principal Powers had met in London and Paris, and had come to an agreement as to the production of a map on this scale, to cover ultimately all lands, on a uniform projection and with uniform methods of representation, etc. A few sheets had been produced in various countries. They were scattered, in some instances imperfect and not available in any quantity, and in any event useless to meet even partially the necessity which was felt, almost at the outset of the war, of a map to cover uniformly Western and Central Europe and Asia Minor and adjacent areas affected by military operations. Even for Europe no such map existed, and it was necessary, in taking a broad view of the operations, or for any such purpose as that which will ultimately become of prime importance, the tracing of boundaries, to pass at certain points from maps of a particular scale and method to others totally different in every respect. People are prone to comment that the scale 1/1,000,000 (nearly 16 miles = 1 inch) is too small even for such general purposes, but it is not so. It allows the representation of important places, railways, roads and boundaries, rivers, and elevation by means of contour lines, either alone or in conjunction with layer colours.

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Such a map, then, was undertaken by the Royal Geographical Society under the direction of the Geographical Section of the General Staff. The society's responsibility has extended to the compilation of construction drawings from the materials available on the spot, while the engraving and reproduction is being carried out by the Ordnance Survey Department. Methods have been used which, if slightly rough, have allowed of high speed, and a number of the sheets are already on the market in a preliminary issue. The work at the society's house has been done by Mr. Hinks and a number of volunteer fellows, all more or less accustomed to map-compilation, with the assistance of certain external advisers and a few trained draughtsmen.

Despite the possibilities for error which are inseparable from work done thus rapidly and without access to local information at the moment—possibilities which were frankly discussed by Mr. Hinks—there can be no question that a valuable and important task has been accomplished. Much experience has been gained. In certain respects the methods laid down at the international conferences have been improved upon. Two of the most important departments in which the work marks a real scientific advance are (1) the solid endeavours which have been made to overcome the immense difficulties of regularising the spelling of place-names in Central and Near Eastern Europe; (2) the contouring of the maps, which, in the same localities, often represents a reasoned collation of very imperfect sources, and the application to the data thus obtained of what may be called topographical sentiment of a high order. The systems of transliteration and hints as to pronunciation are indicated, where necessary, on the maps themselves. The work of compiling the physical outlines and contours has enabled a proper value to be set on many of the well-known official and other maps; notably it has resulted in the detailed criticism of the great Austrian staff map of 1/750,000, which does not emerge triumphantly from this test.

It is to be hoped that on the solid foundation of preliminary work thus laid will be raised, after present exigencies have been met, a structure of permanent value to geography generally; these maps should ultimately be revised and executed by the best methods, excellent as the present results are for the time being.

#### RECENT STUDIES IN THE DYNAMICS OF LIVING MATTER.

THERE is no falling off in the stream of work which comes from Prof. Jacques Loeb's laboratory in the Rockefeller Institute, from which we have now before us some ten or a dozen papers, mostly by Prof. Loeb himself, all published since the beginning of last year. They deal with various subjects in that field of comparative physiology, or dynamical biology, which Loeb has so diligently reaped as well as sown. Most of them are concerned with one or other of three topics, the phenomenon of heliotropism, the in-