



SATURDAY, OCTOBER 13, 1934

No. 3389

Vol. 134

CONTENTS

	PAGE
Industrial and Social Interactions	549
Taxonomy and Phylogeny of Monocotyledons	550
Mr. H. G. Wells Reveals Himself. By T. Ll. H.	553
Progress in Biochemistry. By E. F. A.	555
Short Reviews	555
Nutrition in Relation to Disease	557
Pit-Head Generation of Electric Power	558
International Conference on Physics. By J. H. A.	560
Obituary :	
Dr. Berthold Laufer	562
Mr. H. A. Allen	562
News and Views	562
Letters to the Editor :	
The Thermal Decomposition of Acetaldehyde. —Prof. M. W. Travers, F.R.S.	569
Human Daily Requirements of Dietary Ascorbic Acid.—Prof. Gustaf Göthlin	569
Action of Oestrin on the Coagulating Glands and on certain Vestigial Structures in the Mouse (<i>Mus musculus</i>).—Dr. Harold Burrows	570
Science at the Universities.—Prof. J. B. S. Hal- dane, F.R.S.	571
The Philosophy of Sir James Jeans.—Dr. Norman R. Campbell	571
Cosmic Rays and the Earth's Potential.—Dr. L. G. H. Huxley	571
Distortion of the Crystal Lattice of α -Brass.— W. A. Wood	572
Raman Spectrum of Nitrosylsulphuric Acid.— W. Rogie Angus and A. H. Leckie	572
Denitrification in Sunlight.—Prof. N. R. Dhar	572
The Fungus on <i>Zostera marina</i> .—T. G. Tutin	573
Alleged Stimulation of Moulds by Paraffin in Heavy Water.—T. Cunliffe Barnes	573
Mitogenetic Radiation of the Urea-Urease System.—E. G. Prokofiewa	574
Bird Migration and the Red Sea.—Dr. C. Crossland	574
Ionic Product of Heavy Water.—B. Topley and W. F. K. Wynne-Jones	574
Research Items	575
Colloidal Electrolytes. By D. J. L.	578
Economic Problems of Technological Progress	579
Scottish Fisheries in 1933	580
University and Educational Intelligence	581
Science News a Century Ago	581
Societies and Academies	582
Forthcoming Events	584
Official Publications Received	584

Editorial and Publishing Offices :

MACMILLAN & CO., LTD.

ST. MARTIN'S STREET, LONDON, W.C.2

Telephone Number : WHITEHALL 8831

Telegraphic Address : PHUSIS, LESQUARE, LONDON

Advertisements should be addressed to

T. G. Scott & Son, Ltd., 63 Ludgate Hill, London, E.C.4

Telephone Number : City 4211

Industrial and Social Interactions

IN many of the addresses and discussions at the recent meeting of the British Association at Aberdeen, attention was given to the social and economic problems which have arisen out of the greater command of Nature placed in the hands of man by the creative ingenuity of the engineer. The advent of power production has resulted in a profound change in the character of industry, and for this reason alone scientific workers, using the term in the broadest sense, should be rightly concerned with the social consequences of scientific discovery and invention. This approach from the engineering or mechanical side, and particularly the endeavour to assess the contribution of what has been termed the engineering mind to questions of distribution and consumption as it has been applied in the field of production, tends to obscure the fact that the attention of science has been focused on social questions with almost equal power from a very different point of view.

The scientific study of the human problems of industry may be said to have commenced with the post-War period. The initial stimulus was undoubtedly derived from the success of the inquiries carried out in 1915-17 by the Health of Munition Workers Committee. The original conception of industrial fatigue was largely that of a rather simple and special study prompted by an acute national emergency. The various reports issued by the Industrial Health Research Board or the publications of the National Institute of Industrial Psychology well illustrate how the work, which began as a clearly defined problem in the supply of munitions, continued as a complex and changing study of profound importance to all industry. The committees associated with the Industrial Health Research Board cover statistics, physiology of muscular work, industrial psychology, heating and ventilation, industrial pulmonary disease, physiology of hearing, physiology of vision; and the reports of the Board range freely over these subjects, industrial accidents, vocational guidance and selection, and the like.

The work has, however, now extended far beyond laboratory investigations, and a recent admirable study by Prof. E. Mayo, "The Human Problems of an Industrial Civilisation" (New York: The Macmillan Company, 1933), illustrates the point that it can, and is, playing its part in bringing before the scientific world some

of the larger social issues. It is not merely that there is no simple condition or fact described by the word 'fatigue', for example, and that fatigue is rather a convenient word to describe a variety of phenomena. The disuse of the word 'fatigue' in the title of the Industrial Health Research Board tokens indeed a significant admission that the problems are highly complex and that the industrial investigator must take account of many factors, some of which may lie outside the boundaries of industry proper. Investigations have revealed the existence in the works situation of difficulties and disabilities which are the direct outcome of external conditions, and can scarcely be removed by methods developed inside the works.

The question of industrial *moral* in this way becomes related directly to that of public *moral*. It is not enough to have an enlightened company policy in all staff matters and a well-planned programme of manufacture with adequate scientific and technical control, if effective human collaboration cannot be secured. Account must be taken of the real difficulties experienced by the workers in their social, as well as in their industrial, environment.

The focusing of attention on social conditions from this point of view of industrial efficiency and welfare reveals at once that some of the difficulties experienced by industry in regard to *moral* are due to the reaction of the disintegrating influence of industry itself on the social order. Changes in social habits induced by industrial demands or development, or the greater freedom conferred by new methods of communication or transport, frequently tend to diminish social control and the social understanding and support which the ordinary individual requires. Such conditions demand an accession of intelligent self-control, just when many find it difficult to formulate for themselves new attitudes or habits.

In the social disorganisation thus created—this breakdown of the social codes which formerly disciplined us to effective working together—we find the true explanation of much that is mechanical in the so-called leisure of to-day, much of the delinquency, crime, suicide and lawlessness of to-day, as well as contributory factors in the more sinister aspects of unemployment or political movements. The rapid development of the industrial civilisation, out of proportion with social and moral or ethical development, threatens what McDougall describes as world chaos and Durkheim as 'anomie'—disequilibrium or planlessness.

Thus from the human side we are faced with the same necessity for intelligent control, for wider and wiser planning, for the expansion of the area within which a rational or scientific direction functions in place of prejudice, if mankind is to avert disintegration and regain control over events. In this rapidly changing world, man cannot assign a value to his work unless there is some sort of integral social background—unless in the human and social-political sphere we can replace haphazard guess and opportunist fumbling by precise knowledge of the type and extent of social change, comparable with our knowledge and technique in the physical world.

It is not of course suggested that industry, any more than science, bears the sole responsibility for this problem of social disorganisation. A period of exceedingly rapid economic growth, defects in our educational system as well as in political institutions, have all contributed to the present state of affairs. Both science and industry, however, do carry a sufficiently large share of responsibility to warrant an increasingly close concern on the part of scientific workers and industrialists with social and political problems.

Taxonomy and Phylogeny of Monocotyledons

The Families of Flowering Plants. 2: Monocotyledons; arranged according to a New System based on their probable Phylogeny. By J. Hutchinson. Pp. xiii+243. (London: Macmillan and Co., Ltd., 1934.) 20s. net.

EIGHT years have elapsed since the publication of the first volume of "The Families of Flowering Plants", which dealt with the Dicotyledons. The author, in his preface to this his second volume, dealing with the Monocotyledons, apologises for the delay. At the time of the appearance of the former treatise, he confesses that he had then "only a cursory knowledge of the Monocotyledons as compared with that of the Dicotyledons". Perhaps if he had hastened the publication of the second volume, he might have produced a work somewhat perfunctory in character. As it is, whatever criticism may be brought against it, he cannot be charged with this. In the interval, Mr. Hutchinson has been able to exercise to the full on the Monocotyledons his flair for affinities, with the result that we have before us a work of much originality.

The book is compiled on similar lines to the previous one on the Dicotyledons, but with this amplification. Owing to the Monocotyledons being a less extensive group of plants, there is sufficient