

NATURE

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HUMAN FACTORS IN INDUSTRY

THERE has been much discussion in recent months of the problem of incentives as a means of encouraging increased effort and productivity in industry. Apart from economic and related aspects, the matter is of considerable interest to psychologists, social scientists and many other scientific workers, and it raises many issues which come into the field of scientific management.

When, in 1945, the Percy Committee issued its report on higher technological education in Britain, a major criticism was the inferior quality of the management literature of the country, and particularly the absence of the intellectual content of a sound mental discipline. It is early to look for much improvement in this respect; but one recent book, by Mr. R. P. Lynton, "Incentives and Management in British Industry"* goes so far to meet this criticism as to indicate that the British Institute of Management is already making its influence felt in this respect. Mr. Lynton acknowledges help received from colleagues of the Field Research Group of that Institute, and whatever may be the indirect influence of the Institute on his thought, he has written a book that is far ahead of much American literature in this field, and which makes a really useful and challenging contribution to the subject.

Mr. Lynton, eschewing the irritating jargon which so often mars books written on management, puts the question of incentives in a broad and true perspective. He is sharply critical of both management and trade union policy, and though he writes with sympathy and insight and a keen appreciation of the contribution of Prof. Elton Mayo and many others, he puts his finger very accurately on the weak spots in our present policies, and the way in which the resistance to change, on both sides, and the lack of vision of the Government are causing such dangerous waste of human qualities in industry. Many of his observations, particularly those on the mistaken belief that the feeling of insecurity in work stimulates the competitive spirit, and on the indirect effects of the fear of unemployment on output or as an incentive require careful consideration. As he also points out, management must learn to discriminate effectively against the inefficient. Other matters raised are the declining extent to which workers can influence their wages, the influence and limitations of welfare arrangements, the question of training and the importance of managements finding out what work interests their workers.

A dominant impression left on the mind of the reader is that the task of exposition should be undertaken by British writers. Comparison with the volume edited by Mr. S. D. Hoslett under the title "Human Factors in Management", and published in Great Britain last year†, sufficiently illustrates this point. In that volume Mr. Hoslett has assembled contri-

* Incentives and Management in British Industry. By R. P. Lynton. Pp. viii+212. (London: Routledge and Kegan Paul, Ltd., 1949.) 15s. net.

† Human Factors in Management. Edited by Schuyler Dean Hoslett. Pp. x+316. (London: Macdonald and Evans, 1948.) 18s. net.

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butions from such talented and well-known writers and expositors as Ordway Teed, Chester J. Barnard, F. J. Roethlisberger, W. J. Dickson and D. McGregor; and although the papers range over such topics as the nature of leadership, the researches at the Western Electric Co., foremen and their training, industry and the community and personnel work, the book does not lack unity. Indeed, it could equally well have been issued under Mr. Lynton's title, "Incentives and Management", but with the added proviso that it is confined to American industry.

The failure to interpret American experience in British terms, however, robs the book of much of its value in relation to the present discussions going on in Great Britain between the Government, managements and employees. In some ways the book may even do harm rather than good, since it is unlikely to hold, if it can gain, the interest of those who most need to be stimulated to fresh thought and effort in the field of industrial relations. This is unfortunate, for the literature of the subject is not so extensive that one can afford to pass over any serious contribution.

The paper on "Anthropological Engineering" well illustrates the weaknesses of the book. Even if anthropologists do not regard as too narrow the definition of their science as one which is concerned with the study of human relations, the use of the term 'engineering' in this context is not a happy one. Such terms as 'anthropological' or even 'human engineering' indicate an approach which cannot help, and indeed will probably hinder, the development of an atmosphere in which real progress is possible in the establishment of better relations between management and operatives, and in the promotion of policies in which incentives can really be effective. For this reason, the study of human relations and the establishment of anything approaching a science in this field will certainly not be forwarded by the use of such terms.

Lord McGowan's forthright speech in Birmingham on November 10, at the first of a series of 'free enterprise' meetings organised by the National Union of Manufacturers, frankly recognized that over-full employment has led to the breakdown of incentives to hard work, and that taxation had also tended to diminish effort. He showed that he is fully aware of the many ways in which this lack of effort manifests itself, and that he recognizes, too, the need for a closer understanding between the employers, the trades unions and the workers. Both tact, and a human understanding of the hopes and aspirations of employees, must be shown by employers in their relations with their workers.

Lord McGowan, however, is convinced that there is need for a wage policy, and that we require not a wage structure guaranteeing a certain standard of living but rather a wage policy of incentives and sanctions that will encourage the industrious and penalize the lazy. He advocates the increasing use in every industry where possible of work measurement and piece-rates as a method of wage payment, and he emphasized that the true solution to our difficulties is not so much to increase productivity but rather to obtain greater production from existing

hours of work by greater effort. Extension of the working week by paying for the extra hours at overtime-rates is unlikely to provide a satisfactory answer. Lord McGowan also believes that substantial transfers of labour between industries and occupations are imperative, although the Government has rightly refrained from using to any extent its powers for compulsory direction of labour. We have no longer reserves or a pool of labour, and the readjustment of our industrial pattern to changing world conditions involves drawing labour from some industries if others are to expand; in other words, a certain amount of re-distribution of the labour force seems essential.

Mr. Lynton's book alone will show how much hard thinking and resolute but sympathetic action will be required to give effect to such a policy or programme as that indicated by Lord McGowan. Nor must the thought and effort required come from one side only. "Control is no substitute for incentives", Sir John Anderson remarked in the House of Commons on October 27, and the Government as well as industry has its part to play in establishing conditions in which incentives can be effective. Lord McGowan's speech is evidence that, in any event, some industrialists are aware of what is required, and the endorsement by the General Council of the Trades Union Congress of the recent report of its Economic Committee indicates that the trades unions, in theory at least, admit the need for relating earnings to output. The report gives official blessing to systems of payment by results and proposes special incentive schemes to help the lower-paid workers. There is, however, no hint in the report of how the abandonment of mobility in wages is to be reconciled with the need to increase the mobility of labour, although the value of incentives as a means of securing greater output or attracting workers to export industries may be underestimated. It remains to be seen how far the unions are prepared to accept the advice of their leaders; but meanwhile, readers of Mr. Lynton's book will be in no doubt about the urgent need for a widespread re-orientation of attitudes in industry on the part of employers and managements if the willing co-operation upon which the effectiveness of incentives so largely depends is to be secured. To that end the Government has its own contribution to make, and the fact that the decisive factors are so largely psychological should not be allowed to hinder the clear and fundamental thinking on ways and means which will be demanded of both sides, but particularly of management.

That is true particularly of joint consultations, where, in the first instance, almost everything depends on the approach made by management. But an effective economic policy is required to give the indispensable stimulus and incentive to greater efficiency and higher output, and to the more economic marshalling of man-power. That is primarily a responsibility of government, as is a lead in a conscious and calculated campaign to root out restrictive practices of all kinds.

Already it appears that the work of the Anglo-American Committee on Productivity may have a

profound influence on industrial productivity, and visits of teams like those from the steel founding industry may make a most important and even revolutionary contribution if fully utilized and handled with imagination. Neither side of industry, in truth, has equipped itself fully for the responsibilities of increasing productivity. It has been suggested that a national industrial advisory council could prove more effective than the National Production Advisory Council on Industry and the National Joint Advisory Council in exercising a constant stimulus on individual industries and individual concerns, by offering advice or exerting pressure in the cause of greater efficiency or larger production; such an experiment might be worth trying.

No aspect of human relations is more important than that of establishing the closest possible contact between management and the workers, and of discovering and utilizing fully the most effective means of explaining to the latter what is involved in regard to problems that beset their particular industry and firm and those of the country. No step that promises to improve the communications between the Governments, managements and the workers should be left untaken, and there is still much to be done in this field to which Prof. Elton Mayo directed attention in his last book. But the problem is ultimately one of leadership; no amount of exhortation, and no form of organisation can make good defect of leadership, with all it connotes in coherent policy and the vigorous but imaginative translation of policy into practice.

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SIR PHILIP HARTOG

P. J. Hartog

A Memoir. By his Wife, Mabel Hartog. Pp. viii+178+6 plates. (London: Constable and Co., Ltd., 1949.) 10s. net.

THE publication of this excellent and well-written biographical memoir of the late Sir Philip Hartog will be welcomed by all who knew him personally, and no less by that far greater number who knew his work in one or other of the many fields in which he achieved distinction.

The opening chapter recalls a bygone age in the university life of Western Europe, when Hartog studied in Manchester under Roscoe, Schorlemmer, Balfour Stewart and Schuster, under Friedel, Lippmann and Würtz at the Sorbonne, under Bunsen in Heidelberg and Marcelin Berthelot in the Collège de France. It recalls other days in that great period; for in Paris Hartog lived with his brother-in-law, Arsène Darmesteter, the greatest authority of his time in Old French, and at his house he met and came to know well Renan, Gaston Paris, Paul Meyer, Michel Bréal, Louis Havet, Gabriel Lippmann the physicist, the Dieulafoys who excavated Susa, and James Darmesteter the orientalist, while he was a close friend of Bergson and was offered lessons on the piano by Pachmann. There are many interesting stories here of student life in Paris and Heidelberg in the 1880's, and some illuminating comments on France and Germany from Hartog's letters.

The next chapter, on Hartog's years in Manchester 1889-1903, first as Bishop Berkeley fellow in chemical physics in Owens College, then as assistant lecturer and demonstrator in chemistry and later as secretary of the University Extension Scheme of the Victoria University, is no less interesting; it brings back to mind the days of H. B. Dixon, Samuel Alexander and Tout in the University, and of W. T. Arnold, C. F. Montague and C. P. Scott of the *Manchester Guardian*, to which over many years Hartog contributed scientific articles, leaders and reviews. Here also he met Michael Ernest Sadler, one of the determining influences in his life.

The succeeding chapter deals with Hartog's work as academic registrar of the University of London, 1903-20, and there is much here of the history of the University of London during the period when it developed from being a mere examining body with candidates, rather than students, into a university concerned with students and charged with the duty of providing for teaching and research. As these pages show, Hartog throughout his long and eventful period of office was inspired by the aim of helping to build a university worthy of the greatest city in the world.

The fourth chapter describes Hartog's pioneer work in the foundation of the School of Oriental Studies and his life-long devotion to its interests; and the following three chapters deal with his great services to higher education and administration in India. The eighth chapter covers the years 1930-39, and describes Hartog's wide range of activities during his so-called 'retirement', including his remarkable contributions to the history of chemistry and his return to the study of the problem that had attracted him for many years, the first results of this study being published in 1935 as "An Examination of Examinations", the appearance of which caused considerable discussion. The next chapter deals with his long campaign for the better teaching of English, from his early days in Manchester to the posthumous publication of his "Words in Action". A final chapter describes his last years and his heavy labours during the Second World War; it is followed by an epilogue quoting various tributes to his memory and a bibliography of his writings.

Lady Hartog is to be congratulated on the skill and conciseness with which she has portrayed the life and work of a great and rare personality.

D. McKERR

BRITISH VEGETATION 6/6

Britain's Green Mantle

Past, Present and Future. By A. G. Tansley. Pp. xii + 294 + 70 plates. (London: George Allen and Unwin, Ltd., 1949.) 18s. net.

BY the layman the preservation of the flora and fauna is too often regarded as the concern of the man of science alone, since the contribution that the wild plant and animal life make to his enjoyment is either entirely unapprehended or only vaguely appreciated. A wider knowledge by the general public of the nature and diversities of wild life would do much to inculcate a realization of the part which Nature plays in providing the æsthetic enjoyment of the many who have little or no technical appreciation.