Accumulation at, and diffusion from, the site of liberation of acetylcholine with consequent extension of its action is unlikely. The presence of 'true' cholinesterase at the site of liberation and non-specific cholinesterase in the blood and tissues offers a double barrier to such extension.

Without eserine to protect acetylcholine from enzymatic destruction, little would be known of cholinergic transmission; what little is known about adrenergic transmission has been gleaned without the use of a specific inhibitor of any inactivating enzyme. Mono-amine oxidase has been suggested as playing a part comparable to cholinesterase. There is much evidence to support this, but recent work attributes inactivation to combination with the tissue receptors. Whatever the mechanism, it is easily swamped; so that accumulation of noradrenaline, local extension of its action by diffusion, and escape into the blood stream can all occur. As a consequence, localization of action comparable with acetylcholine-mediated effects is improbable.

THE WORKER AND HIS WORK

IN his presidential address to Section J (Psychology) Dr. H. G. Maule points out that at the beginning of the nineteenth century, as industrialization proceeded with great rapidity, there was but little attention paid to the personal and human needs of the industrial worker. In general, industrialists were concerned more with the new, developing, techniques of engineering and with new machinery than they were with people. There were, however, individual examples of firms which appreciated that workers as much as machines required attention. Against this background a developing public conscience gradually intervened, and laws were passed which helped to make the workers' lot more tolerable. Leonard Horner, one of the original inspectors of factories, reported some interesting and successful experiments in which hours of work in the cotton industry were reduced, with advantage not only to production but also to the general well-being of the worker. He admitted that he had not realized that shorter hours of work could lead to more punctual attendance, the avoidance of waste, and the general raising of industrial morale and so increase industrial efficiency.

Towards the end of the century a carefully conducted experiment on the effect of reduced hours was carried out in a Lancashire engineering works, and the result confirmed these findings of the earlier pioneers. Speaking of this experiment, Sir William Mather said that in his view the most economic production was obtained only so long as workers were at their best, and no economy was effected by continuing beyond this point. Up to 1914, however, it was only in respect of hours of work that there was any serious thought about the relationship between the worker, his work, and his working efficiency. In 1914, faced with war demands, industry attempted to solve its production problems by extending hours of work with little or no limit. So unsuccessful was this policy that a special committee to investigate the health and efficiency of munition workers was set up in 1915. When this committee was disbanded, it was succeeded by a peace-time organization, the Industrial Fatigue Research Board, which for the next thirty years carried out research and published its findings. In this way the foundations for modern industrial psychology were securely laid. At that time the main problems were those of working environment and methods of work. Even so, the early investigators directed attention to many of those aspects of people at work which are to-day regarded as the most important.

Between the two World Wars the emphasis changed. Studies carried out in the United States stressed the great significance of psychological forces operating within the working group and demonstrated the adverse effect on both well-being and production which might result from failure to pay adequate attention to these psychological forces.

By the time of the Second World War a substantial body of knowledge had been accumulated about conditions most favourable to efficient performance. But even so, many managers of industry were ignorant of the knowledge that was available to them.

The war years saw psychology playing its main part in application to the problems of the Armed Forces, particularly in the development of personnel selection. In this field striking contributions were made to the more effective use of Service personnel.

Since the end of the War there have been further important developments in the application of psychological principles to industrial problems, though there is still a considerable gap between knowledge and its application. We know, for example, that industrial neurosis accounts for the loss of some seventy million working days each year. It has been suggested that £700,000,000 a year is lost through people changing from job to job. We know some, but not all, of the factors influencing psychological mal-adjustment; we are beginning to understand the significance of the attitude of the worker not only to his work but also to those with whom he works. Design of equipment and machinery is now being recognized as having a psychological as well as engineering implication. A beginning has thus been made in our knowledge of the psychological needs of people at work.

Industry should recognize that sociology and psychology can make a contribution towards solving the problems of industrial management.

ASPECTS AND PROBLEMS OF CONIFER EMBRYOLOGY

PROF. J. DOYLE remarks in his presidential address to Section K (Botany) that our understanding of the nature of conifer embryology has been somewhat hampered by the fact that early work was centred on north temperate forms with special emphasis on the Scots pine. As a result, some presentations seem to make the matter a little obscure, whereas in reality it is relatively simple. The various embryogenies in the conifers can be largely resolved into a number of obvious modifications of a basal plan, with only a few cases which present any difficulty in fitting into the scheme.

The nature of what appears to be the basal plan can be most readily appreciated from a consideration of embryogeny in the podocarps. After fertilization, the diploid fusion nucleus undergoes a number of free mitoses, up to five, to give at the archegonium base a number of free nuclei, up to 32. At membrane formation these are arranged in a single upper tier of unclosed cells, the 'open' tier, and a lower group of primary embryo cells. An internal division,