

Industrial Psychology.

IN the programme of Section J (Psychology) at the Oxford meeting of the British Association, industrial psychology was the subject of several papers and demonstrations of which the following is a brief review:

(1) Mr. R. J. Bartlett, King's College, read a paper on the judgment of value of individual advertisements. The paper arose from an inquiry undertaken by the National Institute of Industrial Psychology three years ago. The first essential of a good advertisement is attracting power and the second holding power. The grading of individual advertisements according to 'attracting-holding' power was taken as the principal task. But in a world as inconstant as that of Paris fashion a 'scale' for measuring this power can have only a temporary value. The scatter of some 180 advertisements when arranged in a scale of 7 grades was found to be normal. Most advertisements fell in the central three grades and very few indeed in grades 1 or 7. For the advertiser the lesson is the old one: 'There's plenty of room at the top.' Another feature is that when the 16 Bovril posters were judged by 15 members of the advertising profession, great variability of judgment from subject to subject was exhibited, yet the resulting order of merit correlated with the winning ballot order as high as 0.8 ± 0.1 , showing that there is a common factor in the judgments which is shared by the large population that contributed to the ballot figures.

It was concluded that with a small number of advertisements, up to say 20, the method of paired comparisons, though tedious, is trustworthy. Above that number a fractionation method using 7 groups was recommended. Some practised subjects are even capable of employing this method using 15 groups. Simplicity and unity of design coupled with artistic treatment of shape and balance make for the good advertisement, while overcrowding, distraction from competing foci, and failure to secure the illusion of perspective are among the principal causes of failure. In conclusion, two kinds of variability were discussed, namely, the common variability from some nodal value, and that founded on the limited appeal of certain advertisements; for example, pipe smokers agreeing very closely in their disagreements with cigarette smokers. The latter kind is important and deserves further study. This, however, was set aside in forming the present scales, the aim being to assess the value of an advertisement on the assumption that the reader is a prospective purchaser.

(2) Mr. Arthur Stephenson, of the National Institute of Industrial Psychology, read a paper on some observations on accidents in industry. Although one must not belittle the success of mechanical safeguards, yet 90 per cent. of present-day accidents are to be accounted for as failures on the part of the human subject. The U.S. Federal Board for Vocational Education gives many examples of efficient safety work in various industries, but only one-third of the reductions in the personnel sustaining accidents has been effected by mechanical safeguards: two-thirds have been accomplished through organisation and education. Mr. Davis, Secretary of Labour, states that the fatal industrial accidents in the U.S.A. probably exceed 23,000 per annum and non-fatal accidents $2\frac{1}{2}$ millions, and he is advised by experts that 85 per cent. of these are preventable. In Great Britain there are about 1200 fatal accidents per annum in factories and workshops, and another 1200 in coal mines and quarries. Non-fatal accidents of sufficient severity to cause disablement for a week or more number 120,000 a year in factories, and 200,000 a year in coal mines.

The National Institute of Industrial Psychology, so

far back as 1922, recommended preliminary surface instruction of youths entering the mine and applied a scheme of training. Mr. Stephenson described an experiment where learners were trained in an industrial process along certain lines. Some of the learners were raw novices while others had previous experience. Periodical tests of efficiency were made and those who proved incapable of profiting by instructions were discharged. After the scheme had been in operation for 10 months the accident frequency was analysed. The frequency rate for novices dismissed was $1\frac{1}{2}$ times as great as for novices retained, while for experienced learners dismissed it was $3\frac{1}{2}$ times as great as for experienced learners retained. The data obtained made it probable that ability to acquire the neuro-muscular co-ordination required by the particular process, is at least as important a factor as age or experience. Whilst agreeing that a considerable advance may be made by educational and propaganda methods, it is considered probable that the scientific selection of the workers would probably tend to diminish the frequency rate of accidents.

(3) Mr. A. Angles read a paper on restriction of output. In no case within the experience of the National Institute of Industrial Psychology has restriction of output been attributable to the particular trades union as such. It is usually brought about by a strong feeling of class loyalty which, in known cases, has even overcome individual self-interest. Two of the reasons given by workers for this policy are sufficiently frequent to be outstanding:

(a) Fear of rate-cutting. Examples are on record where employers have reduced rates in order to keep the workers down to a certain minimum.

(b) Fear of unemployment, or increased short-time. The work is spread out so that time-rate workers shall have the benefit of longer hours and more pay. Other reasons are: The fear of discharge of less competent workers, general dissatisfaction with present conditions, influence of the foreman, satisfaction with present earnings. General conditions and systems of wages vary enormously according to the efficiency of the management, but where the 'mental atmosphere' of the factory is good, restriction of output will very rarely be found.

(4) Miss W. Spielman gave a lecture on recent progress in vocational selection. The older methods of vocational selection were compared with modern methods employing mental and physical tests. This lecture served as an introduction to the demonstration given at the conversazione, by Miss Spielman and her assistants, of psychological tests in use at the National Institute of Industrial Psychology. There were tests for vocational guidance (*e.g.* of intelligence, mechanical ability, and manual dexterity); and tests for vocational selection (*e.g.* for engaging weavers, packers, clerks, sales assistants, etc.). In addition, the material collected from various countries by the Research Committee on Vocational Guidance was on view and the various reports of this Committee were distributed to those interested.

(5) Mr. Eric Farmer, investigator to the Industrial Fatigue Research Board, arranged an exhibition, and gave a demonstration at the conversazione, of apparatus designed for the Board by Dr. Schuster, namely, a pursuit-meter, steadiness-meter, a fatigue-inducing apparatus, a dotting apparatus, an original type of chronoscope for serial reactions, and a figure-setting apparatus which serves excellently as a non-verbal test of intelligence. All were original in design and ingenious in workmanship and well calculated to render effective service in the hands of the industrial psychologist.

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