

probably less potent than they will be after labor and management come to a clearer realization of the essentially psychological nature of many of their difficulties, and after more psychologists, in turn, have had opportunity to come to grips with these difficulties, not as they are defined in books, but as they crop up in the daily relationships of factory operation.<sup>1</sup>

<sup>1</sup>Typical of influential books written by economists in order to make fruitful for industry the doctrines of psychology, may be mentioned Carleton Parker's "The Casual Laborer," Veblen's "Instinct of Workmanship," Tead's "Instincts in Industry," Z. C. Dickinson's "Economic Motives," and Whiting Williams' "Mainsprings of Men."

Full of practical suggestions for self training and development of supervisors and young executives is Craig and Charters' "Personal Leadership in Industry." C. R. Allen's "The Instructor, the Man and the Job" is at once psychologically sound and immediately useful.

In employment psychology we have had the books of Link,

**E**VEN the development in mechanization does not do away with the problem of vocational fitness; but the new aspects of this problem determined by mechanization should be clearly recognized. Such new aspects are: (1) that the fitness for certain jobs cannot be determined *before*, but only *during* practice; (2) that the degree of fitness for certain jobs can be less and less measured by the size of the output, but can be measured only by *other* criteria.

To arrive at a systematic investigation of fitness, we need (1) a classification of the different occupations on the basis of the importance of the fitness of the worker in relation to the output; (2) a classification of the occupations on the basis of the criteria which indicate the greater or lesser degree of the fitness of the workers.

In this connection I shall briefly call attention to the work of the "Arbeitsleistungsausschuss in der deutschen Wirtschaftssequete" in order to make a new suggestion for future lines of research in the field of the science of labor.

The objective of the "Arbeitsleistungsausschuss"

Chapman, Kingsbury and Kornhauser, Laird, Snow, Griffiths, Kitson, Bingham and Freyd, and Burt.

Of general interest are Overstreet's "Influencing Human Behavior," Helen Marot's "Creative Impulse in Industry," Mary Follett's "Creative Experience," Elliott Smith's "Psychology for Executives," and John Dewey's "Human Nature and Conduct."

The two most substantial manuals on personnel principles and procedures are Tead and Metcalf's "Personnel Administration," and Scott and Clothier's "Personal Management." The latter emphasizes psychological considerations. Among volumes of narrower scope but more intensive treatment, "The Selection and Training of Salesmen," by Kenagy and Yeakum, is outstanding because it embodies the findings of years of research and experiment in its field.

Three periodicals should be mentioned: The oldest of these, *The Journal of Applied Psychology*, publishes technical contributions by psychologists not only to business and industry, but also to law, medicine and other fields. *The Personnel Journal*, also technical, while narrower in scope, confining itself to the subject matter of its title with emphasis upon educational and vocational adjustment, is on the other hand more inclusive, approaching the personnel problem from the economic as well as the psychological angle. *Industrial Psychology* is edited for the business executive, and interprets for him the pertinent findings of psychological research and discussion.

as affixed by national law is to determine "the way in which, according to data collected in recent years, changes in hours of work and in wages have influenced human efficiency." The data collected by the *Ausschuss* during the last eighteen months seem to indicate that future research, starting from changes in the output, must determine (1) the degree to which changes in *output* depend on changes in human efficiency; and (2) the cause for any observed change in human efficiency.

As regards the conditions determining efficiency, vocational fitness plays a role; as well as wages and hours of work; just *what* role it plays besides the other conditions determining efficiency and output, as well as the degree and nature of this role, have not as yet been determined by systematic research, since so-called technopsychology has been viewed from too narrow an angle and has not found its proper place in the science of labor. (Otto Lipmann, "The Human Factor in Production," *The Personnel Journal*, Vol. VII, No. 2, August, 1928, p. 95, translated from the German by Heinrich Klüber.)

## Scientific Management<sup>1</sup>

An Analysis With Particular Emphasis on Its Attitude  
Toward Human Relations in Industry

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**S**CIENTIFIC management has a number of objectives, according to the point of view from which it is examined. The following are outstanding: to make enterprise successful by good judgment in gauging the demand for the commodities or services to be produced and by economical application of the human and material energies involved; to make work agreeable in its physical conditions, human relations and the satisfaction of a job well done; and to promote human welfare by increasing productivity, improving distribution and raising the standard of living.

It was a practical human relations problem arising out of an effort to secure productivity that in 1880 stimulated Taylor, then an inexperienced boyish foreman, to those researches out of which scientific management developed.<sup>2</sup>

At that date mechanization of American industry was under way, operations were becoming specialized, workers were more scattered throughout larger plants, experience with unemployment had generated a spirit of "make work," recent experience with the cutting of piece rates had caused distrust of management, voluntary effort was at a low state of efficiency, supervision had not adjusted itself to the new conditions, and generally morale and productivity were low. Advanced from worker to foreman, young Taylor not unnaturally imitated the bosses under whom he had worked and attempted to force production by driving the workers, which was the method of foremanship then customary. A fight with the men resulted. Taylor won out, but the experience hurt what was a sensitive and sympathetic nature and disillusioned him. "I was a young man in years, but I give you my word I was a great deal older than I am now, what

<sup>1</sup>Part of an American report on Fundamental Relations in Industry presented at the First Triennial Congress of the International Industrial Relations Association, held at Cambridge, England, July, 1928.

<sup>2</sup>Copley, F. B., "Frederick W. Taylor, Father of Scientific Management," New York, Harper & Brothers, 1923, Vol. I, pp. 3, 157-189, 205-245.

with the worry, meanness and contemptibleness of the whole damn thing," he said years later; "I made up my mind either to get out . . . or to find some remedy for this unbearable condition."

The youthful foreman did some hard thinking and decided that management was chiefly at fault. Throughout American industry its only concept of a proper day's work was what it could drive workers to do. But it is management's business to *know* what is a proper day's work. The only way to know is by research and experiment. Thereupon Taylor secured permission to conduct "some experiments," the purpose of which he kept to himself. He did not think they would take over six months, but they continued more than twenty-five years. Almost immediately, however, they yielded results in the nature of measured possibilities of work which put supervision and management in that shop on a factual basis. Output was planned, controlled and increased under conditions agreeable to the workers. Never again did Taylor have controversy with workers under his supervision, and never have any of those who have followed his methods faithfully.

The body of procedures which grew gradually out of these investigations and experiments came to be known as "The Taylor System," and to the doctrine and principles later derived from these procedures was given the name "Scientific Management."

Scientific management, says Taylor, is primarily a mental attitude toward work, and only secondarily a system of practices. "The essence of scientific management consists in the application of certain broad general principles, and the particular way in which these principles are applied is a

<sup>3</sup>Op cit. I, p. 5.

<sup>4</sup>The term "Scientific Management" was adopted by a group of engineers called in conference late in 1910 by Louis D. Brandeis, then an attorney for the shippers in the Eastern Rate Case hearings, now an Associate Justice of the Supreme Court of the United States.