

chemical companies elsewhere either to come to terms and possibly join the "I.G." or to try establishing through mergers huge combines that could stand up to the Germans. Alfred Mond, chairman of Brunner, Mond, favored the former alternative, but only if he could get the American Allied Chemical Corporation (in which his company owned much stock) to cooperate. Harry McGowan, managing director of Nobel Industries Ltd., favored an all-British union to be called the Imperial Chemical Industries. A dramatic series of negotiations occurring in New York in September 1926 and involving the top chemical executives of Britain, I.G., and Allied Chemical resolved the question. When the independent-minded president of Allied Chemical, Orlando Weber, refused to join Mond in forming a cartel alliance with the I.G., McGowan caught Mond on the rebound and convinced him of the all-British formula. Details of the ICI merger were then worked out on board the *Aquitania* as the parties sailed back to Britain.

A wealth of information and insight fleshes out the story just outlined, and excellent recapitulations, statistical tables, charts, illustrations, and glossaries augment the narrative. Readers of the book will learn new things about their countries. Americans can, among other things, learn much about the duPont Company; how backward it was technologically in all but black-powder making; how Francophilia and Germanophobia affected its policies; how it lured German dye chemists to Wilmington after World War I; how it managed to participate in cartels despite the Sherman Antitrust Act; how its managerial organization and heavy post-war investment in the auto industry were copied by Nobel Industries in Britain.

Few histories, if any, deserve to be called "definitive." This one is no exception despite its massive scholarship—or perhaps because of it, for the better the work the more questions it raises. In this book, for instance, the diplomatic episodes are described mainly from the British side as documented in ICI archives. Furthermore, the negotiating personalities are pictured as more autonomous than they could have been. The staff work and organizational factors underlying positions taken are often shadowy. Finally, Reader's decision to focus on corporate diplomacy leaves to future historians vast areas of useful inquiry: into the managerial, marketing, and lobbying practices of

ICI's various predecessors; into the cultural, social, and environmental impact of their factories on surrounding communities; into their labor relations; into the special attitudinal and public relations problems faced by those who made munitions or partook in cartels that assured them a share of the profit of armament in hostile countries.

As praiseworthy as this book is the enlightened attitude with which ICI's Board commissioned it. From the scope of the project, from the continued personal support which Reader and his able co-workers received at all levels of management, from the open access given to all documents, and from the freedom from censorship which Reader demanded and received as a matter of course, it is clear that what ICI's leadership was after was history at its best. And this Reader delivered, reducing to comprehensible form the complexities of corporate organization, humanizing the persons who built the company, and making its goals and methods believable and, if not always likable, at least not unredeemed by right attitudes and decency. This work was conceived in the faith that in the long run truth is the best form of employee and public relations. We can look forward with confidence to the sequel volume which will pick up the story in 1926.

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Prophet of Efficiency

Frederick Taylor. *A Study in Personality and Innovation.* SUDHIR KAKAR. M.I.T. Press, Cambridge, Mass., 1970. xvi, 222 pp. \$6.95.

Frederick Taylor (1856–1915) proclaimed the good news that Scientific Management would increase the efficiency of industrial production, "expressed in measurable, quantifiable terms." By approaching work and workers through rationalistic, mechanistic engineering, he asserted, managers could attain the goal of greater efficiency and at the same time eliminate industrial strife and encourage cooperation between capital and labor. Many workers and almost all union leaders rejected his approach. Critical scholars warned of the hazards inherent in the means he used to reach his goals, declaring that he and his disciples preoccupied themselves solely with the physical and technical aspects of work, to the neglect of

the social and psychological needs of men on the job.

While many people over the last half century denounced Taylor's means, few questioned his goals. Throughout the industrial world, disciples and critics, workers as well as managers, both consumers and producers, and even socialists as well as capitalists accepted increasing productivity as the ultimate good. It became, as Kakar puts it in this book, "a core element of the new technological identity." Ironically, that core became infused with the same one-sided values that were inherent in the technique of scientific management. Only recently has a new generation begun to question seriously the desirability of continual striving for industrial efficiency, measured and defined as Taylor conceived it. Now many, especially of the young, want to escape the discipline of technology and the demands of industrial efficiency in order to gain a freedom they believe has been too long denied.

In this "study in personality," Kakar analyzes Taylor's motives and values in the setting of his time, for the purpose of illuminating the problems with which Taylor wrestled (and with which we still wrestle today)—how to reconcile autonomy and dependency in work, how to maintain routine while encouraging creativity, and how to limit the stresses of technology's demands upon the individual. In his analysis Kakar uses what he calls a psychohistorical method of probing Taylor's life and reinterpreting his accomplishments. It is a way of examining "the interdependence of a historical movement with the personality of its follower and the needs of a particular period of history." Using many long extracts from Taylor's own writings Kakar lets the man reveal himself and his thinking.

The first part of the study is well done. The author traces the sources of Taylor's obsessive personality and compulsive behavior to the psychological conflicts generated in his upbringing by a stern, dominating mother and a cultured, aristocratic Quaker father. He explains Taylor's dropping out of college and becoming an apprentice as a "necessary repudiation" that gave him a "chance to carve a niche of his own, independent of his father." Kakar sketches concisely the industrial and work milieu into which Taylor threw himself. In the rough workplace of the Midvale Steel Works he began to develop the ideas and methods that were to resolve his own conflict about

authority. To reconcile the ambivalent hostility and respect with which he responded to authority in the person of a superior, Taylor created a new source of authority, scientific management, impersonal and rational in its absolute control of the worker and its definition of the job.

Kakar then attempts to show that Taylor's "solution" to his own neurotic conflicts "met the needs of industrial management at a time when traditional ways were fast becoming obsolete. . . . It is the fateful coincidence of an original man's conflicted life history with a critical moment in the industrial and social history of his world" (p. 188). Here the analysis falters and the evidence is unconvincing, however. Taylor's contribution to management did not coincide with the needs of industry; it preceded them slightly, and thereby led Taylor into one practical failure after another in the 1890's. He failed to gain acceptance of his new form of managing in the Manufacturing Investment Company, in Cramp's Shipyard, and in the Simonds Company. Finally, the experimental application of the new management in the Bethlehem Steel Company came almost to an end when the president summarily dismissed him. Apparently managers of the time did not highly value either his methods or his goals. At the turn of the century, businessmen were realizing such large efficiencies from enlarging their factories and mills—from economies of scale alone—that they felt little need to make a further effort to rationalize their management.

Though Kakar overlooks the fact that Taylor's managerial innovation was mistimed to meet the immediate needs of industry, he recognizes that the decade of failures led Taylor to abandon the practice of scientific management, though the vision of it burned brighter than ever for him. Kakar sees him redeeming his failures by becoming a prophet of a reforming creed that promised a world of industrial harmony. As a prophet Taylor was both a *forthteller* of the new means of managing and a *foreteller* of the managerial style that surely would be adopted. Disciples hailed his vision, and with a religious fervor spread his message to a still reluctant but increasingly receptive industrial world.

Academicians understood the significance of his vision and his creed. He provided the basis for a science of management and the training of professional managers. They invited him

to lecture, to conduct seminars, and even to head the new business schools and institutes of technology. He died in 1915 just as businessmen were beginning to accept his preachings. Since then management has molded itself in Taylor's image, and business schools have become the keepers of the flame. A new time has arrived for the industrial world. There is need for a new managerial creed that will fit today's demands better than Taylor's does.

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A Fair Chance for Girls

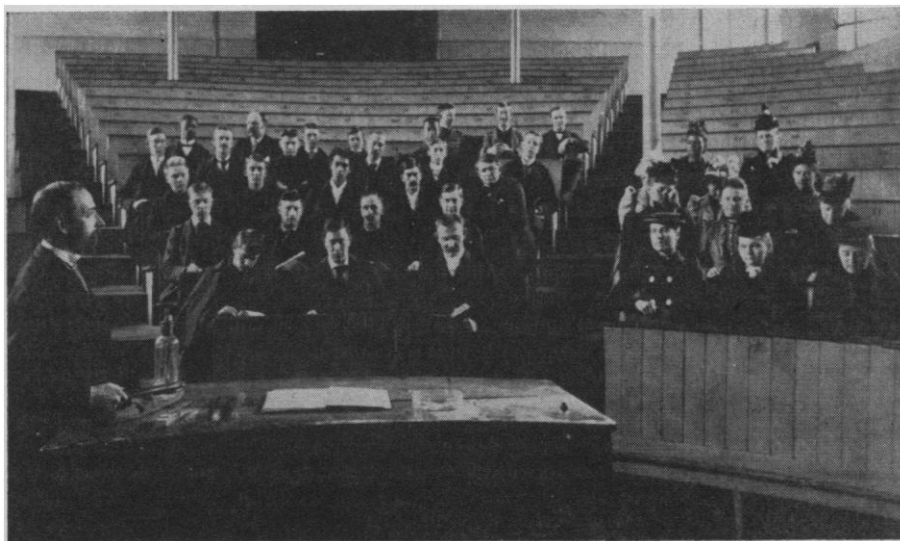
A Dangerous Experiment. 100 Years of Women at the University of Michigan. DOROTHY GIES MCGUIGAN. Center for Continuing Education of Women, Ann Arbor, 1970. vi, 136 pp. + plates. Paper, \$2.50.

The first woman undergraduate at the University of Michigan chose to call it an accident that she was asked to translate a passage from Sophocles which began, "It behooves us in the first place to consider this, that we are by nature women, so not able to contend with men. . . ." She did conclude, however, that her admissions examinations had been "longer and more severe" than those normally administered. The "dangerous experiment" was the admission of women to the University of Michigan in 1870. Michigan was not the first institution, or even the first state university, to admit women, but

it was the largest and most prestigious to do so. The subtitle of the book, "100 Years of Women at the University of Michigan," is in a sense misleading, for Dorothy McGuigan has skillfully employed the experiences of students and administrators of a single institution to illumine the broader story of higher education for women in the United States. This admirable and unpretentious book is a small gem of social history, with much useful information about enrollments and national trends embedded in a framework of refreshing individual biographies and anecdotes.

McGuigan has tapped a rich mine of quotable material which derives wry humor from its extraordinary aptness to today's discussions: Horace Mann warning the university regents of the difficulty of securing themselves against clandestine meetings between male and female students, or retiring President Tappan, a firm opponent of coeducation, cautioning against communities of "defeminized women and demasculated men." There must have been particular satisfaction in unearthing the *New York Times's* 1870 comment on the Michigan experiment that "Harvard and Yale, which have so long hesitated on the brink, will have an opportunity to observe the effect on those who have plunged boldly in."

At Michigan, the one irrefutable argument in favor of women was that the university's founding statute of 1837 had opened it to all persons resident in the state. One young woman was admitted to undergraduate classes in February 1870, and 33 the following September. Eighteen of them were in the medical department, where the pos-



A physics lecture at the University of Michigan in the late 1880's. [From *A Dangerous Experiment*]