

engineering instruction: University of Virginia, University of Michigan, Hanover College, Miami University, University of Alabama, and others. The author says that when directors of internal improvements "created or found a supply of engineers, every step they took to assure that supply helped to fix the civil engineer as a separate occupational type in the United States" (p. 54).

Still, the civil engineer did not achieve status overnight, often being ambiguously involved on public projects in a position quasi-contractual or directorial, sometimes merely advisory, and frequently embroiled in state and local politics. In 1867, the founding of the American Society of Civil Engineers was a long step toward the professionalism the civil engineer enjoys today. Yet the author concludes that nineteenth-century experience made the engineer not an independent entity but, rather, dependent upon "a corporate America that supported the engineer, sustained the engineer, and quite early defined his character" (p. 199).

The author uses many details to illuminate adventures of such engineers as Benjamin Wright, Nathan Roberts, Jesse L. Williams, Benjamin H. Latrobe, and others, and reveals problems, engineering and human, in the building of the Erie Canal, Chesapeake and Delaware Canal, Wabash and Erie Canal, Baltimore and Ohio Railroad, and so forth. In this volume, a great quantity of information rests on copious documentation. Yet the piling up of minutiae about political and technological squabbles makes hard reading, chiefly because a pedestrian style does little more than list a catalog of facts. The writing calls for lift and flair. The numerous engineers, commissioners, and politicians who populate these pages emerge not as living human beings but only as automatons with names; a bald recital misses the drama that must have attended those ambitious construction jobs. Trite words like "case," "type," "the fact that," "field," "area," "participated" make the prose flat. The assembly of plentiful data merits approval for the workmanlike industry it shows, but unfortunately the narration plods with heavy foot.

Purdue University

Paul Fatout

Steelworkers in America: The Nonunion Era. By David Brody. *Harvard Historical Monographs*, Volume XLV. Cambridge, Mass.: Harvard University Press, 1960. Pp. viii, 303. Tables, bibliography, index. \$5.00.)

It is remarkable that in America, despite the great natural resources and inventive genius of private enterprisers, both of which are conspicuous in the steel industry, workers in the mills from 1870's until World War I lived a life close to slavery—with subsistence wages, long hours of work, continual exposure to danger of death and injury, and a condition of servility. How was this possible? Besides describing the workers' conditions, David Brody has studied the economic and social forces affecting the iron and steel industry up to 1929 and offers a reasoned and well-documented answer. His findings do not reflect

favorably on either the businessmen or the union leaders of this sixty-year period.

Brody describes, first, the economic characteristics of the industry. From 1870 to 1900 unrestricted competition bred overriding concern for *economy*. Economy brought rapid technological progress, cost accounting, and technical efficiency in production. The economy of Carnegie and other enterprisers included the exploitation of both engineers and workmen—labor was “a commodity like anything else.”

The labor union to which the American Federation of Labor granted exclusive jurisdiction was the Amalgamated Association of Iron and Steel Workers, limited to skilled workmen. It reached a total of twenty-four thousand members at its peak in 1891. The union never faced up to the results of mechanization, neither saving its own members from displacement nor attempting to organize the increasing proportion of unskilled workers. By 1914 it had only sixty-five hundred members.

Management lured the English-speaking skilled workers away from unionism through promotion and paternalism. It was the large flow of unskilled workers from eastern Europe that kept wages down—a continually shifting group, since many returned home with hard-earned savings. Southern Negroes and Mexicans played the same role in the 1920's. The companies dominated the steel communities. Following a ruthless antiunion policy, they placed paid spies in union meetings; workers dared not even talk among themselves about their grievances.

The author also discusses the labor policy of U.S. Steel, the special situation in World War I, and the ill-fated AF of L organizing drive and strike of 1918-1919.

Steel centers in Indiana, such as Elwood and Gary, played an important part in this story of steelworkers, as well as those centers in Pennsylvania, Ohio, and Illinois.

Indiana University

H. Haines Turner

Indiana Election Returns, 1816-1851. Compiled by Dorothy Riker and Gayle Thornbrough. *Indiana Historical Collections*, Volume XL. ([Indianapolis]: Indiana Historical Bureau, 1960. Pp. xxv, 493. Appendix, index. \$7.50.)

This volume greatly enlarges our equipment for study of government and politics in Indiana during the period of the first constitution. There are 390 pages of electoral data (listing candidates for offices and showing the vote received); an appendix citing acts creating the state's counties and apportioning the state for Congress and general assembly. Seventeen pages of introduction describe the state of Indiana's electoral records, explain how the information in this volume was obtained, outline the electoral law and procedures, and relate the popularly chosen officials to the total structure of government under the first constitution. And finally, there is an index which shows for every person named in the book every office that he sought, the year he stood for election, and whether he won or lost. Naturally it is not possible to know how patiently the editors sought reliable data for the