

a better insight into the operation of the petroleum industry and the problems which confront it.

N. H. DIMSDALE

*The Queen's College,  
Oxford.*

*Men of Iron: The Crowleys in the Early Iron Industry.* By M. W. FLINN.  
(Edinburgh: Nelson & Sons for the Edinburgh University Press, 1962.  
Pp. x + 270. 42s.)

USUALLY histories of business firms are based primarily upon the surviving records of the firm. The value of the work lies in the extent to which the author has succeeded in placing the story of the individual concern, gleaned from those records, in the setting of its time and circumstance. Dr. Flinn has had no company records from which to reconstruct the story of the Crowley enterprises. This fact in itself makes this book something of a *tour de force*, the product of skilled detective work, only possible with a thorough understanding of the time and circumstance in which its characters moved. Most of the surviving records of the firm were burned in 1862. The only internal evidence which Flinn could exploit were some of the letters by which the enterprise was conducted, its fascinating law-book and a few scattered nineteenth-century manuscripts relating to its then decaying welfare activities. Indeed, the author has been able to piece together much of the story precisely because this extraordinary firm had its main production units in Durham while it was managed from its commercial base in London. Every ship which sailed up the east coast with materials for Ambrose Crowley III's works at Winlaton and Swalwell carried a cask of stationery.

Dr. Flinn has quarried much information from family papers in the Lloyd and Ashburnham collections. He has also followed his elusive prey through the intricacies of several departments' records at the Public Records Office. But this is not all. He has seemingly culled every reference to Crowley in contemporary literature and a host of manuscript collections not only in England and Scotland but also in America and Sweden. It is a tribute to Dr. Flinn's thoroughness and his disinterested scholarship, as well as to his charm, that he has acquired many pieces of his jigsaw from other people, and each clue he thus obtained has been most carefully acknowledged. The above characteristics permeate the study, which is never narrow, which places every fact in its context and which conveys to the reader some of the delight of his chase by its freshness, frankness and generous quotations from sources.

Although the firm founded by Ambrose Crowley in 1682 survived until the 1850s, the most important part of its history, which the author has been able to document most fully, was the period from the 1690s, when Ambrose III secured his first naval contracts, until the death of his son, John, in 1728.

The first part of the book traces what can be established about the family, the course of the firm's growth and its various managers. The next two sections on its commercial and industrial organisation respectively are concerned mainly with the work of Ambrose Crowley III, with occasional excursions, when possible, into the later period.

Ambrose III was a man of such outstanding business ability that he created the largest iron-manufacturing concern of his day, giving it a structure and momentum that sustained it as a profit-making concern with no major innovations for a century after his death, a century that was by no means a static one for the iron industry. Crowley achieved all this without making any striking innovations in production techniques. His nailors, many of whom worked within his factories, each carried out all four processes in the making of nails. Division of labour was carried a little further in anchor-making, where separate sets of men made anchors of different sizes. But on the whole this firm, which employed perhaps a thousand men and boys, used the same methods which prevailed in workshops and homes in Staffordshire and Worcestershire. Its fixed capital was valued in 1728 and formed only 8% of the total capital assets. Most of the capital was needed to carry stocks and pay wages. Crowley's enterprise grew because he was able to maintain a high quality in his finished articles. The daring choice of location on the Derwent, where stocks of Swedish pig could be imported easily, his careful regulation of the raw material supplied to his workmen and his meticulous arrangements for the inspection of finished goods all contributed to the reputation his firm gained for quality. A second factor in his success was his ability to meet a great number of varied demands for ironware promptly. This advantage flowed partly from the large scale of his undertaking and the skills of the labour force he recruited. Though nail-making was the foundation stone of his enterprise, he presented weekly demands from London for particular items of ironware, stocks of which were currently low.

Dr. Flinn rightly gives considerable attention to the management of this firm, since its competitive advantages seem to have resulted so largely from this side. The personal qualities of Ambrose III are of particular interest. A man with an immense power of mastering details and a great capacity for work who saw his goals clearly and rationally, he suspected almost everyone—the Navy, other ironmasters, his managers, his workmen, his stepbrothers—of dishonesty and more particularly of trying to cheat him. In the business environment in which he had to work it was necessary that his management be entirely autocratic. The committee system he introduced was not modern, but a device designed to get his officials to check on each other. His innovations in careful control of stock issued to his workmen were similarly aimed at overcoming the chronic difficulties of the domestic system, pilfering and debasement of quality. Yet with all the self-interest that led him to back these fastidious administrative regulations

with minute scrutiny of all the reports forwarded to him, Crowley was something of a benevolent despot who felt a responsibility for the moral and physical welfare of his "people." In Dr. Flinn's view it was more than a desire to keep his labour force and enhance its productivity that led him to pioneer with a grievance procedure that involved arbitration courts and a contributory welfare scheme very modern in its comprehensiveness.

Though its price is somewhat prohibitive, Dr. Flinn's book should reach a wide audience in addition to scholars and students.

CHARLOTTE ERICKSON

*London School of Economics.*

*The Rise of the English Shipping Industry in the Seventeenth and Eighteenth Centuries.*

By R. DAVIS. (London: Macmillan, 1962. Pp. ix + 427. 50s.)

SHIPPING displayed a number of characteristics of a modern industry a century or two before other industries adopted them: separation of ownership and control, need for professional management, investors' opportunities for participation in industrial profits while protected by a degree of safety not far short of limited liability and regular social-security payments, though contributors were not identical with beneficiaries. Moreover, the amount of shipping an island employs must furnish some indication of the volume of overseas trade it transacts, though goods conveyed in foreign bottoms as well as the divergence between value and bulk of merchandise carried complicate the relationship. With so many features foreshadowing the shape of economic life to come, it is surprising that no worthwhile history of English shipping before the nineteenth century has hitherto existed. This may well be due to reluctance to get to grips with the quantitative material. The amount of records extant is not inconsiderable, but they are abnormally tricky to handle; an appendix of eleven pages in this book gives details of the shifts employed to wring from them reliable statistical indications.

Dr. Davis, with experience in this field gained over many years, now fills the gap in our knowledge. He follows in the best tradition of industrial history established by recent economic historians. Beginning with a survey of the expansion of shipping during the two centuries, he then reviews shipbuilding to provide a picture of the types of ships used; the different participants in the industry, ship owners, ship's husbands (managing owners), merchant seamen, masters and brokers are separately discussed. A chapter is devoted to each of the main areas with which England traded, and the Government's influence on the industry is traced in peace and war. Finally, Dr. Davis compares capital intensity and value output of shipping with contemporary industries, discusses its importance as an employer of labour and draws his material together to present something like a profit-and-loss account for the average ship owner—as elusive and unreal a concept as the average man.