Book Review

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The Sources of Invention, by John Jewkes, David Sauers and Richard Stillerman, Macmillan & Co., Ltd., 1958 ($6.75)

In all of the socio-legal literature, there is no area in which assumptions are as freely made and conclusions as boldly advanced without adequate data as in the field of invention. Much of the controversy on the subject arises largely because a simple legal device, the patent for invention, was created several centuries ago to encourage innovation and the development and importation of technological novelties.

The patent for invention was probably as ingenious a legal device as has ever been contrived to effect a specific purpose. Saved by the Statute of Monopolies from extinction, it has always had zealous advocates and vociferous critics, both engaged in an argument distinguished more by intensity than sound information. Adherents of the patent system have not been timid about ascribing to it the whole responsibility for technical and industrial progress. Critics of the system have attributed to it as many of the defects and failures of the modern industrial economy as could be assigned to a device in the family of monopolies. The color of the debate has been brightened by the fact that the participants have all labored with the most meager factual information on the method of invention.

The subject of invention, however, is more than an excuse for debating the subject of patents, although its place in contemporary legal literature suggests otherwise. The flow of innovation is indispensable to economic growth and any enrichment of material prosperity. Little economic discussion has examined the nature, sources and encouragement of innovation.

It is a singular tribute to the University of Chicago Law School that the first scholarly effort to fill this void in a field which is primarily economic and social, rather than legal, should have been financed and supported by the Law School. In the study just published of the Sources of Invention, the authors express their primary debt to the University for support of this unique project. The accomplished economist, John Jewkes, and his research associates on the University of Chicago Law School staff, have compiled a documentary resource that will undoubtedly long remain a fundamental study in the problems of technical and industrial innovation. The book contains as its basic documentation details of the case histories of about sixty commercially successful, important inventions of the last half century. It is from these factual histories, studied both from direct accounts by the inventors and others familiar with the facts, and from the historical records of them that the authors, with suitable caution against the use of necessarily fragmentary statistical material, make many of their analyses.

After examining the nature of invention, and particularly the elusive problem of identifying any specific innovation or the step at which it emerges from a host of contributing approximations, the authors devastatingly contrast the conceptions that invention in the recent years is any different in essential method from that of earlier centuries. Throughout history invention has come largely from the trained man, frequently self-trained, but in communication with the learning

Lady Kilnair, Lord Kilnair, Mrs. Levi, Mr. Levi, and David F. Maxwell, Past President of the American Bar Association, greet James Parker Hall Professor of Law Emeritus George G. Bogert and Mrs. Bogert in the receiving line.

The Chief Justice and Lord Chancellor observe the happy meeting between Lady Kilnair and Professor Emeritus E. W. Puttkammer.
of his generation, and not from the inspired darling of fortune defying all experience and scientific guidance.

This does not lead, the authors quickly demonstrate, to the conclusion that the inventor working alone and outside of educational and industrial institutions is a mere myth, for the case histories of the inventions examined clearly indicate that the instructed individualist, working outside of a group in a research laboratory, is still a substantial contributor to the important inventions of the generation. However questionable any statistical examination or evaluation of his place in the field may be, his contribution, man for man and dollar for dollar, still seems to outweigh that of his corralled contemporaries. That the ever increasing demands for more elaborate equipment to contend with the problems of modern technology and the increasingly attractive assurances of assistance, security, and compensation afforded by institutional employment favor the emigration of the individual from his solitary role seems inescapable. The authors sum up this phase of their study with this cogent warning:

"If invention ever became the prerogative of full-time professional employees there are grounds for believing that it would be weakened in range, liveliness and fertility."

About half of the book is devoted to an examination of the industrial research laboratory and its place in the nurture of invention. The conclusions of the authors, like those on the mythical ignorant inventor, challenge the universal misconception that the mere multiplication of facilities and trained investigators can be translated into a factorial value that justifies itself. The difficulties of administratively organizing the staff and program of men enlisted primarily because of their individualistic attitudes, the necessity concern with budgets and the relation of production problems to laboratory activity, completion dates, conflicts of theory within the laboratory and the resistance to intrusion from without, all contribute obstacles with which the individual inventor, and frequently the university laboratory inventor, do not contend. The cautious examination of the industrial research laboratory which the authors undertake leads them rather early to the statement:

"The industrial laboratory does not appear to be a particularly favorable environment for inducing invention. The organization and administration of research is under any circumstances always difficult and, beyond a certain rudimentary stage, becomes impossible."

The subject next treated in the book is the question whether innovation attributable to industrial research comes most frequently from the industry organized monopolistically, or from institutions in free competition with each other. In spite of substantial documentation which appears completely to destroy the assumption and argument, more persistent in Great Britain than here, that monopoly encourages invention, the authors shy away from any general conclusions.

An interesting aspect of the study is the examinations of the problem of development, as contrasted with that of invention, revealing that the completion of the conception often merely exposes the problems of adapting it to commercial employment, and generates many difficulties as great as that of the original search. While efforts have been made to recognize the inventor, little attention has been paid to the host of "inventors" who must translate the original work into the commodity of trade and use.

The book concludes with a brilliant chapter of "Conclusions and Speculations," temperately blasting away the misconceptions that we have now hit upon infallible methods of invention in the research laboratory, can predict its frequency, can ignore its individual source and rely upon the inevitability that the invention will appear in time, that institutionalized research will provide the necessary assurance of a continuing stream of innovation, and that the patent system is all that is needed to maintain the incentives which have sustained us in the past. No pontifical conclusions and solutions are offered.

Jewkes and his associates have provided a monumental work on a difficult subject. It raises far more questions than it answers, but its pioneering attempt to analyze the urgent problems of innovation in terms of actual case studies offers hope that the effort will stimulate a continuation of the project. The field is limitless in accessible data, boundless in the economic implications of its principles, and immeasurable in its industrial and social significance. Even after this bold effort the authors admit,

"Knowledge about innovation is so slender that it becomes almost impertinence to speculate concerning the conditions and institutions which may foster or destroy it."