

to substantiate. For example, it is by no means certain that the time-lag from invention to innovation is shorter now than it was a century ago. Mansfield is one of a small group of economists who have begun to examine critically the proverbial wisdom in this field.

This is an extremely difficult undertaking. When he says that the productivity of industrial R and D is plagued by "unusually difficult measurement problems", this is the understatement of the year. Although Mansfield has experimented with several different techniques, he would be the last to claim that he has resolved this problem. He has, however, had much greater success in measuring rates of diffusion of major innovations in several industries and in constructing a model to explain variations in diffusion rates. This is probably his most important original contribution to the subject, but he has a great deal of interest to say on many other subjects such as R and D project selection, parallel R and D efforts, patents and technological unemployment.

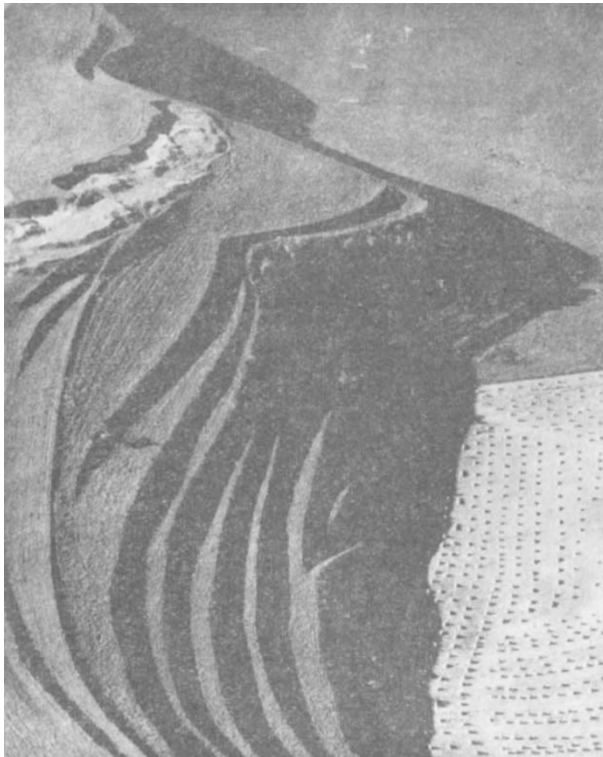
Another area in which he has made an important contribution is the relationship between size of firm and innovative performance. Avoiding the somewhat sterile generalizations of the partisans respectively of the large and the small firm, he has shown by careful empirical inquiry the way in which returns to scale vary in different industries. Smaller firms still perform better in some industries. In adoption of other people's innovations, however, large firms are quicker on average to take up

new techniques in the industries which Mansfield studied. He found that innovations were most frequently introduced neither at the peak of a boom, nor in the trough of a recession, but at periods of modest space capacity.

Mansfield's books are scholarly in the best sense of the word. He is thoroughly familiar with the previous work, he reports his own applied research findings and analysis lucidly and he is scrupulous not to push generalizations further than the evidence warrants. He is sceptical of fashionable explanations unsupported by empirical inquiry, and his occasional sardonic comments lighten an otherwise somewhat dry style. After listing a number of completely erroneous predictions by eminent scientists he observes: "Apparently the experts are more likely to be right when they say something is possible than when they say it is not". Not surprisingly he is not over-enthusiastic about the possibilities and merits of "technological forecasting".

The books are well organized and indexed, with clear summary sections, references and tables. C. FREEMAN

MAN MODIFIED



A man-made landscape—strip lynchets at Chaddenwick near Mere, Wiltshire, as photographed by Aerofilms Ltd. From the new revised edition of *Land and Landscape* by Brenda Colvin (Murray: London, March 1970, 84s). In this classic and well illustrated study, first published in 1947, Miss Colvin explores the development of landscape in Britain, the principles of landscape design, and, finally, landscaping in practice. This book is essential reading for anybody concerned about the man-made environment and the creation of a landscape worth living in.

BACK TO GRASS ROOTS

Metaphysics and the Philosophy of Science

The Classical Origins—Descartes to Kant. By G. Buchdahl. Pp. xii + 714. (Blackwell: Oxford, January 1970.) 105s.

BUCHDAHL's aim is to illuminate the philosophical systems of the classical period of modern philosophy by considering the way in which crucial issues of the philosophy of science entered into the thought of Descartes, Locke, Berkeley, Hume, Leibniz and Kant. Among such issues he cites "the relative place and importance of deduction, induction and hypothesis; the formation of theoretical concepts; the relation of mathematics and physics; logical and extralogical presuppositions; the analysis of the concepts of causation and scientific law; the nature of scientific explanation in general". As he shows, the concrete methodological problems that were faced in the sciences, as well as specifically logical, metaphysical and epistemological issues, had a direct impact on the philosophical systems of the period. In establishing this point, and in sifting the thought of these major philosophers, Buchdahl has written a learned and helpful book, in which familiar doctrines are reassessed under a strong new light.

In an effort to bring the various topics discussed into a clear focus, Buchdahl devotes a long chapter to alternative models by which one may construe "the propositional link", that is, the connexion which relates the subject and the predicate of a proposition. While this has been an essential problem in the history of philosophy, and while it helps in distinguishing between different models of explanation, I do not think it occupies the central position that Buchdahl gives to it. I should interpret rather more diversely the basic motivations in the different philosophical systems with which he was concerned, and attribute less coherence to the period. Fortunately, however, Buchdahl's treatment of the individual philosophers is not rigidly structured by his interest in this one issue, and the fact that he sees it as being intimately tied to a host of other issues permits him to explore a full range of problems in the philosophies of science of those with whom he deals.

Any one of the chapters could, I think, be read with profit independently of the others, and different readers will doubtless find some more novel and more helpful than others. It seems from Buchdahl's preface that he himself regards the chapter on Kant as likely to be of the greatest value in offering new insight into a system that has not been looked at before from this particular point of view. But I should be inclined to attach most value to those chapters, such as the ones on Berkeley and Leibniz, in which Buchdahl's interpretation fits most