conditions can be considered entirely reliable. Much modern work in this general field is also overlooked by the citation of a paper published in 1939 as a typical illustration of the effects of gas adsorption on metal work functions.

The main portion of the book consists of chapters on the major photocathodes—caesium antimonide, other alkali and multialkali antimonides, and the Ag–O–Cs system—followed by shorter discussion of other materials. The preparation and properties of each, and the theory of its operation, are described in detail and illustrated by a large number of diagrams. The complexity of these substances is such that the preparation of one must be described as a process which "can only be learned by watching rather than by description", while some of the associated theoretical problems have remained unsolved for more than thirty years. The difficulties involved have, however, been clearly summarized and presented in a way which can only stimulate further thought, especially in the case of the fascinating Ag–O–Cs photocathode.

Although the book is "primarily concerned with photoemission as an end in itself rather than as a research tool", the penultimate chapter outlines the important application of this technique to the investigation of the band structures of semiconductors. Because this also provides a potentially powerful method for following the formation of new phases during the interaction of gases with solids, and in view of the scarcity of texts on photoemission, it is only unfortunate that space could not have been found for a considerable extension of this section.

The book amply fulfils its stated purpose of providing a source of information for those who make and use photocathodes, and it also contains much of interest to anyone concerned with the subject of photoemission in general.

C. S. McKee

LANDFORMS

Geomorphology

By Fritz Machatschek. Edited by H. Graul and C. Rathjens. Translation of the ninth edition by D. J. David. Edited by K. M. Clayton. Pp. x + 212. (Oliver and Boyd: Edinburgh, February 1969.) 75*s*.

Fritz Machatschek's *Geomorphologie* has been a standard text in Germany for more than a generation. It was comprehensive and succinct, and its predictable course through several editions allowed it to be kept reasonably up to date. After the author's death in 1957, the eighth edition was thoroughly revised by Hans Graul of Heidelberg and Carl Rathjens of Saarbrücken, who also strengthened the parts on climatic geomorphology and added an interesting section on anthropogenic influences on landforms.

Machatschek was a distinguished practical and theoretical geomorphologist who grew up in the heyday of Albrecht Penck and W. M. Davis. He lived to see the reactions of German scientists to these geomorphological giants and, unlike many of his native contemporaries, accepted the validity, as a methodological concept, of the cyclic theories of Davis. He was also prepared to accept the significance of climate, past and present, in the development of landforms, although with typical sagacity he stated, in the sixth edition, that the moment had not yet arrived for "a systematic treatment of morphological phenomena and processes on the basis of climatic causality". From the beginning he had had no such doubts about the close connexion between surface forms and tectonic movements in the Earth's crust, and he always emphasized this relationship; yet, strange to say, he would never agree "to devote a detailed treatment to endogenous processes, for these belong to the realm of

LOCAL GEOLOGY

The Weald Clay lowland and Lower Greensand escarpments of west Surrey seen from Gibbet Hill, Hindhead. Frontispiece to a new Geological Survey Memoir, *Geology of the Country around Haslemere*, by R. G. Thurrell, B. C. Worssam and E. A. Edmonds, with contributions by F. W. Anderson and D. A. Gray (Explanation of Sheet 301 of the New Series One-Inch Geological Map of England and Wales) (HMSO: London, 1968, 25*s*). Other memoirs recently published cover the geology of Cockermouth (Sheet 23), Market Harborough (Sheet 170), Gwendraeth Valley and adjoining areas (Sheets 229, 230 and 246) and Okehampton (Sheet 324).