index and extensive bibliography. This is a well-written book containing full details of proofs of the main theorems. It should prove particularly valuable to the research worker in the field.
H. R. DOWSON

OGILVY, C. STANLEY, *Excursions in Geometry* (Oxford University Press, 1970), vi+178 pp., £2·60.

This pleasantly written little book is an account of some especially attractive topics in elementary geometry aimed at " people who liked geometry when they studied it . . . but who sensed a lack of intellectual stimulus in the traditional course and . . . felt that the play was ending just when the plot was beginning to become interesting ". Given this objective the choice of subject matter follows the expected lines. Topics discussed include circle geometry, with emphasis on inversion; conics from the standpoint of their focal distance and mirror properties and as sections of a cone; projective geometry introduced via conical projection and the invariance of cross-ratio; the golden section; some unsolved and unsolvable problems.

One naturally makes a comparison with an established text such as H. S. M. Coxeter's *Introduction to Geometry*. The work under review is, of course, much smaller, less ambitious and less technically detailed (for instance coordinate techniques are little used, which is rather a pity now that they are being given greater prominence in elementary school work). The common aim of selecting entertaining material means inevitably that some topics are dealt with by both authors; however there are differences of approach and depth. The present book, besides being very welcome in its own right, would serve as a good apéritif for the larger one. Its purpose is certainly to be commended. Worthy of particular mention is the discussion of Soddy's hexlet and its modifications. The book is produced to the press's usual high standard. A nice prize for a sixth-former!
D. MONK

NAIMPALLY, S. A. and WARRACK, B. D., *Proximity Spaces* (Cambridge Tracts in Mathematics and Mathematical Physics No. 59, Cambridge University Press, 1970), x+128 pp., £3.

The subject of proximity spaces is a sufficiently compact subset of topology that a tract of this size can be introductory in character and yet succeed in its aim of enabling the reader to understand current literature. I conjecture that a necessary and sufficient condition to comfortably read the first half of the book would be knowledge of the Stone-Cěch compactification, though it receives mention but twice. However at least a nodding acquaintance with uniform spaces is required for the second half.

I welcome the inclusion of an excellent historical introduction, which reveals, as do all histories of recent events, that the nearer one comes to the present day the harder it becomes to unravel a sense of direction in the subject. The following lines are developed in the text:

The axioms for a proximity on a set are motivated by five properties of " nearness " between pairs of subsets of a pseudo-metric space. A proximity induces a completely regular topology. A subspace proximity and proximity mapping are defined in a natural way.

The main result in the first half of the book is the construction of the Smirnov compactification of a proximity space by means of clusters, revealing the order-isomorphism between the proximities and compactifications of a completely regular space.

Proximity lies between uniformity and topology in the sense that a uniformity induces a proximity and a proximity induces a topology. The equivalence class of