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BOOK REVIEWS

Conway, J. H., Curtis, R. T., Norton, S. P., Parker, R. A. and Wilson, R. A., ATLAS *of finite groups: maximal subgroups and ordinary characters for simple groups* (Oxford University Press, 1985), xxxiii + 252 pp., £35.

At last the monster task is complete and the ATLAS of finite simple groups has appeared in print! This book, which brings together a wealth of detail for the study of finite simple groups begins with eight chapters of introduction. The first three chapters are a survey of the finite simple groups; the classical groups; the Chevalley and twisted Chevalley groups. There then follow four chapters on how to read the ATLAS, the four chapters describing the subtopics of the "constructions" sections, information about subgroups and their structure, the map of an ATLAS character table and character tables. These chapters describe the uniform system of notation used in the tables which follow. The notation was given careful consideration by the authors. Finally there is a chapter of concluding remarks. A careful study of this introductory material is essential before proceeding to the tables.

The major part of the book consists of tables for the finite simple groups. These tables cover all of the sporadic simple groups. As far as the infinite families of groups are concerned the tables "go as far as a reasonable person would go, and then go a step further". In practice this means that there are, for example, tables for the groups $L_2(q)$, $q \leqq 32$; $L_3(q)$, $q \leqq 9$ and $U_3(q)$, $q \leqq 11$. A typical ATLAS consists of the following four parts: the order of G, its Schur multiplier and outer automorphism groups; various constructions for G, or related groups or concepts; the maximal subgroups of G and its automorphic extensions; the compound character table, from which the ordinary character tables for various extensions of G can be read off.

Although there are a few minor errors in the introductory chapters, the computational group theory "grapevine" would suggest that the necessary very high degree of accuracy in the tables has been attained. The book contains a valuable bibliography. Given the large page size it would be difficult to say that it is a must for the bookshelf. Nevertheless for the amount of information that it contains, for the reasonable price and for the care with which it has been written the ATLAS will prove an extremely interesting and useful purchase for any mathematician involved in the study of finite simple groups.

C. M. CAMPBELL

Priestley, H. A., *Introduction to complex analysis* (Oxford University Press, 1985), 197 pp., £8.50.

It is a daring venture to add to the plentiful supply of texts on this subject. Dr. Priestley sets out to cover the topics usually included in a first course, stating that "advanced and specialized topics have been ruthlessly excluded". One exception, however, is permitted: with an eye to the reader more interested in applications, she includes an introduction to Fourier and Laplace transforms.

The book is clearly written, with a pleasing style. The reader is well supplied with motivation and signposts. He is also warned to expect "brevity". At times, this is perhaps overdone: certain concepts, such as convexity and the length of a path, are accorded almost no discussion, and some students (at least outside Oxford) will find the handling of analytic details rather too abrupt. The author certainly presupposes successful completion of a first course on real analysis, but does not assume any prior knowledge of multivariate or metric space analysis.

My strongest reservations concern the handling of Cauchy's theorem. The reader is offered the theorem at two "levels", both depending on notions like homotopy, the Jordan curve theorem and triangulation of a polygon. These notions are presented hastily, with only outline proofs, in a way that gives the student no time to get used to them. It is unsatisfactory—and unnecessary—to have