supplemented by a more general text if one is available. This book is in the category of general texts and is quite readable, but the material will need careful updating by the instructor.

MALCOLM C. HARRISON

New York University
Courant Institute of Mathematical Sciences
New York, New York 10012

32 [12, 13.05].—ALFRED M. BORK, *Fortran for Physics*, Addison-Wesley Publishing Co., Reading, Mass., 1967, viii + 85 pp. 23 cm. Price $1.95 paperbound.

This rather thin (85 pages) booklet is devoted to the physicist who has had no exposure to the mysteries of computer programming. In particular, the author addresses himself to classical mechanics. Indeed, the first three chapters are devoted to the subject of classical mechanics to the complete exclusion of Fortran. By this time the reader is left wondering whether Fortran *is* Physics. However, in Chapter 4 the reader is presented with an IBM 1620 Fortran II program which, regrettably, requires a substantial textbook on Fortran II to understand it.

HENRY MULLISH

New York University
Courant Institute of Mathematical Sciences
New York, New York 10012

33 [13.05].—JOHANN JAKOB BURCKHARDT, *Die Bewegungsgruppen der Kristallographie*, Birkhäuser Verlag, Basel, Switzerland, 1966, 209 pp., 25 cm. Price F 37.50.

There are very few readable, carefully developed derivations of crystallographic space groups available. This book is one of them. From the few known derivations of space groups, the author selects one which he has helped to develop. This derivation relies heavily on the concept of an arithmetic crystal class (which is to be distinguished from the more common geometric crystal class, or point group), and on the Frobenius congruences. The development is such as to require a minimum of mathematical background (even the required linear algebra is developed in the text). The theoretical development is accompanied by many examples, pictures, and tables.

This second edition does not differ markedly from the first, although several sections have been rewritten.

The author defines a point lattice L to be a subset of a Euclidean space R^ν which spans R^ν, which is closed under subtraction, and which has the property that there exists a positive, real number ϵ such that $x, y \in L \Rightarrow ||x - y|| > \epsilon$. A symmetry of a point lattice $L \subset R^\nu$ is then a function $f\colon R^\nu \to R^\nu$ such that $f(L) \subset L$, and $f(x) = Ax + a$, where A is a real $\nu \times \nu$ orthogonal matrix, and a is a real $\nu \times 1$ column matrix. The author develops some properties of lattices, and proceeds to define and develop properties of crystal classes, geometric and arithmetic crystal classes, and space groups. A few of the results obtained can be summarized in the following table.