

duced in Chapter III. The properties of general, distributive and modular lattices are discussed and some basic theorems demonstrated.

An operator which corresponds to implication in the propositional interpretation is introduced in Chapter IV. Implicative lattices are those for which detachment and exportation hold. Four formulations are proposed, one relational (with detachment and exportation taken as postulates) and three logistic. The latter are *TA* (Gentzen's natural formulation), *HA* (the familiar calculus construction) and *LA* (Gentzen's *L*). Some theorems are proved about the implicative lattices and their duals (the subtractive lattices). *HA* and *TA* are shown to be implicative lattices equivalent to each other, to Bernays' positive logic, and to intuitionistic logic without negation.

Where, in the propositional interpretation, implication is construed as deducibility, the above systems (called the positive systems) are applicable. For a truth functional definition of implication, they must be strengthened to accommodate some form of Pierce's law. An implicative lattice so strengthened is a classic implicative lattice. Appropriate modifications of *TA*, *HA*, and *LA* are made. *TC*, *HC*, and *LC* (the classic positive systems) are shown to be classic implicative lattices. Classic subtractive lattices (Boolean rings) are treated in some detail.

Four kinds of negation are considered in Chapter V. *M*, minimal (refutability); *N*, intuitionist (absurdity); *D*, strict (refutability with excluded third); *K*, classic (absurdity with excluded third). Algebras with each type of negation are discussed and some results established about their interrelation including an extension of Glivenko's theorem. The larger part of Chapter V is devoted to the classic (Boolean) algebra.

In conclusion, extensions beyond the classical are briefly considered, particularly in the direction of modalities.

Following each chapter are notes of a bibliographical, historical, and occasionally expository nature which add greatly to the value of the book. The preface by R. Feys is oriented toward the student of philosophy. (On page 99, line 23, add "Nous employerons pour cette espèce la lettre "*K*"" at the end of the line. On page 136, line 18, for "§7" read "§1.")

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Theory of perfectly plastic solids. By W. Prager and P. G. Hodge. New York, Wiley, 1951. 10+264 pp. \$5.50.

This book is an important and valuable contribution to the litera-