

The treatment of topics is informal and inductive, there being a noticeable absence of formal proofs. Naturally the reviewer does not agree with the arrangement of material nor with its content, but we do agree with an avowed object of the book, namely that of coaxing students in a small college, or elsewhere for that matter, into a further study of non-required mathematics. We object to the form of the discussion of the quadratic in one unknown (pages 46, 47) wherein the authors seem to discard complex roots, as *roots*. Of course problems in analytic geometry and elsewhere lead to equations with complex roots, which are not interpretable in terms of the real elements presented in the problem. But this does not seem to be the meaning of the authors.

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NOTES.

THE following mathematical papers have appeared in recent numbers of the *Proceedings of the National Academy of Sciences*: volume 5, number 1 (January, 1919): "A theorem in power series, with an application to conformal mapping," by T. H. GRONWALL; number 3 (March): "Tables of the zonal spherical harmonic of the second kind $Q_1(z)$ and $Q_1'(z)$," by A. G. WEBSTER and W. FISHER; number 4 (April): "On the real folds of abelian varieties," by S. LEFSCHETZ; "Covariants of binary modular groups," by O. E. GLENN; "The general solution of the indeterminate equation: $Ax + By + Cz + \dots = r$," by D. N. LEHMER; number 6 (June): "On the most general class L of Fréchet in which the Heine-Borel-Lebesgue theorem holds true," by R. L. MOORE; "On a certain class of rational ruled surfaces," by A. EMCH; number 7 (July): "On the twist in conformal mapping," by T. H. GRONWALL; "Groups involving only two operators which are squares," by G. A. MILLER; "Real hypersurfaces contained in abelian varieties," by S. LEFSCHETZ.

THE concluding (June) number of volume 20 of the *Annals of Mathematics* contains the following papers: "Relations between abstract group properties and substitution groups," by G. A. MILLER; "The complete quadrilateral," by J. W.