

*The Elements of Surveying and Geodesy.* By W. C. POPPLEWELL. New York, Longmans, Green and Company, 1915. 244 pp. Price \$2.25.

THIS book contains the usual descriptions of surveying instruments and their uses, chapters on geodetic astronomy, earthwork calculations, railway curves, underground and hydrographic surveying. Distinctively an English text, it contains no matter pertaining to public land surveys in the United States. The exposition is clear, detailed, and accurate. The mathematical nature of the subject is kept in the foreground. A brief course, as the title indicates, it covers the field in a surprising manner.

The book contains five pages of four-place tables. There are no collections of trigonometric or other formulas. For field work it would need to be supplemented by a separate book of tables. There are no exercises.

W. V. LOVITT.

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#### NOTES.

THE third annual meeting of the Mathematical Association of America was held at the University of Chicago on Thursday and Friday, December 27-28, 1917. At the opening session on Thursday morning papers were presented by A. F. FRUMVELLER: "The graph of  $f(x)$  in line coordinates for complex numbers;" F. H. HODGE: "On the generalization of the witch and the cissoid;" W. H. BUSSEY: "Fermat's method of infinite descent;" C. N. MOORE: "On the disciplinary and applied values of mathematical study;" E. J. MOULTON: "On the content of a second course in the calculus." Thursday afternoon was devoted to a consideration of the teaching of descriptive geometry as a college subject, opening with an address by W. H. ROEVER, followed by extended discussion. At the meeting of the Council important matters of policy and procedure were taken up. The evening was dedicated to a joint dinner with the Chicago Section of the American Mathematical Society. On Friday morning reports were presented by the committees on mathematical requirements, libraries, and mathematical dictionary. General discussion followed each report. In the afternoon a joint session

was held with the Chicago Section, after which the annual business meeting of the Association and the election of officers took place.

At the meeting of the National academy of sciences, at Philadelphia, November 20–21, papers were read by EDWARD KASNER: "Geometric aspects of the theory of heat," and O. E. GLENN: "Invariants which are functions of parameters of the transformation."

At the Pittsburgh meeting of the American association for the advancement of science, the retiring vice-presidential address before Section A was by Professor L. P. EISENHART on "The kinematical generation of surfaces."

THE regular summer meeting of the Swiss mathematical society was held at Zurich on September 11, 1917. The programme included papers by DAVID HILBERT: "Axiomatic thought;" C. CARATHEODORY: "Concerning the geometric treatment of extrema in double integrals;" and ARNOLD EMCH: "Concerning plane curves with certain properties."

At the meeting of the London mathematical society on December 5 the following papers were read: by R. L. HIPPISELEY: "A new method of describing a three bar curve;" by OSCAR HOPPE: "Proof of the primality of  $n = (10^{19} - 1)/9$ ;" by G. H. HARDY and E. J. LITTLEWOOD: "New Tauberian theorems;" by C. V. H. RAO: "The curves which lie on the quartic surface in space of four dimensions and the corresponding curves on the cubic surface and the quartic with a double conic;" by W. H. YOUNG: "The connection between Legendre series and Fourier series," and "Series of Bessel functions."

At the meeting of the Edinburgh mathematical society on December 14 papers were read by C. TWEEDIE: "Nicole's contribution to the foundation of the calculus of finite differences;" by E. T. WHITTAKER: "An asymptotic representation of the exponential function."

THE following American doctorates with mathematics as a major subject should be added to the list published in the December, 1917, BULLETIN: J. D. BARTER, California, "A

contribution to the theory of vector functions;" SISTER M. GERVAS, Catholic University of America, "On the cardioids fulfilling assigned conditions;" W. G. HUBERT, New York University, "Sextic curves with two triple points;" J. N. RICE, Catholic University of America, "On the inscribed and circumscribed triangles of the plane rational quartic curve."

THE Paris academy of sciences has awarded the Bordin prize of 3,000 francs to M. GASTON JULIA; the Francoeur prize of 1,000 francs to M. HENRI VILLAT for his publications on hydrodynamics; the Montyon prize of 700 francs to M. RENÉ DE SAUSSURE for his work in mechanics; and the Poncelet prize of 200 francs to M. JULES ANDRADE for work in applied mechanics.

PROFESSOR C. A. EPPERSON, of the Kirksville, Mo., Normal School has been commissioned first lieutenant, coast artillery reserve corps, Battery E, 61st Artillery.

PROFESSOR WILLIAM MARSHALL, of Purdue University, has entered the national food administration service and has been assigned to duty as controller and chief statistician of the international sugar committee.

PROFESSOR J. N. VAN DER VRIES, of the University of Kansas, has received a year's leave of absence to engage in the work of the field division of the U. S. chamber of commerce.

REV. A. S. HAWKESWORTH has been appointed mathematician on the staff of the chief of ordnance of the Navy Department.

AT Syracuse University associate professor F. F. DECKER has been promoted to a full professorship of mathematics. Dr. J. L. JONES has been promoted from an instructorship to an assistant professorship of mathematics.

BOOK CATALOGUES:—Galloway and Porter, Cambridge, England, catalogue 89, 50 titles in mathematics and physics.—Francis Edwards, 83 High Street, London, catalogue 377, 18 titles in mathematics.—W. Heffer and Sons, Cambridge, England, catalogue 169, 543 titles in mathematics, physics, and engineering.