

the basis of the discussion, and for the premiums and reserves of insurance policies. Naturally these parts are devoted mainly to matters which must be treated in all complete texts on insurance. A shorter fourth part treats the theory of risk.

Good judgment has been shown by the author both in the selection of topics and in the apportionment of space to them.

Not only will the book be of particular interest to those who desire to deal with the theory of life insurance as one phase of the mathematics of statistics, but it will prove instructing to most and valuable to all of those who deal primarily with actuarial science.

G. H. LING.

CORRECTION.

PROFESSOR H. W. Kuhn has informed me that the theorem relating to the totality of the substitutions which are commutative with every substitution of a transitive group, published in my article in the present volume of the *BULLETIN*, page 19, is not new. It is found in Professor Kuhn's doctor dissertation, *American Journal of Mathematics*, volume 26 (1904), page 67.

G. A. MILLER.

NOTES.

THE Annual Register of the AMERICAN MATHEMATICAL SOCIETY for 1908, containing the list of officers and members of the Society, constitution and by-laws, annual reports, and catalogue of journals in the Society's library together with other accessions for 1905-1907, has recently been issued. A complete catalogue of the library up to 1905 is contained in the Register for that year, copies of which may still be obtained from the Secretary.

THE January number (volume 9, number 2) of the *Annals of Mathematics* contains the following papers: "On the classification of plane algebraic curves possessing fourfold symmetry about a point," by R. D. CARMICHAEL; "A second inverse problem in the calculus of variations," by C. E. STROMQUIST; "The continuous plane motion of a liquid bounded by two right lines," by H. C. WOLFF; "A problem in chance," by J.

K. WHITTEMORE; "The expression of constant and of alternating continued fractions in hyperbolic functions," by A. E. KENNELLY.

THE third regular meeting of the Rochester section of the association of teachers of mathematics in the middle states and Maryland was held at the University of Rochester, Saturday, February 8. The following papers were read: By W. BETZ, "The use of intuition in geometry"; by H. D. MINCHIN, "Physical demonstrations for the mathematical class-room"; by J. H. TANNER, "Genesis and extension of the number concept"; by Miss K. L. CARING, "Discussion of the syllabus of elementary algebra." The next meeting will be held at the University of Rochester on Saturday, April 11.

AT the meeting of the London mathematical society held on January 9, 1908, the following paper was read: By C. S. JACKSON, "A formula of interpolation."

THE following programme for the Fourth international congress of mathematicians, to be held at Rome in April, is announced:

Sunday, April 5, 9:30 P. M. General reception in the Aula of the University of Rome.

Monday, 10 A. M. Opening of the congress at the Capitol. 3 P. M. Election of the general bureau; award of the Guccia medal. First and second conferences.

Tuesday, Wednesday, Thursday, Friday, Saturday. 9 A. M. Sectional meetings. 3 and 3:30 P. M. Two conferences.

Organization of the sections:

I. Arithmetic, algebra, analysis: opened by ARZELA, CAPELLI, PASCAL, PINCHERLE.

II. Geometry: BIANCHI, SEGRE.

III. Mechanics and applied mathematics: LEVI-CIVITA, LUIGI, PIZZETTI, TOJA.

IV. Philosophic, historic, and pedagogic questions: ENRIQUES, LORIA, VAILATI.

All meetings after the opening one will be held at the Royal academy dei Lincei, Via della Lungara, 10. Reduced rates (40 to 60 per cent.) will be offered on all Italian railroads and in many hotels in Rome. All reports, conferences, and formal papers read at the Congress will be collected in the volume of

the proceedings, to be published by a committee under the management of the director of the *Rendiconti del Circolo matematico di Palermo*. Authors are requested to give their manuscripts to the general secretary before the close of the meetings.

The membership fee of 25 lire should be sent to Professor Vincenzo Reina, treasurer, Piazza S. Pietro in Vincoli 5, Rome, not later than March 25.

Subjects of conferences :

DARBOUX : "Quelques idées dans la géométrie infinitésimale."

FORSYTH : "On the present condition of partial differential equations of the second order, as regards formal integration."

HILBERT : "Die Methode der unendlich vielen unabhängigen Variablen."

KLEIN : "Über die mathematische Encyclopädie."

LORENTZ : "Le partage de l'énergie entre la matière pondérable et l'éther."

MITTAG-LEFFLER : "Sur la représentation arithmétique des fonctions analytiques générales d'une variable complexe."

NEWCOMB : "La théorie du mouvement de la lune ; son progrès et son état actuel."

PICARD : "L'analyse dans ses rapports avec la physique mathématique."

POINCARÉ : (Subject not yet announced).

VERONESE : "La geometria non archimedea."

In the inaugural session, Professor VOLTERRA will discuss "Le matematiche in Italia nella seconda metà del secolo XIX."

At the annual public meeting of the Paris academy of sciences, held on December 2, 1907, the following prizes in mathematical sciences for 1909 and 1910 were announced ; competing memoirs should be in the hands of the secretary before December 31 of the year preceding that in which the respective prizes are awarded : Francoeur prizes (fr. 1000) will be awarded annually for general progress in pure and applied mathematics ; Bordin prize (fr. 3000) for 1909, see BULLETIN, volume 13, page 308 ; Grand prize (fr. 3000) for 1910, for the solution of the following problem : "It is known how to find all the systems of two meromorphic functions in the plane of the complex variable, connected by an algebraic relation. An analogous question arises for a system of three uniform functions of two complex variables, each having the character of a rational function in the finite part of the field, and all

connected by an algebraic function. In default of a complete solution of the problem, the academy at least desires the treatment of particular examples, leading to classes of new transcendentals."—Fourneyron prize (fr. 1000) for 1910: "Theoretic and experimental study of the blow of a battering ram in an elastic tube."—Poncelet prize (fr. 2000) for 1909 for general progress in applied mathematics; for 1910, for an important memoir in pure mathematics.—Vaillant prize (fr. 4000) for 1909: "Perfect, in some important point, the application of the dynamical principles of fluids to the theory of the propeller."—Boileau prize (fr. 1300) for 1909, for an important contribution to the theory of fluids. The remaining prizes will be awarded under the same conditions as those previously announced.

Dr. H. LEBESGUE has been promoted to a professorship of mathematical analysis at the University of Poitiers.

THE late Mr. RICHARD BROWN, of Youngstown, Ohio, left the sum of \$30,000 to Mount Union College to endow the chair of mathematics. The present professor, Mr. B. F. Yanney, has been appointed to the chair.

PROFESSOR C. O. GUNTHER, of the Stevens Institute of Technology, has been promoted to be acting professor of mathematics.

PROFESSOR W. W. BEMAN, of the University of Michigan, has been granted a leave of absence during the next academic year.

NEW PUBLICATIONS.

I. HIGHER MATHEMATICS.

- BAKER (H. F.). Introduction to the theory of multiply periodic functions. Cambridge, 1907. 8vo. 16 + 336 pp. Cloth. 12s. 6d.
- BÔCHER (M.). Introduction to higher algebra; prepared for publication with the cooperation of E. P. R. Duval. New York, Macmillan, 1908. 8vo. 11 + 321 pp. Cloth. \$1.90
- BROMWICH (T. J. P. A.). Quadratic forms and their classification by means of invariant factors. (Cambridge tracts in mathematics and mathematical physics.) New York, Putnam, 1907. 8vo. 8 + 100 pp. \$1.10
- BROZAT (W.). Ueber Scharen von ∞^4 Flächen im R_3 , die durch Berührungstransformationen in Scharen von ∞^4 Kurven überführbar sind. Greifswald, 1907. 8vo. 53 pp. M. 1.80