

this is a primitive tissue in the willows and not a modification of the normal tissues due to changed environment; (2) that the reinstatement, under stimulus of vestigial characteristics in a plant has an important bearing on the question of gall production, for the gall producer not only exercises directive control over the active characteristics of the protoplasm, but over dormant as well. Under these conditions, unexpected structures and unusual combinations may well be produced.

*On a Pre-Cambrian Outlier in Central Manitoba:*

PROFESSOR R. C. WALLACE. Presented by A. H. REGINALD BULLER, D.Sc., F.R.S.C.

*The Swarming of Ondotosyllis:*

C. McLEAN FRASER, Ph.D. Presented by A. B. MACALLUM, Ph.D., F.R.S.C.

*Bibliography of Canadian Botany for the Year 1914:*

DR. A. H. MACKAY, F.R.S.C.

*Bibliography of Canadian Geology for 1914:*

WYATT MALCOLM. Presented by R. G. MCCONNELL, B.A., F.R.S.C.

*Bibliography of Canadian Entomology for the Year 1914:*

REV. C. J. S. BETHUNE, D.C.L., F.R.S.C.

*Bibliography of Canadian Zoology for the Year 1914 (Exclusive of Entomology):*

E. M. WALKER, B.A., M.B.

HENRI M. AMI

### SOCIETIES AND ACADEMIES

#### THE AMERICAN MATHEMATICAL SOCIETY

THE twenty-second summer meeting of the society was held at the University of California on Tuesday and at Stanford University on Wednesday, August 3-4, 1915, in connection with the Panama-Pacific International Exposition, thirty-four members being in attendance. Professor M. W. Haskell, chairman of the San Francisco section, presided on Tuesday afternoon, and Professor R. E. Allardice at that on Wednesday afternoon.

Tuesday morning was devoted to a joint session with the American Astronomical Society and Section A of the American Association for the Advancement of Science. Addresses were delivered by Professors C. J. Keyser on "The human significance of mathematics," and G. E. Hale on "The work of a modern observatory." The astronomers, mathematicians and physicists lunched at the Faculty Club as guests of Professors Leuschner, Haskell and E. P. Lewis.

The social program included a dinner with the American Astronomical Society at the Hotel Oakland on Wednesday evening, an excursion to

the Lick Observatory on Friday, and a luncheon given by Mrs. Phoebe Hearst at the Hacienda del Pozo de Verona on Saturday.

The following papers were read at this meeting:

L. E. Dickson: "Invariantive classification of pairs of conics modulo 2."

C. J. de la Vallée Poussin: "Sur l'intégrale de Lebesgue."

A. R. Schweitzer: "On the solution of a class of functional equations."

Nathan Altshiller: "On the circles of Apollonius."

Dunham Jackson: "Proof of a theorem of Haslkins."

W. W. Küstermann: "Fourier constants of functions of two variables."

B. A. Bernstein: "A set of four independent postulates for the logic of classes."

G. A. Miller: "Limits of the degree of transitivity of substitution groups."

R. D. Carmichael: "On the representation of numbers in the form  $x^3 + y^3 + z^3 - 3xyz$ ."

H. S. White: "Seven points on a gauche cubic curve."

M. W. Haskell: "The del Pezzo quintic curve."

L. J. Richardson: "A phase of Roman mathematics."

C. A. Fischer: "Functions of surfaces with exceptional points or curves."

A. R. Williams: "On a birational transformation connected with a pencil of cubics."

F. N. Cole: "Note on the triad systems in 15 letters."

A. B. Coble: "The determination of the lines on a cubic surface."

H. S. Vandiver: "An aspect of the linear congruence, with applications to the theory of Fermat's quotient."

C. H. Forsyth: "An interpolation formula based upon central and multiple differences."

G. M. Green: "On isothermally conjugate nets of space curves."

L. P. Eisenhart: "Surfaces of rolling and transformations of Ribaucour."

A. R. Schweitzer: "Generalized quasi-transitive functional relations."

L. M. Hoskins: "'Quantity of matter' in dynamics."

A. A. Bennett: "The iteration of functions of one variable."

The next meeting of the society will be held in New York, on October 30.

F. N. COLE,  
Secretary