

of the old barrier between the two basins in which this deposition was carried on.

E. T. DUMBLE

SOCIETIES AND ACADEMIES

THE ANTHROPOLOGICAL SOCIETY OF WASHINGTON

THE 461st regular and 33d annual meeting of the society was held on April 30, at 8 P.M., in the new National Museum, with the president, Mr. F. W. Hodge, in the chair. The following officers were elected:

President—Mr. G. R. Stetson.

Vice-president—Mr. Francis LaFlesche.

Secretary—Mr. William H. Babcock.

Treasurer—Mr. J. N. B. Hewitt.

Additional Members of the Board of Managers—Messrs. G. C. Maynard, Felix Neumann, E. T. Williams, Drs. E. L. Morgan and John R. Swanton.

The following amendments to the by-laws were adopted:

Art. I., Sec. 1, to read: "... Its members shall be classed as Active, Life, Associate, Corresponding and Honorary."

Art. I., Sec. 2, for the words "This sum . . . January" the following to be substituted: "Members elected at any time during the first half of the calendar year shall pay the full amount of their annual dues; those elected during the last half of the year shall pay one half the regular annual dues."

Art. I., Sec. 3, to read: "Associate Members are those who, after having been elected, shall have paid the annual fee. The annual dues for Associate Members shall be Two (\$2.00) Dollars for each calendar year, payable in January. This sum entitles them to all rights and privileges of the Society with the exception of the *American Anthropologist*."

Old sections, 3, 4, 5, 6, 7, to read 4, 5, 6, 7, 8.

Art. I., Sec. 5 (formerly Sec. 4), "Proceedings" to be substituted for "Transactions"; "or associate" to be inserted after "active"; "those classes" to be substituted for "that class."

Art. I., Sec. 6 (formerly Sec. 5), for "Transactions," read "Proceedings."

Art. II., Sec. 4, for "quarterly" read "annual"; for "transactions" read "proceedings."

Art. III., Sec. 1, for "alternate Tuesdays" read "third Tuesdays of each month."

Art. III., Sec. 3, after the words "Board of Managers" insert "the President."

Art. III., Sec. 4, insert after "President," "or at the recommendations of three members of the Board."

Art. VI., Sec. 1, to read: "These by-laws may be amended by a three-fourths vote of the Active, Associate and Life Members present at any officially appointed meeting of the Society, provided notice of the proposed amendment shall have been given, in writing, at a meeting held not less than sixty days previously."

TRUMAN MICHELSON,
Retiring Secretary

THE PHILOSOPHICAL SOCIETY OF THE UNIVERSITY OF VIRGINIA

At the regular monthly meeting of the Scientific Section of the Philosophical Society, held on April 15, 1912, Professor W. H. Echols presented a paper "On the Flow of Water in Artificial Channels, Clean Pipes." The paper may be summarized briefly as follows:

The paper continued the investigations presented two years previous, by proceeding to another degree of precision with wider range of application. The result gives for Chezy's coefficient of resistance m in the expression for loss of head in clean pipes

$$h = m \frac{L}{r} \frac{V^2}{2g},$$

the value

$$m = \frac{.0094 + \frac{.00003}{Vr}}{1 + \frac{.07V}{1 + \left(.015 + \frac{.002}{r}\right)V} + \frac{.6r}{r + .1}}$$

r being the mean hydraulic radius and V the velocity expressed in feet and seconds. This value of m applies to the whole class of clean pipes of easy curvature, of glass, brass, tin, lead, zinc, cast and wrought iron coated, riveted iron coated with asphalt. For straight new asphalt coated cast-iron pipes the velocities from the formula should be increased five per cent. and for wooden stave pipes ten per cent. Four hundred experiments were tabulated in the paper with diameters from one tenth of an inch to eight feet and velocities ranging from two tenths to fifty feet. Three graphical plates accompanied the paper drawn to large scale, giving corresponding values of the coefficients m and c and the relations of V , r and s the hydraulic slope. The paper will be published in the *Transactions* of the society, Bulletin No. 10, Scientific Series.

R. M. BIRD,
Secretary