



The Annual Meeting of the Metropolitan New York Section

Source: *The American Mathematical Monthly*, Vol. 52, No. 7, (Aug. - Sep., 1945), pp. 416-418

Published by: Mathematical Association of America

Stable URL: <http://www.jstor.org/stable/2304662>

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4. *Heron's problem*, by Professor E. T. Bell, California Institute of Technology.

As generalized by Tannery, Heron's problem is the problem of solving the simultaneous system

$$a(x + y) = u + v, \quad xy = buv$$

in which a and b are known integers, for integral values of x , y , u , and v . Several individuals have written papers which purported to present the complete solution of this problem, but in each case the work was incomplete, inexplicit, or unproved. The speaker presented a complete solution with its proof. By suitable specialization of the parameters in the complete solution, the special cases $a = b$ and $a = 1$ considered by Heron, Planude, and others can be solved.

5. *The use of conformal transformations to solve certain practical problems in aerodynamics*, by Dr. G. H. Peebles, Douglas Aircraft Company, introduced by Professor P. G. Hoel.

This paper dealt with the problem of designing airfoils, ducted airfoils, intakes, turbine blades, and slotted flaps to give prescribed flow patterns.

6. *Applications of mathematics—analysis by means of mass spectrometer*, by Miss Sibyl N. Rock, Consolidated Engineering Corporation, introduced by Professor G. E. F. Sherwood.

Miss Rock employed lantern slides to explain the mass spectrometer and its use in making certain chemical analyses. She also described an electric analogue computer used to solve a system of simultaneous linear equations arising in connection with the work. The time required for solution by means of this machine and by the usual calculator methods was stated. The question of errors was also considered.

7. *Educational problems in statistical quality control*, by Dr. P. C. Hammer, Lockheed Aircraft Corporation.

The speaker discussed the problem of presenting the quality control course to men with diverse educational backgrounds. He stated that at the Lockheed Aircraft Corporation the problem has been partially solved by presenting statistical concepts by means of experiments. Some of the materials used in these experiments were washers, rivets, playing cards, and ball bearings. The success of this type of instruction in statistics indicates that similar methods could be profitably employed in mathematics courses.

P. H. DAUS, *Secretary*

THE ANNUAL MEETING OF THE METROPOLITAN NEW YORK SECTION

The annual meeting of the Metropolitan New York Section of the Mathematical Association of America was held at the Polytechnic Institute of Brooklyn, Brooklyn, New York, on Saturday, April 21, 1945. Professor Jewell Hughes Bushey, Chairman of the Section, presided.

The attendance was one hundred and eight, including the following forty-seven members of the Association: Claire F. Adler, R. G. Archibald, Aaron Bakst, Brother Bernard Alfred (Welch), Frank Boehm, C. B. Boyer, Benjamin Braverman, A. B. Brown, Jewell Hughes Bushey, H. R. Cooley, T. F. Cope, W. H. H. Cowles, W. H. Fagerstrom, J. M. Feld, R. M. Foster, Marion C. Gray, Mary W. Gray, George Grossman, C. C. Grove, C. E. Heilman, L. S. Hill, Joseph Jablonower, Herman Karnow, Edna E. Kramer-Lassar, Helen L. Kutman, Nathan Lazar, C. H. Lehmann, Joseph Milkman, F. H. Miller, P. B. Norman, L. F. Ollmann, Max Peters, L. M. Reagan, Moses Richardson, John Riordan, S. G. Roth, Charles Salkind, Harry Schor, Aaron Shapiro, James Singer, F. E. Smith, E. R. Stabler, H. E. Wahlert, Etta A. Waite, Alan Wayne, D. E. Whitford, John Williamson.

At the business meeting the following officers were elected for the coming year: Chairman, F. H. Miller, Cooper Union; Vice-Chairman, H. E. Wahlert, New York University; Secretary, C. B. Boyer, Brooklyn College; Treasurer, Aaron Shapiro, Midwood High School.

The following program was presented:

1. *Demonstrative algebra*, by Professor E. R. Stabler, Hofstra College.

The speaker outlined a simple logical unit of algebraic postulates and theorems, essentially the elementary theory of number fields, for possible use in courses in high school or college algebra. Some advantages which might occur from the teaching of such a unit were cited.

2. *Triangular permutations*, by John Riordan, Bell Telephone Laboratories.

Permutations are called triangular when they are subject to a set of conditions on positions forbidden to elements which appear as a triangle in the square array formed with elements as columns and positions as rows. The properties and the problem of the enumeration of such permutations were discussed.

3. *Hadamard's determinant theorem*, by Professor John Williamson, Queens College.

Professor Williamson defined a Hadamard or H -matrix to be a square matrix of order $n > 1$, each element of which is ± 1 , and whose determinant has the maximum possible value $n^{n/2}$. He outlined the proof by which Paley showed that, if $n \equiv 0 \pmod{4}$ and $n \leq 200$, an H -matrix of order n exists except possibly for $n = 92, 116, 156, 172, 184, 188$. He stated that it could be shown by other methods that an H -matrix of order 172 does exist, and that by generalization of Paley's methods the existence of H -matrices of certain other orders can be established. He also considered the maximum values Δ_n of the determinants of such matrices for certain small values of $n \not\equiv 0 \pmod{4}$. These values of n were 3, 5, 6, and the corresponding values of Δ_n were $2^2, 3 \cdot 2^4$, and $5 \cdot 2^5$, respectively. It was remarked that $9 \cdot 2^8 \leq \Delta_7 \leq 10 \cdot 2^8$, and it seems probable that $\Delta_7 = 9 \cdot 2^8$.

4. *Changing objectives in the teaching of algebra and trigonometry in the senior high schools*, by Benjamin Braverman, Seward Park High School.

In algebra and trigonometry as taught, say in 1915, the content was arranged topically and developed logically. Each topic was developed in all its theoretical ramifications, and highly involved techniques were taught. Now the content is organized in a psychological way, and selected because of its direct connection with the life situations of the student. The emphasis is on the understanding of concepts; skills and techniques are taught only as needed, and in problem situations that have meaning to the pupil.

5. *Changing objectives in the teaching of geometry in the senior high schools*, by Samuel Welkowitz, Franklin K. Lane High School, introduced by Dr. Nathan Lazar.

Mr. Welkowitz advocated that geometry be exhibited as an illustration of the scientific method, that the role of deduction and the nature of proof be emphasized, that we lift the pupil from the second to the third dimension, and that we provide practice on more useful constructions without restriction to the straightedge and compasses. He also recommended a modification of the order of topics to permit a gradual approach to formal deduction, the selection of the easier topics for the first semester, and the introduction of a greater amount of algebraic and arithmetic drill.

H. E. WAHLERT, *Secretary*

CALENDAR OF FUTURE MEETINGS

The following is a list of the Sections of the Association with dates of future meetings so far as they have been reported to the Secretary.

ALLEGHENY MOUNTAIN	NORTHERN CALIFORNIA, Berkeley, January 26, 1946
ILLINOIS	OHIO, April 4, 1946
INDIANA, Indianapolis, October 19, 1945	OKLAHOMA
IOWA	PHILADELPHIA, Philadelphia, December 1, 1945
KANSAS	ROCKY MOUNTAIN
KENTUCKY	SOUTHEASTERN
LOUISIANA-MISSISSIPPI	SOUTHERN CALIFORNIA, Pasadena, March 9, 1946
MARYLAND-DISTRICT OF COLUMBIA-VIRGINIA	SOUTHWESTERN
METROPOLITAN NEW YORK	TEXAS
MICHIGAN	UPPER NEW YORK STATE
MINNESOTA	WISCONSIN, Milwaukee, May, 1946
MISSOURI	
NEBRASKA	