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- L. N. Patterson, Student, Massachusetts Institute of Technology.
- Jose da Silva Paulo, Lic.Math.Sc. (Lisbon) Vice-Rector, Liceu Nacional de Oeiras, Portugal.
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- Rev. Michael Richartz, S.V.D., Ph.D. (Muenster, Germany) Head, Department of Mathematics, University of San Carlos, Philippines.
- M. E. Rimmel, M.S. in Ed. (Akron) Instr., Indiana Technical College.
- I. J. W. Robinson, Student, Queen's University.
- Hartley Rogers, Jr., Ph.D. (Princeton) Asst. Professor, Massachusetts Institute of Technology.
- Marjorie Roskos, Student, Cardinal Stritch College.
- V. R. Sheffield, M.A. (Rochester) Asst. Professor, Kansas State Teachers College, Emporia.
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- Sister Mary Frederick Holbrow, M.A. (Boston C.) Instr., College of St. Elizabeth.
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- Patricia K. Southworth, Student, University of Oregon.
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- G. L. Stephens, M.S. (Kentucky) Numerical Analyst, General Electric Co., Evendale, O.
- Konrad Suprunowicz, M.A. (Nebraska) Grad. Asst., University of Nebraska.
- D. V. Susco, M.A. (U.C.L.A.) Staff Member, University of California, Los Alamos, N. Mex.
- Lee Suyemoto, B.A. (Cincinnati) Cincinnati, Ohio.
- Eileen J. Theisen, M.S. (Northwestern) Computing Engr., Rocketdyne, North American Aviation, Canoga Park, Calif.
- M. R. Thompson, Ed.D. (Oregon S.C.) Asso. Professor, Oregon College of Education.
- R. C. Thompson, M.A. (British Columbia) Defence Scientific Officer, Defence Research Board, Ottawa, Ont., Canada
- Mary Tsingou, M.S. (Michigan) Staff Member, University of California Scientific Lab., Los Alamos, N. Mex.
- J. R. Vail. M.A. (Michigan) Asst. Professor, Georgia Institute of Technology.
- R. E. Ward, Math., Jack & Heintz, Cleveland, Ohio.
- M. J. Ware, Asst. Superintendent, Byron Jackson Co., Los Angeles, Calif.
- Vaughan Weston, Ph.D. (Toronto) Res. Asst., Defense Research Board, Toronto, Ont., Canada.
- E. F. Wilde, M.A. (Illinois) Instr., Beloit College.

## THE APRIL MEETING OF THE METROPOLITAN NEW YORK SECTION

The fifteenth annual meeting of the Metropolitan New York Section of the Mathematical Association of America was held at Stevens Institute of Technology, Hoboken, New Jersey on April 28, 1956. Dr. J. H. Davis, President of Stevens Institute of Technology, gave the address of welcome. Dr. Barnett Rich, High School Vice-Chairman of the Section, presided at the morning session and Professor A. B. Brown, Chairman of the Section, at the afternoon session. There were 158 persons in attendance, including 73 members of the Association.

The following officers were elected for the year 1956-57: Chairman, Dean Mina S. Rees, Hunter College; Collegiate Vice-Chairman, Professor J. N. Eastham, Cooper Union; High School Vice-Chairman, Dr. Irving Dodes, Bronx High School of Science; Secretary, Dr. Azelle B. Waltcher, Hofstra College; Treasurer, Mr. Aaron Shapiro, Midwood High School, Brooklyn.

At the business meeting reports were given by the Treasurer, the Committee on Membership, and the Committee on Contests and Awards. Professor C. G. Salkind, Co-Chairman of the latter committee reported, among other things, that 502 schools including 14,013 contestants had registered with the Section for the current contest. A motion that Professor W. H. Fagerstrom receive a vote of thanks and appreciation for his years of work as Chairman of the Committee on Contests and Awards was passed unanimously.

The following papers were presented:

1. Constructions with ruler and divider, by Professor Emil Artin, Princeton University.

The elementary constructions with ruler and divider were given as well as some examples of constructible and non-constructible problems. The analysis of constructibility led to the condition that all solutions of the problem should be real for all values of the parameters.

The next three papers were presented as a panel discussion on the topic: "Does the High School Curriculum in Mathematics Provide the Optimum College Preparation for the Brighter Pupil?"

2. What are the high schools doing for the abler mathematics student?, by Mr. S. L. Greitzer, Bronx High School of Science.

Most schools can do little or nothing for the abler mathematics student because there are too few per school, and because of lack of personnel and courses. Most of the offerings for these students are to be found in a few specialized schools. At these schools, there are offered, in addition to advanced algebra and solid geometry, a variety of courses now considered on the college level. These include analytic geometry, calculus, statistics, mathematical applications to science, *etc.* Because of the varied nature of the first year college courses, it is obviously impossible to prepare students so that they will show the same degree of ability at all colleges. It is suggested that the colleges would do well to standardize their offerings at the first year level.

3. Does the high school curriculum in mathematics provide the optimum college preparation for the brighter pupil?, by Professor W. H. Fagerstrom, The City College of New York.

The speaker presented the College's idea of what the preparatory curriculum should be. He warned that the success of any education program is hinged on the curiosity and creativeness of the pupils themselves. The teachers, he said, do not seem to encourage the students to work enough on their own. Many seem content to impart only a "smattering" rather than a mastery of a subject in their classes. He gave a list of about fifty topics including concepts and techniques from the field of secondary school mathematics in which the entering freshmen seem poorly prepared. He did not blame the teachers for the lack of knowledge on the part of the students, but attributed it to the trend of the times.

4. What should be taught to bright high school students who intend to go to college?, by Mr. I. M. Rothman, Brooklyn Technical High School and Brooklyn College.

The tentative course of study for the "Five Years in Four" mathematics honor classes at Brooklyn Technical High School was described. Then the speaker discussed concepts and topics that should be stressed, those that should be eliminated or minimized, and those that should be considered for inclusion in the curriculum for bright students. It was pointed out that we need

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special textbooks for these students. Since these are not available at present, supplementary material should be prepared.

5. Applications of non-euclidean geometry to some technological problems in waveguides, by Mr. G. A. Deschamps, Federal Telecommunication Laboratories, Nutley, New Jersey.

The paper illustrated a practical use of non-euclidean geometry. In the first part some properties of non-euclidean geometry of the hyperbolic type were reviewed using the well known conformal and projective models of Klein, Poincaré, and Beltrami. It was shown that on the projective model, geometrical constructions were greatly simplified by means of a "hyperbolic protractor" which gave the hyperbolic distance between two points by direct reading. A simple construction for the angles was also described. In the second part of the paper applications to waveguide technology were given. They were based essentially on the fact that the transformation of the reflection coefficient through a waveguide junction could be represented by a congruent transformation in the hyperbolic space. Some specific problems that were simplified by this interpretation are: the description of a junction by a minimum number of parameters, the experimental determination of these parameters, the interpretation of measurements taken on one side of the junction in terms of what they mean for the other side, the composition of junctions in cascade, and the design of matching elements.

AZELLE B. WALTCHER, Secretary

## CALENDAR OF FUTURE MEETINGS

Thirty-eighth Summer Meeting, Pennsylvania State University, University Park, Pennsylvania, August 26-27, 1957.

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 Associate Secretary.

- ALLEGHENY MOUNTAIN, Westinghouse Research Laboratories, Pittsburgh, Pennsylvania, May 4, 1957.
- ILLINOIS, Illinois State Normal University, Normal, May 10-11, 1957.
- INDIANA, May 4, 1957.
- Iowa, Iowa State Teachers College, Cedar Falls, April 26–27, 1957.
- Kansas
- KENTUCKY, Berea College, Berea, April 20, 1957.
- LOUISIANA-MISSISSIPPI, Buena Vista Hotel, Biloxi, Mississippi, February 15–16, 1957.
- MARVLAND-DISTRICT OF COLUMBIA-VIRGINIA, Johns Hopkins University, Baltimore, Maryland, May 4, 1957.
- METROPOLITAN NEW YORK, April 27, 1957.
- MICHIGAN, Wayne State University, Detroit, March 23, 1957.
- MINNESOTA, Carleton College, Northfield, May 11, 1957.
- MISSOURI, Southeast Missouri State College, Cape Girardeau, April 27, 1957.
- NEBRASKA, University of Nebraska, Lincoln, April 26, 1957.

New Jersey

- Northeastern
- NORTHERN CALIFORNIA, University of California, Berkeley, January 12, 1957.

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- OKLAHOMA
- PACIFIC NORTHWEST, State College of Washington, Pullman, June 14, 1957.
- PHILADELPHIA
- ROCKY MOUNTAIN, Colorado School of Mines, Golden, May 3-4, 1957.
- SOUTHEASTERN, Emory University, Emory University, Georgia, March 15-16, 1957.
- SOUTHERN CALIFORNIA, San Diego State College, May 11, 1957.
- SOUTHWESTERN, University of Arizona, Tucson, April 26–27, 1957.
- TEXAS, University of Houston, Houston, April, 1957.
- UPPER NEW YORK STATE, Skidmore College, Saratoga Springs, May 4, 1957.
- WISCONSIN, Wisconsin State College, Whitewater, May 11, 1957.