



2868

File in folder
of
C.P. Steinmetz

THE SEVENTIETH ANNIVERSARY OF THE BIRTH OF CHARLES PROTEUS STEINMETZ

IN COMMEMORATION of this Anniversary, April 9, 1935, the April issue of the **GENERAL ELECTRIC REVIEW** contains a Steinmetz Pictorial Section so attractive that it will be of permanent value to all admirers of this world-renowned mathematician, engineer, and teacher.

Foremost in the group of pictures is a full-page portrait made from an original print, the negative of which is no longer in existence. Of all the photographs ever taken of Steinmetz, this was his favorite. As shown above in miniature, it is an unusually characteristic picture of him studying at his desk. Its reproduction in the **REVIEW** was made by the gravure process on art paper, and therefore it has the high quality of a print suitable for framing.

The remainder of the Pictorial Section consists of photographs of the electrical genius at historic periods in his career and of pictures of him as he appeared in a variety of activities ranging from attendance at formal engineering conventions to life as he liked to live it when at camp. These reproductions are in sepia tint on paper chosen for its distinctive character, and were printed from extra-fine-screen plates prepared especially for the purpose.

In the same issue there is also the ninth of the "Steinmetz Memorial Lectures," which were founded to perpetuate the memory of this man who did so much for the electrical industry.

In addition, it is appropriate that in this commemorative issue Dr. Steinmetz's mathematical work should be extended by the publication of the first article of a comprehensive series on "Tensors, a powerful mathematical tool that furnishes a means for further promoting the development of electrical engineering.

In the following pages are copies of a few of the many Steinmetz photographs appearing in this April issue, a list of his many articles that have been published in the **REVIEW**, and an indication of how his services to the electrical profession are being continued in our magazine by contributions of other engineers.

SPECIAL STEINMETZ FEATURES IN APRIL ISSUE OF REVIEW

Cover Illustration
Steinmetz in His Canoe

Frontispiece
Steinmetz in His Laboratory

Steinmetz Pictorial Section
Full-page Gravure Portrait
Four Pages of 22 Other Pictures

Steinmetz Memorial Lecture
"An Undeveloped Phase of Engineering Education,"
by Robert E. Doherty, Dean, School of Engineering,
Yale University

Serial
"Application of Tensors to the Analysis of Rotating
Electrical Machinery," by Gabriel Kron,
General Electric Company

Other articles in this issue are listed on the last page of this announcement

If you are already a subscriber, tell your friends of these Steinmetz features in the April issue for they too would probably like to have copies.

A FEW OF THE STEINMETZ PHOTOGRAPHS

IN THE APRIL ISSUE OF THE REVIEW



Dr. Steinmetz going through the morning mail and noting it with his characteristic and unusual personal shorthand



The president of the board of education and of the park commission of the City of Schenectady busies himself with civic problems



In the broadcasting studio of WGY from which he delivered many interesting popular radio talks



The versatile scientist at work in his chemical laboratory where he experimented with numerous original formulas

ARTICLES BY DR. STEINMETZ IN THE GENERAL ELECTRIC REVIEW

Dr. Steinmetz's fame rests not on one achievement but on many, and descriptions of them as written by him appeared in the following issues of the REVIEW. Considered one by one, these articles trace the chronological steps in his technical career; taken together, they form an impressive record of his accomplishments.

- | | |
|--|--|
| Surges and Oscillations (<i>Mar. 1907</i>) | Effect of Electrical Engineering on Modern Industry (<i>April 1914</i>) |
| Transient Electric Phenomena (<i>Dec. 1907</i>) | Recording Devices (<i>May 1914</i>) |
| Lightning and Lightning Protection (<i>June 1908</i>) | Energy Density (<i>July 1914</i>) |
| Variable Ratio Converters (<i>Nov. and Dec. 1908; Jan. and Feb. 1909</i>) | Energy of the Radio-atom (<i>Sept. 1914</i>) |
| Thermodynamics (<i>Jan., Feb., Mar., May, and June 1909</i>) | Individual and Corporate Development of Industry (<i>Aug. 1915</i>) |
| Luminescence (<i>Aug. 1910</i>) | Control and Protection of Electric Systems (<i>Sept. 1915</i>) |
| Insulation against Electrical Impulse Forces (<i>Oct. 1910</i>) | Protection and Control of Industrial Electric Power (<i>Oct. 1915</i>) |
| Energy Loss through Corona on Transmission Lines (<i>Feb. and Mar. 1911</i>) | Why an Arc Produces Oscillations (<i>Feb. 1916</i>) |
| Power Limiting Reactances (<i>Sept. 1911</i>) | Inherent Economic Advantages of Electric Power (<i>June 1916</i>) |
| Arc Lighting (<i>Dec. 1911</i>) | Electric Conductors (<i>May and July 1916</i>) |
| Electrical Disturbances and Nature of Electrical Energy (<i>Jan. 1912</i>) | Is the Induction Generator Practical? (<i>Sept. 1916</i>) |
| Nature of Transients in Electrical Engineering (<i>Feb. and Mar. 1912</i>) | Scientific Research in Its Relation to the Industries (<i>Feb. 1917</i>) |
| Control and Operation of Transmission Systems (<i>June 1912</i>) | Magnetic Reluctivity (<i>Feb. 1917</i>) |
| Second Law of Thermodynamics and the "Death" of Energy (<i>July 1912</i>) | Effect of Artificial Light on Plants (<i>Mar. 1918</i>) |
| Phenomena beyond the Elastic Limit (<i>Oct. 1912</i>) | America's Energy Supply (<i>July 1918</i>) |
| Efficiency of Illuminants (<i>Nov. 1912</i>) | Oxide-film Lightning Arrester (<i>Sept. 1918</i>) |
| Abnormal Strains in Transformers (<i>Dec. 1912</i>) | Electric Power Collection (<i>Aug. 1919</i>) |
| Hunting (<i>May 1913</i>) | Hydro-electric Power Collection (<i>Nov. 1919</i>) |
| Grounding of Transmission Lines (<i>June 1913</i>) | Control and Stability of Electric Generating Stations (<i>Aug. and Sept. 1920</i>) |
| Efficiency of Illuminants (<i>March 1914</i>) | Einstein's Theory of Relativity (<i>Dec. 1921</i>) |
| | Electric Power Industry (<i>Nov. and Dec. 1922; Feb. 1923</i>) |

BOOKS WRITTEN BY DR. STEINMETZ

In the following technical books, Dr. Steinmetz embodied many of his electrical-engineering and mathematical contributions which continue to be read and studied the world over: (*)

- | | |
|--|---|
| "Theoretical Elements of Electrical Engineering" (\$4.00) | "Alternating-current Phenomena" (\$5.00) |
| "Theory and Calculation of Electrical Apparatus" (\$5.00) | "Electric Discharges, Waves and Impulses and Other Transients" (\$2.50) |
| "Theory and Calculation of Electrical Circuits" (\$4.00) | "Radiation, Light and Illumination" (\$3.50) |
| "Theory and Calculation of Transient Electric Phenomena and Oscillations" (\$6.00) | "Four Lectures on Relativity and Space" (\$2.00) |
| "General Lectures on Electrical Engineering" (\$3.00) | "Engineering Mathematics" (\$3.50) |

TWO STEINMETZ BIOGRAPHIES

The life of Dr. Steinmetz is comprehensively and authentically presented in the two following biographies, by the late John Winthrop Hammond: (*)

- | | |
|--|--|
| "Charles Proteus Steinmetz—A Biography" (\$4.00) | "A Magician of Science—A Boys' Life of Steinmetz" (\$1.75) |
|--|--|

(*) Any of these books may be obtained through the REVIEW at retail price, or in combination with a year's subscription at \$1.50 additional.

CONTINUING THE WORK OF DR. STEINMETZ

Though death has ended the contributions of Dr. Steinmetz to the columns of the REVIEW, his good work is still being carried on by others, many of whom gained inspiration and training from this eminent teacher. Their articles covering further important developments and applications in electrical engineering are published monthly in the REVIEW. Those in the first four issues this year are given below:

JANUARY 1935

Annual Review: Developments in the Electrical Industry during 1934

(Including Waterwheel Generators, Steam Turbine-generators, Marine Equipment, Electric Transportation, Motors, Control Devices, Electric Dredges, Mining, Oil Wells, Paper Mills, Sugar Mills, Steel Mills, Electric Welding, Industrial Heating, Heating Appliances, Electric Refrigerators, Air Conditioning, Research, X-ray Apparatus, Electromedical Apparatus, Radio, Carrier Current, Rectifiers, Transformers, Network Protectors, Voltage Regulators, Lightning Arresters, Lightning Protection for Rotating Machines, Distribution Fuse Cutouts and Fuse Links, Cable, Unit-type Substations, Switchgear, Meters and Instruments, Lighting)

FEBRUARY 1935

Bursitis—X-rays—High Frequency
Development and Use of Generator Voltage Regulators
Loss Calculations of Transmission Lines under Load
Automatic Heating for Mt. Holyoke College
Cross Section of Transformer Cores
Elements of a Power Distribution System for Electric Shovels
Measuring the Arc-resistance of Insulating Materials in Air
New Galvanometers

MARCH 1935

Qualifications of a Developmental Engineer
Three New Step-voltage Regulators
Testing with High Impulse Currents
What Is Speed in a Supervisory System?
The Usefulness of Mathematics to Engineers
Recent Developments in Electric-drive Rail Motor Cars
The Automatic Oscillograph and Its Utility

APRIL 1935

An Undeveloped Phase of Engineering Education
Tensors in the Analysis of Rotating Electrical Machinery: Part I
Two-way Police Auto Radio Systems
Sealed-equipment Mine Locomotives
The Conversion of a Bulk Freighter to a Self-unloader
A New Reflection Meter
The Petersen Coil

IN EVERY ISSUE:

High Lights and Side Lights: News Notes and New Products
Library Section: Condensed References to Recent Articles and Books

BY BECOMING A SUBSCRIBER NOW!

Here's what you will receive in the course of a year's subscription for the REVIEW:

1. Twelve issues—one each month
2. Annual review of the progress in the electrical industry—in the January issue
3. Electrical engineering articles on the design, application, installation, operation, and economies of apparatus, equipment, and devices for use in the Industrial, Utility, and Rail Transportation Fields—together with other useful articles on research developments and engineering practices—all articles prepared by authorities on the subjects
4. High Lights and Side Lights—news notes and new products
5. Library Section—references to important current articles in the technical press, and reviews of new books also of interest to the electrical industry
6. Annual Index—by subjects and authors of articles published during the year—included with the copy of the December issue (suitable for bound volumes and other reference purposes)

Your subscription for the REVIEW can still be started with any one of the issues of which the contents are listed above. The blank below is for your convenience in subscribing for the REVIEW, and for ordering any of the Steinmetz books and extra copies of the April issue. Fill out the blank and return it today with your remittance in the enclosed self-addressed envelope, which requires no postage.

TEAR HERE AND MAIL TODAY!

CONVENIENT ORDER BLANK

(For Subscription, Single Copies, and Books)

GENERAL ELECTRIC REVIEW
Schenectady, New York

Date.....

Please enter my order for:

My remittance of \$ is enclosed.

Check

Name.....

() Subscription to the REVIEW for year(s) to begin with the issue.

Address.....

() Extra copies of the April 1935 issue.

() Above subscription in combination with the following book.

Position.....

() The following book(s).

Company.....

SUBSCRIPTION RATES—United States and Possessions: One Year, \$3.00; Two Years, \$5.00. Professors, Students, and College and Public Libraries: \$2.00 a Year. Extra Postage (1 or 2 Yrs.): Canada, 25¢; Other Foreign Countries, 50¢. SINGLE COPY PRICE 30¢