

The following June he became principal assistant to General Russell Thayer, in civil engineering; for another year, still pursuing his studies, he spent considerable time visiting mines, various works in operation, and inspecting important structures. July 1885, he was given charge of various field surveys in Pennsylvania and Virginia, and in August became chief engineer of the Lynchburg Iron Company operating iron mines and constructing railroads. During the major part of 1886 he served as principal assistant to General Russell Thayer, but in November 1888, he turned his attention to electrical engineering and six years later became principal assistant engineer to J. G. White, president of J. G. White & Company of New York and Baltimore; three years later he was made chief engineer. With this company his work included cable and electric railway construction; the design and construction of subways in Baltimore; design, construction, and operation of electric light and power plants; the design and construction of substations for the Toledo and Detroit railway, and for the Niagara Falls-Buffalo transmission line.

Previous to this he was for two years chief engineer of Atlantic Highlands, Red Bank, and Long Branch Electric Railway and for over a year he filled the position of chief engineer and superintendent of the Borough of Manhattan Electric Company, New York City, for the purpose of reconstructing and reorganizing its plants, and subsequently to plan and install extensions; it was while filling these positions Mr. Kennedy secured his permanent position as chief engineer of the J. G. White and Company. Mr. Kennedy was one of the first engineers to appreciate the advisability of making parts and flywheels of engines used in parallel operation of such weight that they would have no tendency to vibrate in harmony with the electrical oscillations. His attack of any engineering problem was energetic and intelligent and he was an enthusiastic and indefatigable worker. Among his other achievements in the line of electrical design and construction were the Detroit and Lake Orion Railway, Detroit, Mich., the power station at Perth, West Australia, and the design of a proposed central station for the Third Avenue railway of New York City.

J. L. Highsaw, Memphis Tech. High Sch. Feb. 9. Att. 35.

Mexico

SOME RECENT DEVELOPMENTS AND TRENDS IN ELECTRICAL MACHINERY AND APPARATUS, by Dr. C. E. Skinner, pres. A.I.E.E., asst. director of engg., Westinghouse Elec. & Mfg. Co. Demonstrations. Feb. 17. Att. 70.
Banquet. Feb. 18. Att. 58.

Minnesota

RESEARCH WORK IN LABORATORY DEVELOPMENTS, by H. D. Sanborn, Genl. Elec. Co.; THE CHALLENGE TO THE AMERICAN BUSINESS MAN, by J. B. Chapple, Ashland Daily Press. These talks were given before the convention of the Minnesota Federation of Architectural and Engg. Societies. Feb. 26-7. Att. 100.

Montana

RECENT DEVELOPMENTS IN THE ELECTRICAL FIELD, by A. D. Atewart, Westinghouse Elec. & Mfg. Co. Discussion. Feb. 18. Att. 43.
Dean H. V. Carpenter, State Col. of Wash., vice-pres. A.I.E.E., gave a report of the winter convention held in New York. Discussion. Feb. 25. Att. 20.

New York

MARINE ENGINEERING AND THE AMERICAN MERCHANT MARINE, by Arthur M. Tode, pres., Propeller Clubs of the U.S. (Transportation group.) Feb. 10. Att. 275.

CHARACTERISTICS AND PROTECTION REQUIREMENTS OF THE LOW-VOLTAGE A.C. NETWORK, by C. W. Pickells, N. Y., and Queens Elec. Lt. & Pwr. Co., A. Pinto, Otis Elevator Co., L. A. Nettleton, Bklyn. Edison Co. (Power Group.) Feb. 18. Att. 250.

THE NEW MUSIC OF ELECTRICAL OSCILLATIONS, by Benjamin Miessner, Capt. Richard Ranger, and Prof. Leon Theremin. Feb. 26. Att. 875.

RECENT INVESTIGATIONS OF NEW YORK CITY SMOKE, by E. E. Free, N. Y. Univ. March 8. Att. 75.

Oklahoma City

NOISE INDUCTION BETWEEN POWER TRANSMISSION AND TELEPHONE CIRCUITS, by E. B. Jennings, Southwestern Bell Tel. Co., and C. E. Bathe, Oklahoma Gas & Elec. Co. Demonstrations. Jan. 25. Att. 115.

Philadelphia

ELECTRON TUBES IN INDUSTRY, by E. H. Alexander, Genl. Elec. Co. Demonstrations. Jan. 11. Att. 150.

SHIF STABILIZATION BY ELECTRICALLY CONTROLLED MECHANICAL DEVICES, by Nicholas Minorovsky, Univ. of Pa. Feb. 8. Att. 180.

Pittsburgh

THE WESTINGHOUSE SECTION MERCURY ARC RECTIFIER, by A. L. Atherton, J. H. Cox, D. C. West, H. Speight, A. J. Maslin, R. R. Longwell, and J. Slepian. Joint meeting with Engrs. Soc. of Western Pa., Feb. 9. Att. 453.

AN OUTDOOR MERCURY BOILER POWER STATION, by A. R. Smith, Genl. Elec. Co. Dinner. Joint meeting with Engrs. Soc. of Western Pa., March 8. Att. 174.

Pittsfield

MEN MADE ISLAND TO SPEED OCEAN FLYING, by E. R. Armstrong, Armstrong Seadrome Corp. Feb. 16. Att. 300.

FAMOUS WOMEN SPIES AND THEIR METHODS, by Maj. Thomas Coulson. Dinner. March 1. Att. 1,450.

Portland

Motion pictures describing cable manufacture and short talks on telephone transmission. Feb. 23. Att. 75.

St. Louis

THE WORLD OF ELECTRONS, by Larry Hawkins, Genl. Elec. Co. Feb. 16. Att. 1,600.

San Antonio

THE ELECTRICAL INDUSTRY OF TODAY, by Dr. C. E. Skinner, pres. A.I.E.E., asst. director of engg., Westinghouse Elec. & Mfg. Co. Feb. 23. Att. 99.

San Francisco

OVERSEAS RADIO TELEPHONE SERVICE OF THE BELL SYSTEM, by W. H. Harrison, Am. Tel. & Tel. Co. Joint meeting with I.R.E. and Signal Corps Assn. Feb. 12. Att. 450.

Schenectady

VERTICAL TRANSPORTATION IN BUILDINGS, by

Local Meetings

Past Section Meetings

Atlanta

AUDIBLE LIGHT, by John B. Taylor, Genl. Elec. Co. Demonstrations. Feb. 15. Att. 850.

Chicago

ELECTRIC MOTOR CONTROL, by G. C. Wilms, Bradley Mfg. Co. Joint meeting with Western Soc. of Engrs. Feb. 15. Att. 178.

Cincinnati

ELECTRIC SHOCK, by Dr. W. B. Kouwenhoven, Johns Hopkins Univ., vice-pres. A.I.E.E. Dinner. Feb. 25. Att. 85.

Cleveland

Demonstration and lecture by S. P. Grace, asst. vice-pres., Bell Telephone Labs., Inc. Joint meeting with Advertising Club, Chamber of Commerce, Cleveland Engg. Soc., and Elec. League. Feb. 3-4. Att. 5,000.

FIELD STUDIES OF LIGHTNING PROTECTION ON DISTRIBUTION CIRCUITS, by K. B. McEachron, Genl. Elec. Co. Feb. 18. Att. 107.

Dallas

THE ELECTRICAL INDUSTRY OF TODAY, by Dr. C. E. Skinner, pres. A.I.E.E., asst. director of engg., Westinghouse Elec. & Mfg. Co. Feb. 26. Att. 127.

CONSTRUCTION PROGRESS AT THE HOOVER DAM, by S. O. Harper, U.S. Bureau of Reclamation. Demonstrations. Dinner. Feb. 10. Att. 60.

Detroit-Ann Arbor

FUNDAMENTAL PHYSICAL AND PSYCHOLOGICAL ASPECTS OF TELEVISION, by J. O. Perrine, Am. Tel. & Tel. Co. Demonstrations. Joint meeting with Detroit Engg. Soc. Feb. 16. Att. 650.

Erie

HISTORY AND DEVELOPMENT OF MOTOR DRIVEN ELECTRIC CLOCKS, by Alvan Fisher, Warren Telechron Co. Feb. 16. Att. 100.

Fort Wayne

RADIO INTERFERENCE, by Arthur B. Smith, Assoc. Elec. Labs. Discussion. Feb. 11. Att. 90.

Houston

THE ELECTRICAL INDUSTRY OF TODAY, by Dr. C. E. Skinner, pres. A.I.E.E., asst. director of engg., Westinghouse Elec. & Mfg. Co. Dinner. Feb. 24. Att. 85.

Indianapolis-Lafayette

ELECTRONS AT WORK AND AT PLAY, by Dr. Phillips Thomas, Westinghouse Elec. & Mfg. Co. Demonstrations. Feb. 10. Att. 340.

Ithaca

PROTECTION OF DISTRIBUTION CIRCUITS AND APPARATUS, by B. B. McEachron, Genl. Elec. Co. Feb. 19. Att. 124.

Kansas City

LIGHT AND ARCHITECTURE, by A. L. Powell, Genl. Elec. Co. Dec. 28. Att. 110.

CONTROL OF SMOKE NUISANCE IN CITIES, by A. S. Longsdorf, Wash. Univ. Joint meeting with A.S.M.E. Sec. Jan. 15. Att. 85.

Los Angeles

OVERSEAS TELEPHONE SERVICES OF THE BELL SYSTEM, by W. H. Harrison, Am. Tel. & Tel. Co. Demonstrations. Feb. 9. Att. 106.

Louisville

LIGHTNING—RECENT INVESTIGATIONS AND FINDINGS, by F. W. Peek, Jr., Genl. Elec. Co. Demonstrations. Feb. 19. Att. 169.

Lynn

AMERICA STEPS AHEAD WITH THE AKRON, by R. H. Smith, M.I.T. Movies. Feb. 10. Att. 1,054.

MERCURY VAPOR TURBINES, by L. A. Sheldon and B. P. Coulson, Genl. Elec. Co. Feb. 24. Att. 500.

Memphis

DEVELOPMENT OF VOCATIONAL GUIDANCE, by

Bassett Jones, Meyer, Strong, and Jones. Joint meeting with A.S.M.E. Jan. 21. Att. 125.

AIR CONDITIONING IN BUILDINGS, by A. R. Stevenson, Gen. Elec. Co. Joint meeting with A.S.M.E. Sec. Feb. 4. Att. 130.

THE GREAT ICE AGE IN NORTH AMERICA, by K. F. Mather, Harvard Univ. Joint meeting with A.S.M.E. Sec. Feb. 18. Att. 425.

Seattle

SEGREGATION OF HYDROELECTRIC POWER COSTS, by W. S. McCrea, Jr.; GENERATOR VOLTAGE REGULATORS, by K. L. Howe; REFLECTED VOLTAGE WAVES IN SINGLE PHASE INDUCTION MOTORS, by D. C. Moore; RESIDENTIAL UNDERGROUND DISTRIBUTION SYSTEM, by Wallace Quistorff. W. S. McCrea awarded prize of \$25 for presentation of best paper. Jan. 19. Att. 75.

Sharon

MODERN MARVELS, by C. K. Lee, Westinghouse Elec. & Mfg. Co. Feb. 16. Att. 135.

Spokane

INSTITUTE AFFAIRS AND REPORT ON THE WINTER CONVENTION, by Dean H. V. Carpenter, State Col. of Wash., vice-pres., A.I.E.E. Feb. 26. Att. 21.

Toledo

Executive committee meeting. Feb. 9. Att. 9. PROTECTIVE RELAYS, by J. H. Hunt, Toledo Edison Co.; MODERN CIRCUIT INTERRUPTERS, by J. Slepian, Westinghouse Elec. & Mfg. Co. Demonstrations. Discussion. Feb. 19. Att. 80.

Toronto

NON-RESONATING TRANSFORMERS, by K. K. Palueff, Genl. Elec. Co. Demonstrations. Feb. 11. Att. 114.

AUTOMATIC FREQUENCY CONTROL, by J. B. McClure, Genl. Elec. Co. Joint meeting with Niagara Frontier Sec. and Engg. Inst. of Canada. Feb. 19. Att. 151.

SOME PHYSICAL CHARACTERISTICS OF SPEECH AND MUSIC, by Harvey Fletcher, Bell Tel. Labs., Inc. Demonstrations. Feb. 26. Att. 350.

Urbana

MODERN HIGH POWER TRANSMISSION ANTENNA, by Prof. H. A. Brown, Univ. of Ill. March 2. Att. 35.

Utah

WHAT MEN SEE WITH, by A. S. Bennion, Utah Pwr. & Lt. Co. Dinner. Feb. 8. Att. 70.

Washington

SOME THOUGHTS ON WAVES, by O. B. Blackwell, Am. Tel. & Tel. Co. Dinner. Feb. 9. Att. 130.

Future Section Meetings

Akron

April 12—THE ELECTRICAL INDUSTRY AND SOME PROBLEMS OF THE INSTITUTE, by Dr. C. E. Skinner, pres. A.I.E.E., asst. director of engg., Westinghouse Elec. & Mfg. Co. Movies.

May 10—Annual banquet and ladies' night. HUMAN ENGINEERING, by Dean Fred E. Ayer, Univ. of Akron. Movies.

Baltimore

April 15—Subject to be announced. Speakers from Western Electric Co.

May 20—Speaker: Dr. W. B. Kouwenhoven, Johns Hopkins Univ., vice-pres. A.I.E.E.

Cleveland

April 21—ELECTRIC REFRIGERATION AND DOMESTIC AIR CONDITIONING, by W. M. Timmerman, Genl. Elec. Co.

May 19—Subject and speaker to be announced.

Dallas

April 11—THE COORDINATION OF LINE AND STATION DESIGN FOR LIGHTNING SURGE CONDITIONS, by A. O. Austin, Ohio Brass Co.

Detroit-Ann Arbor

April 19—COMMERCIAL METERING OF ELECTRIC ENERGY, by A. S. Albright, Detroit Edison Co.

May 17—HOUSE OF MAGIC, by Oliver Ajer, Genl. Elec. Co.

Louisville

April 15—Inspection trip to Bowman Field Airport. FUNDAMENTALS OF PLANE CONSTRUCTION AND FLIGHT, by A. W. Lee, Louisville Gas & Elec. Co.

May 13—DIAL TELEPHONE EQUIPMENT IN LOUISVILLE. Speaker from Southern Bell Tel. & Tel. Co.

New York

April 15—Final meeting of power group; general subject: regulation of power flow between interconnected systems. GENERAL PROBLEMS OF INTERCONNECTION, H. L. Melvin, Electric Bond and Share Company; AUTOMATIC CONTROL OF FREQUENCY AND LOAD, J. B. McClure, Genl. Elec. Co. Election of power group officers. Meeting to be held in Engineering Societies Building at 7:30 p.m.

Pittsburgh

April 12—TELEVISION. Demonstrations. Joint meeting with I.R.E.

May 10—Annual banquet and ladies' night.

Seattle

April 19—Joint meeting with Student Branch at Univ. of Wash.

May 17—Address by L. Sapovi, Hooker Electro-Chemical Co.

Spokane

April 22—NEW DEVELOPMENTS IN OIL CIRCUIT BREAKERS, by J. F. Spease, Genl. Elec. Co.

May 27—Annual dinner meeting. HISTORY OF THE ELECTRICAL DEVELOPMENT OF THE INLAND EMPIRE, by John B. Fiskien. Election of officers.

Toledo

April 15—PROBLEMS IN THE DESIGN OF LARGE TURBO-ALTERNATORS, by S. H. Mortensen, Allis-Chalmers Co.; APPLICATION OF ELECTRICITY IN INDUSTRY, by R. E. Paxton, Toledo Edison Co.

Vancouver

April 4—SWITCHGEAR, by W. D. Robertson, Canadian Genl. Elec. Co., Ltd.

May 2—Open.

May 21—Annual outing to the Baker River Plant of the Puget Sound Pwr. & Lt. Co.

Past Branch Meetings

University of Akron

BIOGRAPHY OF ALEXANDER GRAHAM BELL, by R. I. Felver, student; BAFFLE BOARDS AND THEIR RELATION TO MODERN LOUDSPEAKERS, by Sol. Leibowitz, student. Demonstrations. Feb. 24. Att. 9.

Alabama Polytechnic Institute

ELECTRIFICATION OF THE NORFOLK AND WESTERN RAILWAY, by F. N. Williams, student; TELEPHONE SYSTEMS, by D. P. Johnson, student. Feb. 18. Att. 10.

MANUFACTURE OF CAST IRON PIPE BY THE MONO-CAST CENTRIFUGAL PROCESS, by S. D. Moxley, Am. Cast Iron Pipe Co. Joint meeting with A.S.M.E. Feb. 2. Att. 45.

University of Arkansas

NON SINE WAVES, by H. G. Thomasson, student; VECTORS, by E. E. Ray, student; HARMONIC ANALYZERS, by J. G. Lewis, student. Feb. 3. Att. 35.

ELECTRIC SHOVELS, by Robert Vining, student; BRUSHES, by E. E. Boreland, student; AUTOMATIC STOPS FOR ELEVATORS, by F. L. McDonald, student. Feb. 15. Att. 30.

Armour Institute of Technology

BUILDING NETWORKS, by E. E. Chilberg, Genl. Elec. Co. Feb. 19. Att. 30.

University of British Columbia

AUTOMATIC TELEPHONY, by J. W. McRae, student. Discussion of transmission systems. Feb. 9. Att. 14.

THE C.G.E. TEST COURSE, by S. D. Scott, student; THE AUTOMATIC SWITCHBOARD INSTALLED FOR THE POWELL RIVER PULP AND PAPER CO., by H. E. Woodland, student. Film—"The Transportation Problem." Feb. 23. Att. 19.

Film—"Electrification of the Mexicana Railway." Feb. 24. Att. 100.

Brooklyn Polytechnic Institute

THE PIANOFORTE OR ENGINEERING APPLIED TO THE ART OF MUSIC, by Wm. B. White, Am. Steel & Wire Co. Demonstrations. Refreshments. Jan. 14. Att. 200.

Bucknell University

LIGHTING AND ITS RELATION TO INDUSTRIES, by George Heinisch, student. Feb. 11. Att. 12.

University of California

THE DEVELOPMENT AND APPLICATION OF VACUUM TUBES, by A. W. Copley, Westinghouse Elec. & Mfg. Co., vice-pres. A.I.E.E. Banquet. Feb. 19. Att. 46.

ENGINEERING OBSERVATIONS ON A RECENT TRIP EAST, by W. C. Smith, Genl. Elec. Co. Feb. 24. Att. 35.

Case School of Applied Science

THE RESEARCH ATTITUDE, by Prof. T. D. Owens; SAFETY DEVICES ON STREET CARS, by J. C. Elder, student; X-RAY PROTECTIVE DEVICES, by W. J. Cherney, student. Feb. 17. Att. 51.

W. J. Cherney elected chairman. March 4. Att. 43.

Catholic University of America

ELECTRICITY AND THE TELEPHONE, by Mr. Gioffre, Chesapeake & Potomac Tel. Co. Refreshments. Feb. 24. Att. 3.

University of Cincinnati

ELEVATOR MOTORS AND CONTROL, by A. J. Liebenberg, Warner Elev. Co. Feb. 17. Att. 40.

Clemson Agricultural College

PHOTOELECTRIC TUBES, by Prof. F. T. Tingley; THE PRESENT PRACTICES IN INSULATED POWER CABLES, by W. G. Wallenberg, student. March 3. Att. 20.

University of Colorado

Films—"Speeding up Our Deep Sea Cables" and "Pictures by Wire." Refreshments. Feb. 10. Att. 55.

NEW IDEAS FOR HIGH VOLTAGE CIRCUIT BREAKERS, by C. A. Church and N. R. Damon. Slides. Feb. 24. Att. 30.

Cooper Union

ENGINEERING ASPECTS OF THE SOVIET FIVE YEAR PLAN, by W. N. Polakov. Feb. 4. Att. 70.

University of Denver

Films—"Mazda Lamps," "Electric Ships," "Liquid Air," and "A Visit to the General Electric Factory With Earl Carroll." Feb. 18. Att. 84.

University of Detroit

CONSTRUCTION AND APPLICATION OF STORAGE BATTERIES, by W. C. Leingang, Elec. Stor. Bat. Co. Film—"The Electric Ship." March 2. Att. 45.

Duke University

MERCURY ARC RECTIFIERS, by Mr. Creekmore, student. Discussion. Feb. 11. Att. 13.

ILLUMINATION AND NEON TUBES, by Mr. Garrett, student; SHORT WAVE RECEIVING CIRCUITS, by Mr. Flack, student. Feb. 25. Att. 13.

University of Florida

AMATEUR RADIO, by G. W. Haug, student; THE KENNELLY-HEAVISIDE LAYER AND METHODS FOR DETERMINING ITS HEIGHT, by D. C. Beck. March 7. Att. 25.

Georgia School of Technology

Films—"Automatic Arc Welding" and "Busy Body." Feb. 16. Att. 60.

University of Illinois

Discussion of plans for the elec. engg. show. Feb. 17. Att. 100.

Iowa State College

Film—"The Life of Edison." Feb. 10. Att. 50.

University of Iowa

Films—"General Electrical Icing Unit." Election of officers as follows: H. A. Peterson, chmn.; L. E. Travis, vice-chmn.; J. F. Kapinos, secy-treas. Feb. 3. Att. 44.

Discussion. Feb. 10. Att. 44.

ELECTRICAL RELAYS, by M. J. Larsen, student. Feb. 17. Att. 30.

NEW RADIO AIR CELL A BATTERY, by L. F. Grizel, student; THE GROWTH OF THE UNIVERSITY RADIO STATION, by R. E. Griffin, student; ELECTRICITY IN THE MOFFAT TUNNEL, by D. G. Fritz, student; TELEVISION, by E. C. Dunn, student. Feb. 24. Att. 38.

Kansas State College

Election of officers. Feb. 4.

Talk by G. W. Wood, Frigidaire Co. Feb. 18. (Afternoon meeting.)

RUSSIA, by J. C. Bradley. Feb. 18. (Evening meeting.)

University of Kansas

COOPERATIVE EDUCATION, by Prof. D. C. Jackson, Jr., counselor. Feb. 18. Att. 36.

THE MAKING OF A LIFE, by R. A. Schwegler, dean, school of education. Films—"Far Speaking" and "Voices Across the Sea." March 3. Att. 54.

Lafayette College

WELDING, by A. S. Cumberland, Ingersoll-Rand Co. Illus. Joint meeting with A.S.M.E. and A.S.C.E. branches. Feb. 26. Att. 50.

Louisiana State University

THE WYMAN DAM HYDROELECTRIC PROJECT, by E. E. Frenzel, student. Feb. 18. Att. 19.

University of Louisville

ADVANTAGES OF GOVERNMENTAL CONTROL, by J. Groves, student; ADVANTAGES OF PRIVATE OWNERSHIP, by J. Morris, student. Feb. 12. Att. 11.

University of Maine

PLANNING A POWER SYSTEM, by H. W. Coffin, Bangor Hydroelec. Co. Feb. 25. Att. 23.

Marquette University

MAGNETIC TESTING, by Prof. J. F. H. Douglas, assisted by Messrs. Trimborn, Dernbach, Hallbach, and Van Peterson, students. Feb. 4. Att. 20.

Massachusetts Institute of Technology

Inspection trip through the L Street generating station of the Edison Elec. Ill. Co. Feb. 19. Att. 15.

THE THYRATRON TUBE, by H. M. Wagner, student. Dinner. Feb. 25. Att. 65.

Michigan College of Mining and Technology

INDUSTRIAL APPLICATIONS OF VACUUM TUBES, by R. E. Welton, Gen. Elec. Co. Films "Automatic Substation for Mining and Industrial Service" and "Big Deeds." Feb. 11. Att. 36.

Michigan State College

THE DEVELOPMENT OF THE VACUUM TUBE, by W. A. Stelzer, student. Feb. 23. Att. 11.

METHODS OF FIXING LIGHT AND POWER RATES, by Mr. Carolyn, Consumers Pwr. Co. March 8. Att. 14.

School of Engineering of Milwaukee

ORGANIZATION, PURPOSE, DUTIES, AND OPERATION OF THE MILWAUKEE FIRE DEPARTMENT, by Mr. Lippold, asst. fire cf. Feb. 10. Att. 46.

University of Minnesota

Inspection trip through the Elec. Mchy. Mfg. Co. Feb. 18. Att. 65.

University of Missouri

ULTRA HIGH FREQUENCY OSCILLATIONS, by C. Thorne and L. Smart, students; TELEVISION, by H. Leibovich and L. Buell, students. Feb. 17. Att. 18.

ADVENTURES IN SCIENCE, by L. A. Hawkins, Genl. Elec. Co. Joint meeting with Sigma Xi. Feb. 27. Att. 263.

Montana State College

THE SWOPE PLAN, by A. J. Hill, student; A MODERN LAUNDRY, by C. G. Anderson, student; ELECTRIC ARC WELDING IN MINES, by E. Hughes, student; DEVELOPMENT OF TRANSFORMERS, by R. MacDonald; THE ORIGIN OF THE ELECTRICAL SCIENCE, by Wm. H. Scheele. Jan. 28. Att. 103.

University of Nebraska

Film—"Power Transformers." Feb. 17. Att. 22.

Demonstration of thyatron tubes by L. W. Cook and P. Ehrenhard, students. March 2. Att. 34.

Newark College of Engineering

PHOTOELECTRIC CELLS, by J. Wier, student; APPLICATION OF PHOTOELECTRIC CELLS, by W. Amon, student; THYRATRON INVERTER, by W. R. McLaughlin, student. Feb. 29. Att. 22.

University of New Hampshire

Film—"Something About Switchboards." Jan. 9. Att. 28.

A NEW WARNING BEACON WHICH UTILIZES THE VACUUM TUBE, by A. Philbrick, student; CONVICT LABOR IN HIGHWAY CONSTRUCTION, by H. W. Feindel, student. Jan. 16. Att. 27.

THE SOLUTION OF UNBALANCED FAULTS ON TRANSMISSION LINES BY THE METHOD OF SYMMETRICAL COORDINATES, by H. R. Stewart, Westinghouse Elec. & Mfg. Co. Jan. 20. Att. 78.

Discussion. Feb. 6. Att. 24.

THE FUTURE ENGINEER, by O. K. Reid, student; THE ELECTRON TUBE IN INDUSTRY, by H. W. Hunt, student. Feb. 13. Att. 21.

Discussion of plans for spring inspection trip. Feb. 20. Att. 22.

Discussion. Feb. 27. Att. 26.

PREDETERMINED COUNTER AND ITS USES, by J. Prentice, student; DIESEL ELECTRIC DRIVES USED ON TRAMP STEAMERS, by R. D. Ives, student. March 5. Att. 21.

University of New Mexico

Discussion of plans for engineers' day. Feb. 17. Att. 10.

ENGINEERING ACHIEVEMENTS OF THE GENERAL ELECTRIC CO. DURING 1931, by Martin Zirhut, student. Feb. 25. Att. 17.

College of the City of New York

Discussion. Feb. 18. Att. 18.

THE TOOLS OF MODERN WARFARE, by Maj. Carl de Zafra, U.S. Army. Feb. 25. Att. 44.

SOME RECENT DEVELOPMENTS IN ELECTRICAL COMMUNICATION, by R. D. Parker, Am. Tel. & Tel. Co. Demonstrated. March 3. Att. 40.

New York University

QUASI OPTICAL WAVES, by E. H. Osterland, student; LABOR UNIONS, by W. Rubsamen, student. Feb. 16. Att. 12.

AMATEUR RADIO STATION EQUIPMENT, by J. Mantone, student; MEASUREMENT OF THE MOISTURE CONTENT OF WOOD BY ELECTRICAL METHODS, by A. W. Lebert, student. Feb. 23. Att. 13.

THE PRESENT PATENT SITUATION, by L. C. Dinnar, student; QUARTZ CRYSTAL OSCILLATORS, by H. C. Fleming, student. March 1. Att. 13.

THE DEVELOPMENT OF THE USE OF ELECTRICITY AT SEA, by J. P. Munroe, student; THE INDUCTIVE COMPENSATING GENERATOR, by C. J. Dunn, student. March 8. Att. 13.

North Carolina State College

NEON TUBES, by K. L. Ponzer, student; LATE ELECTRICAL DEVELOPMENTS, by C. M. Smith, student; AMATEUR RADIO TRANSMISSION AND RECEPTION, by D. A. Worsley, student; ELECTRICITY IN SYRIA, by Joseph Salem, student. Jan. 26. Att. 31.

Film—"General Electric Enameling Furnace." Feb. 9. Att. 21.

North Dakota State College

RECENT DEVELOPMENTS IN MODERN ILLUMINATION, by O. P. Cleaver, Westinghouse Elec. & Mfg. Co. Feb. 5. Att. 93.

IMPRESSIONS OF ENGINEERING, by Foster Buck. Film "The Story of the Glass Bottle." Joint meeting with A.S.M.E. and A.S.C.E. branches. Feb. 18. Att. 66.

University of North Dakota

ENGINEERING DEVELOPMENTS IN 1931, by L. A. Myrand, Westinghouse Elec. & Mfg. Co. Film—"Dynamic America." Feb. 17. Att. 32.

TELEVISION, by O. A. Bondeled, North Western Bell Tel. Co. March 2. Att. 28.

Northeastern University

THE CATHODE RAY OSCILLOGRAPH, by H. W. Samson, Genl. Radio Co. Demonstrations. Feb. 17. Att. 82.

University of Notre Dame

MOTOR CONTROL, by C. J. Maloney, Cutler Hammer Mfg. Co. Demonstrations. INCIDENTS IN THE DEVELOPMENT OF ELECTRIC TRACTION, by P. McCaffrey, student. John Scanlan, student, presented the new reviews. Feb. 15. Att. 77.

MANUFACTURE OF A RADIO TUBE, by W. S. Brian, Grigsby-Grunow Co.; DEVELOPMENT OF THE INCANDESCENT LAMP, by C. Roberts, student; SOUND ON FILAMENT, by L. Simmons, student; ENGINEERING CULTURE, by H. E. Ball, student. John Scanlan, student, presented the usual current review. Feb. 29. Att. 71.

Ohio Northern University

A.C. WELDING, CONCEPTION OF THE ELECTRON THEORY, and METHODS OF LOCATING GROUNDS ON

POWER LINES, by O. R. Jacobs, student. Jan. 14. Att. 19.

HOME LIGHTING, by L. Berger, student. Demonstrations. Jan. 28. Att. 9.

Ohio University

Film—"From Mine to Consumer." H. B. McCrone, Am. Brass Co., explained the film. Feb. 17. Att. 55.

EDISON THREE WIRE TRANSMISSION LINES, by R. H. Lloyd, student. March 9. Att. 13.

Oregon State College

LIFE OF EDISON, by B. Blazen, student. SHORT WAVE RADIO TRANSMISSION TO HAWAII, by R. W. Deardork, Pac. Tel. & Tel. Co. Demonstrations. Feb. 11. Att. 57.

Pennsylvania State College

THE RECENT TUBE DEVELOPMENTS OF INTEREST TO INDUSTRY, by H. L. Saxton. Feb. 19. Att. 75.

University of Pittsburgh

ELECTRIFICATION OF RAILROADS, by C. E. Coleman, student; LIFE OF FARADAY, by W. Piercy, student. Jan. 14. Att. 128.

OPERATION OF AUTOMATIC TRAIN SIGNALING, by H. E. Kallenburger, Union Switch and Signal Co. Demonstrations. Jan. 19. Att. 87.

INDUSTRIAL APPLICATION OF VACUUM TUBES, by R. Hansen, student. Feb. 4. Att. 127.

CODE SYSTEM OF CONTINUOUS TRAIN CONTROL, by O. L. Zimmerman, student; METHODS OF ROLLING STEEL PLATES, by M. Zofchak, student. Feb. 11. Att. 120.

PHOTOELECTRIC CELLS, by Wm. Dambart, student. Feb. 18. Att. 126.

MERCURY ARC RECTIFIERS, by Mr. Atherton, Westinghouse Elec. & Mfg. Co. Feb. 25. Att. 126.

Pratt Institute

Film—"Manufacture of Electric Cables." Feb. 4. Att. 25.

ELECTRICITY AND THE PIPE ORGAN, by D. Enslee, student. Feb. 17. Att. 20.

Princeton University

Film—"Electrical Measuring Instruments." Feb. 11. Att. 8.

Purdue Univ.

EINSTEIN'S THEORY, by R. J. Kryter, Prest-O-Lite Stor. Bat. Co. Feb. 16. Att. 508.

Rhode Island State College

TELEVISION, by Messrs. Daly and Downes, students. Feb. 25. Att. 12.

Rice Institute

Election of Officers as follows: E. A. Turner, Jr., chairman; G. R. Adams, vice-chairman; J. E. Reed, secy.; R. C. Bearmann, treas. Feb. 17. Att. 11.

Rose Polytechnic Institute

HISTORY AND MANUFACTURE OF CABLES, by F. E. Calvert, Gen. Elec. Co. March 3. Att. 36.

Rutgers University

THE TWIN FUNCTION OF ENGINEERING, by J. Rudnitsky, student. Feb. 16. Att. 17.

SWEEP CIRCUITS OF CATHODE RAY OSCILLOSCOPE, by B. Schmurak, student. Feb. 23. Att. 20.

University of South Carolina

TELEVISION SCANNING BY MEANS OF CATHODE RAY TUBES, by R. M. Warren, Jr., student; UNLOADING OF GRAIN CARS, by J. T. Lyman, student; DIAL TYPE THERMOTEL, by E. C. Willis, student. March 10. Att. 55.

South Dakota State School of Mines

COMBUSTION, by Chuck Laws, Montana-Dakota Pwr. Co. Feb. 25. Att. 28.

University of South Dakota

Film—"The Single Ridge." Feb. 16. Att. 35

University of Southern California

Discussion. Feb. 3. Att. 15.
Discussion and moving pictures. Feb. 10. Att. 31.

Southern Methodist University

UNDERGROUND DISTRIBUTION NETWORK SYSTEM OF DALLAS POWER & LIGHT CO., by M. M. Lehmberg, student. Feb. 16. Att. 12.
Luncheon. Feb. 24. Att. 11.

Stanford University

RADIO BROADCASTING STATION AT SANFORD AND ITS EQUIPMENT, by P. F. Byrne, student; HIGH VOLTAGE TRANSMISSION, by Prof. J. S. Carroll, counselor. Jan. 14. Att. 28.

Inspection trip through the studios of the Natl. Broadcasting Co., Inc. Jan. 30. Att. 40.

TELEVISION, by A. H. Brolley, Television Labs. Feb. 4. Att. 68.

DESIGN OF THE PORTABLE MOTOR GENERATOR SET WHICH WAS USED BY THE BYRD ANTARCTIC EXPEDITION, by Mr. Heintz, Heintz and Kaufman. Joint meeting with A.S.M.E. Branch. Feb. 10. Att. 42.

Stevens Institute of Technology

PERSONNEL WORK IN THE NEW YORK EDISON CO., by Prof. F. C. Stockwell, counselor. Feb. 5. Att. 38.

THE SETTING OF CLOCKS BY RADIO, by Prof. H. C. Roters. Feb. 16. Att. 26.

Syracuse University

THE PIEZO ELECTRIC EFFECT AND ITS UTILIZATION, by J. L. Schmieder, Jr., student; HISTORY OF THE TELEPHONE, by Wm. Bangs, student. Feb. 12. Att. 21.

CONTROL FREQUENCY BROADCAST, by L. G. Curry, student; ELECTROLYSIS OF CAST IRON PIPE, by H. Coswell, student. Feb. 19. Att. 21.

THE EARTH AS A CURRENT CONDUCTOR, by F. DeBoalt, student. Feb. 26. Att. 21.

A. & M. College of Texas

SOME DEVELOPMENTS BY G.E. IN 1931, by W. Clayton, Gen. Elec. Co. Illustrations. VARIOUS G.E. PRODUCTS, by Mr. Alen, Genl. Elec. Co. Feb. 11. Att. 94.

THE ELECTRICAL INDUSTRY OF TODAY, by Dr. C. E. Skinner, pres. A.I.E.E., asst. director of engg., Westinghouse Elec. & Mfg. Co. Feb. 25. Att. 800.

Texas Technological College

LIFE OF THOMAS A. EDISON, by W. Nott, student. Slides. Feb. 11. Att. 14.

University of Texas

HARMONIC ANALYSIS OF DISTORTED WAVE FORM, by Dr. S. L. Brown. Feb. 11. Att. 12.

University of Utah

THE HISTORY OF AMATEUR RADIO, by L. K. Irvine, student. Discussion. Jan. 28. Att. 37.

DEBATE: RESOLVED: THAT THE ENGINEER HAS CAUSED THE DEPRESSION. Affirmative—D. Ashby, R. C. Hansen, students. Negative—S. Ramo, R. Kirkman, students. Negative side won. Feb. 25. Att. 36.

University of Vermont

THE EFFECT OF ELECTRODE SHAPE ON HIGH VOLTAGE STRESSES IN INSULATORS, by Mr. Whitman. Illus. Feb. 15. Att. 19.

Virginia Polytechnic Institute

LIGHT RELAYS AND LIGHT SOURCE UNITS, by R. W. McCorkle, student; POWER AUXILIARIES, by H. E. Naylor, student; ACTIVE AND INACTIVE DUTIES OF THE ADVANCED R.O.T.C. STUDENT, by M. H. Mills, student; ELECTRIC HEATING AND WOOD BLOCK FLOOR CONSTRUCTION, by C. K. Luck, student. Feb. 11. Att. 47.

METHOD OF WEIGHING SMALL PARTICLES, by W. C. McCall, student; OIL FILLED CABLES, by W. L. Outten, student; THE PREREQUISITES OF AN ELECTRICAL ENGINEER, by G. R. Snyder, student; HIGH SPEED SUBMARINE CABLES, by A. I. Osborne, student; NEW POWER TRANSFORMERS, by T. E. Gilhooley, student; ELECTRICAL OPERATION OF DREDGES, by A. L. Pond, student. Feb. 18. Att. 54.

USE OF NATURAL GAS FOR GENERATING ELECTRICAL ENERGY, by J. H. Pharis, student; THREE POWER LOCOMOTIVES, by J. E. Hamm, student; ELECTRO-PLATING, by A. M. Potts, student; THE ECONOMIC PHASE OF ELECTRIFIED RAILROADS, by W. C. Cottrell, student. Feb. 25. Att. 54.

THE OSCILLOGRAPH, by H. A. Frazier, student; THE LIFE OF SAMUEL MORSE, by R. E. Philbeck, student; LOAD RATIO CONTROL FOR TRANSFORMERS, by C. L. Tune, student; DEVELOPMENT OF TRANSCONTINENTAL RADIO TELEPHONES, by D. H. Smith, student; DIAL SYSTEM AUTOMATIC TELEPHONES, by E. L. Rowell, student. March 3. Att. 50.

University of Virginia

THE QUALIFICATIONS OF AN ELECTRICAL ENGINEER, by R. B. Jones, student; TRAFFIC OPERATED TRAFFIC SIGNAL, by B. G. Switzer, student; BELIEVE IT OR NOT—PERTAINING TO ELECTRICAL ENGINEERING, by T. J. LoCascio, student. Feb. 12. Att. 26.

Washington State College

Election of officers as follows: Philip Nalder,

pres.; T. Torkelson, vice-pres.; Gus H. Bliesner, secy.; H. Brittenham, treas. Jan. 29. Att. 22.

POWER PLANT ACHIEVEMENTS FOR 1931, by R. Uhlig, student; ELECTRICAL INSTRUMENTS, by Prof. O. E. Osburn, counselor. Feb. 12. Att. 26.

University of Washington

TELEVOX, by W. Blashfield, student. Feb. 4. Att. 11.

ELECTRICAL REFLECTIONS IN INDUCTION MOTORS, by D. J. Moore, student. Feb. 11. Att. 15.

THE PUBLIC UTILITIES PLACE IN THE ELECTRICAL INDUSTRY, by H. A. Gardner, Puget Sound Pwr. & Lt. Co. Feb. 18. Att. 17.

Film—"Cohowingo." Feb. 25. Att. 72.

DIABLO-SEATTLE TRANSMISSION LINE, by C. M. Lubcke, Engg. Dept., City of Seattle. March 5. Att. 27.

West Virginia University

HISTORY OF RATE MAKING, by H. Locker; DIESEL ENGINES AS PEAK LOAD UNITS, by L. Palmer; AN INTERVIEW OF DR. H. C. RENTSCHLER, by P. B. Spangler; ENGINEERING FEATURES OF THREE POWER LOCOMOTIVES, by E. D. Harris; REMOTE READING OF WATT HOUR METERS, by L. P. Kirwin; VACUUM TUBE HISTORY, by K. H. DeMoss; THE DYNAMIC RADIO MICROPHONE, by P. M. Vannoy; all students. Feb. 9. Att. 31.

POWER FOR AN ARCTIC ELEVATOR, by J. L. Simpson; AUTOMATIC COMBUSTION CONTROL, by R. H. Colborn; MEASURING HIGH RADIO FREQUENCIES, by N. I. Hall; SHOCKS DUE TO ELECTRICITY, by L. H. Winger; COMMUNICATION IN THE WILDORF ASTORIA, by M. Stewart; PHOTOELECTRIC RECORDER, by W. C. McMillian; FOREIGN JOBS, by W. C. Sandy; all students. Feb. 16. Att. 31.

DEVELOPMENT OF THE CHINESE ELECTRICAL INDUSTRY, by M. Sprigg; REMOTE READING OF WATT HOUR METERS, by D. C. Kennedy; ELECTRIC HEATING IN WOOD BLOCK FLOOR CONSTRUCTION, by J. E. Wallace; CORONA VERSUS CONDUCTOR SURFACE, by F. O. Brown; TRANSOCEANIC RADIO TELEPHONE SERVICE, by C. J. McCormick; all students. Feb. 23. Att. 29.

GAS ELECTRIC RAILWAY CAR, by R. H. Colburn; ALL WAVE RADIO RECEIVER, by N. I. Hall; ELECTRICAL UNITS AND THEIR APPLICATION, by C. J. DeLancy; ELECTRICITY ON THE AIRSHIP AKRON, by L. H. Winger; REDUCING NOISES FROM POWER TRANSFORMERS, by W. C. Sandy; all students. March 1. Att. 29.

University of Wisconsin

THE PRIVATE LIFE OF MICHAEL FARADAY, by M. L. Dack, student; MICHAEL FARADAY'S EXPERIMENT, by P. E. Patterson, student; ELECTRICAL RESEARCHES OF FARADAY, by J. K. Affanasiey, student. Dec. 10. Att. 47.

DANCING CONDUCTORS, by W. A. Kuehlthau, student. Moving pictures. Jan. 19. Att. 64. ELECTRICAL ENGINEERING ONLY? by Charles Moore, Bell Tel. Labs., Inc. Feb. 11. Att. 76.

University of Wyoming

ELECTRON THEORY, by Dr. P. F. Hammond, head, physics dept. Joint meeting with A.S.M.E. Branch. Feb. 23. Att. 17.

Addresses Wanted

A list of members whose mail has been returned by the postal authorities is given below, with the address as it now appears on the Institute records. Any member knowing of corrections to these addresses will kindly communicate them at once to the office of the secretary at 33 West 39th St., New York, N. Y.

Berry, Wayne J., c/o Genl. Elec. Co., Schenectady, N. Y.

Bugg, Vernon, 736 Transportation Bldg., Washington, D. C.

Combs, Clinton R., 13564 Northlawn Ave., Detroit, Mich.

Fay, John L., Genl. Del., Philadelphia, Pa.

King, Milton E., 1521 Laketon Rd., Wilkensburg, Pa.

Master, J. J., 36-7 Canning St., Calcutta, India.

Miyamoto, Tatsuo C., 1330-4th St., Sacramento, Calif.

Palit, Hari-Charan, 151 Ganesh Mohal, Benares City, India.

Rogge, C. A., Consumers Pwr. Bldg., Jackson, Mich.

Thomas, Earl Mead, Intl. Genl. Elec. Co., Schenectady, N. Y.

Titland, Trygve T., 1019 Stanton Ave., Elizabeth, N. J.

Van Der Dussen, John, 114 Gotham Ave., Gerritsen Beach, B'klyn, N. Y.

Employment Notes

Of the Engineering Societies Employment Service

Men Available

Construction

DISTRIBUTION ENGR., 29, married, tech. grad. 8 yr. experience in utility field as supt., mgr., engr. foreman, and lineman. One year constructing municipal power and ice plant. Eighteen months elec. installation in large industrial establishment. Available immediately. Location, immaterial. D-442.

ASSOC. E.E., 25, 8 yr. practical experience in elec. construction work on new bldgs., power plants, and alterations. Familiar with all branches of elec. contracting including field engg. and inspections. Has had complete charge of elec. design and construction outside of New York City. Excellent references. D-502.

ELEC. CONSTRUCTION ENGR., E.E. Grad., 1928, 28, married. 3 1/2 yr. experience with large elec. contractor in estimating, design, control work and field supervision. Also 3 yr. experience in accounting, cost and stenographic work. Excellent references. Available immediately. D-46.

E.E., 33, with 10 yr. practical experience in elec. construction work on new bldgs. Familiar with all branches of elec. contracting including estimating, field engg. and purchasing. Have been in complete charge of elec. work in various large building projects in New York City. A-850.

Design and Development

E.E. GRAD., 35, single, mfg., maintenance, operation, designing experience. Inventions. Foreign languages. Desires responsible position with mfg. industry. (Development or production. Transformers; elec. locomotives; control, etc.) Location, immaterial; eastern preferred. D-452.

FORMER CORNELL INSTRUCTOR IN MACHINE DESIGN for 4 years. Allis-Chalmers designer and checker 5 years, M.E. and E.E. deg., shop apprenticeship and miscellaneous experience, 32, single. Desires teaching or engg. opportunity. Salary open. D-122.

DESIGN ENGR., col. grad., 38, married, citizen; 6 yr. elec. plant construction, wide experience all features design of pwr. and substations and industrial light and pwr., 3 yr. field experience as tester and supervisor. Desires position with utility, engg., or construction firm. Available immediately location, immaterial. D-482.

ELEC.-MECH. ENGR. with metallurgical knowledge. Col. grad. with post-graduate study, 30, married. Westinghouse design training. 6 yr. experience design elec. circuits and mechanical details of control apparatus, specialized in elevator equipment. Interested in alloy welding research. Location, immaterial. Available on short notice. C-9638.

E.E., GRAD., M.I.T. 1925, 30, married, 6 yr. utility design and engg. Capable complete elec. design steam, hydro station, high-, low-voltage