

their good nature than as having any great scientific value from the standpoint of our problem.

EDWIN G. DEXTER.

UNIVERSITY OF ILLINOIS.

*MEMBERSHIP OF THE AMERICAN  
ASSOCIATION.*

THE following have completed their membership in the American Association for the Advancement of Science during the month of July:

Frank Anderson, Mining Engineer, 255 East 2nd St., Salt Lake City, Utah.

William S. Andrews, Electrical Engineer, care of General Electric Co., Schenectady, N. Y.

Marshall H. Bailey, M.D., 47 Brattle St., Cambridge, Mass.

Professor Solon I. Bailey, Associate Professor of Astronomy, Harvard College Observatory, Cambridge, Mass.

Wm. C. Banks, Electrician, Gordon Battery Co., New York, N. Y.

Philip P. Barton, Superintendent Niagara Falls Power Co., 127 Buffalo Ave., Niagara Falls, N. Y.

James P. Baxter, President Maine Historical Society, Portland, Me.

Josiah H. Benton, Jr., Lawyer, Ames Building, Boston, Mass.

Clarence H. Blackall, Architect, 1 Somerset St., Boston, Mass.

Joseph E. Blackburn, State Dairy and Food Commissioner, Box 231, Columbus, O.

Miss Charlotte Bowditch, Pond St., Jamaica Plain, Mass.

Edward C. Briggs, Professor of Dental Materia Medica and Therapeutics, Harvard Medical School, Boston, Mass.

Paul T. Brodie, Professor of Mathematics, Clemson College, S. C.

Rev. Earle A. Brooks, 161 Laidley St., Charleston, W. Va.

Joseph S. Brown, 241 South 5th St., Reading, Pa.

Luther Burbank, Horticulturist, Santa Rosa, Cal.

I. Tucker Burr, Jr., Banker, Readville, Mass.

Irvin Butterworth, Denver Gas and Electric Co., Denver, Colo.

Charles T. Carnahan, Mining Engineer, Equitable Building, Denver, Colo.

Dr. Franklin R. Carpenter, Mining Expert, 1420 Josephine St., Denver, Colo.

Ermine C. Case, Professor of Chemistry and Geology, State Normal School, Milwaukee, Wis.

Ernest P. Clark, 229 W. 18th St., New York, N. Y.  
Solomon S. Cohen, M.D., 1525 Walnut St., Philadelphia, Pa.

Professor Theodore B. Comstock, Mining and Metallurgical Engineer, 534 Stimson Building, Los Angeles, Cal.

Robert A. Cooley, Zoologist and Entomologist, Montana Agricultural College, Bozeman, Mont.

A. Beekman Cox, Civil Engineer, Cherry Valley, N. Y.

Hugh W. Crouse, M.D., Victoria, Texas.

Clayton E. Crafts, Lawyer, 5433 Washington Boulevard, Chicago, Ill.

John F. Crowell, Bureau of Statistics, Treasury Department, Washington, D. C.

Dr. Charles W. Dabney, President of University of Tennessee, Knoxville, Tenn.

Isaac N. Danforth, M.D., 70 State St., Chicago, Ill.

Francis H. Davenport, M.D., 419 Boylston St., Boston, Mass.

Major George M. Derby, Corps of Engineers, U. S. A., 3232 Prytania St., New Orleans, La.

Samuel G. Dixon, M.D., Bacteriologist, Academy of Natural Sciences, 1900 Race St., Philadelphia, Pa.

Russell Duane, Lawyer, Box 193, Northeast Harbor, Me.

Henry B. Duncanson, Professor of Biology, State Normal School, Peru, Nebr.

E. Dysterud, Electrical Engineer, Monterey, Mexico.

Richard H. Edmonds, Editor of *Manufacturers' Record*, Baltimore, Md.

Anton F. Eilers, Mining Engineer and Metallurgist, 751 St. Marks Ave., Brooklyn, N. Y.

Frederic A. Emmerton, 9 Bratenahl Building, Cleveland, Ohio.

John W. Finch, State Geologist, Victor, Colo.

Washington E. Fischel, M.D., 2647 Washington Ave., St. Louis, Mo.

Walter C. Fish, General Electrical Co., Lynn, Mass.

James S. Foote, M.D., Professor of Histology, Creighton Medical College, Omaha, Nebr.

Professor Chas. K. Francis, Adjunct Professor of Chemistry, Georgia School of Technology, Atlanta, Ga.

Charles W. Frederick, Computer, United States Naval Observatory, Washington, D. C.

Augustus H. Fretz, Doylestown, Pa.

Arthur L. Fuller, Brunner, Texas.

Edward L. Fullmer, Professor of Natural Science, Dakota University, Mitchell, S. D.

Robert B. Fulton, Chancellor, University of Mississippi, University, Miss.

George R. Gaither, Ex-Attorney-General of Maryland, 1310 Continental Building, Baltimore, Md.

Miss Emily R. Gregory, Ph.D., Biological Laboratory, S. Harpswell, Maine.

General Eugene Griffin, First Vice-president General Electrical Company, 44 Broad St., New York, N. Y.

Lyman Hall, President of Georgia School of Technology, Atlanta, Ga.

Judson B. Ham, Teacher of Natural Science, State Normal School, Johnson, Vt.

Dr. Henry J. Harnly, Professor of Biology, McPherson College, McPherson, Kan.

Dr. Chauncey G. Hellick, Architect and Engineer, 203 Washington St., Chicago, Ill.

Richard Hermann, Secretary Institute of Sciences and Arts, Dubuque, Ia.

Adolph Herthel, Banker, 1739 Waverly Place, St. Louis, Mo.

John C. Higdon, Lawyer and Mechanical Engineer, 605 Union Trust Building, St. Louis, Mo.

Frederick J. Hillig, S.J., Professor of Sciences, Canisius College, Buffalo, N. Y.

Miss Caroline J. Hitchcock, Teacher, High School, Meriden, Conn.

Thomas E. Hodges, Professor of Physics, State University, Morgantown, W. Va.

Christian B. Hoffman, Enterprise, Kan.

Herman L. Holbrow, Electrical Engineer, Morro Villa, 17th Ave., Bath Beach, Brooklyn, N. Y.

Dr. Gilbert L. Houser, Professor of Animal Morphology and Physiology, University of Iowa, Iowa City, Iowa.

Michael W. Jacobs, Lawyer, Harrisburg, Pa.

Wm. J. Jenks, Electrical Engineer, 120 Broadway, New York, N. Y.

Wm. A. Johnston, Manufacturer, Prince Bay, Borough of Richmond, N. Y.

Jacob A. Kammerer, 87 Jameson Ave., Toronto, Canada.

Edward T. Keim, Superintendent American District Telegraph Co., 1447 Lawrence St., Denver, Colo.

Dr. John F. Kelly, Consulting Electrical Engineer, 284 West Housatonic St., Pittsfield, Mass.

Dr. Norton A. Kent, Assistant in Spectroscopy, Yerkes Observatory, Williams Bay, Wis.

S. L. G. Knox, Engineer of Draft Department, General Electrical Co., Schenectady, N. Y.

Adolph Koenig, M.D., Editor *Pennsylvania Medical Journal*, 122 Ninth St., Pittsburg, Pa.

Dr. Arthur Lachman, Professor of Chemistry and Dean of College of Science and Engineering, University of Oregon, Eugene, Ore.

Philip A. Lange, Superintendent Westinghouse Electrical and Manufacturing Co., Pittsburg, Pa.

Francis V. T. Lee, Electrical Engineer, 31 and 33 New Montgomery St., San Francisco, Cal.

Dr. Milton J. Lichty, Physician and Surgeon, East Market St., Alliance, O.

John Littlefield Tilton, Professor in Simpson College, Indianola, Ia.

James Lyman, Assistant Engineer, General Electrical Co., 1047 Monadnock Building, Chicago, Ill.

Henry McCalley, Chief Assistant State Geologist, University, Ala.

C. A. H. McCauley, Colonel and Deputy Quartermaster-General, United States Army, Manila, P. I.

Charles H. McMahan, Mining Engineer, Sombrometer Mining Co., Sombrometer, Zacatecas, Mexico.

John L. Malm, Cyanide and Mining Expert, First National Bank Building, Helena, Mont.

Miss Nellie M. Mason, Teacher of Science in Abbot Academy, Andover, Mass.

Ellwood V. Matlack, Secretary and Manager, Laclede Power Co., St. Louis, Mo.

Earle A. Merrill, 26 Courtland St., New York, N. Y.

Russell L. Morris, Professor of Civil and Mining Engineering, West Virginia University, Morgantown, W. Va.

Lycurgus R. Moyer, Civil Engineer, Montevideo, Minn.

John Neilson, Larchmont, N. Y.

John C. Olmsted, Landscape Architect, 16 Warren St., Brookline, Mass.

Robert Treat Paine, President Associated Charities of Boston, 6 Joy St., Boston, Mass.

C. Wellman Parks, U. S. N., Civil Engineer, Bureau of Navigation, Washington, D. C.

Fred S. Pearson, Consulting Engineer, Room 840, Cable Building, 621 Broadway, New York, N. Y.

Niels F. Petersen, Teacher, Plainview, Nebr.

Sidney Peterson, Teacher of Chemistry and Botany, Classical High School, Worcester, Mass.

Wm. J. Phelps, Manager the Phelps Co., Mfg. Hylo Inc. Lamps, Detroit, Mich.

Sloan J. Pierce, Geology, 512 Hickox Building, Cleveland, Ohio.

Alexander Pratt, Jr., 26 Bunnell St., Bridgeport, Conn.

John E. Randall, Superintendent and Electrical Engineer, Columbia Inc. Lamp Co., 4960 Lotus Ave., St. Louis, Mo.

Edwin W. Rice, Jr., General Electrical Co., Schenectady, N. Y.

William Henry Richmond, Coal Mining, 3425 North Main Ave., Scranton, Pa.

Dr. Theodore R. Running, Professor of Mathematics and Natural Sciences, St. Olaf College, Northfield, Minn.

Miss Eliza D. Sackett, Cranford, N. J.

Mariano L. Schiaffino, Chief Electrical Engineer of 'Campania de Luz de Guadalajara,' Belen, No. 2, Apartado 260, Guadalajara, Mexico.

Lawrence F. Schmeckebier, Ph.D., U. S. Geological Survey, Washington, D. C.

Samuel C. Shaffner, Engineer, Mobile Gas Light and Coke Co., Mobile, Ala.

Friench Simpson, Jr., Medical Student, Columbus, Texas.

George P. Singer, Professor of Physics, Central State Normal School, Lock Haven, Pa.

Dr. Robert L. Slagle, President State School of Mines, Rapid City, S. D.

Edwin E. Slosson, Professor of Chemistry, University of Wyoming, Laramie, Wyo.

Martin Smallwood, Professor of Biology and Geology, Allegheny College, Meadville Pa.

C. C. Sprague, 1900 Locust St., St. Louis, Mo.

William Stanley, Great Barrington, Mass.

Dr. Halbert S. Steensland, Director of Pathological Laboratory, College of Medicine, Syracuse, N. Y.

Frederick G. Strong, Box 959, Hartford, Conn.

H. A. Surface, Professor of Zoology, Pennsylvania State College, State College, Pa.

James Taussig, Jamestown, R. I.

Wilber J. Teeters, Instructor in Pharmacy, State University, Iowa City, Iowa.

Wm. Mayo Venable, Civil and Electrical Engineer, 713 Hennen Building, New Orleans, La.

Dr. Alex. S. von Mansfelde, 'Quality Hill,' Ashland, Nebr.

Frederick K. Vreeland, Electrical Engineer, Box 1877, New York, N. Y.

Miss Kate Elizabeth Williams, 1450 Pearl St., Denver, Colo.

Wm. C. Woodward, Consulting Electrical Engineer, Union R. R. Co., Providence, R. I.

Alfred F. Wuensch, 1556 Detroit St., Denver, Colo.

#### SCIENTIFIC BOOKS.

##### RECENT BOOKS ON PHYSICS.

*Natural Philosophy for General Readers and Young People.* Translated from Ganot's 'Cours élémentaire de physique,' by E. ATKINSON. Ninth edition, revised by A. W. REINHOLD. Longmans, Green & Co. 1900. Pp. 752.

*Elements of Physics.* By C. HANFORD HENDERSON and JOHN F. WOODHULL. D. Appleton & Co. 1900. Pp. 388.

*A Brief Course in General Physics.* By GEORGE A. HOADLEY. American Book Company. 1900. Pp. 463.

*One Thousand Problems in Physics.* By WILLIAM H. SNYDER and IRVING O. PALMER. Ginn & Co. 1900. Pp. 142.

*A Manual of Laboratory Physics.* By H. M. TORY and F. H. PITCHER. John Wiley & Sons. 1901. Pp. 288.

*Advanced Exercises in Practical Physics.* By ARTHUR SCHUSTER and CHARLES H. LEES. England, Cambridge University Press; New York, The Macmillan Company. 1901. Pp. 368.

It was in 1863 that Dr. Atkinson first put before English readers his excellent translation of Ganot's 'Éléments de Physique,' a book which quickly won favor by its good arrangement and lucidity. In the first edition he graciously apologized for the use of the metric system. It has passed through fifteen or more editions since its introduction. A demand soon arose for the more elementary course by the same French author, as a text-book for the middle and upper classes of schools preparatory to college. The popularity of this is manifested by the appearance now of its ninth edition, a considerable part of which had been prepared for the press before the death of Dr. Atkinson. The present volume has all the excellences of its predecessors, the illustrations being abundant, and some of them possibly a trifle too expensive. Colored lithographs of metallic spectra and of Geissler tube discharges were formerly fashionable, but in a general treatise to-day they seem almost out of date. For the general reader it would be hard to find a more pleasant and satisfactory book than this volume. For American school purposes, however, it is too diffuse; and it seems adapted only for recitatorial purposes where oral answers are given to questions relating to descriptive details and general principles. Physics is nothing if not a quantitative science. This idea is best instilled into the elementary student, even though his mathematical attainments be not sufficient to warrant the use of complex problems.

The present volume illustrates the difficulty of maintaining a text-book up to date by slight modifications and additions applied in succession to a long series of new editions. As years pass on, the necessity for omissions becomes as