

CONCERN FOR THE HISTORY OF SCIENCE AT MEETINGS OF THE OHIO ACADEMY OF SCIENCE, 1891-1966, WITH AN ANALYSIS OF THE PAPERS^{1, 2}

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ABSTRACT

By the 75th anniversary of The Ohio Academy of Science in 1966, a total of 116 papers had been read at annual meetings on the history of science. Measured by numbers of papers presented, botanists have shown the greatest interest and activity in the historical aspect, while zoologists have been second, with increasing concern by other scientists generally in recent years. With 16 papers presented at a Special Session for the History of Science in 1966, the grand total of 132 papers prepared by 99 authors, fall into 13 categories as follows: biographical studies; history of organizations and institutions; historical development of special fields of science; history of technology, medicine, Ohio natural resources, ethnic groups and social history, plant collections, science education, places of scientific interest, science literature, and scientific instruments; and the history of science in general.

Over the past 75 years of The Ohio Academy of Science, reasonable attention has been given to the history of science. A total of 116 papers dealing with some historical aspect of science has been presented in the general and regularly scheduled sections at 57 per cent of the annual meetings. For a period of 13 years (1896-1908), there were no papers of a historical nature. Since that time any gap between historical reports has not been more than three years. The number of papers has ranged from none to eight each year, with an average of 1.5 papers per year. The years of greatest participation were: eight in 1958, seven in 1915, and six each in 1964 and 1965. In 1966 a special session for the history of science was held as part of the 75th anniversary celebration, at which time 16 papers were presented. With an increasing interest in this discipline, special sessions for the history of science at convenient intervals are planned for future meetings of the Academy. It is hoped that eventually the Academy may organize a permanent Section for the History of Science.

Papers of a historical nature have been read in every section except for Mathematics and Psychology, both of which have had a brief active existence, and the Section of Genetics, which is of very recent origin. The Plant Sciences Section has shown the greatest interest, with a total of 23 papers presented; the second greatest came from the Section of Zoology, with 14 papers.

In the three-fourths of a century of its existence, the Academy has had only two individuals serving as Historian: William R. Alexander, 1941-1954, and Ralph W. Dexter, 1958-1967; in April, 1967, the position of Academy Historian was transferred to Ronald L. Stuckey. Members of the Academy have also contributed to the programs of the International Congress for the History of Science, the History of Science Society, the Midwest Junto for the History of Science, the Ohio Academy of Medical History, and the Handerson Medical History Society (Cleveland). During the past 75 years of the Ohio Academy of Science, 99 authors prepared 132 contributed papers, invitational lectures, and presidential addresses which were historical in their approach. These titles are listed below, grouped into 13 categories. For the purpose of analysis, each one is listed only once, under its primary concern, although some papers may overlap two or more categories. Authors are listed in parentheses.

¹This paper is based upon reports given by the Academy Historian-Archivist at a Special Session for the History of Science held April 22, 1966 at The Ohio State University and April 21, 1967 at the University of Dayton.

²Manuscript received April 15, 1967.

ANALYSIS OF PAPERS ON THE HISTORY OF SCIENCE

- I. Biographical Studies (36)
- A. General Science
 Pioneers of Science in Ohio (T. C. Mendenhall, 1914)
 Men of Science (J. A. Culler, 1921)
 Ohio Members, National Academy of Sciences (E. M. Miller, 1944)
- B. General Natural History
 Samuel P. Hildreth (H. R. Eggleston, 1929; R. L. Walp, 1966)
 Jared P. Kirtland (F. C. Waite, 1930; G. M. Curtis, 1941)
- C. Plant Sciences
 Early Ohio botanists (W. A. Kellerman, 1895)
 Luther Burbank (G. D. Smith, 1909)
 Milo G. Williams (M. B. Church, 1933 and 1936)
 Thomas F. Moses (M. B. Church, 1934)
 John H. Schaffner (A. E. Waller, 1940)
 André Michaux (A. E. Waller, 1951)
 Manasseh Cutler (A. H. Blickle, 1953)
 Leslie L. Pontius (W. G. Gambill, Jr., 1953)
 Carl Linnaeus (Alan Graham, 1965)
- D. Zoology
 Otto Buetschli (W. J. Kostir, 1934)
 Edward S. Morse (R. W. Dexter, 1965)
 F. L. Landacre (L. F. Edwards, 1966)
- E. Microscopy
 Gen. J. D. Cox (H. I. Hellwig and J. P. Visscher, 1941)
- F. Paleontology
 Col. Charles Whittlesey (R. L. Walp, 1954)
- G. Geology
 Men of Geology (J. W. Wells, 1947)
 Edward Orton (A. F. Foerste, 1927)
 W. W. Mather (J. A. Bownoche, 1927)
 John S. Newberry (L. G. Westgate, 1942)
 William Keating (G. W. White, 1961)
- H. Medical Sciences
 Gov. Edward Tiffin (L. F. Edwards, 1947)
- I. Physics
 Hendrick A. Lorentz (Maximilian Braam, 1928)
 James Clark Maxwell (Elizabeth Wolfe, 1966)
- J. Chemistry
 Berthold Schwarz (R. E. Oesper, 1939)
 John Dalton (W. L. Evans, 1940)
 T. G. Wormley (W. MacNevin, 1941)
- K. Anthropology
 Georg Simmel (K. H. Wolff, 1958)
 Emile Durkheim (R. C. Hinkle, 1958)
 Frederic W. Putnam (R. W. Dexter, 1963)
- II. History of Organizations and Institutions (24)
 The Ohio Academy of Science (W. R. Lazenby, 1915; J. P. Porter, 1940;
 A. E. Waller, 1966; R. W. Dexter, 1966)
 Old-World Botanical Gardens (A. E. Waller, 1923)
 Chemistry Department of Ohio University (J. R. Morton, 1947; W. D.
 Huntsman, 1965); of Capital University (K. G. A. Busch, 1950); of
 Miami University (H. C. Brill, 1951); of Central State College (E. O.
 Woolfolk, 1963); of Western Reserve University (Ernest Yeager, 1964)
 Sections of The Ohio Academy of Science (R. W. Dexter, 10 papers, 1958-62)

- The Ohio State University Biological Club (A. E. Waller, 1958)
 The Ohio State University Botanic Journal Club (A. E. Waller, 1964)
 Ohio College Biology Teachers Conference (A. S. Bradshaw, 1962)
- III. Historical Development of Special Fields of Science (24)
 Circulation of Blood (W. F. Mercer, 1910)
 Advances in Geology (L. G. Westgate, 1911)
 Quarter-century Progress (1890-1915) in: Zoology (E. L. Rice, 1915);
 Botany (Bruce Fink, 1915); Geology (Frank Carney, 1915); Physics
 (F. P. Whitman, 1915); Chemistry (W. McPherson, 1915); Archaeology
 (G. F. Wright, 1915)
 Geography in America (N. M. Fenneman, 1939)
 General Physics (L. W. Taylor, 1941)
 Glacial Theory (G. W. White, 1947)
 Anthropology and Folklore (F. L. Utley, 1948)
 Land Survey Systems in Quebec (J. T. Maddox, 1948)
 Entomology (Herbert Osborn, 1952)
 Astronomy in Cleveland (J. J. Nassau, 1954)
 Optical Research by Michelson, Morley, and Miller (R. S. Shankland,
 S. W. McCuskey, and F. C. Leone, 1954)
 Ohio Geography (R. C. Heppell, 1954; James Thompson, Clyde Smith,
 and Jack Francis, 1958)
 Cartography (G.-H. Smith, 1962; M. M. Walmsley, 1965)
 Molecular Biology (E. D. Rudolph, 1966)
 Paleobotany (A. H. Blickle, 1966)
 Behavioral Sciences (R. C. Davis, 1966; J. C. Burnham, 1966)
 American Sociology (R. C. Davis, 1966)
- IV. History of Technology (9)
 Berea Stone Industry (J. H. Smith, 1892)
 Transportation in Ohio (Frank Carney, 1910)
 Early Iron Manufacture in Ohio (Wilber Stout, 1930)
 Telephone (L. W. Taylor, 1934)
 Flute (D. C. Miller, 1938)
 Natural Gas in Finland (R. S. McClure, 1942)
 Water Works Equipment (Samuel Shenker, 1950)
 Industry in Middletown, Ohio (R. M. Webb, 1953)
 Electric Interurban in Ohio (Mildred Danklefsen, 1958)
- V. History of Medicine (8)
 Medical Entomology (Edna Mosher, 1919)
 Madstones (S. R. Williams, 1940)
 Asiatic Cholera in Ohio (S. R. Williams, 1942)
 Diagnostic Non-surgical Biliary Drainage (A. A. Hall, 1942)
 Grave Diggings (L. F. Edwards, 1949)
 Medical Education in Ohio (L. F. Edwards, 1952; N. P. Hudson, 1958;
 W. A. Manuel, 1962)
- VI. History of Ohio Natural Resources (7)
 Pest Hunts (E. L. Moseley, 1924)
 Wildlife Research (E. L. Wickliff, 2 papers, 1935; S. R. Williams, 1944;
 Emmett Conway, 1965)
 Timber Wolf (E. S. Thomas, 1944)
 Plants of Washington County (R. L. Walp, 1950)
- VII. History of Ethnic Groups and Social History (6)
 Prehistoric Indians of The Ohio Valley (R. G. Morgan, 1949)
 Moravian Indian Mission (A. C. Mahr, 1949)
 An Urban Church (B. L. Girkin, 1959)
 Social Research Before Civil War (R. C. Davis, 1964)

- "Two Cultures" and Victorian Science (S. B. Barnes, 1966)
 Science in 19th-Century Russia (A. A. Skerpan, 1966)
- VIII. History of Plant Collections (4)
 Milo G. Williams Herbarium (M. M. Johnson, 1930)
 John Samples, William Sullivant, and Milo G. Williams' Collections of
 Ohio Plants (R. L. Stuckey, 1963 and 1964)
 Ohio Valley Plant Collections (R. L. Stuckey, 1966)
- IX. History of Science Education (4)
 Physics Education (A. W. Smith, 1954; Jon Sticklen, 1966)
 Earth Sciences Education (P. W. Kirby, 1964)
 Boyle Lectures (J. J. Dahm, 1966)
- X. Historical Study of Places of Scientific Interest (4)
 Milan, Ohio (C. G. Shatzer, 1913)
 Antarctica (Paul Siple, 1942)
 Newark, Ohio (W. M. Harris, 1959)
 Galápagos Islands (J. R. Gorham, 1964)
- XI. History of Science Literature (3)
 Bibliography of Ohio Botany (W. A. Kellerman, 1892)
 Schleiden's "The Plant, a Biography," Edited by Alphonso Wood (E. D.
 Rudolph, 1965)
 Natural History in Earliest Science Journal of Midwest (P. A. Gerstner,
 1966)
- XII. History of Scientific Instruments (2)
 Microscope (F. C. Waite, 1933)
 Thermometer (E. H. Brown, 1933)
- XIII. History of Science in General (1)
 Progress of Science (G. W. Rightmire, 1930)

TITLES AND AUTHORS OF PAPERS AS GIVEN IN THE PUBLISHED PROGRAMS

General Science

1910. The development of transportation in Ohio. Frank Carney.
 1914. Some pioneers of science in Ohio. T. C. Mendenhall.
 1915. Historical sketch of the Ohio Academy of Science. William R. Lazenby.
 1921. Chronological view of men of science. J. A. Culler.
 1930. Progress of science. George W. Rightmire.
 1933. The early history of the microscope. F. C. Waite.
 1940. History of The Ohio Academy of Science. J. P. Porter.
 1944. Ohio members of the National Academy of Sciences, 1863-1943. Ethel Melsheimer
 Miller.
 1966. Francis Leroy Landacre (1867-1933) and his legacy to science. Linden F. Edwards.
 Samuel Prescott Hildreth—pioneer scientist and his correspondents. Russell Lee Walp.
 The "Two Cultures" issue and Victorian science. Sherman B. Barnes.
 The borderlands of science in nineteenth century Russia. Alfred A. Skerpan.
 Prospects for the history of the behavioral sciences. Robert C. Davis.
 The significance of the origins of behaviorism. John C. Burnham.
 Science and religion in the early Boyle lectures: the mind-body problem. John J. Dahm.
 Natural history in the midwest's earliest scientific journal. Patsy A. Gerstner.
 The Academy of Science begun. Adolph E. Waller.
 Concern for the history of science at meetings of The Ohio Academy of Science, 1891-
 1966. Ralph W. Dexter.

General Biology

1929. S. P. Hildreth: pioneer biologist of Ohio. H. R. Eggleston.
 1930. Jared Potter Kirtland: a biographical sketch and tribute. F. C. Waite.
 1936. Champaign's guardian of biological history. Margaret B. Church.
 1941. Jared Potter Kirtland: pioneer naturalist of the Western Reserve. George M. Curtis.
 1958. The Ohio Academy and the Biology Club. Adolph Waller.
 1962. The Ohio College Biology Teachers Conference—a brief history. A. S. Bradshaw.
 1966. Molecular biology: retrospect and prospect. Emanuel D. Rudolph.

Zoology

1910. History of the discovery of the circulation of blood. W. F. Mercer.
 1915. Progress of Zoology in past quarter Century. Edward L. Rice.
 1934. Otto Buetschli and his contributions to biology. W. J. Kostir.
 1941. The scientific work of Gen. J. D. Cox, with demonstrations of his microscopes and slides. H. Isabelle Hellwig and J. Paul Visscher.
 1944. Wild animals found in southwestern Ohio about 1800. Stephen R. Williams. Some early Ohio records of the timber wolf. Edward S. Thomas.
 1952. The development of entomological science. Herbert Osborn.
 1958. A brief history of The Ohio Academy of Science, Section of Zoology. Ralph W. Dexter.
 1964. Darwin's Galápagos. J. R. Gorham.
 1965. Edward S. Morse as a zoological draughtsman. Ralph W. Dexter.

Plant Sciences

1892. Bibliography of Ohio botany. W. A. Kellerman.
 1895. The early Ohio botanists. W. A. Kellerman.
 1909. The plant productions of Burbank. G. D. Smith.
 1915. Progress of botany in past quarter century. Bruce Fink.
 1923. Some old-world botanic gardens. A. E. Waller.
 1930. The herbarium of Milo G. Williams, a pioneer botanist of Ohio. Minnie M. Johnson.
 1933. Milo G. Williams, botanist (1804-1880). Margaret B. Church.
 1934. Thomas F. Moses, Ohio scientist, from 1870 to 1894. Margaret B. Church.
 1940. John H. Schaffner—a resumé. A. E. Waller.
 1950. Riddell's "Notice of vegetable productions growing spontaneously in Washington Co., Ohio" (1832). R. Lee Walp.
 1951. Michaux and the Ohio Valley. Adolph E. Waller.
 1953. Manasseh Cutler—botanist. A. H. Blickle. Contributions of Leslie L. Pontius to systematic botany in Ohio. William G. Gambill, Jr.
 1954. Col. Charles Whittlesey's correspondence with Dr. S. P. Hildreth describing a strange fossil (*Whittleseya*). R. Lee Walp.
 1958. A brief history of The Ohio Academy of Science, Section of Plant Sciences. Ralph W. Dexter.
 1963. The John Samples collection of vascular plants from lower southwestern Ohio (1836-1840). Ronald L. Stuckey.
 1964. The Ohio State University Botanic Journal Club. Adolph E. Waller. Some rare Ohio vascular plants in the historical collections of John Samples, William S. Sullivant, and Milo G. Williams. Ronald L. Stuckey.
 1965. A generally unknown Cincinnati edition of Schleiden's "The Plant, a Biography", edited by Alphonso Wood. Emanuel D. Rudolph. Linnaeus and the floristic relationship between eastern United States and eastern Asia. Alan Graham.
 1966. Ohio Valley plant collectors and collections before 1825. Ronald L. Stuckey. Excerpts from early Ohio paleobotanical history. Arthur H. Blickle.

Geology

1892. The development of the Berea stone industry. J. H. Smith.
 1922. Geological progress of 25 years. L. G. Westgate.
 1915. Progress of geology in past quarter century. Frank Carney.
 1927. Unveiling of portraits, with comments: W. W. Mather by J. A. Bownocker; Edward Orton by A. F. Foerste.
 1930. A sketch of early iron making in Ohio. Wilber Stout.
 1942. Newberry on Ohio glaciation, 1869—a study in scientific method. L. G. Westgate.
 1947. The personalities of geology. J. W. Wells. Who was the father of the glacial theory? George W. White.
 1959. A brief history of The Ohio Academy of Science, Section of Geology. Ralph W. Dexter.
 1961. William Keating's geological observations in Ohio in 1823. George W. White.

Medical Sciences

1919. Five years of progress in medical entomology. Edna Mosher.
 1940. Original advertisement for madstone: sample of different types of madstones. Stephen R. Williams.
 1942. A localized epidemic of Asiatic cholera on the Paddys Run (Butler Co., Ohio) in 1834. Stephen R. Williams. The science of diagnostic non-surgical biliary drainage: history and practical applications. Augustus A. Hall.
 1947. Gov. Edward Tiffin: pioneer doctor, lay preacher, statesman. L. F. Edwards.
 1949. "Grave doings" in Ohio in the 19th century. L. F. Edwards.

1952. The evolution of medical education in Ohio (1787-1952). L. F. Edwards.
 1958. Master of medical science at The Ohio State University. N. Paul Hudson.
 1959. A brief history of The Ohio Academy of Science, Section of Medical Sciences. Ralph W. Dexter.
 1962. A summary of baccalaureate origins of medical graduates. W. A. Mannuel.

Physics and Astronomy

1915. Progress of physics in past quarter century. Frank P. Whitman.
 1928. Dr. Hendrik Antoon Lorentz: a tribute. Maximilian Braam.
 1933. The evolution of the thermometer. Earl H. Brown.
 1934. Untold chapters of the telephone story: the invention of the receiver. L. W. Taylor.
 1938. Evolution of the flute and the origin of the musical scale, with demonstrations. Dayton C. Miller.
 1941. The historical approach to general physics. L. W. Taylor.
 1954. Remarks on the history of astronomy in Cleveland. J. J. Nassau.
 The optical researchers of Michelson, Morley, and Miller. R. S. Shankland, S. W. McCoskey, and F. C. Leone.
 Physics in American universities: its growth and influence. A. W. Smith.
 1960. A brief history of The Ohio Academy of Science, Section of Physics and Astronomy. Ralph W. Dexter.
 1966. James Clerk Maxwell, experimental physicist. Elizabeth Wolfe.
 Quantum theory in physics textbooks. Jon Sticklen.

Geography

1913. Geographic influences in the history of Milan, Ohio. C. G. Shatzer.
 1939. The development of geography in America. Nevin M. Fenneman.
 1942. American discoveries of the Pacific Quadrant of Antarctica since 1928. Paul Siple.
 Historical geography of Finland natural gas boom. Russell S. McClure.
 1948. French and English land survey systems in Quebec, Canada, south of the St. Lawrence. Joseph T. Maddox.
 1953. The development of industry in the Middletown, Ohio, area from 1850 to World War I. Robert M. Webb.
 1954. The geography of Ohio as presented in Morse's Gazetteer of 1804. R. C. Heppell.
 1958. Aspects of Ohio geography (1875). James Thompson, Clyde Smith, and Jack Francis. Some aspects of a bygone form of Ohio's transportation—the electric interurban. Mildred Danklefsen.
 1959. Changing settlement patterns of the Newark area, 1800-1950. William N. Harris.
 1960. A brief history of The Ohio Academy of Science, Section of Geography. Ralph W. Dexter.
 1962. A cartographic cavalcade. Guy-Harold Smith.
 1965. Geographic importance of the Heckewelder map of 1796. Mildred M. Walmsley.

Chemistry

1915. Progress of chemistry in past quarter century. William McPherson.
 1939. Berthold Schwarz and the invention of gunpowder and firearms. Ralph E. Oesper.
 1940. A present day examination of the postulates of John Dalton. William L. Evans.
 1941. T. G. Wormley (1826-1897), early American scientist and first microchemist in America. W. MacNevin.
 1947. History of the Department of Chemistry at Ohio University. J. R. Morton.
 1950. History of the Department of Chemistry at Capital University. K. G. A. Busch. Advances in water works equipment and practice during the past 15 years. Samuel Shenker.
 1951. History of the Chemistry Department of Miami University. H. C. Brill.
 1961. A brief history of The Ohio Academy of Science, Section of Chemistry. Ralph W. Dexter.
 1963. The Department of Chemistry of Central State College. E. O. Woolfolk.
 1964. Chemistry at Western Reserve University. Ernest Yeager.
 1965. Chemistry at Ohio University. William D. Huntsman.

Science Education

1961. Science education and The Ohio Academy of Science—an historical review. Ralph W. Dexter.
 1964. The past and future trends of earth science as a secondary school subject. Paul W. Kirby.

Anthropology and Sociology

1915. Progress of archaeology in the past quarter century. G. Frederick Wright.
 1948. Anthropology and folklore's second century. Francis L. Utley.

1949. Health conditions in the Moravian Indian Mission of Schonbrunn in the 1770's. A. C. Mahr.
Prehistoric Indians of the Ohio Valley region: a cultural and chronological survey. R. G. Morgan.
1958. Georg Simmel in 1958. Kurt H. Wolff.
Emile Durkheim in 1958. Roscoe C. Hinkle.
1959. A study of historical, demographic, and organizational change in an urban church. Billie Louise Girkin.
1962. A brief history of The Ohio Academy of Science, Section of Anthropology and Sociology. Ralph W. Dexter.
1963. Contributions of Frederic Ward Putnam to Ohio archaeology. Ralph W. Dexter.
1964. Roots of quantitative social research before the Civil War. Robert C. Davis.
1966. American sociology before Lester Ward: the prehistory of a discipline. Robert C. Davis.

Conservation

1924. Pest hunts in Wood County. E. L. Moseley.
1935. Ten years of wild-life research in Ohio. E. L. Wickliff.
1962. Conservation and The Ohio Academy of Science—an historical review. Ralph W. Dexter.
1965. Resource development—a forward look from 1755. Emmett Conway.
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