

A Brief History of Geography in Indiana

STEPHEN S. VISHER, Indiana University

Geography, a comprehensive science, embraces several subdivisions which often are studied individually, for example, physical geography, climate, plant geography, economic geography, political geography, historical geography, conservation.

Numerous people have contributed to the history of geography in Indiana. In this necessarily brief article (limited to about 5,000 words) slight mention is made of work by non-professional geographers. The excellent volume *Natural Features of Indiana* (2) contains many splendid chapters, some of which are cited here as particularly significant.¹ Also cited are numerous additional volumes and articles.

This article is primarily a discussion of contributions of some professional geographers to the history of Indiana's geography. It is a sort of supplement to *Indiana Scientists* (9) where, in addition to brief sketches of about 5,000 scientists who were born, partly trained or employed in Indiana, are presented summaries by institutions and subjects of the history of various sciences in Indiana, including geography, geology, conservation, soils, and biology.

Prior to World War I, although many professionally trained geologists, biologists, etc., were employed in Indiana, there was no professional geographer. The first Ph.D. in Geography, Visher, came to I.U. in 1918.

During World War II, three Ph.D.s in Geography taught briefly at I.U. (Chauncy Harris, 1939-41; Ed Ullman, 1941-42; Otis Freeman 1943-46.) Indiana's first Department of Geography was established at I.U. in 1946. Very little formal geography has ever been taught at Purdue or Notre Dame and that not by professional geographers.

There still (1966) is no second Department of Geography in Indiana although some geography is taught at numerous institutions, and several Ph.D.s in Geography have taught at Ball State University and Indiana State University. However, the geographers at Ball State teach in a "Division of Social Studies" while those at Terre Haute teach in a "Department of Geography, Geology and Astronomy." Valparaiso University currently offers 31 courses in geography in its Department of Geography and Geology.

Land Survey

Prior to the federal survey into north-south arranged townships, ranges and sections, small parts, especially near Vincennes and Clarksville, were surveyed into rectangles which are not north-south. These are shown and discussed by A. F. Schneider in the *Proceedings* (1964) and *Natural Features*. The first moderately detailed description of the state was a 130-page *Gazetteer* published in 1825 by John Scott, an able journalist.

1. Referred to hereafter as *Natural Features*.

An excellent account of the early land survey by men employed in carrying out Thomas Jefferson's plan for official surveys of the public land northwest of the Ohio River is presented in Lindsey's introductory chapter in *Natural Features*. A more detailed discussion is the large volume by Pence and Armstrong (4).

The U.S. Geological Survey has done much mapping in Indiana, commencing with preliminary surveys made by two sons of the famous Robert Owen, founder of the New Harmony socialist settlement of 1825. David Dale Owen's survey was made in 1837-46 and Richard's in 1859-64 (9). Leverett and Taylor authored a 529-page monograph largely on Indiana in 1915. (1) More recently, the U.S.G.S. has made detailed maps of many parts of the state, of which numerous quadrangles and several geologic folios have been published.

Soil maps of much of Indiana have been made by the U.S. Bureau of Soils and Purdue University on a cooperative basis. T. M. Bushnell of Purdue was active in this work 1918-45. His summary in *Indiana Scientists* (9) and his *Story of Indiana Soils* (1944) merit mention here. The chapter on "Soils" by H. P. Ulrich in *Natural Features* also merits mention.

Clyde A. Malott of I.U. was active in mapping various aspects of the physiography of Indiana 1919-30 and wrote the physiography section of *Handbook of Indiana Geology*. (3) It is partly a refinement for northern and central Indiana of Leverett and Taylor's monograph, supplemented by much on southern Indiana, which area is not dealt with by the U.S. geologists. Malott also studied extensively Indiana's Lost River area and contributed a historical section to *Indiana Scientists*. (9).

W. J. Wayne of the Indiana Geological Survey has been decidedly active since 1940, especially concerning glacial features of Indiana. His chapter "Ice and Land" in *Natural Features* is highly illuminating, and he contributes considerable to several other chapters of this volume, and elsewhere. Dr. Wayne also has been active as to land-use planning in Monroe County as to Lake Monroe, now Indiana's largest lake.

Alfred H. Meyer of Valparaiso University has studied since 1930 the northwestern corner of the state in considerable detail, mapping many aspects and changes in land use. The *Proceedings* of our Academy for 1945, 1955, 1956, 1958, 1961, and 1962 contain articles by him on the Calumet Region. The *Annals* of the Association of American Geographers (Sept. 1954 and Sept. 1956) contain several of his maps, diagrams and photos. The *Transactions* of the Michigan Academy of Sciences published lengthy articles by him on northwestern Indiana in 1935 and 1952.

Regionalization of Indiana

The most comprehensive study of regionalization of Indiana is by Visser in the *Annals* of the Association of American Geographers (Dec. 1948). There, 16 maps present river drainage basins; geologic regions; physiographic regions (types of topography); elevation regions; regions based on the amount of local relief; regions based on soil productivity; native vegetation regions; climatic regions; O. E.

Baker's agricultural regions; Purdue's farming types regions; regions based on dates of maximum population; regions based on amount of urbanization. There are brief descriptions of most of the regions and subregions, with citations to numerous sources of information about them. The final section is reprinted in our *Proceedings* (1948). Visser's *Economic Geography of Indiana* (6) and *Climate of Indiana* (8) also contain much on regionalization.

Brief descriptions by professional geographers include articles on "Major Cities of Indiana" by Otis W. Freeman in *Economic Geography* (1945) and on state parks in the *Proceedings* (1946) and two by T. F. Barton on "Comparisons Between Indiana Cities" in the *Proceedings* and three by J. Fraser Hart in the *Proceedings* on population contrasts, especially urban vs. rural.

Several chapters of *Natural Features* by non-geographers contain significant bits on regionalization. Examples are "Bedrock Geology" by Gutschick; "Physiography" by Schneider; "Soils" by Ulrich; "Lakes and Streams" by M. D. Hale; "Ground Water" by Bechert and Heckard; "Caves" by R. L. Powell; "Mineral Resources" by C. E. Wier and J. B. Patton; "Plant Communities" by R. O. Petty and M. T. Jackson.

Studies of Indiana's Weather and Climate

Indiana's weather and climate have been studied in many ways: 1) by persons who spent perhaps only a little time somewhere in the state, and reported their impressions in places which had some influence; 2) by other people who kept records. After the U.S. Weather Bureau was established in 1891, many individuals kept records with instruments supplied by the federal government, which published summaries of their daily and monthly reports. Hundreds of observers served thus faithfully day after day for decades, a few of them for more than fifty years. (*Climate of Indiana* (8) lists many who have served long.) 3) Other people studied the records. Of the successions of official representatives of the U.S. Weather Bureau stationed in Indianapolis, J. H. Armington, who served skillfully for decades, merits special mention.

The U.S. Weather Bureau expert in Washington, D.C., who served long making more useful the weather records which had accumulated was J. B. Kincer, author of many maps and articles and especially of much of the U.S. Department of Agriculture Yearbook: *Climate and Man*, 1941, a monumental work with considerable on Indiana.

Of geographers who studied Indiana's weather and climate, Visser contributed many articles on aspects of Indiana's weather and climate to the Academy's *Proceedings*, to numerous scholarly journals, to farm magazines, and more than 30 to the Indianapolis Sunday Star. *Climate of Indiana* (8) is widely rated as the most satisfying treatise on the climate of any state. The chapter on Bloomington's weather and climate is listed officially by the U.S. Weather Bureau as one of the five best discussions of the weather and climate of an American city.

Climatic Atlas of the United States (10) has nearly 1,000 maps each of which includes Indiana. It facilitates comparisons between

Indiana and other parts of the nation. "Climatic Contrasts in the United States" in *Scientific Monthly*, Sept. 1955, presents 15 maps selected from the Atlas, and considerable text which is not in the Atlas. That article is the fifteenth on aspects of the climate of the United States by Visser to appear in the *Scientific Monthly*. Each had numerous maps, which include Indiana, and considerable text.

"Indiana's Weather: Some Extremes and Advantages" in the *Proceedings* for 1953 presents a supplement to *Climate of Indiana*, whose data end with 1940. The last paragraph states approximately:

"When compared with other parts of the world, Indiana's weather and climate rank relatively high. No part of the world lacks serious weather and climate defects. Vast areas, during parts of the year at least, are much colder, hotter, wetter or drier, less satisfactory as to sunshine, winds and storms. The more one knows about the weather and climate of other regions, the better one realizes that Indiana's weather and climate (despite numerous and considerable imperfections) are comparatively suitable for civilized man. It is doubtful if one-eighth of the world fares better."

Two chapters in *Natural Features* contribute significantly to the better understanding of Indiana's weather and climate, Chapter 9 by the present U.S. Weather Bureau State Climatologist L. A. Schaal, and Chapter 10, "Bioclimate" by James E. Newman, both of Purdue's Department of Agronomy.

Social Geography

An aspect of human geography which has been specially studied in Indiana is that part of social geography which deals with the place of birth, education, and employment of people who somehow have become recognized as leaders. Since 1921 Visser has written several dozen articles on aspects of this subject in an effort to learn more about what conditions favor the production of leaders, who now are, of course, vitally important to the advancement of civilization. The *Geography of American Notables* considers numerous sorts of leaders, including many from Indiana. *Scientists Starred 1903-1943 in American Men of Science* (1947, Johns Hopkins University Press) includes much on Hoosiers. *Indiana Scientists* includes brief sketches of thousands of Indiana scientists and considerable information, including summaries of the contributions of various Indiana institutions (9).

The *Annals* of the Association of American Geographers published (March 1952) "An Aspect of the Social Geography of Indiana." An article in the Academy's *Proceedings*, 1962, "Indiana's Yield of Eminent People Compared with that of Nearby States," presents clear evidence that Indiana ranks lower than nearby states except Kentucky as the birthplace of the presidents of a dozen internationally recognized organizations.

A special aspect of social geography in Indiana are some contributions of Amos W. Butler (1860-1937) of Indiana's State Board of Charities, an eminent penologist. He instigated the official sterilization of defective people. (Indiana was the first American state to do this.) Butlerville, Indiana (adjacent to the state institution for mental patients)

is named after him. He authored *Indiana, A Century of Progress in the Development of Public Charities and Corrections* (1916) and *Birds of Indiana* (1897).

The excellent chapter "The Birds" in *Natural Features* is mentioned here especially as presenting abundant evidence of the great progress made since Butler's detailed 1897 study of *Indiana's Birds*.

Studies of Various Changes in Indiana

Many people, particularly those especially interested in history, have written on various changes which have occurred in Indiana. The Indiana Historical Society, with its numerous publications (partly financed by Eli Lilly), and the *Indiana Magazine of History* (edited and published by Indiana University) merit special mention. John Shepard Wright of Eli Lilly Co., and Will E. Edington of DePauw University have also contributed significantly in this field. Dr. Wright organized the Academy's History of Science section and persistently stimulated it. He also greatly aided financially in the preparation of *Indiana Scientists* and also of *Natural Features*. Dr. Edington prepared for the *Proceedings* obituary sketches of scores of former members of the Academy, wrote valuable sections of Chapter III of *Indiana Scientists*, (9) and also several historical articles published in the *Proceedings*.

Natural Features of Indiana (2) contains numerous valuable contributions to "Changes in Indiana." Already mentioned are some by its editor, A. A. Lindsey, in the introductory chapter. Wayne's chapter "Ice and Land"; Hale's "Lakes and Streams"; Bechert and Heckard's "Ground Water"; Wier and Patton's "Mineral Resources." "Plant Communities" by Petty and Jackson is another chapter already mentioned which has considerable on changes which have occurred in Indiana. The chapter on "Plant Diseases" by Ralph J. Green, Jr., also contains considerable about changes which have occurred.

J. V. Osmun and R. L. Giese's "Insect Pests of Forest, Farm and Home" clearly merits mention here as does the chapter "The Fishes" by Gammons and Gerking, and "Mammals" by Russell and Mumford. H. Kohnke and L. S. Robertson's chapter "Changing Patterns of Agriculture" is an especially thought-provoking summary of its subject. The same is true of the book's final chapter, T. E. Dustin's "Perspective."

A few geographers have contributed some significant studies on changes in Indiana since 1816. A. H. Meyer's work in northwestern Indiana has already been mentioned. B. H. Schockel wrote his Ph.D. thesis (1947) on changes in manufacturing in Evansville. J. E. Switzer wrote on "Indiana's Historical Geography" in the *Proceedings* (1942). Charles R. Dryer, M.D., at Indiana State Normal 1893-1913, contributed studies of Indiana's geology and regionalization. (He became president of the Indiana Academy in 1911 and of the Association of American Geographers in 1919.)

Geography of Indiana by Visser (5) and his *Economic Geography of Indiana* (6), *Geography of American Notables* (7), *Climate of Indiana* (8), and *Indiana Scientists* (9) each contain numerous bits on changes that have occurred in Indiana.

An article in the Academy's *Proceedings* by Visser dealing with total population changes 1840-1940 was published in 1942. One on contrasts in county population was published in 1944. Four articles in the *Proceedings* for 1925, 1926, 1934, 1938 dealt with changes in death rates in Indiana. The *Indiana Magazine of History* published four articles of Visser's: "Sources of Indianians of 1870" (1930); "Indiana Governors" (1938); "Sources and Dispersals of Indiana Population" (1942); and "Indiana's Towns and Cities" (1950). The *Annals* of the Association of American Geographers published (1956) "Changing Significance of Environmental Factors at Bloomington, Ind." Expanded, this article was republished in the Academy's *Proceedings* (1961). In brief, Bloomington was established in 1818 where it is in response to locational conditions which have been profoundly altered since then by the spread of population over the state, by the development of improved transportation facilities, and by the increased population and wealth of the state and its spread northward. Bloomington's location on a drainage divide in an area of rolling topography, which was decidedly significant in early years, has become far less valuable. That it was in a densely wooded area was somewhat disadvantageous for several decades during which most of the land was cleared for agriculture. However, the remaining forest became advantageous when the town's first sizable factory used much local lumber for furniture-making. When the nearby lumber supplies were largely depleted, the furniture factory could not compete with some of those of the South, and went out of business. Bloomington's location upon limestone was advantageous until the springs became infected. For some decades thereafter, many people got typhoid, and Bloomington had a relatively high death rate from typhoid. The limestone yielded choice building stone, especially 1890-1930, but before 1880 and since 1950 the stone was relatively unimportant. Agriculture was the chief source of livelihood of Bloomington's people during its first century, but soil erosion is relatively rapid in this unglaciated rolling land, with its often heavy rains. In recent decades, farming has greatly decreased. Since Indiana University became sizable (about 1920) it has yielded vastly more wealth than has local farming. After several decades with serious water-supply problems, a series of sizable dams have created an abundant water-supply as well as several recreational areas welcomed by the many people which the University now attracts.

Another geographic article by Visser which deals with highly important changes in Indiana is on "increasing the value of Indiana's human resources" (*Proceedings* 66:254-55). It points out how increased population, partly by immigrants from other areas, increased talent and permitted more diversification. Improvement in health aided notably (for the early decades of statehood much of Indiana was relatively unhealthful in summer partly because malaria was common in the many poorly drained areas). Better educational facilities supplied in recent decades have helped greatly, as did better transportation facilities; and better use of the soil, partly by much land drainage, particularly in central and north Indiana. Also important was increased use of the soil, timber, coal, oil, gas.

In other words, five major methods of increasing the efficiency of people in Indiana are: 1) by better education; 2) by curtailing premature deaths; 3) by increasing physical and mental vigor (not merely prolonging life); 4) by making available better tools with which to work; and 5) by improving incentives, goals, or objectives.

A chapter of *Natural Features* by Benjamin Moulton presents many interesting bits of evidence and suggestions as to population changes in Indiana.

Conservation or Resource Use Planning

Purdue University professors and associates in the extension division and in the U. S. Agricultural Experiment Station at Purdue have contributed notably to Conservation in Indiana. A series of bulletins present well various methods of better use of resources: Bull. 376 *Marginal Land in Southern Indiana*; 409 *Back to the Land in Southern Indiana*; 431 *Development of Previously Grazed Farmwoods*; 454 *Economy of Pastures on Limestone*; 473 *Management of Farms in South Central Indiana*; 515 *Adjustments Needed to Conserve Soil Resources*; Circular 306 *Trees for Recreation in Indiana*; and Cir. 331 *Forest Plantations, Their Establishment and Management*.

Purdue experts played significant roles with respect to three sizable bulletins issued by the State of Indiana Department of Public Instruction: *The Conservation of Soils*; *Conservation of Plants*; and *Conservation of Wildlife*.

The State Geologist for 1894-1911, Willis S. Blatchley (1859-1940) merits special mention partly because of the great breadth of his interests, his skill as a writer, his many worthy books, and his widespread educational influence. Dr. Blatchley and Dean Stanley Coulter (1853-1943) of Purdue and Richard Lieber, an Indianapolis businessman, helped greatly in the establishment of the State Department of Conservation in 1919, after failing in 1917. Under the inspiring leadership of Col. Richard Lieber (1869-1946) Indiana had, for a few years while he was director, the nation's finest state park service. Lieber is widely credited with "creating Indiana's state parks." His *America's Natural Wealth* (Harper, 1942) had considerable national influence. A Purdue professor, Howard H. Michaud, has conducted a summer training school in conservation at a state park and has contributed a valuable chapter on "Indiana's State Parks" to *Natural Features*.

Indiana University's contribution to conservation included teaching several large college classes every year until Visser retired in 1958 and since then by T. F. Barton, L. J. Guernsey and others. T. F. Barton wrote well on wiser planning as to artificial Lake Monroe and as to the Ohio River. A chapter by Visser appeared in a leading university conservation textbook in 1937, 1951, and 1965. A pamphlet, *Aids to the Student of Conservation* (1937), and several articles in various journals also appeared by the same writer.

Since its establishment in 1919, the state Department of Conservation has contributed notably in addition to the state parks already mentioned. The first state geologist appointed by the Department was

I.U.'s Prof. W. N. Logan (1869-1941). (Previous state geologists had been political.) Dr. Logan planned the *Handbook of Indiana Geology* (3) and wrote about half of this 1120-page volume, on economic geology.

The first state entomologist was Frank N. Wallace (1878-1966), who beside reducing insect damage, did much to increase public appreciation of Indiana's scenery and wildlife with the help of exceptionally fine color photos and attractive lectures. He also augmented public appreciation of the Indiana Academy of Science.

Indiana has had a succession of state geological surveys which contributed considerable knowledge as to the state and some of its resources, with many somewhat detailed studies of individual counties or groups of counties, and with repeated urging of the desirability of conservation of forest, soils, wildlife. A recent publication of the State Survey worthy of mention is *Wealth from the State Beneath Us* (1955).

State Forester Charles C. Deam (1865-1951) studied for many decades Indiana's vegetation exceptionally exhaustively. His *Flora of Indiana* (1940) is truly monumental.

Indiana University's School of Business has done considerable on economic resources of Indiana, notably its 14-volume *Indiana's Economic Resources and Potential* (1955, 1956).

Indiana University's Department of Geography issued in 1966 a special publication, *An Atlas of Southern Indiana*, by R. C. Kingsbury and others, which contains many excellent maps, photographs and brief texts, grouped under "The Physical Landscape," "History and Historic Towns," "Urban Southern Indiana," "Rural Southern Indiana," "State Parks," "State Forests," "Other Features." Detailed maps are given of most of southern Indiana's larger cities, and of the state parks of central and southern Indiana.

Literature Cited

1. Leverett, Frank, and F. B. Taylor. 1915. **The Pleistocene of Indiana and Michigan and the History of the Great Lakes.** U.S.G.S. Monograph 15.
2. Lindsey, A. A., ed. 1966. **Natural Features of Indiana.** Indiana Academy of Science, Indianapolis.
3. Logan, W. N., ed. 1922. **Handbook of Indiana Geology,** Indiana Department of Conservation, Publ. 21.
4. Pence, George, and Nellie Armstrong. 1933. **Indiana's Boundaries, Territory, State and County.** Indiana Historical Society, Indianapolis.
5. Visher, S. S. 1922. Geography of Indiana. In: Logan, Handbook of Indiana Geology (3).
6. ————. 1923. **Economic Geography of Indiana.** D. Appleton, N.Y.
7. ————. 1928. **Geography of American Notables.** Indiana University, Bloomington.
8. ————. 1944. **Climate of Indiana.** Indiana University, Bloomington.
9. ————. 1951. **Indiana Scientists.** Indiana Academy of Science, Indianapolis.
10. ————. 1954, 1966. **Climatic Atlas of the United States.** Harvard University Press.