



Arts and Sciences on the Early American Frontier

(Article begins on page 2 below.)

This article is copyrighted by History Nebraska (formerly the Nebraska State Historical Society).
You may download it for your personal use.

For permission to re-use materials, or for photo ordering information, see:

<https://history.nebraska.gov/publications/re-use-nshs-materials>

Learn more about *Nebraska History* (and search articles) here:

<https://history.nebraska.gov/publications/nebraska-history-magazine>

History Nebraska members receive four issues of *Nebraska History* annually:

<https://history.nebraska.gov/get-involved/membership>

Full Citation: Thomas D Clark, "Arts and Sciences on the Early American Frontier," *Nebraska History* 37 (1956): 247-268

Article Summary: American pioneers were determined to maintain their European and British cultural heritage. Newspapers, books, periodicals, and paintings produced on the frontier brought that heritage to new audiences.

Cataloging Information:

Publishers / Writers: John Scull (*Pittsburgh Gazette*), John and Fielding Bradford (*Kentucke Gazette*), Daniel Bradford (*Medley, or Monthly Miscellany*), Timothy Flint (*Western Magazine and Review*), James Hall (*Illinois Monthly Magazine*), William Littell (*Festoons of Fancy*), David Crockett, Joseph M Field (*The Drama in Pokerville*), John S Robb (*Streaks of Squatter Life*), William T Porter (*The Spirit of the Times*), Pierre-Jean De Smet, Humphrey Marshall, John Reynolds, Thomas Ford

Artists: Matthew Harris Jouett, Thomas Worthington Whittredge, George Caleb Bingham, John Banvard, George Catlin, Charles Bodmer

Scientists / Ethnologists: Gerard Troost, David Dale Owen, John Bradbury, John J Audubon, Thomas Say, Maximilian of Wied-Neuwied

Educator: William Holmes McGuffey (*McGuffey Readers*)

Keywords: Transylvania University

Photographs / Images: cover of *McGuffey's New Second Eclectic Reader*

ARTS AND SCIENCES ON THE EARLY

AMERICAN FRONTIER

BY THOMAS D. CLARK

POSSIBLY the most remarkable thing about American frontier expansion was the fact that cultural institutions were transported from one layer of settlement to another. It would hardly be proper or sensible to discuss these institutions as mature, or as making the same contributions to society as those of England, France, or New England. It was necessary to make adaptations as population moved inland, and frontiersmen had to be more or less selective of the types of cultural institutions which they would develop. Still the early and rapid development of artistic and scientific activity was characteristic of frontier expansion.

Next to the community and local government, the newspaper was the institution most consistently to find patronage on the frontier. Whatever his state of isolation, the backwoodsman had a keen interest in newspapers. It brought him news, no matter how stale; often it confirmed his narrow political views, or antagonized him because it expressed a contrary political opinion; and it entertained him with foreign and variety matter. Even illiterates depended upon newspapers as sources of information. One of the reasons for the popularity of the backwoods tavern

Dr. Thomas D. Clark is chairman of the Department of History at the University of Kentucky. This paper was presented in part at the dinner session of the 78th annual meeting of the Nebraska State Historical Society, Lincoln, 29 September 1956.

common rooms was the presence of a newspaper and someone to read it aloud.

John Scull's *Pittsburgh Gazette* was the first newspaper to be published in a purely frontier community. This journal appeared in July 1786. A year later John and Fielding Bradford of Lexington, Kentucky, published the *Kentucke Gazette*. Like Scull, the Bradfords had learned something of newspaper operation in Philadelphia and Pittsburgh. Both publishers had bought their meager equipment in Philadelphia and learned to set type largely by self-taught methods. Equipment for the *Kentucke Gazette* was transported from Pittsburgh to Maysville by boat, and then by packhorse to Lexington. News appearing in the first issue came along with the equipment, and much of the type was set on the river journey. On August 11, 1787, after the type had been pried, editor Bradford placed the first issue of his paper in the hands of his backwoods subscribers. For the next fifty years the *Kentucke Gazette* was a seminal frontier newspaper. Its office produced, not only a vigorous journal, but also a small army of future editors and printers who moved on to other states to found papers of their own. Locally, the *Gazette* was an active forum where individuals freely expressed their views. It carried news, advertisements, reminiscent articles, and hot controversial writings which reflected brilliantly the processes of economic, political, and social developments.

The printing press followed on the heels of the first settlers, and by 1840 all of the new states and territories had rapidly growing lists of newspapers. Editors were functionally necessary in expressing various political points of view, not only of the major national parties, but of the local political forces as well. State and national legislative actions were adequately described, and favored political leaders were kept constantly before the people. Doubtless much of the success of the Jeffersonian Party on the frontier was due to the good press support which it received. News columns were thrown open to controversies, political and hypothetical, to correspondents who aired their personal feelings, to groups who queried candidates on embar-

raising issues, and to local organizations promoting ventures of social improvement. In fact, news was often so scarce and facilities for securing outside information so badly limited that peppery letters helped to fill gaps of haunting white space.

Western printshops also produced a stream of handbills, pamphlets, almanacs and books. John Bradford printed the *Kentucke Almanac* in 1788 as the first pamphlet in western history. Four years later he printed the *Acts of the Kentucky General Assembly*, and by the end of the decade he had published other official material. Before 1840 frontier printers had produced an appreciable volume of materials such as legislative, court and official proceedings, pamphlets, directories, and new editions of standard works which had originated elsewhere. Some of the early printers set an unusually high standard of graphic art which is not now excelled by most of the modern presses in the region.

Besides furnishing personnel, frontier printshops helped reproduce themselves in other ways. Printing equipment was reasonably durable. Outmoded handpresses and other equipment were moved on to new offices out on the frontier to begin over and over the processes of journalistic pioneering. The rate of multiplication of newspapers on the frontier was almost unbelievable. Professor Ralph Leslie Rusk says that while there was one paper for 75,000 people when Bradford began publication of the *Kentucke Gazette*, fifty years later there was one newspaper for every 12,000 in the population. In the latter decade almost a fourth of the papers in the United States were published in the West; that is, 354 of the 1,404 appeared in the western states.

The frontier was a newspaper editor's Eden. If they did not make fortunes, they at least found opportunities aplenty. Papers varied in popularity with the personalities and political points of view of the editors, but the press generally was a highly popular institution. Newspaper popularity caused prospective editors of literary periodicals to believe that a magazine could share the same general popu-

larity, but the Middle West a hundred and fifty years ago, as now, was not fertile ground for the nurturing of a literary magazine.

The first purely literary periodical to make its appearance was the *Medley, or Monthly Miscellany*. This monthly was printed in Daniel Bradford's print shop, and the first issue appeared in December 1803. For a year it struggled for existence and then gave up. Its contents consisted mostly of selected matter from other publications.

Perhaps the most successful of all the western magazines was Timothy Flint's *Western Magazine and Review*. Flint had a good background for his venture in the field of western publication, and he selected Cincinnati as his publication city. The *Review's* pages were filled with somewhat more solid materials than that which had appeared in its Kentucky predecessors. Certainly there was more originality to it, and the critical articles were of solid worth. Three volumes of this periodical appeared before the author found himself in financial straits, and stepped aside to permit James Hall to pre-empt the western literary field with his *Illinois Monthly Magazine*. Hall, like Flint, had an intimate knowledge of western life, but Vandalia, Illinois, in 1830-1832, was hardly a town where a literary magazine would flourish, and soon Hall's publication ceased.

More to the liking of the westerners were books. Before 1830 Lexington and Cincinnati were the main publishing centers. An astonishing number of books found their way into print shops located in these towns. Copyrights seem to have meant little to the frontier publisher who sought to turn a penny by supplying a book starved region with the standard works of the moment. It is not at all unusual to discover a Lexington or Cincinnati imprint on a book that was written and originally published elsewhere.

Still, large numbers of volumes of native origin came from the frontier. Until recently both historians and literary scholars have tended to overlook this rather significant collection of writings. Authors of these books were con-

ECLECTIC EDUCATIONAL SERIES.

McGUFFEY'S
NEW
SECOND ECLECTIC READER

FOR YOUNG LEARNERS.



By WM. H. McGUFFEY, LL. D.

NEW-YORK ❖ CINCINNATI ❖ CHICAGO
AMERICAN BOOK COMPANY

FROM THE PRESS OF
VAN ANTWERP, BRAGG, & CO.

The McGuffey reader—harbinger of culture on the frontier

scious of the meaning of the frontier movement as it influenced the unrefined society of the backwoods. Masses of people had either been out of touch with the more sophisticated patterns of society in the older settled regions, or they were born on the frontier and developed their own peculiar social forms. In many instances it was not necessarily isolation which produced a local literature, but rather the sharp contrasts which existed between the older and more refined society and that of the raw, surging, struggling, and unwashed border settler. The latter reduced thought processes and communicative formula to a simple, colorful and direct figure of idiomatic speech which eloquently reflected environmental conditions.

Many imaginative authors who recorded this aspect of frontier social life were men who had at least observed at firsthand the vicissitudes of the land and the people. Many of them had run the popular professional gamut of being lawyer, steamboat man, newspaper editor, doctor, and some had even served in the pulpit. Sophisticated literary critics may question whether or not the frontier local colorists wrote worthy literature or not. Whatever its literary merit, this was the literature the frontier produced, and an objective analysis of it would establish the fact that it is among the more important local color literature in American history. What the frontiersmen did and said may have been stupid, and in some cases barbaric and uncouth when measured by more polite standards, but it was never unimaginative or colorless.

One of the earliest frontier literary contributions was William Littell's *Festoons of Fancy* (1814). Littell, a native of New Jersey, arrived in Kentucky near the turn of the century. He began the practice of law and quickly established himself as an able but eccentric scholar before the Kentucky bar. During his first decade in the West he had abundant opportunity to observe the eddying course of human life. Politicians strove for picayunish advantages; pious frauds led double lives; bullies, fops, and mountebanks were on the make; plain people sought the benefits of the proximity of government and yearned for

the multiplication of counties; and a host of others of varying qualities and motives lumbered across the local scene. Adopting a Biblical style in his writings, Littell introduced the art of satire to the frontier. While men of conscious destiny like John Filson, William Maxwell, Humphrey Marshall and Caleb Atwater were writing in serious vein, Littell broke the spell and punctured a regional bubble with his humorous pen. He was a forerunner of those other lawyers and journalists who gained relaxation and a degree of immortality in books describing the plain people.

A genuine blood and flesh character of rare nature was David Crockett of West Tennessee. Colonel Crockett was as tangible as a drink of muddy branch water, and as rowdy as a backwoods legend. He appealed to his neighbors because he disdained learning and preferred politics and courting in raw and untutored style. His name early became synonymous with wild yarn spinning and tall-talking. He was one of the earliest rip-roarers who amused themselves by barking squirrels with a rifle, turning pestiferous panthers wrongside out, grinning bark off gnarly trees, scratching their heads with forked streaks of lightning, and spitting a yellow stream of tobacco juice that plucked chickens' eyes at the distance of a long corn row. In real life this blood-and-thunder character was born in the backwoods village of Rogersville, Tennessee. Every pulse of movement in that region was waving people westward, and Davy felt the pulse. After many misadventures he settled down on a farm, but being restless and shiftless he packed up his wife and two daughters and moved on nearer the Mississippi. He served briefly with General Jackson in the Creek Campaign, but he did not become a hero worshipper of the Master of the Hermitage. On his less than triumphant march westward the Colonel served the grass-roots apprenticeship to political success of being constable, justice of the peace, and militia colonel. Later he served two terms in the United States Congress.

Davy Crockett was frank-spoken, boastful, unlettered, and a rich backwoods character who gave the national legislative halls a ring of the "natural." How much of the

writing attributed to him was his own may still be enough in question to give rise to a respectable dispute. By the time of his death, as one of the perishing heroes of the Alamo assault in 1836, at least five books of a biographical nature had capitalized on his name and career and the Crockett *Almanac* was an American institution. It is not the purpose here to sort out the strands and set aright the tangled skein of authorship of these books. It is enough to say that Crockett yarns of whatever authorship were influential in stimulating a rising flood of "original" narratives about the frontier.

Across the Mississippi, Joseph M. Field and John S. Robb made St. Louis a home of humorous writings. Field with his book, *The Drama in Pokerville*, and Robb, with his *Streaks of Squatter Life*, raised themselves above the pedantic herd of writers who viewed life through the eyes of commonplace typesetters. Much of their material appeared first in the original newspaper and special feature journal, the St. Louis *Reveille*. Both of these authors were major contributors to William T. Porter's New York journal, *The Spirit of the Times*. This latter periodical began publication in 1831 as a sporting periodical, but after 1836 it began publishing an increasing number of original articles about the frontier, and during the years 1844 to 1854 it carried some of the best of the backwoods material. Porter's editorial desk became a clearing house for much of this type of material. In time he gathered together the best of these stories and published them under the collective titles of *The Big Bear of Arkansas*, and *Other Sketches*, and *Major Thorpe's Scenes in Arkansas*.

Whether or not these humorous folk stories were authentic narratives of life on the frontier matters little. They were not seriously challenged, if challenged at all, by contemporary readers. Story-telling was a man's art, and the tougher the author made conditions appear, the more mighty he appeared to his hearers and readers. Many stories made the teller appear as a greenhorn of the first water, but a proud and unselfconscious one.

Just as the frontier grew its bumper crop of comic writers, so it became the central theme of a vast list of travel accounts. Travelers of almost every nationality and from every section of the East came westward to see the country, to complain about the hardships of travel, to view the natives with horror, to sleep in crowded inns, and to predict the doom of civilized man in the great slough of the backwoods. From the beginning of settlement of the Ohio Valley, travelers established a well-beaten path, the "grand tour." This route led from New York to Philadelphia, then westward to Pittsburgh, down the Ohio to Cincinnati, across the river to Kentucky, back across to Indiana, southward across Tennessee, and downriver to New Orleans. Later an alternate route led westward to St. Louis and backwoods Missouri and back across Illinois and Michigan to the East.

The stream of foreign travelers to the frontier remained flush, and with monotonous regularity visitors returned home to write and publish accounts of their experiences. Today some of these accounts are rare pieces of Americana. The travelers kept up with the advance of the frontier, and occasionally one even overreached it. John Bradbury, a Scotsman, was one of the earliest visitors up the Missouri River, and he wrote of his experiences with the British immigrant in mind. His book is one of the most useful of the early descriptions of this region, and it gives an insight into the primitiveness of native life that is equalled only by the Lewis and Clark journals.

As the Far West came into focus during the first decades of the nineteenth century, a score of travel narratives describe journeys on that frontier. Among these were Thomas Nuttall's *A Journal of Travels into the Arkansa Territory, During the Year 1819*; Samuel Parker's *Journal of An Exploring Tour Beyond the Rocky Mountains, Under the Direction of the A. B. C. F. M., Performed in the Years 1835, '36, and '37*, and Henry Schoolcraft's various journals of early exploration along the Upper Mississippi. James Ohio Pattie's narrative of his travels in the Southwest, and the voluminous account of Father De Smet describing his

travels along the Upper Missouri and in Oregon are classics. Father De Smet had an opportunity to observe Indian life at first hand over a long interval of time, and his missionary reports and journals constitute a major source of information on this part of the West.

For the most part the great mass of travelers came looking for a mature society, and were unable to evaluate what they actually found because of their lack of experience in viewing a virginal country coming under the control of a momentarily primitive civilization. Essentially most of the travelers came to see how well American democracy was working as it spread itself over the continent. Scores of them believed that it was failing, or that it had become completely submerged under the inert layer of uncouth informality and general rudeness which the traveler encountered. They disliked the frontiersman's food, outspoken individuality, lumpy beds, crowded tavern common rooms, muddy roads, unattractive womenfolk, loud boasting, pugnaciousness, political attitudes, extreme nationalism, and narrow religious views. Great masses of this material is of no literary merit, but collectively it is important as a literary mural of the varied and complex trials and moods of the American moving into contact with the raw western country.

Travelers often viewed the western American scene from the pedestal of outside superiority and they were assured that they could escape the next day or next month. There were native sons, however, who took time to look about them and to record their observations. The volume of western books bearing early imprints is extensive. It is surprising that western authors and publishers were so successful in their labors. John Filson of Kentucky led the parade with his famous book, *The Discovery and Settlement of the Present State of Kentucke* (Wilmington, Delaware, 1784). Before the middle of the next century almost every frontier state had its own historian, and he had published at least one book.

Humphrey Marshall of Kentucky published a one vol-

ume history of his state in 1812, and in 1824 he enlarged it to two volumes. He presented local history from the warped point of view of a strong-willed and aroused Federalist. North of the Ohio Salmon P. Chase published *A Sketch of the History of Ohio* in 1833, and Caleb Atwater undertook a more ambitious work in his *History of the State of Ohio, Natural and Civil* (Cincinnati, 1838). Earlier, George Washington Stipp of Xenia, Ohio, gathered a number of the better sections of John Bradford's reminiscent notes about the conquest of the older frontier and published them in 1827 under the title of the *Western Miscellany, or, Accounts Historical, Biographical and Amusing*. James H. Lanman's *History of Michigan, Civil and Topographical* was published in 1839, almost before the fresh influx of American settlers had raised their axes. Nevertheless, Michigan had a history and an ancient background. Illinois had two governors who turned historians: John Reynolds and Thomas Ford. Both of these men knew most of the personalities of the period about which they wrote, and both of them had intimate personal knowledge of state politics. Reynolds was a humorless eccentric who wrote a narrow and partisan volume, while Ford was more colorful. The latter not only recorded much factual material of his state's history, but he also analyzed frontier politics. He was unable to write with complete objectivity, but he, like some of his contemporaries had a good sense of personal and social history, and much of his material has enjoyed a lasting value. All of the other states in time produced historians whose contributions were of more than passing importance.

In the 1840's several legislatures became mildly interested in subsidizing state histories. John B. Dillon of Indiana undertook such an authorized volume, but the legislature failed him before he got past 1816 in his book. In Kentucky, Lewis Collins undertook a history of that state at the instigation of the general assembly.

Novelists found the western scene a good source for their art. Frederick W. Thomas wrote three or four novels, among them *Clinton Bradshaw*, *East and West*, and *How-*

ard Pinckney. Caroline Kirkland attempted to fictionalize the westward movement in her book, *A New Home—Who'll Follow? or Glimpses of Western Life*. Benjamin Drake, a brother of the famous Cincinnati physician Daniel, published not only a life of the Sauk Indian Chief Black Hawk, but he tried his hand at fiction in the amusing *Tales and Sketches of the Queen City*. This is a humorous publication which satirizes the democratic process of local elections.

The early West was to be distinguished not so much by the novels which were written contemporarily with its development as by those which were written about pioneering in a later period. The Beadle Series of dime novels found the adventures of frontiersmen good picking, as did the Beadle, Adams, and Munro series. Emerson Bennett of Cincinnati used various western themes to good advantage in the novels which he prepared for the "yellow back" trade. From Mark Twain to Elizabeth Madox Roberts, at least three generations of modern writers have dredged the frontier theme in their books. The noble pioneer was to become as much a romantic bit of property as was the noble red man.

Materials contained in an extensive list of pamphlets, periodicals, and books make it evident that the westerner was neither altogether illiterate nor uninterested in literature. He was conscious of western expansion, and many contemporary works of native origin show that authors were early concerned with historical interpretation of the frontier movement. There is revealed both a consciousness of the importance of the frontier movement in the growing nation, and a fear that unless contemporary historians recorded the story the pioneers would be forgotten. Most of the writings that undertook to analyze the history of the frontier contain a strong flavor of both provincialism and nationalism. Authors proclaimed the joys of living in the new country, begged for an increase in population, and boasted of the future. Literate men found it impossible to leave the pen aside; the vastness of the new country inspired them to make a permanent record of their times. As an example Caleb Atwater boasted for Ohio that: "every

river in the West is vexed with our oars, and every lake is whitened with our sails. The majesty of our forest is borning before us, and delightful villages, towns and cities rear their glittering spires in the forest's stead. Indeed our mild climate, our fertile soil, and numerous rivers, without falls in them, moving majestically along, as noiselessly almost as the root of time; with the broad and beautiful Ohio washing our whole southern border, and Lake Erie, with impulse almost resistless, our citizens are invited to industry, activity, enterprise and wealth."

As in the field of literature, the frontier produced a creditable number of artists who have left behind not only a record of their artistic attainments, but also tangible evidence of the general appearance of individuals on the frontier. Most of the early art was of a personal variety. Strangely, the vast stretches of virgin country, and the inspiring vistas which appeared at every hand seem not to have inspired landscape painters of any appreciable importance. Among the first of the frontier artists was William West who lived for a time in Lexington, Kentucky. He had as a contemporary Asa Park who combined portraiture with painting still life. Actually, the first major western artist was Matthew Harris Jouett, second son of the famous Captain Jack Jouett who rode to Monticello from Cornwallis' troops to save the Virginia Assembly from capture. Young Jouett was educated in Transylvania University, and then went East in 1816 to study with Gilbert Stuart. Before his death in 1827 this industrious Kentuckian is known to have produced 334 portraits. Other Kentucky painters were John Grimes and Joseph Bush. Both of these men were influenced by Jouett, and were reasonably good portrait artists.

Jouett had for neighbors the Ohio painters, Thomas Cole, William Watkins, Frederick Eckstein, Lily Martin, Sala Bosworth, William Henry Powell, and Charles Sullivan. Like the Kentuckians, these artists devoted their skill largely to portraiture. They found commissions enough to keep themselves alive, and many of their paintings are still in existence. Possibly the most outstanding of the Ohio

artists prior to 1860 was Thomas Worthington Whittredge who received formal training in Europe. He departed from the traditional personal art and produced nature paintings, some of which are in the Corcoran Gallery. Powell painted "DeSoto Discovering the Mississippi" for the murals in the rotunda of the national Capitol. Christopher Harrison, George Winter, and James Otto Lewis were early Indiana artists. Winter and Lewis gained reputations for their Indian paintings. In 1833 Lewis published seventy-two of his paintings made at Detroit in the *North American Aboriginal Portfolio*.

Missouri contributed the able genre painter, George Caleb Bingham. Though born in Virginia, Bingham had spent nearly all of his life on the frontier. Beginning as a self-taught artist, he studied abroad and in the East. His paintings of frontiersmen in various moods became documentary of the frontier movement. Possibly his best paintings were "Raftsmen Playing Cards," "Emigration of Daniel Boone," "County Election," and "Verdict of the People." In these paintings Bingham captured much of the spirit of the swirl of life about him, and preserved it in a graphic form that equalled the contemporary humorous writings. In Louisiana, Thomas Bangs Thorpe combined humorous writings with descriptive painting to record his concepts of frontier life. While he was writing and publishing his "Big Bear of Arkansaw," *Mysteries of the Backwoods* and *The Hive of the Bee Hunter*, he was painting "The Prairies of Louisiana," "Wild Turkey Hunting," and "Watercraft of the Backwoods."

John Banvard of Louisville, Kentucky, set out in 1840 to portray the Mississippi River on a wide panoramic painting. He produced a canvas almost three miles long, which he claimed was the largest painting in existence. Banvard's work was photographically accurate, but it had little of artistic merit. He exhibited his painting in both the United States and England. A less original type of art was produced by Basil Hall with a camera lucida. He was able to recreate scenes along the western rivers and in the clearings. He had an eye for clothing details, facial expressions,

and social behavior. In selecting forty plates for publishing, he chose only the clearer impressions. Fortunately, however, all of his prints are now owned by the Indiana University Library, and the unpublished collection indicates a much wider range of drawings.

Almost from the beginning of organized society in the West there were theatricals. Early amateur companies of Thespians in Kentucky gave their plays in Transylvania University and in the courthouses at Lexington and Louisville. Many of the early performances were given by amateur players who either engaged in theatricals for art's sake, or as a part of benefit programs. In time professional actors and managers such as Noble Luke Usher, Samuel Drake, N. M. Ludlow, Sol Smith, and James Caldwell monopolized the field of professional drama. While the theatre was popular on the frontier, it is doubtful that plays of western origin were favored. Following the standardization formula of presenting tragedy and comedy, the conventional programs nearly always consisted of a tragedy and a comedy. Sometimes it was difficult for unsophisticated audiences to distinguish between the two, and not infrequently the only tragedy and comedy present was the disastrous reactions of the patrons.

Medicine as a science is a field within itself. The frontier was not neglected by the medical men, nor was medical education ignored. Transylvania University in Lexington, Kentucky, introduced medical training into its curriculum before 1800, and by 1820 this institution had gathered into its faculty a number of able scientists who made genuine progress in the field of teaching and research. Some of the men on this early Transylvania faculty were pioneers in their particular specialties. Dr. Daniel Drake was an extraordinarily able physician, and his voluminous study of the *Diseases of the Mississippi Valley* is a classic.

Health was ever a problem with the American frontier. Not only did the frontiersman have physical ailments arising from dietary lacks, but he fell victim to lymphatic disorders and to all of the communicable diseases, especially

the dreaded smallpox. Rheumatism, scurvy, tuberculosis, arthritis, and acute intestinal troubles took their toll. The vast category of seasonal frontier ailments, including the general one called "ague," all but defeated pioneers in certain ill-favored localities. Quite generally it was believed that miasma arising from decaying humus matter in the woods and newly cleared fields was threatening to health. Several early authors wrote at length about the deleterious effect of woods miasma. This is one explanation why frontiersmen destroyed trees at so furious a rate. Night air and swamp dampness were generally considered injurious to health. Some argued that effluvium from rotting logs and branches following the clearing of lands was a threat to health, and there was widespread belief that it took three to four years to condition a homestead and the land about it to healthful living. That a family would lose some members during this time was accepted stoically as the natural course of human affairs.

Doctors of varied training and capabilities appeared on the frontier. Far too many were quacks; some were cranks; but some were sincere men of considerable ability. In 1789 Dr. Samuel Brown of Lexington, Kentucky, introduced the anti-smallpox virus, and began successfully to combat both the disease and blind prejudice against inoculation. The Kentucky legislature in 1800 went so far as to restrict the use of the virus to almost impossible conditions.

Dr. William Goforth, born in New York City, was possibly one of the first to vaccinate against smallpox. He landed on the Kentucky frontier in 1788, and in 1799 moved to Columbia, Ohio. He had as a pupil young Daniel Drake whose family had moved from Virginia to Kentucky. Later there were Doctor Ephraim McDowell, Benjamin Dudley, and Doctors True and Farley.

Frontier medication was generally of the home administered type. Handbooks of medicine were part of family equipment. Medicine was made from herbs and other folk concoctions. But whatever the brew, home remedies were administered with a tremendous amount of superstition and misguided psychology. As an example, snakebite was

treated with a great variety of remedies which ranged all the way from applying pieces of the snake and a freshly killed chicken to the wound. A contemporary observer wrote the following description of snakebite treatment: "The method is to scarify the part, and rub salt, then put on a poultice of the touch-me-not plant, and to drink plantain juice and milk. The juice of the walnut bark likewise is serviceable as a blister, and the puccoon root (a red root used by the Indians for paint) upon being rubbed on the limb affected will prevent the extension of the poison."

Patent medicines in the form of cordials, bitters, cathartics and ointments made early appearances in the West. As soon as there were newspapers the ubiquitous medicine men made their wares known to the public. Pretending to have recovered ancient Indian medical secrets, these early quacks and frauds no doubt reaped a bountiful harvest from a beleaguered people.

Surveying was one of the earliest frontier professions, but early surveyors were strictly surface workers. They were primarily interested in establishing landmarks, and determining in a superficial way the general lay and qualities of lands. Few of them made serious attempts to describe topography on a broad pattern. To them, knowledge of the courses of streams, and their interrelationships was often secondary to that of locating blocks of desirable land. Such matters as the general "dips" and rises of the topography were not fully determined until long after settlement had occurred.

Various individuals did become interested in primitive archeology because of the existence of numerous Indian mounds in the Ohio and Mississippi valleys. Occasionally local archeologists like Caleb Atwater, William Goforth, Ephraim Squier, Edward Hamilton Davis of Ohio, and John Clifford of Kentucky, dug into Indian mounds and made preliminary archeological discoveries, but no sustained geological exploration took place.

In December 1831, Tennessee began what appears to have been the first orderly geological survey on the frontier.

This state was fortunate in securing the services of Dr. Gerard Troost. A native of Amsterdam, Dr. Troost had a long and varied scientific career already behind him when he came to America. He was a member of the so-called "boatload of knowledge" which went out to New Harmony, Indiana, in 1825. In this adventure he was associated with William Maclure, Thomas Say, Robert Dale Owen, and C. A. Lesueur. Two years later he left New Harmony and took his scientific collection to Nashville where he remained the rest of his life. There a progressive legislature appointed him geologist, mineralogist, and assayer for that state. A diligent laborer, he prepared ten reports, including contour maps, which covered the various resources of Tennessee. To these he added pioneering studies in the archaeology and anthropology of the region.

While Dr. Troost was introducing scientific geology to Tennessee, David Dale Owen was in England studying chemistry and geology. Upon his return to America he studied medicine for a time and then began his geological career under the direction of the Dutch scientist at Nashville. Owen's first independent work was a preliminary survey of Indiana in 1837. The next year he was commissioned by the federal government to make a survey of Iowa and Wisconsin, and later of Minnesota and the Bad Lands of South Dakota. His report of 1839 showed his close organization and good administration. After extensive work on the Upper Mississippi and Missouri, he was employed to survey Kentucky. Working furiously, he was able to produce a highly acceptable scientific survey that still has much merit. At the time of his death, Dr. Owen was working sixteen hours a day on the first geological survey of Arkansas.

In Ohio various individuals had demonstrated an intelligent amateur interest in geology and geography. W. W. Mathew prepared the first geological report in 1838. This report, however, amounted to little more than a preliminary surface survey which established some information about rock formations, location of coal beds, and the general surface contour of Ohio. In the other frontier states, legisla-

tures were becoming aware of the economic importance of mineral resources. Illinois employed Dr. J. C. Norwood to search out its hidden wealth, and in the South, Mississippi employed Dr. John Milligan and B. L. C. Wailes to report on the resources of that state.

Scientific investigation of natural resources was only one way of satisfying curiosity about the frontier. Botanists of every description found the virgin West an inexhaustible source of study. With its hundreds of plants and varied soil and climatic conditions, there was no end of fresh materials which could be added to collections, and whose classification could bring enduring fame to their discoverers. The French botanists, Andre and Francois Michaux, began a long tradition of foreign botanical visitations to the frontier. None of these was more assiduous in his labors than the Scotsman John Bradbury. He was one of the first to visit the Missouri Valley, and to leave a good elementary description of both plant and animal life. His *Travels in the Interior of America, in the Years 1809, 1810, and 1811*, is essentially a preliminary natural history of the Missouri River frontier.

Other naturalists who interested themselves in western life were David B. Thomas, John L. Riddell, Allen Lapham, and Thomas Nuttall. Although all of these men made important pioneering contributions, perhaps the work of none was of greater significance than that of Nuttall. His visits to the Trans-Mississippi West took him over vast areas of the country. Between 1809 and 1835 he had visited that part of the country between Louisiana and Oregon, and his journals and scientific materials are of importance both in the field of exploration and the natural sciences.

Early in the century Alexander Wilson, the famous Pennsylvania ornithologist, visited the Ohio Valley where he became acquainted under none too favorable circumstances with John J. Audubon. Although his paintings of western birds are of great importance, he could hardly be called a frontier scientist. On the other hand, Audubon belonged, scientifically at least, to the region. Few more ro-

mantic figures came to the frontier than this French immigrant who reached Kentucky by way of Philadelphia. Though circumstances of his birth and background are now established beyond any reasonable doubt, some of the romantic legend still persists that he was the Lost Dauphin of France. He came West as a merchant, but he failed in several businesses, including a milling enterprise near Henderson, Kentucky. Audubon's heart was in the woods and not at the counter and mill hopper. Largely a self-taught artist and ornithologist, he was able to produce well-nigh photographic paintings of American birds. In spite of the various criticisms of poetic license of his works, they still remain important. The large and colorful plates of his elephant edition of *Birds of America* were of specimens which he collected in the western country. In both his bird and animal studies he left significant records of frontier wild life. Important are his observations of human life as recorded in his journals and voluminous notes, and the fact that he created a popular interest in ornithology.

Another young scientist to know the joys of exploration in the unsettled West was Thomas Say, nephew of William Bartram, who became intensely interested in entomology. Say accompanied Major Stephen Long on his two expeditions to the West. Much of the material which went into his monumental *American Entomology; or Description of the Insects of North America* (1825) was gathered on his two western visits. Not only did scientists looking for information about the mineral resources and natural life of the vast expanse of the West come in droves, but so did persons interested in Indian life.

George Catlin, a Pennsylvania artist, traveled among the western tribes between 1832 and 1839. He said he visited "the vast and pathless wilds which are familiarly denominated the great 'Far West' of the North American Continent." He had seen a delegation of "ten or fifteen noble and dignified-looking Indians from the 'Far West,' suddenly arrived in that city [Philadelphia] arrayed and equipped in all their classic beauty, with shield and helmet, with tunic and manteau,—tinted and tasselled off, exactly

for the painter's palette." In 1832 he went up the Missouri on the second trip of the *Yellowstone*. During his eight years in the West, which seem to have been spent largely in the region east of the Rockies, he painted in the Mandan villages, and among the Apaches in the Southwest. Catlin produced more than six hundred paintings and displayed them here and abroad in his Indian Gallery. In 1841 he published his *Letters and Notes on the Manners, Customs, and Condition of the North American Indians*. This book in its various colored and black and white editions, is an important social document. Another Indian painter was Alfred Jacob Miller who went West in 1837 and has influenced the popular concept of the western Indians.

Prince Maximilian of Wied-Neuwied went up the Missouri in 1833 aboard the *Yellowstone*. He was accompanied by the Swiss artist, Charles Bodmer. Maximilian was essentially interested in ethnology, and his *Travels in the Interior of North America* (1839) is a good contemporary study in this field. It is doubtful, however, that this text is as important as is the atlas prepared by Bodmer. The artist gave close attention to form, movement, spirit, and details of dress and arms. He made some of the most accurate documentary paintings of the western Indians in existence. In 1836-1844 T. L. McKenney, superintendent of Indian trade under James Madison, and James Hall produced their famous folio volumes, *History of the Indian Tribes of North America, with Biographical Sketches and Anecdotes of the Principal Chiefs*. The 120 illustrations in these volumes came from the War Department collection. McKenney's *Memoirs, Official and Personal*, also contains enough ethnological material about the Indians to constitute a major scientific footnote.

Basic to all frontier intellectual advancement was the region's philosophy of education. Frontiersmen dreamed of the betterment of conditions for their children, but they hardly knew what they wanted. Education promised greater advantages at the same time it offered certain liabilities. In the first place education was expensive, and, too, there

was fear of the changes it might make in individuals. Nevertheless the subject was a great challenge.

Western printers and authors produced a steady stream of books and texts after 1820. Among these were Murray's *English Reader*, Bate's *Western Preceptor*, James Hall's *Western Reader*, Ray's *Little Arithmetic*, Jedediah Morse's *New System of Geography*, John Kilbourn's *Ohio Gazetteer*, and the Samuel Goodrich histories. Noah Webster's *American Spelling Book* (the Blueback Speller) had a ready sale on the frontier almost from its publication date. At least one edition of this famous book was pirated and printed in a Lexington, Kentucky, printshop. Perhaps this was the reason that Webster spent so much of his time agitating for an adequately protective copyright law.

The most famous of the textbooks of western origin were the McGuffey *Ecclectic Readers*. The *First* and *Second Readers* appeared in 1836, and the next year the *Third* and *Fourth* were added to the list. William Holmes McGuffey was himself of the frontier. He was born in Washington County, Pennsylvania, in 1800, but in 1802 when the Connecticut Western Reserve was opened, his parents settled near Youngstown, Ohio. Alternating teaching with college attendance, he was graduated from Washington College in 1826 and thereafter devoted himself to college teaching at Oxford, Cincinnati and Athens, Ohio, and at Charlottesville, Virginia. He served as president of Cincinnati College and Ohio University. In Cincinnati he was located in one of the chief cities of western printing. He found a publisher willing to undertake the publication of his books, and soon after the appearance of the first two readers he saw his texts gain in popularity every year. In Louisville the J. P. Morton and Company offered serious competition with a list of readers and grammars, but they never quite captured the lucrative early market.

There was little originality of authorship in any of the early textbooks. Possibly Webster offered the most original matter in his new system of spelling and word selections. The early text writers were more concerned with

offering moral lessons and aphorisms in pleasant selections than they were in presenting their own ideas. It would be well-nigh impossible to appraise the influence of the large numbers of textbooks which appeared in the West prior to 1850, but one thing is possible and that is the fact that they contributed heavily to a spirit of nationalism in this period of American history. Too, they offered a sort of literary stabilization to the repetitive cultural process of making new beginnings as American settlers moved on westward.

This paper, of course, has touched only a few of the cultural and scientific advances which were made on the American frontier. The arts and sciences thrived as white civilization was spread across the land. Not only were institutions adapted to changing environmental conditions, but the culture of the Old World was transported westward. There was great respect for the literature of Europe and England: British poets and writers enjoyed almost as much prestige in the region as they did at home. Shakespeare, for instance, was read by many people who had understanding of, and respect for both his literary and dramatic qualities. Possibly the most significant fact about the arts and sciences on the frontier was the determination of the American pioneers to maintain a cultural heritage in the face of enormous environmental challenges.