The Palimpsest

JULY 1939

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THE PURPOSE OF THIS MAGAZINE

THE PALIMPSEST, issued monthly by the State Historical Society of Iowa, is devoted to the dissemination of Iowa History. Supplementing the other publications of this Society, it aims to present the materials of Iowa History in a form that is attractive and a style that is popular in the best sense—to the end that the story of our Commonwealth may be more widely read and cherished.

BENJ. F. SHAMBAUGH
Superintendent

THE MEANING OF PALIMPSESTS

In early times palimpsests were parchments or other materials from which one or more writings had been erased to give room for later records. But the erasures were not always complete; and so it became the fascinating task of scholars not only to translate the later records but also to reconstruct the original writings by deciphering the dim fragments of letters partly erased and partly covered by subsequent texts.

The history of Iowa may be likened to a palimpsest which holds the records of successive generations. To decipher these records of the past, reconstruct them, and tell the stories which they contain is the task of those who write history.

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THE PALIMPSEST

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Abner Kneeland — Pioneer Pantheist

The summer of 1844 saw the death of two men whose religious beliefs — or unbeliefs — gave much concern to the adherents of the orthodox churches of Iowa. One of these men was Joseph Smith, founder and prophet of Mormonism; the other was Abner Kneeland, militant exponent of pantheism. Smith was shot by a mob at Nauvoo, Illinois, just across the Mississippi River from Montrose, Iowa, on June 27, 1844. Kneeland died quietly at his home two miles south of Farmington, just two months later.

Abner Kneeland's career reversed the usual trend of New England-Iowa relations. For the most part, the Territory of Iowa looked to New England for ministers and missionaries, as well as for money to help build churches and church schools; but Kneeland was, instead, a missionary of doubt and materialism. To the Iowa pioneer his belief was atheism.

The story of Abner Kneeland begins, so far as America is concerned, as early as 1630, when his Scotch ancestors settled in Ipswich, Massachusetts. His father, Timothy Kneeland, was a carpenter by trade and served as a soldier in the American Revolution. Abner Kneeland, the fourth son of Timothy and Moriah Stone Kneeland, was born at Gardner, Massachusetts, on April 7, 1774, just when the clouds of the revolution were darkening. As a small boy, he must have heard the stories of men who were defying established government. Perhaps this environment influenced his character. His formal education was limited to the common schools of the community and one term at the Chesterfield (New Hampshire) Academy.

Abner was not sent to college. Perhaps money was scarce; perhaps sons of carpenters did not, at that time, go to college even in Massachusetts. At any rate the young man began work as a carpenter. His mind, however, had time for other things. One Sunday, it is said, Abner accompanied his father to a church built in a primitive style. After the service the father reproved his son for failure to pay due attention to the sermon. But the young man repeated the text and then, point by point, gave the sermon almost in its entirety. Then he added, "Now father, I can tell you just

how many rafters there are in that church and how many mortises, how many holes without pins and how many with, and how many mistakes the carpenter made."

About the time Abner Kneeland "came of age", he went to Dummerston, Vermont, to work at his trade and teach school. There he was "converted" to the Baptist faith, was immersed, and joined the Baptist Church at Putney, Vermont. Presently, however, he began to question the "fundamentalist" doctrine of the New England Baptists, and plans were made to try him for heresy. In 1803 he withdrew from the Baptist Church and united with the Universalists. A year later he was licensed to preach. Following his ordination, in 1805, Congregationalists and Universalists at Langdon, New Hampshire, united to offer Reverend Kneeland the position of town minister, supported partially at least by public tax money.

During this pastorate Kneeland displayed his initiative and his diversity of interests by representing the town in the legislature during 1810 and 1811. He also became interested in spelling reform, especially the elimination of silent letters, publishing, in 1807, *A Brief Sketch of a New System of Orthography*. Later he prepared a number of reformed spelling textbooks.

In 1812 Reverend Kneeland became minister of the Universalist Society at Charlestown, Massachusetts. But his inquiring and restless mind began to trouble him with doubts as to the truth of Universalist doctrine and in 1813 he resigned his position as minister and opened a dry goods store at Salem, where he had married a well-to-do widow. At the same time he began an extensive correspondence with Hosea Ballou — one of the ministers who had officiated at his ordination — concerning the divine origin of the Scriptures. Each man wrote ten letters which were published in 1816 under the title, *A Series of Letters in Defence of Divine Revelation.*

This exchange of ideas seems to have allayed Kneeland's doubts for a time and, a year after the publication of the book, he returned to the Universalist ministry, locating at Whitestown, New York. Of his work there, a contemporary wrote: "Calm, courteous and gentlemanly in his deportment and intercourse, remarkably plain and intelligible in his discourses, he won the respect of opposers and enjoyed the highest confidence of his congregation."

After one year at Whitestown, Reverend Kneeland transferred to the Lombard Street Universalist Church at Philadelphia. There he remained seven years, devoting much time to publication.

He edited the *Christian Messenger* from 1819 to 1821, the *Philadelphia Universalist Magazine and Christian Messenger* from 1821 to 1823, and the *Gazetteer* in 1824, changing the name of his magazine even more rapidly than he changed his religious beliefs. He also debated with a Presbyterian clergyman on universal salvation and published the argument in book form. In 1822 he published a translation of the New Testament, another illustration of his initiative, for his knowledge of Latin, Greek, and Hebrew was acquired largely without benefit of teaching.

But the restless mind of Abner Kneeland soon moved on. In 1825 he became pastor of the Prince Street Universalist Society of New York, later transferring to a dissenting group, the Second Universalist Society. There he continued his magazine work, editing the *Olive Branch* and, in 1828, the *Olive Branch and Christian Inquirer,* which he described as devoted to "free inquiry, pure morality and rational Christianity".

It was during this period that Kneeland became acquainted with Robert Dale Owen and Frances Wright D'Arusmont, social reformers and sponsors of group settlements. His religious doubts evidently increased and finally, in May, 1829, upon the advice of his friend and counsellor, Hosea Ballou, he asked for and was granted per-

mission to suspend himself from the Universalist fellowship. In withdrawing, Kneeland wrote: "Whereas, the circumstances which have attended my ministry in New York, and which have resulted from my labors in that place are such as to produce dissatisfaction in the minds of many, and to induce a belief that I am not what I profess to be, a real believer and defender of the Christian religion . . . it is my desire that all associations and individual brethren of the order will allow me to suspend myself as to fellowship of the order until I shall be able to give entire satisfaction that the cause of the World's Redeemer — of God, of truth and righteousness — is the cause in which I am laboring and to which my talents are devoted. Wishing you success, brethren, in all that is good, I subscribe myself, yours affectionately in the bond of peace."

Following this declaration, which indicates a troubled but conscientious mind, Kneeland went to Boston where he affiliated with a group known as the "First Society of Free Enquirers". Presently he was lecturing on Rationalism; and in 1831 he founded the *Boston Investigator* as a means of publishing his pantheistic beliefs which by this time had been greatly affected by Dr. Joseph Priestley's *Disquisition on Matter and Spirit*. "Here", wrote Kneeland in the *Investiga-*

tor in referring to Priestley's book, "the skepticism of the editor began . . . which gradually continued in spite of all his efforts to prevent it. The whole fabric of Christian evidence was completely demolished in his mind without leaving even a wreck behind." He was not, he insisted, an atheist, but a pantheist.

The next few years were filled with turmoil. In the issue of the *Investigator* for December 20, 1833, Kneeland published certain statements which aroused much opposition. "Universalists", he said, "believe in a god which I do not". The story of Christ, he declared, meant no more to him than the legend of Prometheus. He did not believe in miracles, nor did he believe in the resurrection of the dead or in eternal life.

For these statements Kneeland was indicted under the Massachusetts law against blasphemy and a series of trials followed. At the first trial, held in January, 1834, he was convicted and sentenced to three months in jail, but appealed. In the following trial, the jury disagreed, but at the third trial, in November, 1835, he was again convicted. Again the case was appealed on the ground that the act defining blasphemy was unconstitutional. Kneeland also denied that the words upon which the indictment was based were blasphemous, if construed as he meant them. "I

had no occasion to deny that there was a God", he declared. "I believe that the whole universe is nature, and that God and nature are synonymous terms. I believe in a God that embraces all power, wisdom, justice, and goodness. Everything is God."

His defense, however, failed to move the jury, the prosecuting attorney, or the Governor. In spite of many delays, Kneeland's conviction was finally upheld by the Massachusetts Supreme Court, and in 1838 he was sentenced to serve sixty days in jail. (It is an interesting sidelight on this case that James T. Austin, the Attorney General who secured the sentence, once asserted that the mob which killed Elijah Lovejoy was as patriotic as the men of the Boston Tea Party.)

Feeling in the Kneeland case ran high. Those who feared the dreaded spectre of atheism prodded the prosecution; while the advocates of free speech and a free press declared the case was a disgrace to the State. A petition for a pardon by the Governor was signed by 170 prominent persons including William Ellery Channing, George Ripley, A. Bronson Alcott, Theodore Parker, William Lloyd Garrison, and Ralph Waldo Emerson. Another remonstrance, with 230 signatures, was presented to the Governor's Council. An editorial in a Windsor, Vermont, newspaper

asserted that if Kneeland could not speak his mind, the cause for which the Pilgrims came was overthrown. All to no avail. Massachusetts justice was inexorable — and in the summer of 1838 Abner Kneeland spent sixty days in prison for a crime no worse than expressing frankly his religious beliefs. It was, however, the last prosecution under the statute.

Echoes of the Kneeland case were heard even on the frontier. The editor of the *Iowa News* (Dubuque) published the following editorial comment on July 14th: "Abner Kneeland, editor of the Boston Investigator, on the anniversary of the battle of Bunker Hill, was lodged in jail, there doomed to sixty day's confinement, for the exercise of that privilege to gain which the heroes of the revolution shed their blood, sixty-three years before, on the hill in plain view from the window of his prison cell. What a spectacle was there for a freeman to witness! A grey-headed man of three score years, against whom nought but the charge of blasphemy has been made, torn from his family, and like a felon, locked in a prison, while the *supposed* freemen are rejoicing midst the deaf'ning peals of the wide-mouth'd cannon's roar in honor of the triumph of the American flag — there in the boasted land of liberty, where the spark of liberty first fired the hearts of the heroes

of the revolution, when the tea was thrown overboard is the first place where that sacred liberty has been boldly crushed. Such liberty would thrive under the crown of the greatest tyrant that ever ruled."

When Kneeland came out of prison on August 17, 1838, his religious beliefs had not, of course, been changed, but he was disheartened, disappointed perhaps at his own unbelief. He was then sixty-four years of age, but he still hoped to find a place where he could hold and express his own ideas. What next? The free-soil Territory of Iowa had just been established by act of Congress. Kneeland, already familiar with the collective settlement ideas of Robert Owen and Frances Wright, decided to join a colony which the First Society of Free Enquirers planned to locate two miles south of Farmington, in Van Buren County of the new Territory. The town-to-be, ambitiously lithographed on paper, was christened Salubria before it was born. It was not a communistic undertaking, but an attempt to found a community of "free enquirers". "No minister", asserted the founders, "shall ever come to this community to air his superstitions."

And so it happened that in May, 1839, Abner Kneeland, a venerable, white-haired, and kindly man of sixty-five, arrived at Fort Madison, Iowa,

by way of the Ohio and Mississippi rivers. Thence he went to the site of the paper town of Salubria where he bought a claim on which he and a stepson later built a comfortable two-story weather-boarded house. It was not until July that his wife and several members of their families joined him. The traveling expenses of Mrs. Kneeland and three children from Boston to Salubria amounted to $190.75. Their household goods did not arrive at Salubria until August — some seventy-five days from Boston.

In this modest home Abner Kneeland lived during the remainder of his life, surrounded by his family and a number of followers who had been attracted to the colony. He obtained a government patent to his land in December, 1841. In the "big-room" of his house he assembled the few books he still possessed, met his friends, and performed occasional marriage ceremonies.

Financial difficulties at this period are indicated by a bill of sale recorded in the Van Buren County courthouse, dated July 25, 1840, which records the sale by Abner Kneeland and his wife of all personal belongings, including one horse, valued at $50, four cows at $25 each, four yearlings at $8 each, four calves at $3 each, one "waggon", harness, and saddle at $30, forty hogs at $2.80 each, one secretary and bookcase at $30, and — most

pathetic sacrifice — a private library of about 200 books for $100.

On his way to Salubria and for about a year after he arrived there, Kneeland sent letters back to Boston for publication in the *Investigator*. In these he repeatedly expressed his admiration for Iowa. The forests and the corn greatly impressed him, but, he added, "this is but one item of the splendors of this wonderful country which is destined to outvie every thing which can be even imagined in the east." He also commented on the melons, pumpkins, squashes, and other vegetables. Hogs ran at large, however, and he found it difficult to keep them out of his corn.

On the Fourth of July, 1839, his family having not yet arrived, Kneeland reported that he had dinner at the log cabin of another settler. "I could not help contrasting my situation yesterday . . . with what it was a year ago when I had my meals brought to me in the common Jail in Boston . . . For aught I can see to the contrary there may be as much independence enjoyed in a log cabin with such a dinner as we had yesterday — fresh pork and chickens, new potatoes and green peas, as in a palace with all the dainties and luxuries which can be found at the tables of the great dons of our cities."

In a later communication he called Iowa "the

country 'from whose bourne no traveller returns,' not because they cannot, but because they *will not*." Many of the settlers he found congenial, but, he wrote in another letter to the *Investigator*, "Some of the people here, even men, but more so women, are very ignorant; I mean in point of literature, not being able to read or write, (such ones are not from the east however,) but still they are persons of good sense and judgment about other things, and make on the whole very good citizens."

In these letters, replying to criticisms, Kneeland revealed certain unfortunate investments — in a cancer cure for which he had paid $50 twenty years before, only to find it a fake; in a perpetual motion machine which cost him $62.50; and in the even more questionable endorsement of "two little girls" who claimed to be able to divine fortunes by gazing into clear water. To all this censure, Kneeland replied that other Universalists had been equally gullible and he had never attempted to make money from a scheme after he knew it to be fraudulent.

Apparently the leading citizen of Salubria was too busy to spread his pantheistic propaganda in Iowa. "I have had but very few opportunities as yet, to disseminate any of my views in relation to theology", he wrote on June 29, 1839, to the *In-*

vestigator, "as I advance them very cautiously: but whenever there is a chance without appearing intrusive I do not shrink from what appears to be a duty — a duty I owe to my fellow beings; and whenever I do speak, I find every ear open to hear; and not a tongue has moved yet to my knowledge by way of opposition." In the pursuance of this duty, it appears that later he lectured in Farmington, Bonaparte, Bentonsport, and Keosauqua.

Such attempts to disseminate his pantheistic views — atheistic to the pioneers — and the avowed aims of the sponsors to make Salubria a churchless town, aroused considerable hostility in Iowa religious circles. One answer to the challenge was the coming of the Iowa Band and the work of Harvey Adams who spent twenty years as pastor of the Congregational Church at Farmington.

But Abner Kneeland's interest reached beyond his private affairs and religious doctrines. For a few months he taught school in Helena, Arkansas, where he was remembered as being "competent and faithful, but very kind hearted and indulgent". Well educated, courageous, a good speaker, with a commanding personality, refined and courteous in manner, he soon became a political figure of some importance, in spite of his unorthodox religious views.

In 1840 he was one of the two Democratic candidates for Van Buren County's two seats in the Territorial Council, but was defeated. In 1842 he was unanimously chosen chairman of the county convention held at Farmington. During both these campaigns, the charge that infidelity had captured the Democratic party was used and it apparently alienated enough Democratic voters from support of their tickets to elect the Whig candidates. A member of the 1842 convention wrote of that campaign: "The Methodists and Baptists, indeed all churches took the field. Uncle Sammy Clark, with his powerful logic and irresistible arguments, like a second Martin Luther, swept over the county, and party lines for the time were ignored. Whigs and Democrats united against the 'Infernal legions' . . . Kneeland and his ticket went down to defeat with a crash and no attempt was ever after made in the same direction." During the campaign an opponent referred sarcastically and rather unfairly to the fact that Kneeland had served a term in prison.

In spite of his age Kneeland seems to have done a good deal of physical labor and to have walked long distances. He helped build his house, hoed in the garden, and worked in the hay field. One of the early settlers described him as "about 5 feet 9 and one half inches in height" and thought he

weighed about 170 pounds. His complexion was light, but by the time he came to Iowa his hair was thin and white. The years of Abner Kneeland in Salubria were comparatively short. He died at his home on August 27, 1844, at the age of seventy and was buried on his own farm. Later the body was removed to the cemetery at Farmington.

At his side when he died was his fourth wife, Dolly L. Rice Kneeland, whom he had married ten years before. A stepson, James W. Rice, was for many years a respected citizen of Farmington, serving as mayor and as justice of the peace. Two daughters of this last marriage were born in Salubria. Kneeland's first wife whom he married in Vermont in 1797 was Waitstill Ormsbee. Her given name is a lavender-scented reminder of Puritanism. By this marriage there were at least three children. After Waitstill's death in 1806, he married Lucinda Mason who died a few years later, and in August, 1813, he married Mrs. Eliza Osborn, a wealthy widow of Salem. By all four marriages Abner Kneeland had twelve children.

Salubria, which was to have been the capital of free thinkers, never really took root. Only a few adherents of the philosophy of unbelief came, and in the years that followed these few, or their descendants, were gradually absorbed by the religious groups of the community. In August of

1839, Abner Kneeland had written to the *Investigator*: "I had occasion to go to Farmington yesterday (Sunday); there seems to be some little movement there among religionists, such as prayer meetings, Sunday schools, etc., but I think they will not amount to much."

But Kneeland was mistaken. Pantheism was too cold, too abstract, too impersonal to appeal to the pioneers. They wanted a religion that was confident, hopeful, and personal. Farmington's churches received many of the descendants of these so-called free thinkers. Voltaire Paine Twombley, whose name advertised his father's unbelief, grew up to be a Congregational deacon. Susan Kneeland Boler, a child of the last marriage, became a devout member of the Farmington Congregational Church, and in 1903 a granddaughter was presiding over a Sabbath School in a chapel built on a half acre of ground donated by a descendant of a free thinker.

So ran the story of Abner Kneeland, the man whose trial for blasphemy ended trials for blasphemy in Massachusetts — a kindly, intelligent, and brave man, whose only fault seems to have been frankness in expressing his doubts and inability to harness faith and knowledge to make them work together in his life.

RUTH A. GALLAHER

What About the Weather

The weather, thanks to the advance of science, has lost its place beside politics as a subject upon which every one is qualified to speak with authority, and the time is past when every man's guess on whether tomorrow will be fair or foul is as good as another's. Reading the signs from the appearance of the sun and the direction of the wind is a useful talent, but dependable prediction of the weather is a highly technical science. Any one who has seen the delicate instruments and intricate charts of a fully-equipped weather station must admit that the observation of the weather is no longer a rule-of-thumb matter.

The history of Iowa is full of remarks about weather conditions. Explorers who visited the country between the Mississippi and Missouri rivers found the weather almost as interesting as the scenery. The sun shone brightly on the June day in 1673 when Marquette and Joliet visited the Indian village on the Iowa River. Stephen W. Kearny, riding across the prairies of northwest Iowa with a company of soldiers in the summer of 1820, mentioned many thunder storms in the record he kept. Lewis and Clark, Zebulon M.

Pike, Albert M. Lea, and John C. Fremont included the weather in their reports to the government.

Climate is vitally important to the inhabitants of a country. As a health measure, and perhaps as a source of information for prospective settlers, the War Department required army surgeons at military posts on the frontier to keep diaries of the weather and note the characteristics of the climate. Records were kept at Council Bluff (just north of Omaha) from 1820 to 1825; at Fort Armstrong on Rock Island from 1824 to 1835; at Fort Des Moines from 1843 to 1846; at Fort Atkinson from 1844 to 1846; and at Fort Dodge from 1851 to 1853. Though this data was incomplete and probably not very accurate it constitutes the beginning of official Iowa weather service. Assistant Surgeon Charles C. Keeney thought the extreme variation of temperature, the high winds, and "great atmospheric vicissitudes" at Fort Dodge made the climate treacherous, though the dry air was "one redeeming feature" which rendered it "quite salubrious".

The early settlers were more interested in the weather than were the soldiers. No doubt the pioneer farmers observed the phases of the moon, the direction of the wind, the height of the mercury in the thermometer, and planned their work

accordingly. Theodore S. Parvin seems to have been the first, however, to keep a systematic record of climatological facts. On December 1, 1838, he wrote in his diary, "Commenced a Journal of the weather." His record was begun at Burlington, continued at Muscatine from 1839 to 1860, and from 1860 to 1873 at Iowa City. He took daily readings of the thermometer and barometer, the direction and velocity of the wind, the hours of cloudiness and sunshine, and similar data. A friend who visited Parvin at his home in Muscatine declared that he suffered considerable personal discomfort "while his host, with an enthusiastic devotion, and clad only in the robes of night, went out into the frigid temperature, (the guest chamber being left open to the winter wind,) and took careful readings from his instruments."

The journal kept by Parvin extended over a period of thirty-five years. While his statistics did not apply to a large area or include all the items in modern reports, they did provide reasonably accurate and continuous information, so that the recorded daily history of Iowa weather now covers a full century. Parvin's data on the temperature correspond to later readings. During the decade between 1839 and 1849 the average for the winter months of December, January, and February was 22° above zero — the same as it

has been during the last sixty-five years. Probably the pioneer children of Muscatine did not suffer much from frozen toes and ears because only twice in the first ten years did the mercury in Parvin's thermometer fall as low as 6° below zero. In 1857, however, it went down to —30°.

Parvin's observations were early put to practical use. When the arsenal at Harper's Ferry was destroyed at the outbreak of the Civil War, the government recognized the need for establishing a depot of war supplies in the interior of the country. The island in the Mississippi River, located between the cities of Davenport and Rock Island, was selected. Other interested localities, however, opposed the selection, arguing that "the region was inaccessible, the climate inhospitable; that the sole route of approach was the Mississippi River, and that this was closed to traffic by ice during nine months of the year." The argument carried considerable weight until a partisan of the Rock Island site remembered that copies of Parvin's data had been filed with the Smithsonian Institution. Thereupon the observations were used in Congressional debate, and the Rock Island location was confirmed.

Until 1873, T. S. Parvin continued to keep his journal of the weather. Meanwhile, however, in 1870, the National Weather Service was estab-

lished, and five fully-equipped stations were located in Iowa: at Davenport (1872), Keokuk (1873), Dubuque (1873), Des Moines (1878), and Sioux City (1889). The demand for climatic data for Iowa was great enough, however, so that it was felt by interested individuals that observations should be made by a much larger number of stations than were provided by the national service. Accordingly, in August, 1875, Gustavus Hinrichs, a professor at the State University, invited "friends of scientific work" in all parts of the State to coöperate with him in setting up a series of Iowa Weather Stations, the purpose of which would be "to secure as complete a history of the weather of Iowa as possible, in order to furnish material for an exhaustive study of the climate of our State."

Professor Hinrichs managed to establish sixty observation stations, and regular reports were begun on October 1, 1875. He enlisted all manner of men, and women, in his unique experiment. "Doctors, lawyers, merchants, chiefs," as well as druggists, jewelers, postmasters, farmers, surveyors, editors, captains, bookkeepers, and professors took time to record what the weather was doing. Miss Augusta Larrabee of Fayette County warranted special mention in Dr. Hinrichs's first report. "Miss Larrabee has promptly

and regularly furnished very excellent reports. She is the youngest volunteer Observer, only 14 years old."

Hinrichs furnished the blanks upon which his volunteer meteorologists recorded their observations, and for the first seven months these were sent to him three times a month, at his expense. In May, 1876, monthly reports were made, this time at the expense of the observers. These reports were tabulated by Dr. Hinrichs and from them he prepared a short statement which he mailed to the daily newspapers of the State, usually within the first week of the succeeding month. At his own home in Iowa City he constructed a Meteorological Observatory which was completed in May, 1876. His sixty amateurs, however, had no such facilities and their observations showed wide discrepancies.

It was not until March, 1878, almost three years after the voluntary service had begun functioning, that the Seventeenth General Assembly passed an act establishing a central station for the Iowa Weather Service at Iowa City. Meanwhile, although the need for financial aid was keenly felt and duly voiced, the work had been performed at private expense. Because his previous activity obviously fitted him for the position of director of the station, the General Assembly

named Gustavus Hinrichs as the first "weather man", giving him $1000 a year to collect and disseminate meteorological information, with the special proviso that "no part of said sum shall be used in payment of salaries to any officer or officers, except for clerk hire." Furthermore, the director was to establish volunteer weather stations throughout the State, supervise their activities, receive their reports, tabulate them, and report these tabulations quarterly and have them published as the *Iowa Weather Report*. Thus the act left the Iowa Weather Service on a volunteer basis and made no provision for purchasing equipment for the observation stations, but Dr. Hinrichs was happy to have the public utility of his weather service recognized even in this small way.

Handicapped by lack of funds, the newly-created Weather Service struggled along as best it could with its limited resources. The reports were summary and inadequate, for the costs of publishing them took money which was badly needed for equipment and supplies. In 1887 the National Weather Service also began to issue weekly bulletins about weather and crop conditions based upon the reports of the State observers.

Meanwhile, the demand for complete and accurate reports concerning the crop conditions in Iowa was constantly increasing. The Iowa State

Agricultural Society attempted to meet the need by publishing the reports of the various secretaries of the county agricultural societies, but the information they sent in varied widely both as to quantity and quality. Neighboring States were rendering this service through a system of crop correspondents located in all parts of the State, and a similar plan, with some 900 correspondents cooperating, was inaugurated. But the sum of $600 which the Society could appropriate for the service was inadequate. If crop statistics were to be collected and published, it was evident that the State would have to render aid.

The Twenty-third General Assembly did something about the problem for, in lieu of the Iowa Weather Service established in 1878, it created the Iowa Weather and Crop Service in 1890. The new combined agency was placed under the supervision of the Iowa State Agricultural Society, and the duties of the director remained essentially what they had been previously, but the collection and distribution of crop statistics was added to his responsibility. Still not in a magnanimous mood, the General Assembly nevertheless appropriated $2500 annually for the support of the service. Ten years later, when the Iowa State Agricultural Society was abolished in 1900, the Iowa Weather and Crop Ser-

vice was embraced within the new Iowa State Department of Agriculture. Meanwhile, the functions of the Federal weather stations in Iowa were expanding until practically all the scientific work was performed by them and the State contributed relatively little support.

It was easy to find new uses for the information about the weather and crops. When the horseless carriage came to Iowa, discreet travelers from near and far called the central office in Des Moines to learn what the state of the roads might be and where showers might be expected. When the radio became a reality, the usefulness of the weather forecasts increased tremendously. In 1922 Station WOI of Iowa State College at Ames, WOC at Davenport, WEAB at Fort Dodge, WKAA at Cedar Rapids, and WEAU at Sioux City began weather broadcasts.

Besides collecting current data on crop conditions, the bureau in 1928 undertook an extensive study of the moisture content of new corn. The results were found particularly useful during the worst of the depression years, when the tests were used extensively in determining the suitability of corn for sealing purposes under the corn loan program. Now the information is helpful to Iowa agriculturalists in determining the proper time for cribbing. More recently the bureau has added to

its services studies in corn phenology — the relation of climate to such factors as the time of flowering and fruiting of corn, periods of drought, and damage from frost.

The most recent chapter in the history of the Iowa Weather and Crop Bureau was written by the Forty-seventh General Assembly in 1937. In order to prevent duplication of effort, the legislature replaced the Iowa Weather and Crop Bureau with a Weather Division and a Division of Agricultural Statistics within the Department of Agriculture. The present organization openly recognizes that the functions of the Weather Division are being assumed by the Federal government, and the rôle played by the State is becoming less important.

Many are the changes which Professor Hinrichs would notice at the central station in the Federal Building at Des Moines. Weekly reports are coming in from approximately 125 volunteer observers located in all parts of the State. The telephone rings — often as many as 800 times a day — and at least fifty of the calls are such that they must be handled by the director himself. A good many of them are "curiosity calls", the bane of the service, from overheated individuals who take a morbid delight in checking up frequently to see how warm it really is. Once each hour officials

in the division call the three radio stations in Des Moines to give them weather reports, and special forecasts are made when weather conditions make it necessary. In September, 1938, for example, warnings of floods were issued in time to permit farmers to move out livestock, husk corn, and make all manner of preparations which minimized the losses. Increasing demands for the data compiled by the Weather Division are being made by the air conditioning and fuel distributing industries, and the demands of the aviation industry are tending toward an overemphasis on this part of the work to the detriment of the more fundamental services to agriculture.

Are weather observations and crop statistics unromantic, dull, and prosaic? Perhaps. Yet over the sweep of a hundred years the routine figures show the migration of crops across the State and the concomitant changes in the development of animal husbandry with all their dramatic implications in the tremendous pageant of life on the mighty stage of Iowa. Sometimes tragedy is concealed in the humdrum records of 47° below zero (as on January 12, 1912) or 118° above (as on July 20, 1934) or wind of hurricane velocity (as on June 17, 1882, when a cyclone struck Grinnell). But the commonplace daily activities are probably more important. The

Weather Division and the Division of Agricultural Statistics unobtrusively perform their work of furnishing the accurate and reliable information which is of utmost importance to the non-agricultural interests of Iowa, as well as to the farmers. These officials constitute a neat exception to the trite comment that "everybody complains about the weather, but nobody does anything about it."

JOHN H. HAEFNER

Comment by the Editor

RAIN AND SHINE

"How do you like the weather?"

"Is it cold enough for you?"

"They say these sultry nights will make the corn grow."

"Anything blow down at your house last night?"

What a common topic of conversation the weather is! Wherever you go, whomever you meet, talk is likely to begin with a question or comment about the sunshine, storms, or temperature. Everybody is interested in the weather.

Just as the sky with its stars is always above us and the earth beneath, so the conditions of climate always surround us. People can no more ignore the weather than they can fail to see the other works of nature about them. Directly or indirectly the weather affects every one. Rain and shine make crops grow, but floods and drought destroy them and then people go hungry. The wind carries away smoke and brings relief from sultry days, but blowing hard and laden with snow or dust it causes suffering and often death.

Read the diaries of Iowa pioneers and you will

find that every day the weather was mentioned. Perhaps a single word, like blizzard, hail, or cloudburst, described the source of a tragedy. The loss of a whole year's work might be put in the statement, "Wind and rain; small grain down." It was not for lack of something else to write about that records of the daily temperature were kept. To the early settlers the weather was more important than neighborhood gossip or personal opinions.

In the letters that the Iowa pioneers wrote to their friends and in the guide books that were published for the benefit of immigrants, the changing seasons were often described. "Winter is generally dry, cold and bracing", wrote Albert M. Lea in 1836. "The waters are all bridged with ice; the snow is frequently deep enough to afford good sleighing, and it is considered the best season for traveling." Another writer portrayed winter as a time for hunting, quilting parties, and fun that usually lasted from December to March.

About spring there was difference of opinion. Some thought April was a gloomy month, full of wind and rain and cloudy skies. Others noticed the sunny days and watched the carpet of the prairie turn green, saw the leaves come out, and smelled the fragrance of spring blossoms.

Summers, they said, were warm but not too hot.

Sultry spells were relieved by gentle breezes and refreshing showers. For several weeks during July and August in 1835 an exploring party of soldiers rode across the prairie through grass six feet high and did not mind the heat.

Of all the seasons, however, autumn has always been thought to be the most beautiful. From the end of August to December the sky is clear and the air is fresh. Day after day for weeks during the calm period called Indian summer the sun is veiled in light haze, "while the forests are tinged with the most gorgeous hues, imparting to all nature something of the enchantments of fairy-land." Gradually these golden days fade into winter.

More precisely, according to official records, the average annual temperature in Iowa is about 48° above zero. In the summer the thermometer readings average approximately 72° and in the winter 22°. May 3rd is the average date of the last killing frost in the spring, while the first in the fall is most likely to come on October 5th. The wind blows from the northwest most of the year at about eight miles an hour, but in the summer it shifts to the south and brings the rain clouds. About thirty-two inches of water falls annually in the form of rain and snow. On three-fifths of the days in a normal year the sun shines clearly.

J. E. B.

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