

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."

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