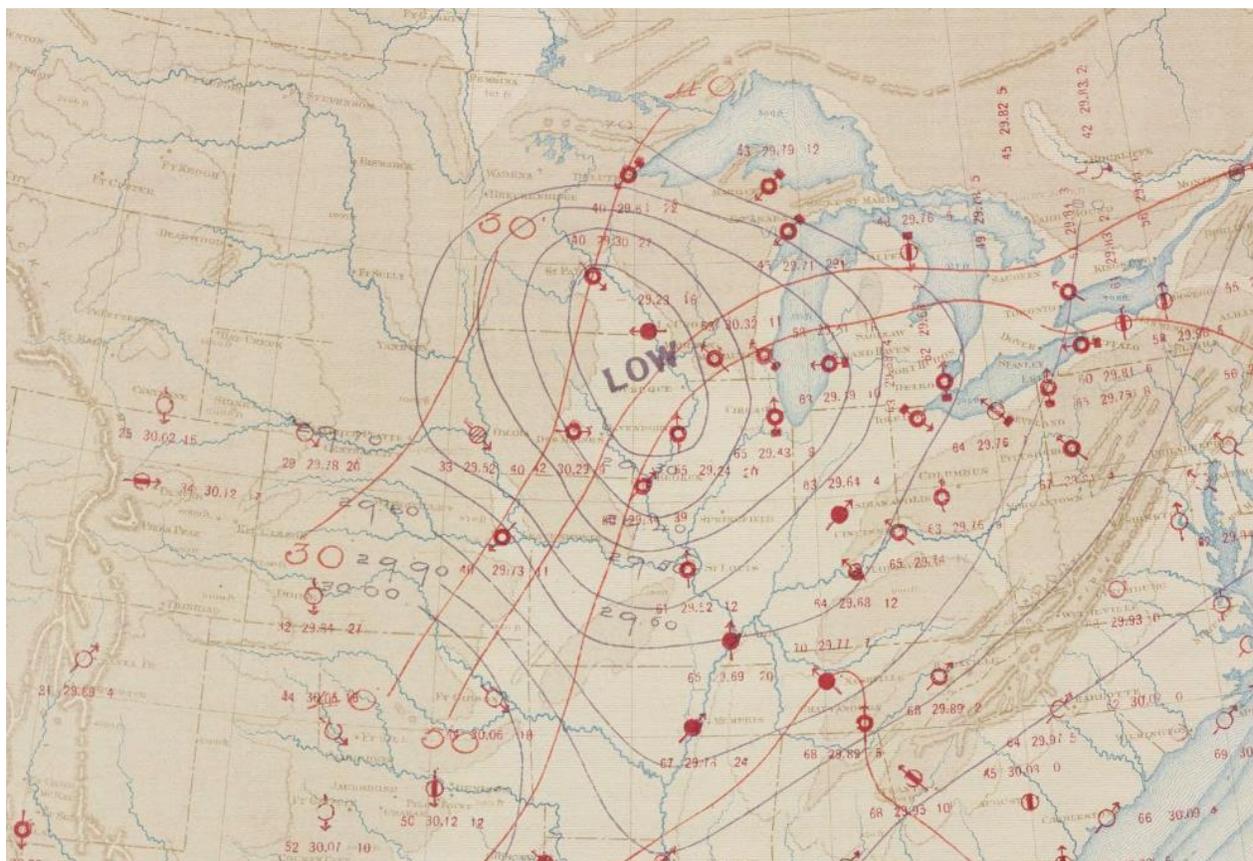


The Blizzard of October 15-16, 1880

MNDNR State Climatology Office



October 16, 1880 US Signal Service Daily Weather Map

The earliest blizzard on record for Minnesota is October 15-16, 1880. This early blizzard came on the heels of six fairly mild winters. The blizzard and the winter that followed was immortalized in Laura Ingalls book: “The Long Winter.” The center of the low moved from the Oklahoma Panhandle to La Crosse Wisconsin by Sunday, October 16. It is unknown how much snow fell with this system since snow measurements were not required at the time. 10 to 15 foot drifts blockaded the railroad lines in southwest Minnesota and was the beginning of one of the longest winters in Minnesota History.

Climatology Volunteer Tom St. Martin wrote an extensive recap of the blizzard as part of his larger work on the winter of 1880-1881.

THE LONGEST WINTER: 1880-1881

THE OPENING SALVO: OCTOBER 1880

For most Upper Midwest residents the winter of 1880-1881 probably came as an unpleasant surprise. Although the winter of 1874-1875 had been bitterly cold (with an average December-February temperature of about 4 F at the St. Paul Signal Corps station), most of the winters

immediately following had featured average to warmer than average temperatures, perhaps encouraging pioneer era residents to think that the Upper Midwest's winter climate had moderated, that severe winters were a thing of the past.. At the St. Paul Signal Corps station, for example, December-February temperatures averaged about 19F in 1875-1876; about 16 F in 1876-1877; a record 29 F in 1877-1878; and about 19F in 1879-1880. Notions of a milder, gentler winter climate were no doubt further encouraged by the fact that the six years following 1874-1875 were marked by an unusual number of anomalously warm winter months (December 1875, 25 F; February 1877, 32 F; December 1877, 34 F; January 1878, 22 F; February 1878, 32 F; and January 1880, 26 F). Moreover, temperatures during the spring, summer and early autumn months of 1880 had been near or somewhat above normal. Specifically, temperatures at the St. Paul station averaged about 63 F, 73 F, 70 F and 60 F during May, July, August and September 1880, respectively, and near normal seasonal temperatures were recorded in early October and again in late October 1880.

Tragically, however, any hopes raised by six consecutive relatively mild winters and the generally warmer than normal months of 1880 were dashed suddenly and emphatically in mid-October. Beginning on 15 October and ending on 19 October 1880, the Upper Midwest, most of Minnesota included, was pounded by an intense early season storm which brought heavy snowfall, record low barometric pressures, high winds, freezing temperatures, extensive damage and which, at least in the Great Lakes region, resulted in a considerable loss of human life. According to the October 1880 edition of the U.S. Army Signal Corps' Monthly Weather Review, the storm began as a "depression" centered near Dodge City Kansas on the morning of 15 October. Areas of high pressure were noted in areas to the southeast and northwest of the center, barometric pressures as high as 30.56 and 30.58 inches noted at Portland, Oregon and Olympia, Washington, respectively. The Review then went on to describe the events of the succeeding days as follows:

"During the day [15 October] the pressure decreased rapidly to the north and east of the center ['centre' in the original], and at the afternoon report the area was well defined as central near Leavenworth [Kansas], the temperature being high in the eastern quadrants and very low, with snow, from the Missouri river westward to Colorado and Wyoming. The storm increased in violence as the depression moved to the northeast, many observers in Iowa and the adjoining states reporting it as the most violent storm that had occurred in twenty years. The midnight report of the 15th indicated that the storm had continued its northeasterly course to the northeastern portion of Iowa, the barometer at St. Paul being 29.23, and that at Davenport 29.24. The isobarometric lines of 29.30, 29.40, 29.50 and 29.60 completely inclosed the depression in the Upper Mississippi Valley and the Upper Lake region....heavy snow, blockading railway trains, were reported in the region between the Mississippi and the Missouri river and more than one inch of rain fell at St. Louis, Madison, Indianapolis, Toledo and Cairo. The course changed to the north during the night and the pressure at the center continued to decrease until it reached 28.85 at St. Paul and 28.86 at LaCrosse, the barometric gradient at this time being about four tenths of an inch for one hundred miles. During the 16th this storm continued with great violence in the Lake region, but observers report that many vessels were saved by the warnings given by cautionary signals which were displayed at lake ports in advance of the storm. When the wind shifted to the southwest it increased in force, reaching 60 miles per hour at Milwaukee, 48 miles at Grand Haven and 45 miles at Escanaba in the afternoon of the 16th.....One unknown schooner reported sunk out in the lake [Michigan] a short distance from port.....The steamer 'Alpena' which left Grand Haven on the night of the 15th with 60

passengers is also believed to be lost.....The height of the waves and the fury of the storm is the subject of comment among all mariners. The observer at Escanaba reports: 'Three masted schooner 'Evening Star' went ashore on the west side of the bay and was landed clear out of the water, wind from the east in early morning, veered to the southwest at 8 a.m. on the 16th, increasing in force, reaching the maximum, 45 miles per hour at 2:30 p.m., when the wind vane was blown from the roof.'.....The storm seems to have been most violent on Lake Michigan where the wind forced the water to the lower end of the lake, causing it to rise eight or ten feet above the usual level thus driving vessels ashore and destroying property near the lake. Reliable estimates have been made which place the value of property lost at little more than half a million dollars; 84 vessels were wrecked and 93 lives lost.....As the center passed to the northeast of Lake Superior the temperature fell decidedly in the western quadrants, accompanied by snow throughout the Lake region and southward to Kentucky, and killing frosts occurred as far south as the northern portion of the Gulf states."

Although the Review's writers make little mention of the storm's impact on Minnesota and what was then the Dakota Territory, other accounts indicate that these areas experienced similar conditions: gale force winds, falling temperatures and heavy precipitation. In the more westerly regions, however, much of the precipitation fell as snow, snow which, driven by high winds, created one of the worst autumn blizzards ever recorded. The 17 October 1880 edition of the St. Paul Pioneer Press, for example, described the event as beginning with a "furious wind and rain storm" which began on 15 October, changing over to snow during the early morning hours of 16 October. The wind and the snow were said to have held "high carnival all day" on Saturday [16 October], "that business of all kinds was greatly impeded by the storm" and that, by evening, St. Paul city streets "were well-nigh deserted. "On the following day, the Pioneer Press reported that "railroads were blockaded" by snow drifts and that buildings in some areas were unroofed and blown down. In a similar vein, the 18 October 1880 edition of the St. Paul Dispatch reported that the "terrific wind and snow storm of Friday night extended from northern Minnesota to southern Iowa". The "gale" was said to be "tempestuous" in places with "much damage". The Dispatch story further noted that a train was snowbound at Melrose and that, due to a storm related breakdown in telegraphic communication, no current weather reports had been received from Army Signal Corps stations at St. Vincent, Breckenridge, Duluth and Yankton [Dakota Territory].

Although the storm had exited Minnesota by the end of the day on 18 October, rail and telegraph services were not fully restored for several days. The 19 October edition of the St. Paul Dispatch reported, for example, that telegraphic communications had not yet been re-established "west of Waverly" and that the railroads were still attempting to "get back on time". Other newspaper stories written on 19 October included reports of deep drifts with eight inches of snow at Winona. Another account provided by a Bird Island correspondent noted ten foot drifts in his area, the result of what he stated was the "most violent snowstorm ever known in Minnesota". In St. Paul, some residents were said to have been caught unprepared by the early season storm and were, consequently, without adequate supplies of food and fuel.

Unfortunately, there is no record of the amount of snow which fell in St. Paul during the October 1880 storm (as noted previously, Signal Corp station observers did not keep daily snowfall records during the early 1880's). Extant records do, nonetheless, suggest a prolonged fall of heavy wet snow (much of which probably melted as it reached the still warm ground).The St. Paul and Ft.

Snelling post hospital stations measured 1.38 and 1.45 inches of precipitation, respectively on 16-17 October 1880: temperatures at the St. Paul station ranged from 40 F to 31 F on 16 October and from 33 F to 28 F on 17 October. This combination of heavy precipitation and freezing or near freezing temperatures suggests a probable accumulation of two to three inches of slushy snow (with greater accumulations likely in the open areas outside the city). Minneapolis observer William Cheney (one of the few observers who did record snowfall during the early 1880's) recorded 1.5 inches on 16 October, a value which although somewhat lower than that suggested by the St. Paul record and by the duration of the storm, does, nonetheless, provide proof that a substantial amount of snow fell/ accumulated in the Twin Cities area on 16-17 October.

As noted previously, the October 1880 storm featured gale force winds which limited visibility, produced dangerously low wind chills and, at least in rural areas, piled snow into huge drifts. Sustained winds of 36 MPH from the southeast were recorded at the St. Paul station on 14 October; 32 MPH from the northwest on 15 October; 36 MPH from the west on 16 October and 23 MPH from the northwest on 17 October. And, as noted previously, St. Paul observers recorded a mean sea level pressure of 28.85 inches at about 0600 hours local time on 16 October.

A third St. Paul newspaper, the St. Paul Globe, like its competitors (i.e. the Pioneer Press and the Dispatch) reported [on 17 October] that “the phenomenal storm which struck the state and the entire northwest has interfered seriously with the operation of the different lines of the railroads. The avant courier of the storm was a fierce gale which prostrated every telegraph line. This was followed by a heavy fall of rain turning into a driving snow storm which lasted the whole day yesterday” [16 October]. On the following day [18 October] the Globe, reporting on the aftermath of the storm, stated that “up to noon yesterday the telegraph wires were down in every direction....about thirty five miles of poles northwest of the city [St. Paul] between Anoka and Sauk Rapids were reportedly torn up. The Fergus Falls express train is snowed in at Melrose where the storm was felt with unusual severity”. On 19 October, the Globe told its readers that the St. Paul, Minneapolis and Manitoba road was “running wild” (a phrase presumably referring to the railroad’s inability to communicate via telegraph with its trains and depot agents). The same edition further noted that “telegraph wires are all down” and that the Bird Island area had been buffeted by a “lively blizzard. Lasting from Friday night until Sunday night....every object on the prairie is drifted under or nearly so”. Also, as in many other parts of the state, trains in the Bird Island vicinity were reportedly “blocked”. On 20 October, the Globe announced that reports of the sinking of the steamer Alpena on Lake Michigan had been “confirmed” and that 50 to 100 passengers and crew had been drowned. The same edition further reported that “at Sioux City, Iowa a storm of sleet and snow set in on Friday [15 October], becoming a “severe snow storm” on Saturday and continuing in “modified form” through Sunday and yesterday. The Globe also noted that “leading railroads leading to the city, except the Sioux City and Pacific have been blocked. It has not been cold but large losses of [live]stock have been reported.....communication by rail and telegraph are so completely cut off that reports from the country are yet meager....The oldest inhabitant does not remember a storm of so much severity so early in the season...”.

Like its St. Paul counterparts, the Minneapolis Tribune carried numerous storm reports, one of which [17 October edition] was published under a headline proclaiming “The Worst On Record; The Tremendous Blizzard of Friday Night and Saturday”. According to this source, the storm was “still raging” in southern Minnesota and eastern Dakota.....The St. Paul and Duluth [railroad] “has kept up telegraphic communication but trains are delayed.....On the Chicago, Milwaukee and St.

Paul lines, it is claimed, all trains are moving on time, except where delayed by telegraphic communications being broken. Along the Northern Pacific west of Brainerd there is said to be less snow than this side of and near Sauk Rapids. Trains are delayed by snowdrifts. Thirty five telegraph poles were prostrated between Sauk Rapids and east Minneapolis. The storm was very severe on the St. Paul and Sioux City division of the Chicago, St. Paul, Minneapolis and Omaha line; also on their branches and along connecting lines as far as heard from, but by this morning it was expected that all causes of delay on the road would be removed, and the telegraph lines would be replaced. On the Chicago division of the Omaha line the storm was heavy, but trains got through with some delay.....”.

The 18 October Tribune further reported that, according to reports from its Fargo [Dakota Territory] correspondent, “the October blizzard struck on the Northern Pacific today and from present appearances we shall be under six inches of snow by tonight [16 October]. It began to rain and gradually grew colder with the increasing wind. Incoming trains report the same storm west and south of here.. It [the storm] will temporarily interfere with the hauling of wheat to the railroad station....but all here expect the premature snow to pass away as soon as it has come, leaving us some weeks of good threshing and plowing weather yet”. Two days later [20 October], the Tribune’s Duluth correspondent reported that “during the late storm no snow fell west of Casselton on the Northern Pacific and in the Red River Valley only two inches fell. From Verndale east along the Northern Pacific, the fall of snow was heavy and is yet nearly all lying on the ground. At Brainerd, fifteen inches fell [a value seemingly inconsistent with earlier reports of snowfall in that area]. Wheat began moving over the Northern Pacific again on Monday [18 October]. Barnes and Magill have about 10,000 bushels in store here and vessels enough are in port to take this away at once...”.

Other reports indicate that the storm was especially severe at Duluth, enhanced as it was by the impact of high winds on waters in the Duluth Harbor. According to the Minneapolis Tribune [18 October], the newspaper’s Duluth correspondent reported “the heaviest storm, accompanied by snow, known in this region struck on Friday night [15 October] and lasted until Sunday morning [17 October]. The lake was raised mountain high. When it struck the breakwater, the spray of the waves reached the height of one hundred feet. The damage to the railroad and harbor property will probably reach ten thousand dollars. The St. Paul and Duluth yard was badly torn up, cars broken and tracks washed away and covered with six to eight feet of gravel. The damage to elevator “A” will be the severest, as it is badly needed at this time of year. The floor was covered to the depth of three feet with water, and the track running inside of the elevator on the east side covered at least nine feet with the debris of logs, stones, etc. Immense boulders weighing half a ton were thrown over the breakwater alongside the elevator, and filling in with gravel so as to make wheat shipping impossible for a day or two.....Graff, Little and Co. had some twenty five thousand feet of lumber washed from the dock, and it is strewn along the shore for some distance, broken to splinters. A serious railroad accident occurred yesterday morning. Train no. 7 was ditched near Spirit Lake by a washout.....”.

The Tribune’s account of the storm’s impact on the Duluth harbor was expanded – and perhaps embellished – by the Duluth Weekly Tribune on 22 October. In a lengthy article entitled “The Great Storm,” the Tribune writer noted “that some years back there was a storm occurred at the head of Lake Superior, which for severity on and about the Lake was a memorable one.....Well,

the year 1880 has eclipsed that storm by a very ‘respectable plurality,’ at least. The storm of several years ago was, comparatively, a local affair, confined to the Lake and vicinity. But the northeaster which struck the head of the Lake region Friday night was no local breeze...It reached all over the Northwest – Dakota, Minnesota, , northern Iowa and Wisconsin.

“The storm everywhere was a blizzard laden with snow and sleet. On the Southern Minnesota railroad even, the trains were snowed in drifts twelve feet deep. Several shipwrecks were reported on the lakes, although shipping did not suffer anything like what might have been expected, which was owing to the fact that ample warning was sounded and all but a ‘scattering unfortunate’ succeeded in reaching harbors of safety. The storm on Lake Michigan, off Chicago, Milwaukee and all lake ports was excessively severe, as it was here.

“Here at Duluth the storm was something fearfully grand. The sea ran mountains high and did a great deal of damage to property along the outside harbor...When the waves would strike, the breakwater spray reached the height of one hundred feet.....Graff, Little and Company had some twenty five thousand feet of lumber washed from the dock.....During the first half of Friday night, shipping came flying into port, and in the awful sea, wind and darkness, some of the later arrivals had all they could possibly do to find the canal and to make it in safety, after they had found the light through the clouds of spray at the mouth of the canal. Several captains could not see the low little ‘june bug’ lantern at the mouth of the canal until they came so near to the shore that it required almost superhuman effort to recover themselves.....At this writing, it is feared that the little schooner Mary Ann is lost. She is said to have left Bayfield for this port, loaded with lumber, just ahead of the storm on Friday evening...when last seen by the crew of the steam tug Camp, she had got too far out to be able to go back....

“...the telegraph brings us terrible news from Lake Michigan, in particular, and the loss of shipping and lives startling. The steamboat Alpena, heads the list....She was wrecked somewhere off Grand Haven, and of the hundred souls on board, not one survived to tell the awful tale. Pieces of her wreck and cargo were coming ashore between Grand Haven and Holland and the body of one lady passenger has been washed ashore...It is believed that the Alpena struck a rock and went to pieces on Saturday morning.....Such a storm was never known before by the oldest navigator living.....”.

Predictably, the extent and severity of the October 1880 storm provoked comments from Minnesota newspapers other than those published in the Twin Cities and Duluth. The 22 October 1880 edition of the Rochester Post reported, for example, that “in all probability the storm of last Friday and Saturday is without parallel in the history of early storms in the Northwest....The snow storm began in this vicinity about noon on Saturday last and continued in an intermittent way until Sunday afternoon with considerable wind. Thermometers also indicated an unusually low temperature for October. In other parts of the country, the storm was more severe, the storm extending over this state, Dakota, Iowa, Wisconsin and Illinois, reaching as far east as Buffalo, New York. The railroads were blockaded and trains delayed for two days...The heavy cuts west of Sleepy Eye, fifteen feet deep, were filled with snow. Three hundred man and three engines with snow plows were sent west from Sleepy Eye, sixty more men being obtained at Rochester...When the men reached Sleepy Eye, a horse and cow were found frozen to death, which gives an indication of the intensity of the cold....At Chicago, no snow fell but buildings were demolished and freight cars blown into the river...”.

Similarly, the 21 October 1880 edition of the St. Cloud Journal-Press noted that “a rain which began falling on Friday afternoon changed about midnight into snow and on Saturday morning the ground was covered to the depth of several inches with snow. The fall continued all day [Saturday], filling the air so that at times objects could not be discovered beyond a few rods ahead. A strong wind prevailed, piling the snow into drifts that obstructed travel by teams and rail. The trees were loaded with the snow which clung to the rain coated limbs and leaves and the more fragile ones were dragged to the ground....Fully eight inches fell here and still more to the westward. The Northern Pacific train up was only an hour or two late but the St. Paul, Minneapolis and Manitoba mail train due here at a little after eleven on Saturday forenoon did not arrive until nearly midnight on Saturday, having been almost twelve hours getting from Clear Lake here, a distance of twelve miles....Travel from the country was almost suspended...Until yesterday morning the air had a decidedly winterish feel, but since then the weather has been more moderate and the snow has disappeared rapidly.....”.

Unlike other Minnesota newspapers, the Stevens County [Morris] Tribune emphasized the agricultural aspects of the October storm. In its 21 October 1880 edition, the Tribune noted that the “great injury [was] the delay and set-back to fall work: and all business in the agricultural districts will feel the effects of this unprecedented storm. The worst feature is the hinderance [sic] to ploughing as the snow, if it melts, will soften the ground, fill it with moisture and render it difficult to work and liable to freeze up. This is a serious matter, as there is a large acreage yet to be turned over by the plow. All threshing operations are temporarily suspended, and as there is yet three fourths of the grain in the stacks, this uncanny weather is a serious drawback both to farmers and merchants. However, threshing can be attended to at almost any time, but yet the business interests of the state must suffer to a greater or lesser extent. There is some consolation in the fact that the storm raged with greater ferocity in other states than in ours....”.

Other reports indicated that, on 16 October, winds reached seventy miles per hour at Yankton, Dakota [Territory], blocking railroads and piling snow into drifts ranging from ten to fifteen feet in depth. On the same date [16 October], Vail, Iowa reported snow drifts three to five feet in depth. Wind damage to trees, out buildings, fences and other similar structures were reported at Dubuque, Iowa.

Additional information regarding the October 1880 storm and its impact on the non-urbanized areas of Minnesota is provided by records kept by Benedict Juni at New Ulm, one of a few cooperative stations maintained by the U.S. Army Signal Corps during the early 1880's. According to the Juni record, winds reached force 8 levels (estimated at sixty five miles per hour) from the northwest at 2100 hours local New Ulm time on 16 October. On the same date, barometric pressure (unadjusted to MSL) dropped to 28.246 inches with temperatures of 33F, 33F and 31 F at 0700, 1400 and 2100 hours, respectively. Windy and cold conditions prevailed on 17 October: Juni recorded a temperature of 30.5 F accompanied by force 6 winds from the northwest at 1400 hours on that date. And on the morning of 18 October, New Ulm's temperature dropped to a wintery 18 F, rising to 24 F at 1400 hours and to 27 F at 2100 hours. In comments appended to his October report, Juni further noted a “rainstorm accompanied by hail stones one-fourth to one-eighth inch in diameter” on 15 October. “Snow accompanied by a strong gale” was noted on both 16 and 17 October.

Interestingly, however, one of the most exhaustive, poignant and personal accounts of October's anomalous blizzard is to be found, not in newspaper accounts or in quantitative records but in Laura Ingalls Wilder's book entitled "The Long Winter". In her book, Wilder, then a teen age girl living with her family in what is now east central South Dakota, recounts the rigors of the winter of 1880-1881 as experienced by herself, her family and her fellow villagers in the then struggling pioneer community of DeSmet, Dakota Territory. Winter's premature October debut is described by Wilder in the fourth chapter of the "Long Winter" in words that make any sensitive reader feel as if he or she were huddled with the Ingalls family as the blizzard winds howled outside their homesteader's shanty:

"Laura woke up suddenly. She heard singing and a queer slapping sound.....Pa was singing his trouble song and slapping his arms on his chest. Laura's nose was cold. Only her nose was outside the quilts that she had huddled under. She put out her whole head and then she knew why Pa was slapping himself. He was trying to warm his hands.

"He had kindled the fire. It was roaring in the stove but the air was freezing cold. Ice crackled on the quilt where the leaking rain had fallen. Winds howled around the shanty and from the roof and all the walls came a sound of scouring.....They met at the stove where the fire was blazing furiously without warming the air at all. The window was a white blur of madly swirling snow. Snow had blown under the door and across the floor and every nail in the walls was white with frost.....A b-b-b-b-blizzard!" Ma chattered. "In October. I n-n-never heard of..." She put more wood in the stove and broke the ice in the water pail to fill the teakettle.....The shanty was growing colder. The stove could not warm the air inside the thin walls. There was nothing to do but sit huddled in coats and shawls, close to the stove.....

"The cold crept in from the corners of the shanty, closer and closer to the stove. Icy cold breezes sucked and fluttered the curtains around the beds. The little shanty quivered in the storm. But the steamy smell of boiling beans was good and it seemed to make the air warmer.....Pa had to bring in more wood. They were thankful that the woodpile was close to the back door. Pa struggled in breathless with the first armful. When he could speak he said, 'That wind takes your breath away.....Now I'm bringing in as much snow as wood. That was almost true. Every time Laura opened the door for him, snow swirled in. Snow fell off him and the wood was covered with snow. It was snow as hard as ice and as fine as sand, and opening the door made the shanty so cold that the snow did not melt.....

".....In the morning Pa sang again his sunflower song. The window was the same white blur, the winds still drove the scouring snow against the shivering little shanty. The blizzard lasted two more long days and two more nights. On the fourth morning, there was a queer feeling in Laura's ears. She peeped from the quilts and saw snow drifted over the bed. She heard the little crash of the stove lid and then the first crackling of the fire. Then she knew why her ears felt empty. The noise of the blizzard had stopped!

"She jumped out of the warm bed, into air colder than ice. The hot stove seemed to give out no heat at all. The pail of snow water was almost solidly frozen. But the frosted windows were glowing with sunshine.....'We'll have Indian summer yet,' Ma was sure. 'This storm was so

early, it can't be the beginning of winter.' 'I never knew a winter to set in so early,' Pa admitted. 'But I don't like the feel of things.'.....'There's some stray cattle by the haystacks.....I guess they're tired out by the storm...They took shelter there by the haystacks. I thought I'd let them rest and eat a little before I drove them off. I can't afford to let them tear down the stacks, but they could eat a little without doing any harm. But they aren't eating.....Well, I might as well go drive them off.'

"He put on his coat and cap and mittens again and went out. After a moment Ma said, 'You might as well go with him, Laura. He may need some help to drive them away from the hay.' Quickly Laura put on Ma's big shawl.....Outdoors the sun glitter hurt her eyes. She breathed a deep breath of the tingling cold and squinted her eyes to look around her. The sky was hugely blue and all the land was blowing white. The straight, strong wind did not lift the snow, but drove it scudding across the prairie. The cold stung Laura's cheeks. It burned in her nose and tingled in her chest and come out in steam on the air. She held a fold of the shawl across her mouth and her breath made frost on it.

"When she passed the corner of the stable, she saw Pa going ahead of her and she saw the cattle. She stood and stared. The cattle were standing in sunshine and shadow by the haystacks – red and brown and spotted cattle and one thin black one. They stood perfectly still, every head bowed down to the ground. The hairy red necks and brown necks all stretched down from bony gaunt shoulders to monstrous, swollen white heads.....They did not seem like real cattle. They stood so terribly still. In the whole herd there was not the least movement. Only their breathing sucked their hairy sides in between the rib bones and pushed them out again.....For a moment Pa stood looking. Then he stooped and quickly did something. Laura heard a bellow and a red steer's back humped and jumped. The red steer ran staggering and bawling. It had an ordinary head with eyes and nose and open mouth bawling out steam on the wind.....At last they all drifted away together. They went silently now in the knee deep spray of blowing snow.....When Pa came in Ma asked him, 'What was wrong with the cattle.....?' 'Their heads were frozen over with ice and snow,' Pa said. 'Their breath froze over their eyes and their noses 'till they couldn't see or breathe....."

"That was a queer storm all around," said Pa. 'I don't like it.' 'Why..it was only a blizzard,' Ma said. 'We'll likely have nice warm weather now. It's beginning to warm up a little already.'.....The air that came in.....was very cold, but the sun was already beginning to melt the snow on the snow on the south side of the shanty. There were only slivers of ice on the water pail next morning and the day was sunny and warm....."

In addition to Wilder's and other accounts of the October storm itself, area newspapers carried numerous follow-up stories, stories which, predictably, were focused on the maritime tragedies caused by wind driven waves on the Great Lakes. The 20 October 1880 edition of the Minneapolis Tribune, for example, published an extensive report on the fate of the steamer Alpena and its passengers. This report, sent by "special telegram from the Milwaukee Sentinel" told Minnesota readers that the shoreline between Grand Haven and Holland [Michigan] was strewn with the wreck of the Alpena. "Part of the hurricane deck, doors, shutters, furniture, etc. is being picked up on the beach. Pieces of boxes with the words 'per steamer Alpena' and satchels and shawl straps known to have been owned by passengers have been found. The body of Ms. Bradley of Silver

Lake, New Mexico, was found five miles north of the pier at Holland. There was no life preserver on the body. Clothing, etc. is being washed ashore continually. The direction from which the pieces of the wreck are coming would indicate that she went down about thirty miles southeast of here [Grand Haven]....". Other reports told of the loss of numerous ships, some of the wrecks involving loss of human life and most involving loss of valuable cargoes (e.g. lumber and iron ore).

The 20 October Tribune further noted that "large losses" of livestock were reported in the Sioux City [Iowa] area. "Nearly all farmers in this neighborhood have reported losses. One man in this county is reported to have lost three hundred head of sheep. In Dakota, Nebraska and Iowa the roads have been so blocked up and communications by rail and telegraph so completely cut off that reports from the country are yet meagre [sic]. The oldest inhabitant does not remember a story of such severity so early in the season. The weather today is bright and pleasant and the snow rapidly disappearing".

Similar reports appeared in the 21 October edition of the Stevens County [Morris] Tribune. According to this source, a Mr. A. Wells stated that "one man perished in the storm" in the vicinity of Herman and that "a lot of stock were lost". The Tribune also noted that the "storms disarranged the mails the first of the week and as a result there was no telling how things went in the outer world, but then we had enough to do clearing up the wreck and shoveling away the snow....The hurricane of Saturday played havoc with the earthworks at Messrs. H.W. Stone and Company's dam. The furious wind beat the water into heavy waves, washed and broke over the dam with such force that only the prompt raising of the flood gates saved it from destruction. As it was, however, considerable injury was done by the water and it will require some time to repair the damage.....".

Although chilly weather marked the days immediately following the 17-19 October event, more seasonal conditions were noted during the last ten days of October, continuing into early November 1880. Daytime temperatures at the St. Paul Signal Corps station ranged from the 40's F to the 50's F during the period, 21-31 October, reaching a maximum of 59 F on 29 October. The highest temperature recorded at St. Paul during the month was a balmy 78 F on 8 October and maxima on the days immediately preceding the storm were in the 50's and 60's F. Similarly, Minneapolis observer William Cheney recorded 78 F and 58 F at 1400 hours on 8 and 29 October, respectively. In his monthly weather summary printed in the Minneapolis newspapers of the time, Cheney noted, however, that October 1880 was the coldest recorded at this station since October 1875. He then added that the "remarkable feature of the month was the severe storm of the 16th which began as rain on the evening of the 15th, turning to snow on the morning of the 16th and continuing through the day until about five p.m.It was very wet snow and as the temperature was near the freezing point it did not accumulate much but melted rapidly as it fell and gave us a measurable depth of only one and one half inches....snow fell again very slightly on the 19th and the 21st.....".

Although small amounts of snow fell at various Minnesota and Upper Midwest locations during the last ten days of October, there was little or no cover at the end of the month, the late October warmth having melted virtually all of the snow deposited on 16-18 October. At Breckenridge, Signal Corps observers reported a trace of snow on the ground at the end of the month while at New Ulm the October blizzard produced fifteen inches of snow, the ground was bare by month's end. Interestingly also, prairie and/or forest fires were reported at St. Vincent, Minnesota on 7, 23 and 24 October and at Breckenridge on 1,2,4-12, 26 and 31 October.