

1939

The 1938 Longspur Tragedy in Northwest Iowa

T. C. Stephens
Morningside College

Copyright © Copyright 1939 by the Iowa Academy of Science, Inc.
Follow this and additional works at: <https://scholarworks.uni.edu/pias>

Recommended Citation

Stephens, T. C. (1939) "The 1938 Longspur Tragedy in Northwest Iowa," *Proceedings of the Iowa Academy of Science*: Vol. 46: No. 1 , Article 120.
Available at: <https://scholarworks.uni.edu/pias/vol46/iss1/120>

This Research is brought to you for free and open access by UNI ScholarWorks. It has been accepted for inclusion in Proceedings of the Iowa Academy of Science by an authorized editor of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.

THE 1938 LONGSPUR TRAGEDY IN NORTHWEST IOWA

T. C. STEPHENS

On Thursday, January 6, of this year (1938), I received by mail from Mr. Weir R. Mills, of Pierson, Iowa, the bodies of twelve birds. They were all Lapland Longspurs (*Calcarius lapponicus*). Later a letter reported that these bodies had been picked up from the streets in the business district of Pierson on Thursday morning. This was the first intimation I had of a rather wide-spread destruction of these birds in northwestern Iowa on the night of January 5-6. It may be well to state at this time that there was a light snow fall on this night, but it amounted to less than a half inch. The effect of the snow on the birds will be discussed later.

On Saturday, January 8, I received a single specimen from Ida Grove, which also proved to be a Lapland Longspur. Through the local Conservation Officer, Mr. W. W. Trusell, I received reports on Thursday and Friday from various towns in the northwestern portion of the state. And later I sent letters of inquiry to the postmasters of about twenty-five towns, enclosing a post-card for reply. Altogether, we learned that there had been at

IOWA

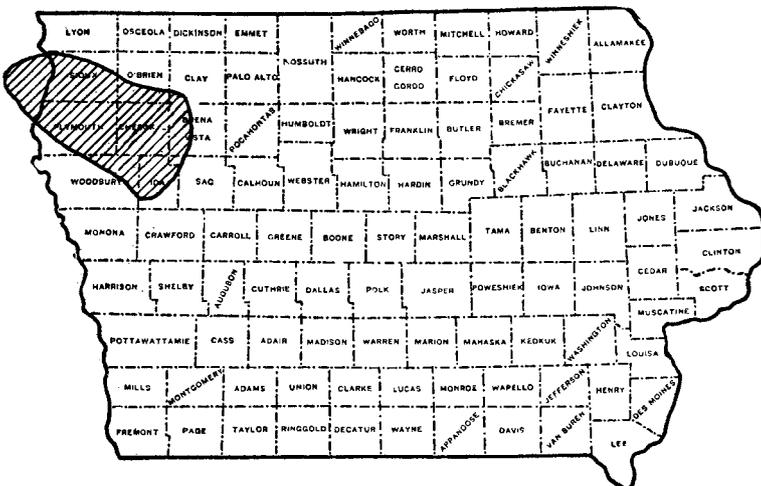


Fig. 1. Map showing area of longspur tragedy, shaded.

least some loss of birds at Rock Valley, Hawarden, Ireton, Alton, Paullina, Peterson, LeMars, Remsen, Storm Lake, Merrill, Kingsley, Pierson, Lawton, Merville, Correctionville, Ida Grove, and Battle Creek, in Iowa.

Negative reports were received from Rock Rapids, Sibley, Alta, Ocheyedan, Sheldon, Sioux Rapids, Aurelia, Cherokee, Sac City, Odebolt, Manning, Anthon, and Mapleton. These negative reports enabled us to delimit the area of the tragedy with a fair degree of accuracy.

On Saturday, January 8, two parties from Sioux City visited a number of towns in northwest Iowa for the purpose of gathering such information as might be still available concerning the destruction of the birds.

The first party, consisting of Conservation Officer W. W. Trusell, Wilfred D. Crabb, and Glen Gordon, left Sioux City at 8:40 A.M. and visited the towns of Lawton, Merville, Kingsley, Remsen, Marcus, Lemars, Merrill, and Hinton, arriving at Sioux City at 5:40 P.M. during a rather heavy snowfall.

The second party, consisting of Mr. Bruce F. Stiles, Borden Buchanan, and T. C. Stephens, left Sioux City at 12:30 P.M. and visited the towns of Merville, Pierson, Correctionville, and Anthon, arriving at Sioux City at 6:00 P.M.

The narrative account may now be given by localities, and with an attempt to keep the towns grouped geographically as well as possible.

Rock Valley. Rock Valley was the most northern town which participated in the tragedy, so far as we could learn. Mr. O. Z. Wood, State Conservation Officer, reported that dead birds had been found at Rock Valley, but no details were obtained.

Hawarden. My information from Hawarden was received in a letter from Mr. Ralph Wheeler, and I will give the following quotation from it: "I first noticed them [the birds] about 11:00 P.M. on the night of January 5. There were a few dead birds, and some that were crippled. The next morning about 6:00 o'clock there were hundreds all over the streets. I would estimate the dead birds at 1,000. We picked up 27 on a vacant lot 50 x 100 ft. We examined some of the birds, and in every case found an empty crop and gizzard, although there seemed to be plenty of fat tissue on them. We also took some of the live birds inside and fed them on bird seed. They ate at once, which is quite unusual for a captive wild bird. Some of the birds had no apparent bruises. The largest number was found in the best lighted streets. Our

rural carriers reported no loss in the country, but they noticed several flocks containing thousands of birds flying around in large circles."

Alton. From Alton we have a report from Mr. W. S. Slagle. He states that about 10:00 o'clock on the evening of January 5 he noticed quite a disturbance in the air. The storm began about this time with a rather dense foggy condition and a northwest wind, with small particles of snow or a very fine sleet. The birds seemed to have become bewildered. Mr. Slagle also noted the relation of the birds to the lights. He says that the town lights made "a very peculiar bright reflection in the sky, and I concluded the birds became confused, and coming toward the light flew against the wires, buildings, or other obstructions. The next morning a hundred or more dead birds were found on the city streets, with only a few in the residence neighborhood."

Paullina. State Conservation Officer O. Z. Wood wrote me that Mr. D. E. Lemke, of Paullina, had recovered several of the injured birds, and had watered them and fed them, and that they all lived. I wrote to Mr. Lemke for information and will quote from his reply, as follows: "I don't know exactly what caused their death, but it seems there was quite a mist in the air, and it seemed to weight the birds down considerably, and seeing the lights in the town they descended, bumping into the buildings and wires.

"I found seven birds lying in the snow, and they couldn't walk or fly. I put them in the basement and fed them bird seed and lettuce leaves. In a few days they were thriving nicely and became so tame that they would almost eat out of a person's hand. I kept them about a week, waiting for a warm day, and set them outside. Five of the birds left, but two remained in the box. On the next day I placed the box out again, and the two remaining birds flew away.

"These birds came in huge flocks. One lady reported that there was a flock of the birds beside one of the barns, and that the sky was black when they took to flight. It seemed that Main Street and other lighted streets were where the dead birds were found."

Peterson. Mr. S. H. Wareham, the Postmaster at Peterson, Iowa, reports that he found one man who had seen three dead "snow birds" in his driveway in the residence district of town. No other information was obtained.

Kingsley. The Postmaster at Kingsley reported by letter that the town Marshal had gathered up two and a half wheelbarrow

loads of dead birds, estimated at 2500 individual birds. In spite of this considerable number Mr. W. W. Trusel picked up a "pile" of the dead birds on Friday, the 7th. On Saturday when the party returned there they found that cats or dogs had removed about half of the pile. The remainder of the pile, in addition to the others picked up on the streets on the 8th, was gathered up and taken to Sioux City, and later found to contain 805 bodies. Twelve crippled birds were seen hopping about in the lumber yard. Eight dead birds were seen on the north side of the roof of a forty foot lumber shed. Thirty-six dead birds were found in a basement excavation on one side of which stood a two-story brick wall. In Kingsley there are the usual electrolier town lamps. But at the time of the bird tragedy the Christmas lights were still in place. These colored lights were strung in a line along the middle of the main street. Many of the dead birds were found below this string of lights. Early in the evening of the 5th the birds had been observed flying and circling above the lights. They began to strike obstructions and fall to the ground at 12:45 after the snow had begun to fall.

While in Kingsley the party heard a report of a large flock of birds on a farm four miles northeast of town. The party visited this farm owned by Mr. Warren Baker. Mr. Baker said that he had first noticed the vast flock of small birds on Thursday morning. Mr. Crabb has given me the following report of this incident. "The field is about 200 yards from the house; and from that distance the birds were so thick as to form a cloud. They circled and wheeled in the air and made a considerable cheeping noise. Mr. Baker said that when a large number of them would fly up into the air at once they sounded like the roar of an automobile on the road. By noon they had gone but the direction of this flight had not been noted. We visited the field to look for dead birds. We spread out and went up one side of the draw and down the other. No birds were found. The layer of snow was tightly packed down almost everywhere by the tramping birds. In the draw which ran through the field there was a considerable amount of foxtail grass, somewhat less on the hillside. The foxtail had been completely stripped of all seeds, and around every clump the snow was packed solid. The only live birds seen were two Longspurs and two Horned Larks, among a few other unidentified birds, in the pasture across the road."

Marcus. Not a great many birds were killed in Marcus, apparently. About a dozen birds, both dead and alive, were carried

into the newspaper office. But no general count or estimate was made. The birds had been noticed in the air as early as 8:00 o'clock on Wednesday evening.

Merrill. Only one dead bird was picked up in Merrill on Saturday by Mr. Trusell's party, and he reported only a "trace" of the tragedy here. But several days later (1/18/38) I received a card from Mr. J. W. Machamer, Postmaster at Merrill, saying that "a few dead birds were observed here in Merrill about the time you speak of, but we took them to be sparrows. I find that literally hundreds of dead birds were seen on the highway (No. 75) between here and LeMars. We think they flew onto the road and were killed by passing cars." Here is the only case where we have learned of the birds being killed on the open highway. Evidently the birds were flying low and got in the field of the headlights.

LeMars. The Trusell party interviewed a number of people in LeMars on Saturday afternoon, but could get very little information there. They did find a Mr. Hart who had seen many of the crippled birds hopping about the morning after the event. He also estimated that there were twelve dead birds to the block on each side of the street. It was here at LeMars that they heard of a farmer who firmly believed that some airplane pilot had purposely released the birds as a practical joke.

Mr. B. C. Woolley, of LeMars, has written me that the birds were heard over the city on the Wednesday evening as early as 8:00 o'clock. The night police reported that the birds appeared on the streets around 1:00 A.M. Thursday, and seemed to be bewildered. They flew six to eight feet above the ground. The police estimated that there must have been 100 birds down on the sidewalks and gutters within a block in all directions from the main intersection.

Mr. L. C. Billmyer, of LeMars, picked up a few live birds and placed them in a cage. They recovered and he fed them and watered them. They were four Lapland Longspurs and one Horned Lark. These five birds were loaned to Morningside College on April 14 and are still alive and in good condition at this time (June 9). They began molting about the last week in April, and are still shedding feathers (May 5). However, the black patch on the throat began to appear before any shedding of feathers was noticed, and was probably due to abrasion.

Rensen. At Rensen on the Saturday following the catastrophe only one or two dead birds were picked up by the Trusell party. Mr. Trusell interviewed one man who was on the streets at 3:00

o'clock on Thursday morning. This man said that the birds flew up from the pavement as he drove along, and that those flying in the air "struck the car like hailstones."

Mr. Jos. N. Beck, of Remsen, wrote me a letter saying that the dead birds in Remsen "were variously estimated to be from 1000 to 5000." The birds appeared over the town about 9:00 o'clock on the evening of the 5th. He, writing, said: "I examined a number of them and found them to be Lapland Longspurs. I expected to find Snowflakes and Horned Larks among them, with which they are usually found together in the fields, but found none." He wrote further that, "At one place where the wires cross Main Street about fifty dead birds were found in a stretch about twenty feet wide and fewer on either side of this area; so that farther away from the wires fewer were to be found. The lighted areas of town seem to have claimed the greatest number of birds, especially on Main Street. Along one street on the north side for a distance of three blocks (about half way across town) I found about fifty live birds on the ground feeding. When flushed they would fly a few yards and again alight. I have not seen any now for a few days."

Storm Lake. Evidently the town of Storm Lake was on the margin of the destruction area. The only report which we have comes from Mr. C. E. Lowry, who found two of the dead birds between his home and office — a distance of three blocks.

Lawton. Messrs. Trusell, Crabb, and Gordon, visited the town of Lawton on Saturday and found no dead birds. But they found one witness who reported seeing two dead ones and one cripple, the latter being identified as a longspur by one of the school teachers.

Correctionville. We visited Correctionville about 4:00 o'clock on Saturday afternoon. Six persons interviewed by Mr. Stiles did not know anything about the dead birds — either in Correctionville or elsewhere. However, we picked up fifteen longspurs on the streets. Later in the month Mr. Frank R. Lee wrote to Mr. Stiles that he had seen some dead birds on the ground in Correctionville on the date in question. A few miles south of Correctionville Mr. Stiles and Mr. Buchanan made a very careful search over about five acres of plowed field to see if any dead birds could be found there. None were found.

Anthon. We also visited Anthon about 5:00 o'clock on Saturday afternoon, and could not find a single dead bird on the streets. Four persons were interviewed, including the day and night mar-

shals but no one had seen or heard of any dead birds. The usual street lights had been burning on Wednesday night.

Moville. Mr. F. H. Rubelsky, attorney, was an eye-witness in Moville. He said there was a very light snow falling at 11:00 o'clock Wednesday night, January 5, and that at that time the birds were milling around in considerable numbers. At 1:00 o'clock the birds were falling to the ground. He could hear them as they struck the walls of the buildings, and again as they fell to the sidewalk. He thought there were "thousands" of birds in the air at this time.

Mr. Lavern Henry Whittecar, who operates a cafe, was also an eye-witness. He closed his cafe about midnight and went on an errand. When he came back to the lighted business district at 1:00 o'clock the birds were flying about in great numbers, and were falling to the ground. He gathered up a bag full of dead birds to give to his cats.

Mr. Ralph Greeson, the Day Marshall at Moville, gathered up the dead birds from the streets on the morning of the 6th, but he gave us no estimate of the total number killed.

In Moville there is a central street intersection. Extending diagonally from the corners of this intersection were two strings of colored Christmas lights—in addition to the regular street lamps. It was at this point that the greatest mortality occurred. On the sidewalk in front of one building fifteen birds were swept up in the morning.

Some of the birds at Moville were only stunned, and were able to fly again after the impact. Others, though not killed, were unable to fly. Mr. Rubelsky stated that he saw Mr. Whittecar reaching up and trying to catch some of the birds on the wing.

Mr. Oscar Oder, of Moville, observed that many birds were killed by flying into wires. Many dead birds were found on the ground south of the line wires, forty feet high, along Highway No. 20. In other parts of the town the lower telephone wires seemed to do no damage; however, this difference may have been conditioned by the amount of illumination.

On Saturday afternoon, when our party visited Moville, we picked up twenty-two bodies, practically all in the lighted business district.

Pierson. Mr. W. R. Mills told us that he estimated that about 500 birds had been killed in Pierson. Many of these were picked up on Thursday morning. Some had received broken wings, and

were unable to fly. On Saturday afternoon our party found seventeen bodies still on the streets — mostly on the main street.

Ida Grove. Rev. John V. Madison, of Ida Grove, who sent me the single Lapland Longspur previously mentioned, also wrote that he counted forty dead birds in one block on Thursday morning. He estimated that the total number of birds killed in Ida Grove would run between 1500 and 2000.

Dr. E. S. Parker, of Ida Grove, was an eye-witness in that locality. He describes the weather as cold with a light mist in the air at 12:30 on the morning of the 6th. Snow fell lightly later in the morning. He saw no birds at 12:30. When the doctor went to his office the next morning the ground was covered with a half inch of snow. At this time the dead birds were scattered around on the streets and gutter. He states further that he drove around on the streets and found that very few birds fell in the residence area, where the lights were shaded above. "Nearly all the birds were on the asphalt streets in the eight blocks of the town lighted by electroliers, which no doubt, threw light upward through the mist." Dr. Parker's estimate of the number of birds killed was 200 for the electrolier district and 25 for the rest of town.

Several live birds were picked up by John Rathjen and kept for about ten days. He found then that the birds readily ate in captivity, and became rather tame.

We have thus presented the narrative of the catastrophe as observed in Iowa. Nature knows no political boundaries, so it is not surprising to find that the same weather conditions prevailed in southeastern South Dakota, and that the longspurs covered that territory also.

How much of South Dakota may have experienced the longspur tragedy on January 6 I do not know. I have a report from only one locality, namely, Beresford. At Beresford, which is about twenty miles west of Hawarden, Iowa, more than 300 dead birds were observed by Dr. M. D. Brown. He noticed that in an open area, such as a golf course, no dead birds were found. But he did find some dead ones below wires strung along the highway or railroad, provided there were lights in the vicinity. He found some specimens which had been decapitated, evidently by hitting wires. Dr. Brown reports that a fog prevailed at the time of the destruction; this together with the lights made it impossible for the birds to see surrounding objects, in Dr. Brown's opinion. Dr. Brown also conducted autopsies on twenty-six of the dead birds. I will quote extensively from his report on these autopsies.

"The birds all died from traumatism, or outside violence. There were a few which displayed a slight hemorrhage from the beak, but they were rare.

"All stomachs were entirely empty. This does not indicate starvation, for all the birds were fat. Death occurred long enough after the last food had been taken on the previous afternoon to allow its passage into the intestines. I found then that 40% of the birds had sustained cerebral hemorrhage: 60% had not. All lungs were pale and not congested at all. But just posterior to the lungs in 99% of the birds there was a profuse hemorrhage and a large bloodclot. Bruises and contusions were very pronounced on the breasts and necks, and also on the wing muscles. The legs were comparatively free from bruises."

Some record should probably be made of the observations of flocks of longspurs during the daylight hours. Mrs. Chas. E. Gustafson, of Aurelia, Iowa, writes that a few days before the longspur tragedy her husband came into the house to say that he had just seen the "largest flock of sparrows flying southwest" he had ever seen; and that "there must have been thousands and thousands of them, so that they looked like a heavy cloud."

Mr. Warren Baker, living on the farm northeast of Kingsley, reported the large flock on his premises on the Thursday morning of the tragedy. He said there were thousands and thousands of small birds, so dense that they made the appearance of a cloud. They circled and wheeled in the air, making a chipping noise.

Conservation Officer W. W. Trusell was driving through Guthrie County, Iowa, on January 13, and while passing over Highway No. 7 he encountered flock after flock of birds which he considered to be the Lapland Longspurs. During a stretch of seventeen miles he saw an estimated total of 35,000 birds.

Attention may also be called to the report from Hawarden that the rural mail carriers saw several flocks of thousands of birds "flying around in large circles."

I am indebted to Mr. Bruce F. Stiles for securing a report of the weather conditions prevailing at Sioux City on the night of the bird destruction.

On January 5, 1938, from 11:00 o'clock to 12:00 o'clock midnight the direction of the wind was north and the velocity was eight miles per hour. At midnight the temperature was 22 degrees above zero. On the 6th from 12:00 midnight to 1:00 A.M. the wind was six miles per hour from the northwest. At 1:00 A.M. the temperature was 21 degrees above zero. Snow started to fall

at 8:35 P.M. on January 5, and ceased falling at 6:00 A.M. on January 6, a total of 0.2 inch fell during the night. This is the record at Sioux City. The direction of the wind and its velocity would probably be very much the same throughout the area of the bird destruction, although the amount of snowfall might vary considerably.

This completes the survey and array of facts. We may now attempt to summarize such conclusions as may be drawn.

Most of the observers agree that the snow on Wednesday night was light and dry, not wet and heavy. The snow was preceded by a visible mist. But we may consider it doubtful whether the plumage of the birds became waterlogged. There seemed to be no evidence that the birds lacked in any degree the power of flight.*

So far as our evidence shows the great percentage of mortality occurred in the towns, and mainly in the lighted streets of the business districts. Even the occurrence of the dead birds on the No. 75 Highway is best accounted for by the blinding lights of automobiles. Had the birds been weighted down by the wetted feathers from the mist or by heavy wet snow we could have expected to find them in the open fields, where they were not actually found. So, the conclusion seems inescapable that the birds had lost their way because of poor visibility. They had lost the ability to orientate themselves.

There is evidence that many of the birds became exhausted and fell to the ground without collision with other obstruction than the ground. One observer in Moville stated that birds were seen to fly low and hit the ground or pavement and bounce a short distance; and another observer stated that in the morning he saw in numerous places a spot in the snow where the bird had hit the ground about a foot behind where the body lay; or two marks where evidently the same bird had struck twice without being killed.

* The *Oologist* for April, 1939 (LVI, No. 4, received in the mail on May 24) contains an article by the late E. D. Nauman, of Sigourney, Iowa, on the destruction of Lapland Longspurs in southeastern Iowa. He reports a flight of longspurs which lasted from 7:00 to 9:30 P.M. on December 9, 1931, over Sigourney. There was no snow on the ground and no reported loss of life. But on December 8 "hundreds" of longspurs fell dead in the streets of Albert City, in Buena Vista County, Iowa. At the time the ground was covered with four inches of snow, which was falling fast. Mr. Nauman writes: "A man whom my brother regarded as truthful said he made the trip from Albert City to Pocahontas next day found more or less numbers of dead birds all the way. No one there could identify the birds, so my brother boxed up six specimens and sent them to me. They proved to be the Lapland Longspurs."

The point of interest here is that these specimens seem to have been picked up along the highway where they must have met their fate in the darkness, there being no city lights to attract them. Such a case would probably be best explained by supposing that snow did weight the birds to some extent, causing them to fly low enough to strike the wires along the highway. Mr. Nauman also mentions another flight of longspurs over Sigourney on the night of January 3, 1932, but unfortunately he does not state the direction of their flight.



Photograph by W. W. Truscell

Fig. 2. Pile of Longspur bodies gathered at Kingsley, Iowa.

The post mortem examinations by Dr. Brown of Beresford, S. D., showed that the stomachs of the dead birds were empty, but the bodies were well supplied with fat. Several autopsies were also made in our laboratory on the birds sent from Pierson by Mr. Mills. These stomachs were also empty, but there was no evidence of emaciation, and the birds appeared to be supplied with the normal amount of fat. It could hardly be expected that food would remain in crop or gizzard during the nine or ten hours since the last possible feeding time. So, it is easy to exclude any thought of starvation as a possible cause of death.

One question which I may not yet have worked out to my own satisfaction is as to whether the longspurs on January 5th were on their northward spring migration, or whether, as I have suggested above, they were merely loafing in Iowa on their southward migration, getting caught in the storm as a result of their tardiness and negligence.

One additional fact which should not be omitted is concerning the presence of other species of birds among the longspurs. Among the 800 and odd bird bodies picked up by the two Sioux City parties on January 8 in the several towns visited one Horned Lark was found. And at LeMars Mr. L. C. Billmyer recovered five birds which have been kept alive up to the present time. Of these five four are longspurs and one is a Horned Lark — sub-species not noted.

One hypothesis that might be suggested is that the great flocks of longspurs were flying southward ahead of the storm, and were overtaken at night in an exhausted condition. They would naturally

concentrate over the lighted towns. There was nothing they could do but keep flying. The observation of two marks in the snow where a bird struck and bounced might suggest a gradual loss of elevation due to exhaustion, until finally the birds hit the ground. Mr. H. E. Liming, Postmaster at Ida Grove, stated that "The way these birds lay in the streets made it seem that they had coasted onto the ground, and were unable to move after having landed." The complete solution of the matter depends in part upon our knowledge of the migratory or winter movements of these birds.

If we now try to reconstruct the entire event we must remember the mild and open weather for the month or two just preceding the date of this tragedy. The ground was bare. Clear weather had prevailed. These birds in the large flocks characteristic of their fall flight may have tarried in northern Iowa later than usual because of the abundance of available food. When the storm came up on the night of January 5 these birds were evidently in flight. (I can not claim to be well posted on the night flying habits of the longspurs, but it must be granted that on this night they were in flight in large flocks after dark). When the sky filled with snowflakes the birds were unable to keep their bearings. Evidently they possess no sixth sense of direction. They became bewildered, and possibly may have milled around more or less in the air at higher altitudes. In due time they could see the diffused illumination from the towns, and were attracted, that is, preferred to fly into the light rather than into the darkness, and, of course, when they got low enough to strike the buildings and other obstructions the inevitable happened.

Many will recall the paper by Dr. T. S. Roberts entitled "A Lapland Longspur Tragedy," which was published in the *Auk* for October, 1907. This paper gave an account of destruction of great numbers of Lapland Longspurs in a snow storm on the night of March 13-14, 1904, over a considerable area in southwestern Minnesota. The area involved in the destruction was estimated to be about 1500 square miles. And it was estimated that more than a million birds were killed on this occasion.

In most respects the facts given for this bird tragedy agree with those which we found for this year's tragedy in Iowa. I think it fair to say that Dr. Roberts laid most stress on the loss of orientation by the birds in the storm as an explanation of their death. He speaks of the birds "becoming confused in the storm-area by the darkness and heavy falling snow," and that they "were attracted

by the lights of the towns and congregated in great numbers over and about these places." But he also says, "It would also seem probable that a considerable number became wet and snow-laden by reason of the character of the snow, and thus, unable to fly, were forced downward to the earth to be dashed to death if falling from a considerable height, or simply stunned if from a lower elevation." No evidence which we gathered would indicate that the birds in the Iowa storm had suffered from wetted or soaked plumage.

Dr. Roberts estimated that the Minnesota area included about fifteen hundred square miles. As near as I have hastily estimated the area of the 1938 destruction it would approximate about 3500 square miles.

While Dr. Roberts estimated the mortality in 1904 at over a million birds, we can make a total of only about 10,500 by adding up the local estimates in the various towns; and I suspect that some of those estimates were rather high. However, we have estimates from only ten towns out of the 17 towns in which the birds were found dead.

In general, the facts of the 1904 and the 1938 tragedies are very similar, except for the occurrence of the vast number (750,000 in round numbers) of dead longspurs present on the two ice-covered lake surfaces near Worthington, Minn., in 1904. It is much more difficult to account for this remarkable phenomenon.

MORNINGSIDE COLLEGE,
SIOUX CITY, IOWA.