

which she carried away the excreta. Thirty minutes later she reappeared and fed the same way again.

On this morning we were impressed by the length of the interval between feedings. Most small birds which bring solid and undigested food to the young make feeding visits every few minutes. With the Pine Siskin the average interval between feeding visits seemed to be twenty-five or thirty minutes.

The young Cowbird is perhaps hereditarily accustomed to more frequent feedings; but when the feedings do come they are voluminous, and the young Cowbird seemed to thrive in spite of the infrequent visits of the foster mother.

SIoux CITY, IOWA.

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### THE PINE SISKIN IN NEBRASKA: ITS SEASONAL ABUNDANCE AND NESTING

BY MYRON H. SWENK

Our commonly consulted authorities on bird ranges agree that the Pine Siskin rarely breeds outside of the coniferous forests of the Canadian zone of the North and of the higher mountain ranges. Ridgway in 1901 (*Birds of North and Middle America*, Part I, p. 98) gave its breeding range as the "northern coniferous forest districts of North America, south to Nova Scotia, New Brunswick, parts of New England, lower Hudson Valley, mountains of Pennsylvania and southward to high mountains of North Carolina, Minnesota, etc., and on the high western ranges quite to the southern boundary of the United States." The American Ornithologists' Union Committee in 1910 (*Check-List of North American Birds*, third edition, revised, p. 250) stated that the species "breeds mainly in Canadian zone from central Alaska, southern Mackenzie, southern Keewatin, and southern Ungava south through the higher mountains of western United States to San Pedro Martir, Lower California, and southern New Mexico, and to northern Minnesota, northern Michigan, New Brunswick, Nova Scotia, and in mountains to North Carolina, and casually in the lower Hudson Valley and Massachusetts." As a matter of fact, however, the Pine Siskin is a rather common breeder, at least in certain years, in eastern Nebraska and other parts of the upper Missouri Valley, in purely Upper Austral zone territory. There are over twenty well-authenticated records of the nesting of the Pine Siskin in Nebraska.

It is well known that the Pine Siskin is one of our most irregular birds in its migratory movements. Here in southeastern Nebraska,

as elsewhere in its winter range, in some winters this bird is present in abundance, while in other winters very few or none are seen in the same localities. Also it may be plentiful in one locality and scarce or absent in another locality a hundred miles or even less away. In most years the siskins appear in October and November, first in small numbers and later in larger flocks, and remain in suitable localities in greater or less numbers through the winter. They usually increase in numbers, often markedly, and in many seasons nest to a limited extent, during March, April or May. Then sometime between March and late May or early June they disappear, not to return before the following fall. The Pine Siskin is thus unlike our other winter residents in that it is also a breeder, and unlike our other breeders in that it is not a summer resident, thus making its status rather anomalous. It may perhaps best be described as an uncommon to abundant, irregular winter visitor and an irregular but sometimes common breeder over most of Nebraska.

The students of Nebraska birds prior to 1900 noted the presence of the Pine Siskin in the state, but apparently did not suspect that it might be a breeder here. Professor Bruner noted the presence of this bird in the vicinity of West Point during the season of 1881-82, and later on observed it at Omaha. Mr. D. H. Talbot reported its presence in the state in the fall of 1884, when a male was collected by him at Genoa on September 30, and a female at Wood River on November 24. Mr. W. E. Taylor in 1888 recorded two specimens taken in December, 1887, at Peru, Nebraska. Both Mr. L. Skow and Mr. I. S. Trostler reported its occurrence at Omaha prior to 1896, the latter referring to it as "an irregular migrant and winter resident—earliest seen October 10." During February, 1897, there apparently was quite an abundance of the Pine Siskin in the vicinity of Lincoln. Mr. J. S. Hunter first reported the presence of these birds on the 6th of that month, when he collected several specimens. Other specimens were collected on the 13th by Mr. Hunter, but we have no further evidence as to how long the birds remained about that year.

There are no 1897-1898 records of the Pine Siskin from Nebraska, but the birds again appeared in abundance in 1898-1899. They were first reported from Long Pine, in north-central Nebraska, on February 15, 1899, by Mr. William Smith. Mr. Merritt Cary found them at Neligh during the same winter, and wrote of them as "a common but irregular migrant and winter resident" in that locality. At Beatrice during the spring of 1899 the writer found Pine Siskins in abundance. The first ones were seen on April 23—a pair of them—but by early May

they were very abundant in the vicinity, and remained so through most of the month. Mr. J. S. Hunter reports that there were large numbers of Pine Siskins near Lincoln during the winter of 1898. They were common during the spring of 1899 and remained until after the middle of May. Pine Siskins were apparently absent in southeastern Nebraska during the seasons of 1899-1900, 1900-1901, 1901-1902 and 1902-1903.

In the Pine Ridge of northwestern Nebraska Pine Siskins are probably to be found in greater or less numbers the year around, though there are no actual records of their having been either seen or taken there in the winter, either by Bruner and Hunter in 1895-1896 or Zimmer in 1910-1911. Cary and Carriker noted them at intervals among the pines during July, 1901, and thought they might breed there, and the same surmise was made by Bruner, Wolcott and Swenk in 1904 (Preliminary Review of Nebraska Birds, p. 84).

Hardly had the surmise that the Pine Siskin might nest in the Pine Ridge been published in 1904 before the bird was actually found nesting in the state, but, surprisingly enough, in its extreme other end. These birds were quite common in southeastern Nebraska during April and early May of 1904. This first record of the breeding of the Pine Siskin in Nebraska was made by J. E. Wallace of Omaha, on May 7, 1904. On that day he was exploring the lowlands at Child's Point south of Omaha, when between the railroad tracks and the Missouri River, on the west side of Mosquito Lake, he found a nest of this bird in a boxelder tree about twenty to twenty-four feet from the ground. The birds were still building on that date, but they had the nest nearly completed. They were very tame, and as Mr. Wallace examined the nest they came within two or three feet of him and displayed considerable excitement over his presence. This excellent view of the birds made the identification very positive.

Immediately upon his return to Omaha, Mr. Wallace wrote to Prof. L. Bruner concerning his find, and on May 9 Prof. Bruner replied, advising Wallace to secure the nest and eggs with the birds to definitely establish this seemingly extraordinary record. Mr. Wallace waited for a few days, and upon about May 13 he revisited the nest, but did not find the old birds there. The nest contained three eggs of the siskin and one Cowbird's egg. The eggs were not taken at the time, but Mr. Wallace returned the next day and found the nest yet deserted and the eggs cold. Evidently the presence of the Cowbird's egg or some other disturbing factor had caused the birds to desert their nest. On this third trip Mr. Wallace took the nest and eggs and sent them to Dr. R. H. Wolcott, of Lincoln, but unfortunately

the eggs were broken in transit. The nest is in Dr. Wolcott's possession.

The seasons of 1904-1905 and 1905-1906 were not marked by the presence of Pine Siskins in numbers in southeastern Nebraska. Reverend J. M. Bates found these birds at Red Cloud on March 25, 1905, but no evidence of nesting was seen. None at all were reported for 1905-1906. But in the spring of 1907 they reappeared in abundance all over southeastern Nebraska. Mrs. H. C. Johnston reports that in March, 1907, a pair of Pine Siskins built a nest in a cedar tree in her mother's yard at Superior. The tree was close by the walk and was passed every time anyone went to the house. It was only about three feet above the ground. The bird was so tame that she would stay on the nest while being observed. Eggs were laid in this nest, but before they hatched they were destroyed by a bad sleet storm, which broke down the nest. Pine Siskins were abundant all over Superior in the spring of 1907, and probably there were other unobserved cases of their nesting there. These birds were very common during that spring, in April and May, on the State Capitol Square at Lincoln, and elsewhere in town. The writer noted them as especially common from April 20 to May 12. On May 28, 1907, Prof. L. Bruner was walking across Capitol Square when he saw a Pine Siskin, probably a female, carrying a long thread. He watched it and found that a nest platform had been formed, indicating a well-developed start of a nest. The other bird, probably the male, was flying about and on the ground. This nest was watched daily, without in any way disturbing the birds, but on May 31 the partially constructed nest was found lying upside down upon the ground and the birds were nowhere to be seen. No other nests were found, although the locality was carefully watched by the local ornithologists. Several writers have noted that the Pine Siskin was particularly abundant over its wintering range in the winter of 1906-1907 and remained unusually late during the cold spring of 1907.

Pine Siskins were not plentiful in southeastern Nebraska in the season of 1907-1908. They appeared at Lincoln on October 18, 1907, but were not seen during the winter nor during the spring of 1908. They were more plentiful in 1908-1909. In the fall of 1908 they were first noted on October 12 and were present until December 12. They were not seen during the winter, but reappeared in May, 1909, when they were common from May 13 to 23. No nests were found, however, in the spring of 1909. The season of 1909-1910 was one marked by the apparent absence of Pine Siskins over all of southeastern Nebraska. At least no one reported seeing them.

In the fall of 1910 the first Pine Siskin was noted by the writer at Halsey, Thomas County, in the center of the sandhill region of Nebraska, on October 28, when one individual was noted and collected. By November 20 they were present as far east as Lincoln. The following spring they became very numerous in the vicinity of Lincoln. The writer noted them on March 13, 18, 19, 22 and 30, and on the latter date they were distributed in pairs. The same was true on April 11 and May 3, 6 and 7. On May 6, 1911, on the ninth annual field day of the Nebraska Ornithologists' Union, the fourth nest of the Pine Siskin, with a sitting bird upon it, was found in a pine tree about twenty feet up at Capitol Beach, west of Lincoln, by Mr. F. H. Shoemaker. Mr. J. T. Zimmer climbed the tree and found that the nest contained one egg, which, it was finally decided, would be collected, but unfortunately in returning to the ground the egg was crushed. It was perfectly fresh. Mr. Zimmer has the nest in his collection at the present time. Later in the same month, Dr. R. H. Wolcott found three nests of the Pine Siskin within the city limits of Lincoln near 21st and A Streets, one in an elm tree and the other two in pine trees. None of these nests or their eggs were collected. Mr. C. S. Ludlow reports that Pine Siskins were present at Red Cloud from April 20 to May 21, 1911, but there is no evidence that they nested there that spring.

Pine Siskins were present, but not common, during the season of 1911-1912. They appeared at Lincoln on November 4, 1911, and the writer saw them in the spring of 1912 on April 5 and again on May 11. Mr. C. S. Ludlow reports them at Red Cloud on January 4, 1912. There are no records of the presence of these birds in this region during 1912-1913. In the season of 1913-1914 they were fairly plentiful at Lincoln in the fall of 1913, on various dates—October 25, December 13 and 28—and a few of them apparently wintered—February 28, 1914—but early in March of 1914 they appeared in abundance and continued so until well toward the middle of May. Dates on which they were seen at Lincoln are March 5, 6, 22, 25, 29 and 31, April 1, 4, 7, 11, 15, 16, 20, 21, 22, 23, 24, 29 and 30, May 3, 5, 6, 7, 10, 11, 13, 15 and 16. In spite of this abundance all through the spring of 1914 at Lincoln, no one reported finding a nest. Mr. C. S. Ludlow reported Pine Siskins at Red Cloud on April 2, 1914.

Pine Siskins were not seen in southeastern Nebraska in the fall of 1914, according to our records, but they appeared in January at Lincoln—January 10, 1915—and another spring tide of abundance of siskins appeared late in March and continued until the end of May.

The writer noted the first ones on March 28 and the last ones on May 30, 1915. Others noted them on March 30 and 31 and April 3, 10, 13, 15, 16, 22, 25 and 27. On May 16, 1915, the fifth Nebraska nest of the Pine Siskin was found, this time in Wyuka Cemetery at Lincoln, by Mr. R. W. Dawson. At the time of discovery the nest had one young siskin in it and a Cowbird was on the ground under the nest. Both old siskins were about and were observed to feed both the siskin in the nest and the Cowbird on the ground. The nest was later collected. This was the same year that the nest was found at Sioux City, Iowa (WILSON BULLETIN, xxvi, pp. 140-146). Mrs. C. S. Ludlow found the Pine Siskin at Red Cloud on February 26, 1915, and Mr. L. M. Gates noted these birds at Haigler, Dundy County, extreme southwestern Nebraska, on May 18 and 20, 1915.

The season of 1915-1916 was a poor one for Pine Siskins. None were seen in the fall of 1915. A few were seen in the winter of 1915-1916—January 2, 1916, at Lincoln—and a few during early May—May 2, 1916, at Lincoln. Mr. C. S. Ludlow noted them at Red Cloud on March 15, 1916.

But the season of 1916-1917 was the banner year for all years so far, for Pine Siskins in southeastern Nebraska and for Pine Siskin nests. At Lincoln the birds appeared about the middle of November—November 14—and remained in fair numbers on through the fall and following winter. They were reported by various observers on November 19, 26, 29, December 2, 3, 30, January 1, 7 and 31. About the middle of March there was a great spring influx of Pine Siskins, and the birds remained until early in June. Dates on which they were reported in the spring of 1917 are March 15, 18, 25, 28 and 31, April 8, 14, 15, 18, 19, 22, 24 and 29, May 4, 5, 6, 7, 8, 13, 15 and 22. The last ones were seen on June 3. During March and April seven nests were found in Wyuka Cemetery at Lincoln. These records may be summarized as follows:

1. March 15. Mr. C. E. Mickel found a nest yet in process of construction, but nearly completed, in an Austrian pine about eighteen feet up. The birds were about the nest on March 18 and 25, but had deserted it on the 28th, and were not subsequently seen.

2. March 18. Messrs. C. E. Mickel and R. W. Dawson found a nest well started, but it was never completed.

3. March 31. Messrs. C. E. Mickel and H. B. Lowry found a fully built nest in a cedar tree with the birds hovering about. Later they were unable to relocate the nest and probably it had been destroyed.

4. April 18. Mr. C. E. Mickel found a nest in a cedar tree ten feet up. The female was on the nest when it was found. It contained four very slightly incubated eggs. The nest was made of pine and cedar twigs, weed stems and cord, and was lined with rootlets and horse hair.

5. April 19. Mr. C. E. Mickel found a partially constructed nest, about two-thirds completed.

6. April 22. Mr. C. E. Mickel found a nest with a sitting bird on it in a spruce tree about twenty feet up. It contained three eggs. The nest was similar in construction to the one found on April 18.

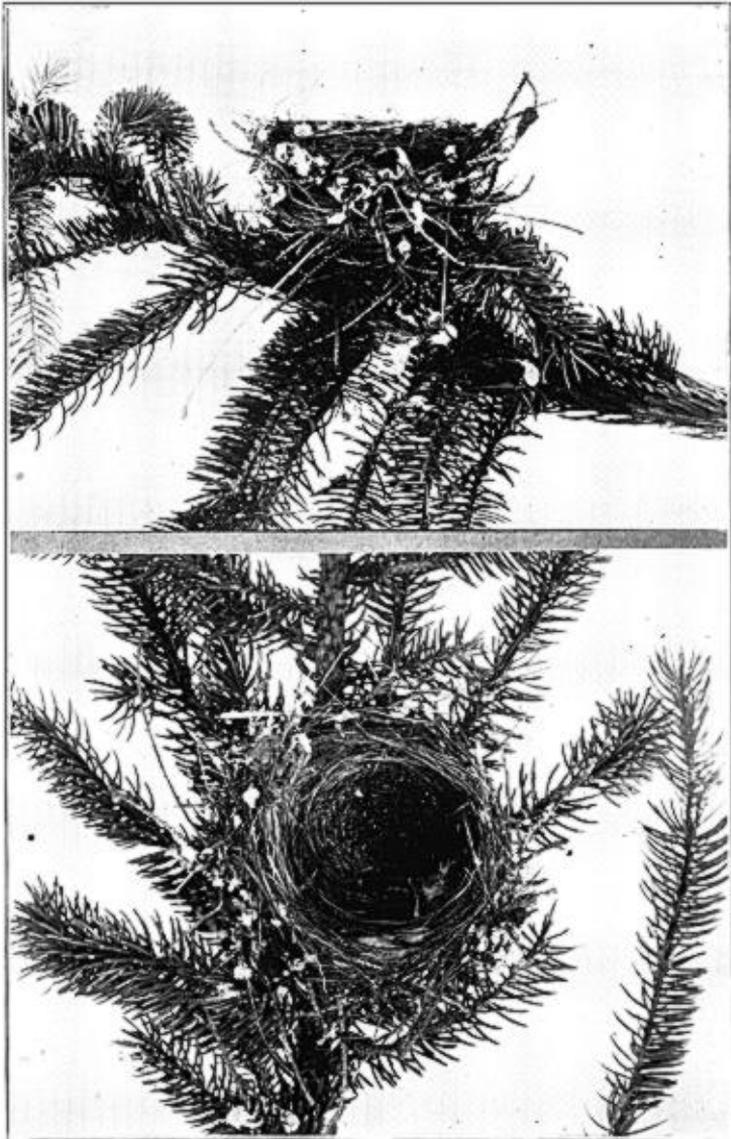
7. April 24. Mr. C. E. Mickel found a nest about half finished. The birds deserted this nest after its discovery.

Pine Siskins, in pairs, continued very common in Wyuka Cemetery through the rest of April and the first half of May, 1917. Without a doubt other nests could have been found if searched for, but the finding of Pine Siskin nests was losing something of its novelty and in the pressure of other things the search for them languished. Paired Pine Siskins were common in other parts of Lincoln aside from Wyuka Cemetery, and no doubt were breeding. Mr. C. S. Ludlow reports that Pine Siskins were present at Red Cloud through the winter of 1916-1917, from December 2 to February 25, even in January.

The seasons of 1917-1918 and 1918-1919 were not Pine Siskin seasons. None of them were seen at Lincoln during these seasons. At Red Cloud Mr. C. S. Ludlow observed them on April 12, 1918. The season of 1919-1920 witnessed a return of the siskins. At Lincoln they were first noted on February 8, 1920, and were last noted on April 7. The species was noted on the eighteenth annual field day of the Nebraska Ornithologists' Union at Ashland on May 15. Mr. C. S. Ludlow found them at Red Cloud on May 13, 1920. In the spring of 1920 they were common around Hastings, where in May of that spring Mr. J. E. Wallace found a nest with two young birds in it, constituting the thirteenth definitely known nesting in the state. This nest is now No. 2676 in the A. M. Brooking collection at Hastings.

The seasons of 1920-1921 and 1921-1922 were seasons of Pine Siskin scarcity. Mrs. H. F. Hole noted this bird at Fairbury on February 23, 1921, and Mr. C. S. Ludlow noted it at Red Cloud on March 11 and April 4, 1922, but there do not seem to be any Lincoln records of it during either of these seasons.

Then the siskins returned again in 1922-1923. They were very numerous around town at Fairbury during the winter of 1922-1923,



Nest of the Pine Siskin found at Lincoln, Nebraska, by Mr. C. E. Mickel, on April 22, 1917, in a spruce tree about twenty feet up. Side view (upper figure) and top view (lower figure).

according to Mrs. H. F. Hole, and remained at least until March 27, 1923. At Superior, Mrs. H. C. Johnston found a pair of Pine Siskins in her father's yard early in April of 1923, and on April 11 they started to build a nest about ten feet up in a Scotch pine tree. They were noted flying to this place in the tree with grass in their beaks, which activity seemed to stir the resentment of the Bronzed Grackles, and the siskins were driven away, thus preventing the realization of another nesting record. However, Pine Siskin nests were found at Lincoln in the spring of 1923 by Mr. Leonard Worley, one late in April and the other early in May of that year, these constituting the fourteenth and fifteenth breeding records. Mr. Ludlow found the siskins at Red Cloud on April 12, 1923.

Siskins were again plentiful during the season of 1923-1924. They were again numerous around town in Fairbury during the winter of 1923-1924 according to Mrs. H. F. Hole. They appeared there on January 28, 1924, and during the following spring a flock of them came nearly every day, and often twice a day, to eat seeds from the pine cones in Mrs. Hole's yard. As spring progressed the flock gradually grew smaller until only one pair was left. For a period of about two weeks in the latter part of April only one bird came to feed in Mrs. Hole's yard, but in May there were again two of them, and they remained through most of the month. Mrs. Hole was not able to find any nest of this pair nor did she see any young that spring at Fairbury. However, on May 10, 1924, while birding in Wyuka Cemetery at Lincoln, Mrs. Hole, accompanied by Mrs. Cropsey and Mrs. McCoy of Fairbury, found a nest of the Pine Siskin about eight feet up in a small pine tree. The female bird was on the nest, while the male bird chirped and called and tried to frighten the observers away when he realized that the nest had been discovered. This nest was not disturbed, but it constitutes the sixteenth breeding record for the state. Mrs. A. H. Jones reports that Pine Siskins were present in unusual numbers at Hastings during the spring of 1924, and one pair that made her home their headquarters remained until June 2, under conditions that pointed to possible breeding. Mr. Ludlow reports Pine Siskins at Red Cloud on January 13, 1924.

The Pine Siskin remained in small numbers during the winter of 1924-1925 at Lincoln, Hastings, and other localities in southeastern Nebraska, but for its nesting operations in the spring of 1925 chose south-central Nebraska along the Republican River, in the vicinity of Superior and Red Cloud. On March 26, 1925, at Red Cloud, Mr. C. S. Ludlow observed a Pine Siskin gathering nesting material, as if pre-

paring to build, but no nests were actually found by him. A little earlier in March, on the 15th, these birds had appeared in the vicinity of Superior, and they remained there through the spring. On April 8 Mrs. King of Superior, found a crippled female Pine Siskin in her yard. She put it in a cage and it laid an egg there. Later on in the same month the siskins were found actually nesting in several places around Superior. The twenty-third annual field day of the Nebraska Ornithologists' Union was held at Superior on May 9, and the birds were still common in that vicinity on that date. A few remained about Omaha until early April but were not observed nesting in that locality in 1925. The same was true at Lincoln.

The fall, winter and spring season of 1925-1926 was marked by a general plentitude of the Pine Siskin in southeastern Nebraska. At Omaha they were first seen on October 4, 1925 (L. O. Horsky). Some remained through the winter, five or six being seen by Dr. C. A. Mitchell on January 14, 1926, and four by Dr. Mitchell and the Misses Mary and Emma Ellsworth on January 17. They were common by middle April, and even as late as May 16, on the occasion of the twenty-fourth N. O. U. field day, they were still present around Omaha. The Fairbury Bird Club reported a large flock of them as appearing in that locality on October 6, 1925, some remaining during the winter, while at least until early in April they were to be found in the Fairbury vicinity. At Hastings they made their first appearance October 15, 1925, and some were observed during the winter, while during the week of February 21, 1926, large numbers of them appeared about town, and they were still numerous on March 23. Mrs. L. R. Button noted them on December 23, 1925, and January 18, 1926, at Fremont. At Red Cloud they were first seen that winter on January 20, 1926—eight of them—then again on February 2—six of them—while by March 10 a flock of forty-eight was present, according to Mr. C. S. Ludlow. The Superior Bird Club reported them as plentiful at that place by March 10, 1926. At Lincoln they began to be noted early in February of 1926, and by about the middle of March had become conspicuously numerous. There is little doubt but that there were some Pine Siskins nesting around Omaha, Lincoln, Fairbury, Superior, Red Cloud and Hastings in the early spring of 1926, but no nests were actually discovered at any of these places that spring. The only case of the nest of the Pine Siskin actually being found was at Wahoo, Saunders County, north of Lincoln.

On or about March 15, 1926, a pair of Pine Siskins appeared in the yard of Miss Mary St. Martin of Wahoo. On March 22 she dis-

covered that they were building a nest in a cedar tree about ten or twelve feet from her porch. When discovered, the nest was all ready to be lined. The nest was finished on March 27. Late on the evening of March 27 a heavy snowfall came, and the nest was not sufficiently protected by the cedar twigs but that it became filled with snow. By March 29 the snow had all thawed out and the female Pine Siskin was back in the nest, repairing the damage that had been done as well as she could. Before 3 o'clock in the afternoon of that same day, March 29, the first egg had been laid. Another egg was laid on March 30 and a third one on March 31. On the morning of April 1 Miss St. Martin heard excited bird calls in her yard, and on investigating found the Pine Siskin nest tipped over and the eggs on the ground. One of the eggs was broken and the other two were frozen and cracked, so that they could not be saved. The nest seemed to have a defect in construction that prevented its being fastened tightly enough to withstand the stormy weather of the period. The siskins stayed around the place most of the day on April 1, but at last they left and did not return. This constitutes the eighteenth nesting record for Nebraska.

The season of 1926-1927 was one of Pine Siskin scarcity, much in contrast with 1925-1926. The species was wholly wanting in the Lincoln and Fairbury vicinities during the entire fall, winter and spring. At Hastings not a single siskin was seen by any of the numerous local observers during the entire fall of 1926 and the following winter, the first observation of the species for the entire season being on March 10, 1927, by Mr. A. M. Brooking. At Omaha, Dr. C. A. Mitchell observed four siskins on March 14, 1927, and that was all. The Superior Bird Club noted the siskin once—on April 6. No one reported it from Red Cloud. Naturally, there were no nesting records for 1927. Near Mitchell, in Scottsbluff County, extreme western Nebraska, however, Mrs. J. W. Hall noted eight of them on March 27, 1927, and by May 22 they were abundant in that locality, feeding on the dandelion seeds along with the Pale Goldfinches.

But in the season of 1927-1928 the siskins returned in force. They were first reported from Hastings, in the fall of 1927, Miss Margaret Diemer noting ten of them on November 20. Mrs. A. H. Jones noted more of them there on November 25, and on November 29 she saw a flock of at least fifty siskins. They were also present along the Blue River south of Hastings, where members of the Brooking Bird Club saw eleven of them on December 23. Pine Siskins were numerous at Hastings, about town, all through the winter of 1927-1928, being seen in the yards and about the bird baths in various parts of the city

every day—a very different condition than had obtained the preceding winter. On April 21, 1928, Mrs. A. H. Jones found a young Pine Siskin, recently out of the nest, in her back yard. The following day it was rescued from the eaves pipe, where it had been imprisoned for a couple of hours, and, after being photographed by Miss Diemer, was restored to its parents. This forms the nineteenth nesting record for Nebraska. Pine Siskins were common and in pairs at Hastings up to May 19, and practically without doubt there were other, and undiscovered, cases of nesting by these birds there during that spring.

At Fremont, Mrs. L. R. Button found Pine Siskins from December 26, 1927, when twenty-five of them were noted, very numerous all through the winter of 1927-1928. At Lincoln Mr. L. H. Watson observed a single Pine Siskin on December 26, 1927, but the species was not again observed during the winter. However, about March 20, 1928, Pine Siskins suddenly appeared in numbers in east Lincoln—at the College of Agriculture campus, in Wyuka Cemetery, and elsewhere—and remained very common until well along in May. They were still common on May 12, on the twenty-sixth annual field day of the N. O. U. A pair of them appeared in my pine trees on March 22, the male in full song, and between then and April 3 Mrs. Swenk secured numerous records of the song of the species. They remained for several weeks, and I have no doubt they nested in the immediate neighborhood but lack of time prevented my exactly locating the nest. Mrs. C. W. McCaskill noted several of them wintering at Beatrice, January 9, 1928.

In the Omaha vicinity Pine Siskins were first noted by Dr. C. A. Mitchell on January 27, 1928. On February 25 the Misses Ellsworth saw a flock of thirty in Forest Lawn Cemetery. They increased in commonness during March and April, and on May 13, Mr. L. O. Horsky had the pleasure of examining a nest of this bird in a cedar tree west of the residence of Mr. Leonard Nicholas, 6218 Spencer Street, Benson. On May 21 three young siskins left this nest, and as they did so they were banded by Mr. Horsky. This constitutes the twentieth definite breeding record for the state.

At Red Cloud Mr. C. S. Ludlow noted his first Pine Siskins of the season on February 7, 1928—a flock of thirty-eight of them—and Mrs. George W. Trine saw a small flock as late as April 14, but no definite nesting records were made. The siskins appeared at Fairbury on February 15, 1928, and were seen from then on. A pair of them

located in the yard of Mrs. H. F. Hole of Fairbury, and were seen every day, the male in full song early in May. Mrs. Hole was sure the birds were nesting in the neighborhood but could not find the nest. However, on May 30 and 31 and June 1 and 2, young birds were seen with the old pair of Pine Siskins, thus definitely demonstrating that the birds had been nesting in the vicinity and constituting the twenty-first record. Thus in the spring of 1928 the Pine Siskin was proved to have nested at Omaha, Fairbury and Hastings, and probably did so also at Lincoln.

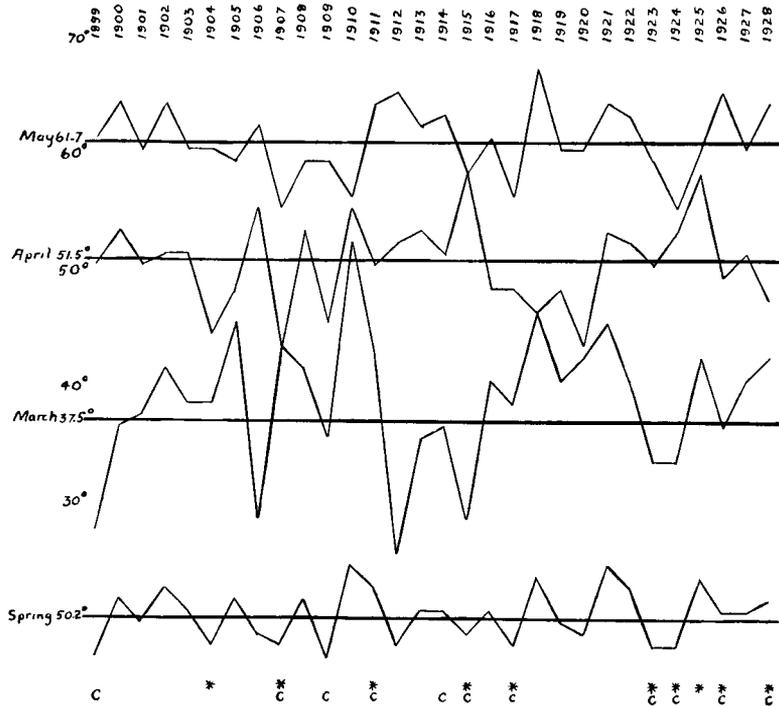
Summarizing the above records, it is seen that the Pine Siskin nested in southeastern Nebraska in the springs of 1904, 1907, 1911, 1915, 1917, 1920, 1923, 1924, 1925, 1926 and 1928. In addition, it was common during the springs of 1899, 1909 and 1914. During the seasons of 1900, 1901, 1902, 1903, 1905, 1906, 1908, 1910, 1912, 1913, 1916, 1918, 1919, 1921, 1922 and 1927 these birds were either uncommon or absent in southeastern Nebraska. The question at once arises why should the Pine Siskin be common, linger late and frequently nest in some springs, in southeastern Nebraska, while in other springs it is uncommon or not present. Can this be due to the character of the spring itself?

As a step in answering this inquiry the writer tabulated temperature records for Lincoln for the months of March, April and May of the thirty-year period from 1899 to 1928, inclusive, from the records of the Lincoln Station of the Weather Bureau of the U. S. Department of Agriculture, located at the University of Nebraska, with the following results:

Table 1. Monthly mean temperature for the months of March, April and May, and for these three months combined, for the thirty-year period from 1899 to 1928, inclusive.

|               |      |      |      |      |      |      |      |      |      |      |
|---------------|------|------|------|------|------|------|------|------|------|------|
|               | 1899 | 1900 | 1901 | 1902 | 1903 | 1904 | 1905 | 1906 | 1907 | 1908 |
| March .....   | 28   | 37   | 38   | 42   | 39   | 39   | 46   | 29   | 44   | 42   |
| April .....   | 51   | 54   | 51   | 52   | 52   | 45   | 49   | 56   | 44   | 54   |
| May .....     | 62   | 65   | 61   | 65   | 61   | 61   | 60   | 63   | 56   | 60   |
| Average ..... | 47   | 52   | 50   | 53   | 51   | 48   | 52   | 49   | 48   | 52   |
|               | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 |
| March .....   | 36   | 53   | 43   | 26   | 36   | 37   | 29   | 41   | 39   | 47   |
| April .....   | 46   | 56   | 51   | 53   | 54   | 52   | 59   | 49   | 49   | 47   |
| May .....     | 60   | 57   | 65   | 66   | 63   | 64   | 59   | 62   | 57   | 68   |
| Average ..... | 47   | 55   | 53   | 48   | 51   | 51   | 49   | 51   | 48   | 54   |
|               | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 |
| March .....   | 41   | 43   | 46   | 41   | 34   | 34   | 43   | 37   | 41   | 43   |
| April .....   | 49   | 44   | 54   | 53   | 51   | 54   | 59   | 50   | 52   | 48   |
| May .....     | 61   | 61   | 65   | 64   | 60   | 56   | 61   | 66   | 61   | 65   |
| Average ..... | 50   | 49   | 55   | 53   | 48   | 48   | 54   | 51   | 51   | 52   |

Graph below shows the monthly mean temperatures for the months of March, April and May, and the average monthly mean temperature for these three months combined, for the fifty-seven-year period from 1881 to 1928, inclusive, as recorded by the Lincoln Station of the Weather Bureau of the U. S. Department of Agriculture, located at the University of Nebraska, in relation to the springs in which the Pine Siskin nested (\*) or was common (c), or both, in southeastern Nebraska.



The significance of these records is brought out when they are compared with the fact that the average monthly mean temperature at Lincoln for the forty-seven year period from 1881 to 1928, inclusive, is 37.5 for March, 51.5 for April and 61.7 for May, and 50.2 for these three spring months. It will be seen that during the springs of 1899, 1904, 1906, 1907, 1909, 1912, 1915, 1917, 1920, 1923 and 1924 the mean temperature for the months of March, April and May was distinctly lower than the forty-seven year average, or normal, for these months, and during nine of these eleven springs the Pine Siskin was either common or nesting, or both, at Lincoln, the exceptions being the springs of 1906 and 1912. However, the Pine Siskin nested in southeastern Nebraska in the springs of 1911, 1925, 1926 and 1928,

and was common in the spring of 1914, all of which, as a whole, were springs of higher than normal average temperature. Comparing next the mean temperature at Lincoln for the month of April for the thirty years under consideration, we find that during each of the fourteen springs in which the Pine Siskin nested or was common, or both, in southeastern Nebraska, the mean temperature for the month of April was more or less subnormal except in four Aprils—1914 and 1915 and 1924 and 1925. In April 1904, 1907, 1909, 1917, 1920 and 1928, in all of which springs the Pine Siskin bred in southeastern Nebraska, except in 1909 when they were common but not found nesting, the temperature of the month was considerably subnormal. In two of the exceptional springs—1915 and 1924—although April temperatures were above normal, those for both March and May were decidedly subnormal, especially in March, 1915, and May, 1924, so that the mean temperature for the entire spring was subnormal in both of those years. The spring of 1914 had very slightly subnormal temperature in March but slightly supernormal temperature in April and distinctly supernormal temperature in May, making the temperature for the entire spring slightly above normal, and it is perhaps significant that although the Pine Siskins were common at Lincoln until the middle of May there was no evidence of their nesting there that spring. In March and April of 1925 temperatures at Lincoln were strongly above normal (+5.5 and +7.5, respectively), and only slightly below normal (-0.7) in May. However, these birds were not common around Lincoln or elsewhere in eastern Nebraska in the spring of 1925, but were common and breeding along the Republican River in the vicinity of Superior, and probably of Red Cloud, twenty-five miles to the west. At Red Cloud, interestingly enough, unlike at Lincoln, temperatures for March and April of 1925 were only *slightly* above normal (+.57 and +.72, respectively), and were slightly below normal (-0.09 in May). Probably this difference in April and May mean temperatures between Lincoln and Red Cloud explains why the Pine Siskins were absent at Lincoln but nested at Superior.

Another point of interest in this study is that the Pine Siskin nested at Superior in March, 1907, at Lincoln in March, 1917, at Superior in March, 1925, and at Wahoo in March, 1926, and that in three of these years—1907, 1917 and 1925—the temperature of the month was distinctly above normal, while in 1926 it was practically at normal.

From these data it seems apparent that when, in any locality in southeastern Nebraska, March temperatures are normal or above and

the birds are common, there may be sporadic nesting, or attempts to nest, by the Pine Siskins. If the mean temperature for the month of April is subnormal the siskins will probably linger and frequently will nest and successfully rear their young. They may do this also in May if supernormal April temperatures are followed by decidedly subnormal May temperatures, as they did in 1915 and 1924. If March and April have about normal temperatures and in May the temperature rises above the normal, the Pine Siskins may linger but not nest. In years like 1900, 1902, 1906, 1912, 1921, and 1922, when both April and May temperatures are above normal, the Pine Siskins do not linger commonly, nor nest. This may also be true when only April has a mean temperature above normal, as in 1903, 1908, 1910 and 1927, or when May temperatures are above normal, as in 1913, 1916 and especially 1918. In other words, the available evidence seems to the writer to make a quite clear case that the lingering and nesting of the Pine Siskin in southeastern Nebraska during some seasons may be accounted for wholly on the basis of its response to prevailing temperatures during the spring months.

Judging from the fact that in the various falls that they have occurred in Nebraska the Pine Siskins usually have been seen first in the more westerly and northerly parts of the state, and later in the more southeastern localities, and also from the further fact that they may reach western or central Nebraska commonly in seasons when they are uncommon or absent in extreme southeastern Nebraska, it is probable our Pine Siskin winter visitors are birds that summer in the Black Hills and those parts of the Rocky Mountains at a corresponding latitude, or northward.

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