

THE GRASSHOPPER PLAGUES IN IOWA

Although scarcely a quarter of a century has elapsed since the pioneer period in Iowa came to a close, it is difficult for the present generation, accustomed to all of the conveniences of modern civilization, to form an adequate idea of the hardships and privations that were endured by the settlers who first made their homes in the new country. People are inclined to scoff at tales of enforced corn meal diet and the chronic failure of crops; while it seems incredible that in one of the richest agricultural areas in the world people should ever go hungry and suffer from the want of clothing.

Yet that very thing came to pass. Year after year the farmers planted their grain with every prospect of harvesting a splendid crop, only to have their hopes blighted by the cut worms, the gophers, the grasshoppers, the chinch bugs, a hailstorm, June floods, a season of drought, a strong wind, or a prairie fire. To persist in the face of such adversity required nothing short of heroism. None of the causes of hardship are to be disparaged, insignificant though they may now seem. It is the purpose of the pages that follow to present an account of the loss and suffering caused in Iowa by the ravages of the dreaded little grasshoppers.¹

¹ The calamities which befell the farmers of western Iowa were no more grievous than those resulting from invasions of locusts the world over. From the first account by Joel in the Bible, history records innumerable instances of devastation in almost every country by these migratory insects. Orosius says that in the year of the world 3800, North Africa was visited by huge swarms, of which so many were blown into the sea that when the bodies washed ashore the stench was unendurable. Locust plagues are mentioned by St. Augustine and Pliny, which were so severe as to have caused famine and the loss of thousands of lives. South America, Australia, and the Philippine

ENTOMOLOGICAL DESCRIPTION

The species of migratory grasshoppers which, until about the year 1880, so often invaded the territory of western Iowa is commonly known as the Rocky Mountain locust.² They are comparatively small, the body seldom exceeding an inch and a quarter in length, slender, and of a light brownish color. The upper wings are longer than the body and of the same color. When flying high and seen against the sun their wings give the appearance of large snow-flakes.³

Locusts are the only insects which may properly be termed migratory. Their native, permanent breeding-grounds are confined to river valleys, sunny slopes, and grassy areas. In North America the region over which they were wont to breed (for they no longer appear in num-

Islands have not escaped the ravages of locusts. In 1924 years China has suffered 173 times. Indeed, locust ravages have constituted one of the three great causes of famine in China. Moreover, the modern history of Europe is not lacking in accounts of locust scourges. The habits of these insects and the causes of their migration are practically the same everywhere.—*Report of the United States Entomological Commission, 1877*, pp. 465-477; 1878-1879, pp. 32-54.

Presuming that every creature has some purpose in existence it is interesting to note the curious ways in which locusts have been utilized. Perhaps the most familiar use for these insects is as fish bait, but the most astonishing, no doubt, is their use as an article of human food. It is stated that delicious broth can be made of them, while young grasshoppers fried in butter are very palatable. Indeed, locusts constitute a staple article of food in some countries. It has been discovered that considerable formic acid can be obtained from them; and they have also been used as fertilizer.—*Report of the United States Entomological Commission, 1877*, pp. 437-443.

² Other names that are applied to the same insect are "The Hopper", "Army grasshopper", "Red-legged locust", "Mormon locust", "Western locust", and "Hateful grasshopper". The scientific classification is that of *Caloptenus spretus*. The Rocky Mountain Locust is to be distinguished from the Red-legged Locust proper (*Caloptenus femur-rubrum*) and Lesser Locust (*Caloptenus atlantis*), both of which are smaller, less destructive, and only occasionally migratory.—*Report of the United States Entomological Commission, 1877*, pp. 31-52, 215, 443-456.

³ *Report of the United States Entomological Commission, 1877*, pp. 42, 46, 144.

bers sufficient to warrant anxiety) included practically all of Montana, southeastern Idaho, northwestern Utah, southern and eastern portions of Wyoming, central Colorado, northwestern Nebraska, the western half of the Dakotas, and a considerable area in the Province of Saskatchewan, Canada — the territory lying for the main part directly east of the chief range of the Rocky Mountains.⁴ Even within this permanent habitat the locusts were essentially migratory, but the swarms that temporarily invaded other sections of the country exhibited that characteristic most strikingly. In Europe invading swarms have been known to fly from four to five hundred miles from their permanent breeding-places, while in North America flights have extended over a distance of between one and two thousand miles.⁵

The immediate cause of migration was probably excessive multiplication, although many remote and secondary reasons have been assigned. Seasons of unusual heat and dryness are most favorable for the increase of insect life, so that climatic conditions must have exerted considerable influence. Hunger, the procreative instinct, annoyance from natural enemies,⁶ and the migratory instinct, all prob-

⁴ A region comprising a zone from two to three hundred miles wide on the elevated plains east of the area described may be designated as a subpermanent habitat, liable to be invaded each year when there were excessive numbers in the truly permanent breeding-grounds.—*Report of the United States Entomological Commission, 1877*, pp. 136, 142.

⁵ *Report of the United States Entomological Commission, 1877*, pp. 131-134, 143, Map 1.

⁶ Among the most destructive enemies of the locust are birds. Indeed, the multiplication and spread of these noxious insects has been laid to the ruthless slaughter of millions of quails and prairie chickens. It was reported that the Chicago market became so flooded at times that ten thousand of these birds were condemned and fed to hogs in a single day. The equipoise of nature will not bear such a shock. Locust-mites and many other parasites, a multitude of beetles, various kinds of flies, ants, spiders, wasps, hair worms, toads, field-mice, gophers, and snakes also do good service to the farmer in the war on grasshoppers. Millions perish if the season is wet and cold.—*Report of the United States Entomological Commission, 1877*, pp. 9, 14, 15, 27, 284-350; *Adams County Union* (Corning), July 29, 1875.

ably played with varying force in bringing about the migratory movements.⁷

About two months after hatching the young locusts molted, changing their entire outer covering for one supplied with wings. Having already exhibited a tendency toward gregariousness, it was only a few days until vast swarms arose as if by common impulse, when wind and weather were favorable, and were swept away in search of greener pastures.⁸

In due time the vast hordes arrived among the fields of tender grain or garden vegetables. Their flight has been likened to "an immense snow-storm, extending from the ground to a height at which our visual organs perceive them only as minute, darting scintillations, leaving the imagination to picture them indefinite distances beyond. . . . On the horizon they often appear as a dust tornado, riding upon the wind like an ominous hailstorm, eddying and whirling about like the wild, dead leaves in an autumn storm . . . they circle in myriads about you, beating against everything animate or inanimate; driving into open doors and windows; heaping about your feet and around your

⁷ *Report of the United States Entomological Commission, 1877*, pp. 201, 202, 249-251.

⁸ It has been discovered that the locusts in their flights were dependent upon the wind for motive force. Using their wings to sustain them and turning their heads toward the wind, they simply drifted backward. With a strong wind it was possible for them to reach a maximum speed of from two to three hundred miles a day, but the rate of progress of invading swarms averaged only about twenty miles a day. Frequently they flew so high as to be out of sight. Either a change of the wind, a lowering in temperature, or an increase of moisture was usually sufficient to bring down the flying swarms. Because northwest winds prevailed over the permanent habitat during June and July, on account of the mountain and forest barrier to the west, and because the best food supply lay to the east, the migrations were in general toward the southeast. Contrary to supposition the locusts were not led by "kings" or "queens", fully corroborating Solomon's statement: "The locusts have no king, yet go they forth all of them by bands".—*Report of the United States Entomological Commission, 1877*, pp. 181, 182, 202, 215, 216, 236, 237, 281-283; Proverbs XXX, 27.

buildings; their jaws constantly at work biting and testing all things in seeking what they can devour." Often they came in such numbers as to obscure the light of the sun, giving the weird, somber appearance of a solar eclipse. At times they accumulated on the railroad tracks to such an extent that the oil from their crushed bodies so reduced the traction as to actually stop the trains.⁹

Falling upon a promising field (their instinct seemed to direct them unerringly toward the cultivated places) it was but the work of a few hours to reduce it to a barren area of leafless stalks. Insignificant individually but mighty collectively, it is said these contemptible insects could "sweep clean a field quicker than would a whole herd of hungry steers." They often completely covered the ground. The ravenous hosts were almost omnivorous. One observer testifies that they "will feed upon the dry bark of trees or the dry lint of seasoned fence-planks; and upon dry leaves, paper, cotton and woolen fabrics. They have been seen literally covering the backs of sheep, eating the wool; and whenever one of their own kind is weak or disabled from whatsoever cause, they go for him or her with cannibalistic ferocity, and soon finish the struggling and kicking unfortunate." Vegetables and cereals were, however, their favorite diet.¹⁰

⁹ *Report of the United States Entomological Commission 1877*, pp. 213-215; Flickinger's *The Pioneer History of Pocahontas County, Iowa*, p. 256; *Annals of Iowa (First Series)*, Vol. XI, p. 359.

Southey, in his poem *Thalaba*, vividly pictures the approach of the locusts. In the Bible the appearance and ravages of these insects are described in an accurate and graphic manner.—Exodus X; Joel, II.

¹⁰ *Report of the United States Entomological Commission, 1877*, pp. 213, 251; Smith's *A History of Dickinson County, Iowa*, p. 344; *Annals of Iowa (First Series)*, Vol. XI, p. 359.

The Arabs, it is asserted, allegorically describe the grasshopper as having "the face of a horse, the eyes of an elephant, the neck of a bull, the horns of a deer, the chest of a lion, the belly of a scorpion, the wings of an eagle, the thighs of a camel, the feet of an ostrich and the tail of a serpent".—Flickinger's *The Pioneer History of Pocahontas County, Iowa*, p. 256.

Having somewhat appeased their appetites, the marauders next turned their attention to providing the region with an abundance of young grasshoppers the following spring. The egg-laying process continued until the ground was frozen or the insects died. With the first warm, sunny days of spring the eggs began to incubate, and the young appeared until the ground was fairly covered with millions of "the liveliest little devils ever hatched". Terrible as was the destruction wrought by the first invading swarms it was hardly to be compared to the ravages of these young locusts during the period of their maturing. As soon as the supply of food in the vicinity of their birthplaces was exhausted, they commenced to migrate, frequently in vast armies, devouring, as they advanced, all the grass, grain, and garden-truck in their path. After they were fully developed, the insects native to the temporary region only awaited favorable winds and fair weather, before they took to their wings and returned to their natural habitat.¹¹

DATES AND EXTENT OF RAVAGES

The authentic record of the ravages of the Rocky Mountain locust extends back to 1818, when hordes of them appeared in North Dakota and in Minnesota, eating every-

¹¹ *Report of the United States Entomological Commission, 1877*, pp. 215, 220, 226-233, 238, 239; *Smith's History of Harrison County, Iowa*, pp. 249, 251-254.

While the armies of unfledged locusts were accustomed to move with remarkable tenacity along a certain course taken by the leaders of the column, this course might lie in any direction, determined entirely by the quantity of food. The rate of speed at which they traveled was necessarily slow, probably not more than half a mile a day. Thus they would proceed but a few miles from the place where they hatched. The cause for the return migration would seem to be chiefly the reproductive instinct, but it is doubtful if the returning swarms, even those that reached the permanent region, by nature weak and diseased (for they could not permanently dwell in the temporary region) were instrumental in perpetuating their species. The Rocky Mountain locust is essentially single-brooded.—*Report of the United States Entomological Commission, 1877*, pp. 234-236, 239, 240-246.

thing in their course.¹² It is probable that a part of the Iowa country was invaded at the same time. There is no evidence of a general visitation of this State, however, before 1833. In that year, according to a tradition among the Indians, "the grasshoppers came so thick that the grass was all eaten off, and there was no grass for their ponies; and the ground looked black, as if there had been a prairie fire." In 1850 the corn crop belonging to the Mormons about Council Bluffs was somewhat injured by grasshoppers, but it is doubtful whether these were of the migratory species for there is no account of an invasion that year in any of the surrounding territory. During August, 1856, swarms came from the north into western and northwestern Iowa where they left their eggs. Great numbers of young grasshoppers hatched the following spring. Later in the summer of 1857 the general locust invasion which swept over the Northwest¹³ reached Iowa, the counties of Woodbury, Harrison, Ida, Adams, and Pottawattamie being visited. But the damage done by these early grasshopper invasions in Iowa was inconsiderable, owing to the limited number of settlements in the western part of the State at that time. These years are usually not included among the "grasshopper years".¹⁴

The first serious grasshopper raid in Iowa occurred in July, 1864, when the region in the vicinity of Sioux City

¹² *Report of the United States Entomological Commission, 1877, p. 54; Collections of the State Historical Society of North Dakota, Vol. I, p. 209.*

¹³ Swarms of grasshoppers came into western Missouri late in the fall of 1820 or 1821, and in the following spring large numbers hatched and departed toward the southeast. Kansas was visited by locusts every year from 1854 to 1857; Nebraska suffered in 1857 and 1858; in 1853 and probably 1856 swarms were found in Dakota; while Minnesota was infested repeatedly, particularly in the years 1830, 1842, 1849, 1855, 1856, and 1857.—*Report of the United States Entomological Commission, 1877, pp. 54, 64, 74, 80, 81, 88.*

¹⁴ *Report of the United States Entomological Commission, 1877, pp. 54, 77; History of the Counties of Woodbury and Plymouth, Iowa, p. 239; Smith's History of Harrison County, Iowa, p. 249.*

appears to have suffered severely. "Gardens looked promising, and each family felt that their wants in the culinary department from this source would be amply supplied, but, in about three hours after these little ravenous intruders entered the city, our fondest hopes in this direction were cut as short as the luxurious vegetation that was swept away like snow before the sun; within three hours not a vestige of vegetation that peered above the ground was to be seen, except squash vines, which alone were left to wind their way."¹⁵

So thoroughly did the insects sow their eggs that the region was made almost desolate the following spring by their progeny. An expedition against the Indians in the Northwest, scheduled to leave Sioux City in June, was abandoned, "the country owing to the grasshoppers and drouth not being able to support so many as must necessarily go." General Sully, at that time in Sioux City, wrote, "The only thing spoken of about here is the grasshoppers. They are awful". The destruction of crops was even more complete than it had been during the preceding summer.¹⁶

Toward the end of May, 1867, news came that the grasshoppers were ravaging Nebraska, although the boast was made in a Council Bluffs paper that in "Western Iowa we are not troubled with these long-legged insects." Even as late as July 14th the coming of swarms of grasshoppers was a subject for ridicule. But by August first large numbers of the insects had entered the southern part of Mills County, seeming to have come from Kansas. In

¹⁵ *Annals of Iowa* (First Series), Vol. XI, pp. 359, 360; *Report of the United States Entomological Commission, 1877*, p. 77; *History of the Counties of Woodbury and Plymouth, Iowa*, pp. 239, 415.

¹⁶ *Report of the United States Entomological Commission, 1877*, pp. 77, 78; *Hamilton Freeman* (Webster City), June 3, 1865; *History of the Counties of Woodbury and Plymouth, Iowa*, p. 239.

another week Pottawattamie County was overrun. Northward the pests proceeded. On August 27th the advance guard of the invading army began to drop down upon the fields in Harrison County. Although a few swarms reached Dickinson County late in the season they created little alarm and did practically no damage north of Sioux City. It was rather toward the east that the main body of locusts drifted. A northwest wind is reported to have brought down a large swarm in the neighborhood of Lake City near the end of August. Their first appearance at Jefferson was on September 2nd, when the "vast concourse seemed to be bearing off in a south-easterly direction", which would tend to identify this as the swarm that had visited Lake City a few days earlier. On the ninth day of September a swarm is said to have passed over Adel, while two days later the ground at that place was covered with grasshoppers. People then living in Fort Dodge declared that the air was full of the insects on September 10th. Swarms arrived in Clarke County about October 5th.¹⁷

The entire southwestern quarter of the State apparently suffered. Indeed, the invasion of 1867 probably was the most destructive of all the grasshopper raids in the counties along the Missouri River. While the insects first made their appearance in August, it was during September and October that they were most numerous. "Their appetites were as ravenous [as] their saw-toothed jaws were destructive; they spared neither the garden lot or cornfield, cabbage, turnips, cornblades, corn in any shape, tobacco chews,

¹⁷ *Council Bluffs Weekly Nonpareil*, May 25, 1867; *Council Bluffs Bugle*, September 12, 1867; *The Dallas Weekly Gazette (Adel)*, August 1, 8, September 12, 1867; *Smith's History of Harrison County, Iowa*, p. 249; *Smith's A History of Dickinson County, Iowa*, pp. 342, 343; *The Iowa North West (Fort Dodge)*, September 4, 1867; *The Jefferson Era*, September 4, 1867; *Report of the United States Entomological Commission, 1877*, p. 78; *Annals of Iowa (Third Series)*, Vol. IV, p. 438; *Flickinger's The Pioneer History of Pocahontas County, Iowa*, p. 257.

old boots, fork handles and overcoats, all perished before their destructive powers and appetites. Here they lit without request and here they tarried without invitation". Farther east, however, the damage was not so great, because of the abundance of grass and the fact that the swarms arrived late in the season.¹⁸

The mischief accomplished by the young unfledged locusts in 1868 was necessarily confined to the territory which had been invaded by their progenitors in 1867. Because the eggs were not distributed equally in all parts of the country the damage done was not universal, some localities being stripped of vegetation while others were scarcely touched. It was hoped in May that the grasshoppers would not be so numerous as to imperil the bountiful harvest in prospect. But by the end of June, when they got their wings and began to migrate northward, not half a crop was left in many places. Some people to save themselves from great loss probably raised a crop of buckwheat later in the season. Newspapers in the more fortunate places claimed that the reports were exaggerated, but there is evidence to show that the insects made sad ravages upon the growing crops in portions of the State.¹⁹

Although certain regions in Iowa were troubled with locusts in 1870, 1871, and 1872, there was no damage worthy of notice. The next year, however, the hopes and in many cases the fortunes of the settlers in northwestern Iowa were ruined, swiftly and surely, by the terrible scourge. Never

¹⁸ *Report of the United States Entomological Commission, 1877*, p. 78; *History of Mills County, Iowa*, p. 374; *Smith's History of Harrison County, Iowa*, p. 250; *The Jefferson Era*, September 4, 1867; *Annals of Iowa (Third Series)*, Vol. IV, p. 442; *Gue's History of Iowa*, Vol. III, p. 19.

¹⁹ *The Hamilton Freeman (Webster City)*, May 20, July 1, 8, 1868; *Gue's History of Iowa*, Vol. III, p. 20; *The Jefferson Era*, June 24, 1868; *History of the Counties of Woodbury and Plymouth, Iowa*, p. 239; *History of Mills County, Iowa*, p. 374; *Report of the United States Entomological Commission, 1877*, p. 78; *Iowa Agricultural Report, 1868*, pp. 12, 13.

before had the grasshoppers come in such numbers or stayed so long. The extreme northwestern counties seem to have been invaded about the first of June, but the direction from which the swarms came is uncertain. If the first swarms were identical with those which were reported to have flown northward from Nebraska about May 26th, it would appear that they came from the southwest.²⁰ But inasmuch as the migration was very general in 1873 (practically all parts of western Minnesota, Dakota, and Nebraska being invaded) and continued almost the entire summer (swarms continually coming and going), it is very probable that the locusts came from different directions at different times. The general trend was eastward.²¹

O'Brien and Osceola counties were said to have been invaded about June 5th, while on June 13th swarms had reached Emmet and Pocahontas counties. By the middle of June the ravagers were busy in Dickinson, Clay, and Buena Vista counties, and early in July they were making depredations on the wheat fields about Humboldt. Probably the havoc extended as far east as western Hancock County. There were no grasshoppers in Green, Hamilton, and Wright counties during the summer of 1873: the Webster City (Hamilton County) paper, so far as can be discovered, does not even mention them.²²

Toward the last of July news came that the locusts were doing great damage to the oat crop in Nebraska. "On the

²⁰ This assumption is also sustained by the fact that grasshoppers entered the southwestern counties of Minnesota about June 12th, traveling northeastward.—Holmes's *Minnesota in Three Centuries*, Vol. IV, p. 110.

²¹ *Report of the United States Entomological Commission*, 1877, pp. 75, 78, 86, 89; *Sioux City Weekly Times*, August 10, 1872; Gue's *History of Iowa*, Vol. III, p. 55; Perkins's *History of O'Brien County, Iowa*, pp. 141, 142; *Iowa Agricultural Report*, 1873, pp. 26-28.

²² *Iowa Agricultural Report*, 1873, pp. 26, 27, 369, 438, 439; *Report of the Commissioner of Agriculture (U. S.)*, 1873, p. 156; *Northern Vindicator (Estherville)*, June 14, 1873; Flickinger's *The Pioneer History of Pocahontas*

1st day of August, 1873, in the neighborhood of Magnolia, and on the 4th day of the same month and year, at Harris Grove" (Harrison County) the plague again commenced an indiscriminate attack on the corn and oats. At the same time much grasshopper humming along the Floyd and Little Sioux rivers was chronicled. One writer states that the grasshoppers had "arrived safely at Dowville" on August 4th, and were "foraging in regular army style" as far east as Denison. A correspondent writing under the same date from Sloan vouches for the fact that the grasshoppers were there in force, while reports from Monona County go to show that the pests had destroyed the prospects for more than half a crop of corn and oats. Immense clouds of locusts passed over Omaha on August 16th, but there is no evidence that this invasion extended into the State to any great distance; and while the corn and oats were considerably injured, the damage was not comparable with that done in the northwestern counties earlier in the summer.²³

County, Iowa, p. 257; Smith's *A History of Dickinson County, Iowa*, p. 343; Gillespie and Steele's *History of Clay County, Iowa*, p. 88; *Wright County Monitor* (Clarion), June 26, July 29, 1873, February 17, 1874; *Humboldt County Independent* (Dakota, Iowa), June 25, July 9, 1873.

Either to conceal the actual amount of damage done by grasshoppers so as not to discourage emigration or because the ravages somewhat abated after June, thereby raising the hopes of the settlers, the newspapers of northwestern Iowa took a very optimistic attitude during July and August. The *Northern Vindicator* claimed that the crops were average and that no permanent injury had been done; while the *Sioux City Weekly Times* declared that the crop reports from all parts of the country were of the most favorable character, and on July 19th went so far as to make the statement that the "extent of small grain sown this year [in the Sioux Valley] is more than three times that of last year, and we hesitate not to predict that (Providence protecting) the yield per acre will be greater than in any other district in the Northwest." Whatever the motive for publishing such items may have been, the fact that it was necessary for the State to aid the farmers in this same country the following winter and spring, is abundant evidence that the statements were not well founded.—*Northern Vindicator* (Estherville), June 28, July 19, August 6, 23, 1873; *Sioux City Weekly Times*, July 5, 19, 1873.

²³ *Sioux City Weekly Times*, July 26, August 2, 9, 1873; Meyer's *History of Crawford County, Iowa*, p. 178; Smith's *History of Harrison County, Iowa*, pp. 254, 255; *Wright County Monitor* (Clarion), August 5, 1873; *The Fort Dodge Messenger*, August 7, 21, 1873.

From the fact that Dickinson, Emmet, Palo Alto, and Kossuth counties suffered more severely from the locusts hatched in the spring of 1874 than did the extreme northwestern counties which had borne the brunt of the attack during the previous summer, it would appear that either the grasshoppers had arrived in the latter region too early for egg-laying or, eggs having been laid they hatched in the fall, and the destruction during the following season was therefore not so great. In general the territory covered by the scourge of 1874 was identical with that invaded in 1873, with perhaps a slight extension toward the east and into the extreme southwestern corner of the State.

The locusts began to hatch in May. As the season advanced it became more and more evident that in some places not only the gardens, but crops of all kinds, were doomed to destruction. In July, when favorable winds came and the grasshoppers took wing for the north, some places were completely stripped of vegetation. Moreover, fresh swarms entered the northwestern counties during July and August, doing great damage. Some twenty counties in that part of the State suffered more or less. As a year in which the ravages of the grasshoppers caused the greatest distress, the year 1874 may be ranked with 1867, 1873, and 1876. Indeed, there was some agitation for an extra session of the State legislature for the purpose of providing relief for the people of the afflicted district.²⁴

Fortunately there were few locusts in Iowa in 1875. In Kansas and Missouri, however, they hatched in unusual

²⁴ McCarty's *History of Palo Alto County, Iowa*, p. 135; Flickinger's *The Pioneer History of Pocahontas County, Iowa*, p. 258; Gillespie and Steele's *History of Clay County, Iowa*, p. 88; Smith's *A History of Dickinson County, Iowa*, pp. 344, 345; Smith's *History of Harrison County, Iowa*, p. 255; *Report of the United States Entomological Commission*, 1877, pp. 78, 79; *Northern Vindicator* (Estherville), May 16, 30, June 27, July 4, 1874; *Humboldt County Independent* (Dakota), May 29, July 24, 1874; *Wright County Monitor* (Clarion), May 26, 1874, June 2, 9, 16, 30, 1874.

numbers and it appears that swarms in their exodus from these States flew into southwestern Iowa from about the tenth of June until the middle of July, many of which alighted, remained a few days, and caused some hardship. In the northwest swarms were reported to have passed over, but scarcely any damage was done.²⁵

Of all the grasshopper raids in Iowa the most extensive, although not the most destructive, was that which occurred in the summer of 1876. In fact the territory invaded comprised nearly all of western Minnesota, a portion of eastern Dakota, and western Iowa — a strip of country four or five hundred miles long and one hundred and fifty miles wide. About the first of August swarms crossed the State line from Minnesota and Dakota almost simultaneously, and swept on toward the east and south. As late as October 2nd grasshoppers were still migrating eastward. "The most eastern point reached was in the middle of the State, and the line retreats westward from Story County both north and south." With 1876 grasshopper invasions of Iowa practically ceased.²⁶

In the spring of 1877 young grasshoppers hatched in varying numbers over the area covered by the pests during the previous summer, but the cold, wet weather killed so many that little destruction was accomplished except in Pottawattamie County. The first flights occurred on June 14th and from this time until the first week in August the locusts were leaving the State, the direction being uniformly northwest. While swarms from the north were noticed passing over several different localities later in the season,

²⁵ *Report of the United States Entomological Commission*, 1877, pp. 66, 67, 71, 79; *The Adair County Reporter* (Greenfield), July 16, 1875; *Adams County Union* (Corning), May 20, June 24, July 15, 1875.

²⁶ *Report of the United States Entomological Commission*, 1877, p. 79; *Northern Vindicator* (Estherville), July 29, August 5, 19, October 7, 1876; *Boone County Republican* (Boone), July 26, 1876; *Annals of Iowa* (Third Series), Vol. IV, pp. 442, 443.

they seldom alighted and did little damage. It could hardly be said that there was a fresh invasion.²⁷

Two small, scattered flights, causing no harm in this State, crossed the southwest corner of Minnesota late in 1878, one of them reaching a short distance into Iowa. The hatching-grounds were more extensive in Iowa in 1879 than in 1878 and a greater number of local flights from the northwest were recorded, but there were no swarms, as in the previous year, which came directly from the permanent breeding area in the West. In 1880 there were probably a few unimportant flights resulting from the progeny of these 1879 swarms. Since that time huge swarms of grasshoppers have been seen in Iowa occasionally, and indeed not infrequently have they dropped down to refresh themselves on a field of grain, but never since 1880 has there been anything to compare with the scourges of the "grasshopper years".²⁸

LOSS AND PRIVATION CAUSED BY GRASSHOPPER RAIDS

The winter of 1872-1873 had been a severe one in northwestern Iowa. The settlers were for the most part people of limited means who had taken advantage of the homestead or preëmption laws. Long and hard had they labored in anticipation of better times. They had endured all of the hardships and privations of pioneer life in the hope of realizing a substantial reward in the years of prosperity that were to come. For two or three seasons their efforts had been crowned with success: the newly broken prairie had responded magnificently to cultivation. But the homesteaders had come to the new country empty-handed, many of them possessed only of a wagon-load of household goods,

²⁷ *Report of the United States Entomological Commission, 1877*, pp. 79, 80; Flickinger's *The Pioneer History of Pocahontas County, Iowa*, p. 259.

²⁸ *Report of the United States Entomological Commission, 1878-1879*, pp. 161-163.

a span of horses, and an indomitable determination to win homes and fortunes in this rich agricultural community. Whether they would achieve their purpose depended entirely upon the crops they were able to raise from year to year: there was no surplus for emergencies. To endure the rigors of a western winter without privation and suffering it was necessary that the settlers should have enjoyed a summer of bountiful harvests. The winter of 1872-1873 had tried the courage of the most prosperous.²⁹

March and April of the year 1873 were cold, rainy months. The seeding was long delayed and when it was finally accomplished the grain was slow in sprouting and slower in coming through the ground. But in May the gloomy prospect brightened: the fields of wheat and oats waxed luxuriant, the corn stretched up by leaps and bounds.

Feasting their eyes on the promising sight the settlers felt that they would be justified in building new granaries, in purchasing implements, and in procuring for their families some of the things that had been long denied. The harvest would pay for all. Merchants were eager to sell on credit, while a multitude of agents for pump, lightning-rod, harvester, and insurance companies infested the country. They, too, accepted credit with the fields of grain as security. Tempting opportunities for investment in railroad lands were also afforded, and again promissory notes were signed. But the day of reckoning came too soon.³⁰

When the grasshoppers which swept over that region had finished their work of destruction a veritable desert remained where but a brief time before there were acres of

²⁹ While the grasshopper invasion of 1867 had caused much suffering in western Iowa, it was only in very limited areas that the crops were an entire loss. The local communities were able themselves to care for all the needy.

³⁰ Van der Zee's *The Hollanders of Iowa*, pp. 161-163; *Wright County Monitor* (Clarion), July 29, November 25, 1873; *Humboldt County Independent* (Dakota), May 1, 1874.

waving grain. It was estimated that not twenty-five percent of the oat crop was left; the corn fields had suffered equally; while the wheat in many places was reported to be an utter failure. It was especially unfortunate that the ravages were most destructive in the more recently settled country where the people were largely newcomers entirely dependent upon their first crop. What in the older communities was a serious misfortune, to them was absolute ruin. A special committee appointed by the Fifteenth General Assembly (1874) to investigate conditions in the northwestern counties of the State reported as follows:

Comparatively few of the settlers have been on their lands over two seasons. The first year of course they could raise little, while their expenses in providing shelter for their families, in breaking up a portion of their lands, etc., generally exhausted the limited means at their command. The consequence was that the most of them were compelled to live during last summer [1873] on decidedly short allowances, but they looked forward hopefully to returns from their promising crops for means to supply their families with food and clothing for the winter and with seed for the present year. The unforeseen devastation of their fields left them destitute. The hard labor of the year was swept away as by a breath, and the expected reward for which they had endured privation from the first was in truth caught out of their very hands.

Toward the middle of September, 1873, a financial panic broke over the country, making even more disheartening the already straitened circumstances of the settlers. Cash payment was suspended for a time in the larger cities, so that money became extremely scarce. It was practically impossible to negotiate loans on any terms, while for farmers without produce as security it was entirely out of the question. At the same time, the "biting grasshopper" in the form of collecting agents, armed with the notes which had been signed in the spring, came to harrass the farmers. In truth, the credit system worked as much hardship in

many cases as the ravages of the grasshoppers themselves. One observer, J. B. Strouse, wrote:

I am not a granger, but if the grange organization can do anything to stop this credit business, may God be with them, for I honestly believe that it is the worst grasshopper that infests the country. . . .

If there are any persons who have had a notion to settle in this country but have been scared out by the big grasshopper stories afloat, I say to them come along, and they will not suffer if they will keep the credit grasshopper off their place.

The following account of the actual suffering was given in November, 1873, by a man who had just left the stricken region:

Nearly every man is poor—very poor, and a great majority are ex-soldiers of the Union, with young families to support. When the grasshoppers took the crops, we did the best we could for the coming winter. We went to the lakes and caught barrels of fish, but we did not have the means to properly care for them; so they spoiled. Stock was sacrificed to the sharks that infest our section, at the next to nothing of a price, and many of us have thus eaten up and worn out the horses and work cattle that had been our main stay. We could buy no fuel, and when I left twisted hay and rank reed grass was the only fuel nine-tenths of the people were using. Much sickness prevails, brought on by a long abstinence from wholesome and nutritious food. One family I knew of has the father down with the rheumatism, three out of six children were down with the measles, while the mother was about worn down herself. Corn meal, grated from frost-bitten nubbins, was the only food in the house, if the sod and board shanty may be called such. The people bear with each other, and mutually extend aid as much as possible. One young man from Jasper county, who happens to be a good shot, has valiantly taken upon himself the task of keeping all invalid families supplied with meat, wild game and the day I left brought some geese, and ducks to the family I have mentioned. But that will soon end, with cold weather. You want to know what they need? They need everything—fuel, clothing and provisions. The women and children are suffering greatly already, for the want of clothing. I know of several women

who died soon after giving birth to children because they could not have even the common luxury of a cup of tea, or anything nutritious to aid them in regaining strength, coupled with the want of proper bed covering. The most of the counties can extend no aid, for the reason that thieves have been running affairs, and have stolen all, just as they did some years ago in Clay county. Many families will leave *on foot*, having sold their cattle or horses to keep them alive. Some general way of relieving those who must remain must be put in operation right away, else the first snap of real cold weather will send many a good man, or woman, or child, to death—frozen, because they will be so weak and emaciated that they cannot stand the rigors of winter, even in its weakest appearance.

Even in July it was feared that thousands of settlers would be so discouraged that a general stampede from that part of the State would ensue. As the summer passed and all hope of even a semblance of a harvest faded, many of the settlers doubtless did seek a means of livelihood elsewhere. Some there were who could not have left if they had wished. But the majority, although they felt that a portion of their sustenance for the next few months must come from the outside, were yet willing to endure a winter of unusual privation in the faith that the next season would bring prosperity.

They were as “deserving, intelligent, industrious, provident a class of citizens” as could be found in any part of the State, “men not likely to depend upon charity,” or “willing to accept charity, when by any means they could work out their own deliverance.” In August it was said that seventy-five percent of the people in Osceola County would have scarcely enough wheat for bread and seed, ten percent would have enough for bread only, while fifteen percent would be without both bread and seed. In the following January it was estimated that there were about six hundred people in northwestern Iowa needing assistance. The special committee of the General Assembly, sent to investigate

the situation, "spent some time in riding over the great sweeps of prairie, snow-clad and desolate, visiting the people in their homes." Conditions were described in the following words:

None of their residences are extravagant, and seldom embrace more than one room. A majority of them are neat, though rough, having little furniture aside from such articles as the man of the house could manufacture. Some of the houses are made of sod, with straw roofs, in which floors other than the hard ground may be absent. A few pounds of flour, or a little meal, with possibly a little pork of some kind, generally comprised the stock of provisions—with no hope beyond the good hearts of the more fortunate people of Iowa for fresh supplies. Nevertheless the people are generally cheerful; and if anyone expects to find a wail of perpetual lamentation he might as well look outside "the grasshopper district" as within it. The men and women there stand up squarely, in the full dignity of their muscular development, and say, "We only ask for a reasonable chance for our lives!"³¹

Spring came at last, but with the first warm days there came also millions of young grasshoppers. From the first the people saw in despair, particularly those to whom seed had been furnished by the State, that the crops were again doomed. In vain they struggled against the pest. The conflict was once more at hand—almost a test of whether the locusts or the settlers should leave the country: there was not room for both. Early in June the residents of Kossuth County decided that the Fourth of July would not be celebrated among them that year: they could not afford to be patriotic. Meetings of farmers were held at which crop reports were heard and committees appointed to as-

³¹ *Iowa Agricultural Report*, 1873, pp. 27, 28, 352, 417, 427, 438, 439; *Sioux City Weekly Times*, August 23, 1873; *Report of the Special Committee on Destitution in Northwestern Iowa*, pp. 3, 4, 9, 10, in the *Iowa Legislative Documents*, 1874, Vol. II; *Wright County Monitor* (Clarion), July 29, November 25, 1873; Sprague's *History of Crises under the National Banking System*, pp. 33, 35, 63-66, 83; *Humboldt County Independent* (Dakota), January 14, May 1, 1874.

certain the necessities of the people. In Emmet County a committee was appointed for the purpose of staying the collection of debts from the settlers until better times.

Harvest time came, but there was nothing to harvest. In the counties of Kossuth, Emmet, Dickinson, and parts of Palo Alto, Pocahontas, and Humboldt the crops were almost an entire failure. The gardens in particular seem to have suffered. The estimates of losses in the agricultural reports varied widely for the year 1874, but a unanimous complaint of grasshopper ravages came from the northwestern counties. One county committee reported as follows:

The eggs deposited last year, in the soil, by the locust cormorants, hatched with the spring sun, and brought forth the young insects almost a hundred fold. The young "hoppers" grew and fattened with the young grain. They swarmed in the fields, in the prairie grass, and even in the trees of the forest, numberless as the sands on the lake shore, and steadily as remorselessly pursued the destruction of the crops, until their wings were fully developed, and until this county [Emmet], with its twelve Congressional townships, containing the well tilled farms of formerly well-to-do settlers, there remain not to exceed fifty acres of poor wheat, one hundred acres of poorer oats, and corn and vegetables in the same ratio.

This is no fancy sketch, unfortunately, it is a direful and lamentable fact, and hundreds, who have visited the county, assert it as strongly as it is attested by your committee, and every resident citizen.³²

Farms, the actual value of which was from ten to fifteen dollars an acre, sold for less than the government price.

³² *Humboldt County Independent* (Dakota), June 5, 19, 1874; *Northern Vindicator* (Estherville), June 27, August 15, 1874; *Iowa Agricultural Report*, 1874, pp. 369, 378, 412, 429, 436, 440.

The statement of the committee appointed to investigate conditions in Emmet County is fully corroborated by the report of a State Commission appointed by Governor Cyrus C. Carpenter to estimate the devastation in the northwest.—*Humboldt County Independent* (Dakota), September 25, 1874.

The collection of debts for machinery and other necessities was pressed vigorously; and thus not only had the grasshoppers taken the crops but they were virtually taking the land also. The settlers left the stricken region by the hundreds, some of them never to return, others seeking temporary employment in more fortunate localities. To add to the misery of the latter, they were in many places mistaken for vagabonds.³³

The winter of 1875 was a long, hard one, accompanied by many blizzards. Those who remained at their post must have watched the advent of summer with much anxiety. But the grasshoppers were far more lenient that season, many of the counties which had suffered most severely in 1874 reporting larger crops than were raised in any of the other counties in the grasshopper region. The country was therefore more or less prepared to endure the wide-spread damage done by the locusts in 1876. Not only had the settlers accommodated themselves to the possibility of grasshopper raids by turning their attention to a greater extent in the direction of stock raising, but they had organized both for the systematic destruction of the locusts and for the purpose of administering aid to the needy. In this manner, although the insects made havoc with the grain crops as usual, suffering such as was experienced during the first years of grasshopper devastation was in most cases avoided.³⁴

³³ *Humboldt County Independent* (Dakota), June 26, July 24, 1874; *Northern Vindicator* (Estherville), July 25, September 5, 1874. Terrible as were the effects of the locust invasion of 1874 in Iowa, they are not to be compared with the suffering occasioned elsewhere. In Kansas 150,000 acres planted to corn yielded not a bushel; while it was estimated that in the two States of Kansas and Nebraska there were 40,000 people left destitute.—*Northern Vindicator* (Estherville), November 14, December 5, 1874.

³⁴ Maclean's *History of Carroll County, Iowa*, pp. 83, 84; *Northern Vindicator* (Estherville), May 1, 1875; *Iowa Agricultural Report*, 1875, p. 11; *Boone County Republican* (Boone), August 16, 1876. Never did the grasshoppers become such a terrible scourge in Iowa as they did in Missouri, Kansas, and

MEASURES FOR THE RELIEF OF THE SETTLERS

When the question of relief first came before the people many were opposed to any such plan, on the ground that the country would acquire a bad reputation and settlement would be retarded. Moreover, there were others who believed that each locality should care for its own needy. When the board of supervisors of Sioux County sent out letters asking for provisions, money, and clothing, a Sioux City newspaper pronounced the policy "a swindle on the people of Iowa, and a disgrace to the independent yeomanry of Sioux County, . . . while they live in Sioux County, a land of plenty, and have the right and lawful authority to help themselves".³⁵ The extent of the destitution among the settlers was doubtless not realized by outsiders at that time. Then there were those who thought it was the duty of the State to intervene, not only in order to prevent a possible stampede from the northwestern counties, but to ameliorate the suffering as much as possible. But when a sudden catastrophe befalls a community leaving hundreds of people dependent upon charity they do not long scruple as to the source of their relief.³⁶

Nebraska in 1875. Indeed, there is evidence that many carloads of grain were sent from Iowa that year for the relief of the sufferers in those States. From Missouri came the report that the people were panic stricken, that the cattle and horses were dying by the hundreds from starvation, and that credit was being refused to men who two years before had been accounted wealthy. The Governor of Missouri even set apart a day of fasting and prayer for divine protection from the pestilence.—Macleay's *History of Carroll County, Iowa*, p. 85; *Humboldt County Independent* (Dakota), May 14, June 25, July 16, 1875; *Northern Vindicator* (Estherville), May 22, 1875.

The constitution of Nebraska which was framed in 1875 when the State was submerged in the gloom and destitution of the scourge was spoken of as the "grasshopper" constitution. The highest salary allowed was \$2,500, showing the influence of conditions upon the convention.—*Proceedings and Collections of the Nebraska State Historical Society* (Second Series), Vol V, p. 100.

³⁵ Quoted in Van der Zee's *The Hollanders of Iowa*, p. 165.

³⁶ Perkins's *History of Osceola County, Iowa*, p. 148; *Wright County Monitor* (Clarion), July 29, 1873.

Before there could be any adequate system of aid, however, some organization and coöperation was needed among the farmers. The "Grange" already had a firm foothold. It was well organized and probably constituted the most effective agency in the immediate relief of the suffering in the northwest. Letters were sent to the National Grange, to the State Grange, and to the Subordinate Granges of Iowa soliciting supplies. In Osceola County a Homesteaders' Protective Association was organized, chiefly for the purpose of looking after the interests of those rendered helpless by the grasshopper ravages. Any resident of the county could become a member by signing the constitution and paying the sum of fifty cents.

On November 15, 1873, the following appeal was issued from Sibley, Iowa:

To the People of the State of Iowa:—

We the undersigned, a committee appointed by the "Homesteaders' Protective Association of Osceola County," an organization effected for the purpose of looking after the extreme and urgent necessities of the people of said county, caused by the almost total failure of the crops, do deem it just and proper that we let our sister counties, who are in affluent circumstances, have positive knowledge of the situation of a very large proportion of the citizens of this county.

The most of the settlers came here last spring with little or no means, and depending entirely on their efforts during the summer to carry them through the winter; honestly and faithfully have they toiled. A very large amount of ground was sown and planted in the spring — more than sufficient to raise subsistence for all for the coming winter, if it had not been for an extremely wet, backward spring, and the invasion of a vast army of grasshoppers, which caused almost a total failure of corn and small grain crops, so that they now find themselves, on the eve of a long, cold winter, worse off than in the spring; without food of the plainest kind, and without means to purchase fuel to protect themselves and families during the coming winter. There are hundreds of families who have not sufficient clothing, and know not where the bread that they will eat ten

days hence is coming from, or their fuel. These same people, relying on their crops to carry them through the winter, have labored diligently through the summer, and thousands of acres of the prairie have been turned over ready for a crop next spring.

Now therefore, be it known to the people of the State of Iowa, that without liberal assistance from some source, a very large portion of the citizens of this county will be without the necessaries to sustain life, and also fuel to keep them from freezing, and unless from some source, seed is furnished to these people to sow and plant in the spring, many of the broad acres that are now ready will have to lie idle the coming season.

We, therefore, appeal to the liberal Christian hearted people of this State for assistance in the shape of money, clothing, fuel, and staple articles of food.

At the present writing there are at least two hundred families in the county needing immediate assistance.

All consignments will be made to C. M. Bailey, Agent H. P. A., Sibley, Osceola county, Iowa.³⁷

As winter approached the situation became more and more desperate. Some effective system for the collection and equitable, judicious distribution of supplies had to be devised. A convention was called in Fort Dodge to which came delegates from the various counties of northwestern Iowa. The situation having been discussed, it was decided that a committee should be appointed to visit the afflicted territory and appoint local committees who would ascertain the actual necessities of the inhabitants and through which the work of distributing the donations could be intelligently performed. Adjutant General N. B. Baker, who volunteered to superintend the work, threw himself heart and soul into the problem. He appealed to the people all over the State to contribute money, clothing, provisions, and seed grain. He also sent word to the destitute people of the stricken region, that if they would make known

³⁷ Perkins's *History of Osceola County, Iowa*, pp. 146-150; *Wright County Monitor* (Clarion), November 25, 1873.

their wants, supplies would be furnished free of cost. At the same time arrangements were made with the railroads to carry supplies at very low rates to the places which had been selected for distribution.

The people responded generously. Meetings were held to see what assistance could be rendered. "Grasshopper parties" for the benefit of the homesteaders became somewhat of a fad. The women worked faithfully in the cause of charity, collecting clothing, bedding, and other things that were needed; and provisions poured in from all parts of the country, even from far-away New England, in generous profusion. From Humboldt County it was reported that three thousand turkeys, eighteen hundred hams, and other supplies in proportion had been sent by January 14, 1874. The people of Fort Dodge donated provisions for one hundred of the Osceola County sufferers and several tons of coal for those in Emmet County. In Sioux City a committee headed by Mayor Turner took a collection which amounted to about one thousand dollars. Two members of this committee in company with General Baker also made a tour of inspection in the devastated region in order to gather information which would enable the people to understand more fully the condition of the settlers. Their report, published in the *Sioux City Journal*, reads as follows:

Sibley, Osceola County, December 3, 1873.

The undersigned, members of the committee appointed by the citizens of Sioux City, to secure aid for the suffering homesteaders in Osceola and other northwestern counties of our state, respectfully submit the subjoined report:

We reached Sibley, Osceola county, which is near the center of the region devastated by grasshoppers, and from the statements of reliable men, whom we have known for years, as well as from many of the homesteaders themselves, we are satisfied that there are many families suffering for the common necessities of life.

It is believed that at least one-half of the entire population of

Osceola county is burning hay for fuel, being destitute of money with which to procure coal. This will be the best understood when it is known that the county is one vast treeless prairie—which is true of all northwestern Iowa.

Just at the time when all vegetation was maturing, and promised a large yield of farm and garden products, the grasshoppers swept away everything. This, to a class of men like our homesteaders, should not be allowed to discourage one of them, though hard is their present lot. All their means was expended in seed and labor, and their loss is irretrievable, unless aided by the benevolent of our state. There is in this county alone, 15,000 acres of land all ready for sowing wheat. These destructive pests are no fault of the homesteaders, and they must receive aid at once. What the people in this and adjoining counties want now is bedding, flannels and food.

At Sheldon, and that vicinity, but little relief has been received, although to-day there are nearly twenty boxes and barrels of food and clothing, and thirty tons of coal now on the way, sent by Gen. Baker.

To-morrow the Sioux City committee will send to Sibley, 1,000 pounds of flour and half as much meal, and to Sheldon the same amount, together with blankets, clothing and bedding.

The local committees in all these counties are good, true men, who will see that all receive a portion of donations. In our inquiry in reference to the needs of homesteaders, Gen. N. B. Baker, of Des Moines, has rendered great assistance. It is hoped, by hints made by the Patrons of Husbandry, that this order will take hold of this matter and co-operate with Gen. Baker and the committee, in securing the amount of seed wheat needed. For passes for ourselves, and free delivery of goods sent to homesteaders, we are under obligations to the officers of the Sioux City & St. Paul railroad company; also the express company, who are performing their whole duty in rendering the aid needed along the lines they represent.

[Signed] WILLIAM R. SMITH,
E. R. KIRK,
For Relief Committee.

The thoroughness with which the business of voluntary relief was conducted is amply corroborated by the special

committee from the General Assembly that visited the country in February. It was learned "that many townships had been thoroughly canvassed by local relief committees, and the data thus obtained, being presented to your committee, was of great advantage in expediting the work in hand. These reports, giving the name of each head of a family, the number of persons in a family, the amount of land under cultivation, the amount of stock owned by each settler, the amount of seed grain he had and the amount needed, his ability to support his family, etc., were generally of such character as to fully indicate the painstaking manner in which they had been prepared".³⁸

In spite of the large amount of private aid extended to the settlers, however,³⁹ there appears never to have been a surplus of contributions on hand. After a time the railroads withdrew their free services in carrying supplies, thus making the work of relief much more difficult. From the very first there had been more or less agitation for as-

³⁸ Gue's *History of Iowa*, Vol. III, pp. 55, 56; *Annals of Iowa* (Third Series), Vol. IV, pp. 445, 446; *Northern Vindicator* (Estherville), November 22, December 6, 1873, January 3, 1874; Perkins's *History of Osceola County, Iowa*, p. 152; *Humboldt County Independent* (Dakota), December 24, 1873; January 14, 1874; *Sioux City Weekly Times*, December 6, 1873; *History of the Counties of Woodbury and Plymouth, Iowa*, p. 240; *Report of the Special Committee on Destitution in Northwestern Iowa*, p. 4, in the *Iowa Legislative Documents*, 1874, Vol. II.

³⁹ An approximate statement of the amount of relief afforded up to about the middle of February, as reported to the State Senate, follows:

"APPROXIMATE STATEMENT OF SUPPLIES FORWARDED BY GEN. BAKER

Clothing—3 barrels, 55 boxes, 13 packages.

Miscellaneous—143 barrels, boxes, bags, sacks, and packages.

Food—774 boxes, barrels, bags, sacks and packages of flour, meal, rice, hominy, molasses, meat, groceries, etc.

Grain—11,750 pounds of corn, 52 bags of corn, 2 carloads of corn, 29 bags of oats, 55 bags of wheat; also, one car loaded with corn, flour, beans, pork, etc.

Coal—Not far from 500 tons. I cannot tell with any certainty in relation to the coal, for sometimes, after advising how to send, they sent directly through without my intervention; and then sometimes dona-

sistance from the State, but when the General Assembly convened in January, 1874, the efforts were redoubled. Governor Cyrus C. Carpenter in his first biennial message reflected the sentiment of the people in these words:

During the last two years there has been a constant stream of immigration pouring into the counties in the northwestern portion of the State. So rapid has been this influx, that in counties where three years ago there was scarcely a human habitation there are to-day from two to three thousand inhabitants. When it is considered that a large proportion of these settlers went into this country with very limited means, in order to take advantage of the homestead law, and that under the most favorable circumstances they must have undergone severe deprivations and hardships, it

tions were mixed up in Grange collections and no notice sent to me, and they may have been reported twice, to Grange department and to me.

Wheat—I have \$146 worth of seed wheat, having sold wheat here and converted it into wheat near point of distribution and saved trouble and expense of transportation.

Cash—I have sent cash relief to committees, amounting to \$351.35. I have paid for coal, bags, rice, molasses, yarn, blankets, leather, transportation, drayage, and other expenses \$1,015.35
Sent out as above stated 351.55
Paid for the seed wheat at Sioux City 146.00

Total cash. \$1,512.90

“An approximate statement of Grange relief is given as follows:

Coal—400 tons.

Pork—(Side meat)—14,000 pounds.

Meal, flour, grain, etc.—125 tons.

Bedding, clothing, etc.—Twenty packages, including 500 yards of flannel.

“Cash paid on freights to date, \$500. Much has been shipped under direction of this office, of which, as yet, we have failed to obtain such statement as to be included in this estimate. Considerable donations are now being made up in different parts of the State that will be forwarded soon. Our receipts in cash are \$3,700, half of which is on hand, unappropriated.

(Signed,) J. D. WHITMAN,
R. R. HARBOUR.

“Your Committee is informed that the National Grange has appropriated \$3,000 to the State Grange of Iowa, in view of what it is doing for the relief of the destitute. This money is in the treasury of the State Grange, to be used for whatever purpose the organization may direct, as other funds.

is scarcely a matter of surprise that, when there is added to these facts an unusual shortness of crops, there should be great want and distress. There was a general belief, when these people settled in these sparsely timbered counties, that the McGregor & Sioux City railway would be completed in the year 1872, or at the farthest in 1873. This has been delayed, from causes beyond the control of the settlers, rendering it much more difficult and expensive to procure fuel than they had reason to expect. This, combined with other causes of destitution mentioned above, has made the case of these people one of extreme hardship. In a country overflowing with agricultural products it would be a shame to allow any of our citizens who, from local or temporary causes have been brought to want, to suffer for the necessaries of life. Would it not be well for the General Assembly to appoint a committee from its own body to inquire into the real condition and needs of these people, and, if found necessary, to devise and present to you for consideration some practical mode of relief?

Senators and Representatives from the northwestern part of the State received many petitions from their constituents praying for help, and particularly for seed grain to be used in the spring sowing.⁴⁰

“The Grange Committee on Tuesday received telegrams from the destitute district calling for coal and meat, indicating that the stocks on hand at the local relief agencies had been exhausted.

“General Baker informs your Committee that he can make no estimate of the real value of the supplies forwarded by him, as the contributions of clothing, provisions, etc., etc., were shipped as received.

“Free transportation having been, in a large measure stopped, the relief agencies find themselves embarrassed in their efforts to supply the pressing needs of the people. Of contributions already made, there appears to be no surplus on hand, and the sole dependence for the future, until such time as the people can produce something from their lands, is placed upon a continuance of the contributions.

“All of which is respectfully submitted.

GEO. D. PERKINS, *Chairman.*

Dated February 18, 1874.”—*Senate Journal*, 1874, pp. 155, 156.

⁴⁰ *Senate Journal*, 1874, p. 101; *House Journal*, 1874, pp. 121, 186, 244, 272, 544; *Shambaugh's Messages and Proclamations of the Governors of Iowa*, Vol. IV, pp. 99, 100.

The following resolution adopted by the board of supervisors of Palo Alto County and forwarded to Representative E. J. Hartshorn, February

One of the first topics to come before the General Assembly in 1874 was the question of providing relief for the sufferers from grasshopper ravages. On January 23rd, Senator George D. Perkins of Sioux City offered a concurrent resolution providing for the appointment of a joint committee of five (two Senators and three Representatives) to make inquiries concerning the true state of affairs in the northwest and to report, with such recommendations as seemed advisable. S. B. Gilliland introduced a similar resolution in the House. The committee was composed of Senator George D. Perkins (chairman), Senator Samuel H. Fairall, and Representatives S. B. Gilliland, C. A. L. Roszell, and E. J. Hartshorn.⁴¹ After preliminary investigation the committee, on January 30th, was granted permission to visit the afflicted locality in order to make definite recommendations.

Accordingly, Sioux, O'Brien, and Osceola counties were

4, 1874, may be deemed typical of those sent to the members of the General Assembly.

"To the General Assembly of the State of Iowa:—

Your petitioners, the Board of Supervisors of Palo Alto County, Iowa, would respectfully represent to your honorable body that owing to the extremely wet weather and destruction by grasshoppers, a great number of the citizens of this county are in destitute circumstances and are unable to procure food, clothing or seed to sow for the coming season. Your petitioners would further represent that they are without means or authority by law and are wholly unable to provide adequate relief for such widespread calamity and that unless aid is procured in some manner, the prosperity and well being of this portion of the state will be materially affected and its development greatly retarded. Therefore your petitioners would humbly ask your honorable body to make an appropriation of \$5,000.00 for the benefit of the destitute in this county, and to make such enactments as shall enable the Board of Supervisors to distribute the same as shall seem just and proper and for the best interests of the county or that you will furnish relief in such other manner or under such other regulations as may seem proper, for the relief of this county, and in furtherance of the future prosperity thereof and to the honor and well being of the whole state."—McCarty's *History of Palo Alto County, Iowa*, p. 166.

⁴¹ Later, William Hopkirk replaced Mr. Hartshorn on the committee.—*House Journal*, 1874, p. 114.

visited, while delegations of settlers from Lyon, Plymouth, and other counties were interviewed. In addition to the character of the people, the amount of destitution, and the extent of private relief work, the financial status of the counties was carefully examined. It was found that the local authorities were totally unable to meet the emergency. The greatest anxiety of the settlers at that time seemed to come from the lack of seed grain.

Occasionally there were to be found those who refused to accept aid, even from the State, but life meant more than pride, and sooner or later practically all came to the position where assistance was acceptable.

At Orange City, Sibley, and Sheldon the committee "met from two hundred and fifty to three hundred and fifty of the anxious and distressed men of the afflicted district. Considering the sparsely populated character of the country, these audiences were a matter of surprise. . . . It only requires to be stated that many of those in attendance came from twenty-five to forty miles across the prairies . . . braving the dangers of the season, augmented by the fact that many were thinly clad, and that but few had means to buy a meal of victuals, to fully indicate . . . the painful interest felt by the people as to the action of the State in the matter of affording them the relief the extremity of their situation demands."

There was not much difference of opinion as to the method which ought to be pursued in State aid, the policy of loaning money to the settlers being generally preferred. The report of the committee from the General Assembly says, in regard to this point:

They emphatically state that they do not desire a donation. The following resolution, adopted unanimously at the meeting in Osceola county, identical in spirit to resolutions adopted at other meetings, indicates the sense of the people on this point:

“Resolved, That we, the people of Osceola county, in mass convention at Sibley, February 3, 1874, represent that there is urgent need of assistance from the State to enable our people to seed in the spring, and that we do not ask this assistance as a gift, but much prefer that it come as a loan, which we will repay as soon as possible.”

A bill, embodying the recommendations of the committee, was introduced in the Senate on February 12th. An appropriation of \$100,000 was to be offered in the form of a loan, “to enable these people to seed their lands to the extent a judicious expenditure of that amount of money will permit.” There was to be an additional \$5,000 “to defray the expenses of purchasing, transporting and distributing the seed.”⁴² These recommendations were made “not simply as a matter of humanity, not simply as a matter of duty to a suffering people; but as a matter of justice to men who are engaged in the work of rescuing one of the fairest portions of Iowa from the wilderness — as a matter of profit to the State at large.”

The bill proposed by the committee, however, was considered to be unsatisfactory. After some effort at amendment, it was re-committed to the committee, with instructions to report a new bill making an appropriation “to be donated to the sufferers in the grasshopper sections”. On February 21st such a bill, carrying an appropriation of \$50,000, “for the purpose of furnishing the destitute in northwestern Iowa, suffering in consequence of the grasshopper raid of the summer of 1873, with such seed, grain, and vegetables as may be deemed necessary,” was passed by the Senate. It passed the House two days later and was

⁴² The committee suggested that \$15,000 be appropriated to purchase grain for horses, but it appears that this provision was not incorporated in the bill.—*Report of the Special Committee on Destitution in Northwestern Iowa*, p. 11, in the *Iowa Legislative Documents*, 1874, Vol. II; *Senate Journal*, 1874, p. 162.

approved on February 26th.⁴³ Three commissioners were to be appointed by the Governor to "purchase and distribute the articles of relief, disburse the money hereby appropriated, and impartially perform all the duties prescribed by this act." By the first of June an itemized report was to be filed with the Governor.⁴⁴

During the spring John Tasker, Levi Fuller, and O. B. Brown, who were appointed as commissioners, distributed at various points in the northwest 26,611 bushels of wheat, 2,263 bushels of corn, 846 bushels of oats, 1,431 bushels of potatoes, and 13,500 packages of garden seed. Seventeen hundred and fifty people were aided; and in all only a little over \$36,000 of the appropriation was used.⁴⁵ Each applicant for supplies was required to answer a list of questions concerning his condition and from these answers the commissioners decided on the merits of his claim to aid.⁴⁶

⁴³ This policy of donating seed grain to needy settlers was not original with the State of Iowa, Kansas having passed a similar law in 1871.—*Laws of Kansas*, 1871, pp. 290-292.

The propriety of allowing counties, where there were people in need of aid, to issue bonds to sufferers in extreme cases, under the direction of the Executive Council, was considered, but nothing came of the plan.—*Senate Journal*, 1874, pp. 151, 152, 158.

⁴⁴ *Senate Journal*, 1874, pp. 25, 29, 53, 124, 162, 167, 170; *House Journal*, 1874, pp. 55, 56, 77, 99, 285, 286; *Report of the Special Committee on Destitution in Northwestern Iowa*, pp. 1-12, in the *Iowa Legislative Documents*, 1874, Vol. II; *Laws of Iowa*, 1874 (Private), pp. 11, 12.

⁴⁵ A newspaper account of the commissioners' report lists the total expenditure at \$36,369.46, but Governor Carpenter in a message to the General Assembly makes the statement that \$13,786.58 was returned to the State Treasury, and thus there is a discrepancy of \$156.04.—*Northern Vindicator* (Estherville), June 6, 1874; *Shambaugh's Messages and Proclamations of the Governors of Iowa*, Vol. IV, p. 168.

⁴⁶ Smith's *A History of Dickinson County, Iowa*, p. 347.

In September, 1874, a special session of the Kansas legislature was called for the particular purpose of affording relief to the people rendered destitute by the grasshoppers. State bonds to the amount of \$73,000 payable in twenty years were authorized to be issued; while nineteen counties were

A measure which proved a particular boon to settlers in Iowa and Minnesota was that passed by Congress on June 18, 1874. It allowed homestead and preëmption settlers, whose crops had been destroyed or seriously injured by grasshoppers in 1873 and where the insects "shall appear in eighteen hundred and seventy-four to a like destruction of the crops", to "leave and be absent from said lands until May first, eighteen hundred and seventy-five, under such regulations as to proof of the same as the Commissioner of the General Land-Office may prescribe." No adverse rights were to attach to the claims during such absence. The settlers were to be allowed to resume and perfect their settlement as though no absence had occurred.⁴⁷

also allowed to issue bonds payable in twenty years to the amount of from \$1,000 to \$5,000, the total sum of issues amounting to \$68,000. The proceeds from the State bonds were to be used for the purchase of county bonds. The funds realized were to be paid to the county treasurers to constitute a fund for the purpose of furnishing the destitute with "necessary food, clothing and fuel only". Another act authorized any county in Kansas to issue bonds in a sum not exceeding one-half of one percent on the assessed valuation of the county, the proceeds from which were to be distributed to the needy, who could be required to perform labor on the public highway in return therefor.

The Minnesota legislature appropriated \$5,000 on January 31, 1874, for the relief of destitute settlers. On March 2, 1874, \$25,000 was appropriated for the purchase of seed grain, not more than \$35 of which might be paid to any one family. On May 26th of the same year a convention was held at Windom, Minnesota, at which a memorial was addressed to the Governor, urging the appointment of a commissioner to go to Washington and ask the aid of Congress to the extent of forty dollars for each destitute person. It was estimated that there were 9,875 such persons in southern Minnesota. Congress was also petitioned to allow settlers to be absent from their claims without losing their rights.—*Laws of Kansas, 1874 (Special Session)*, pp. 3, 9-16; *Laws of Minnesota, 1874 (General)*, pp. 252-254; *Northern Vindicator (Estherville)*, June 6, 1874.

⁴⁷ *United States Statutes at Large*, Vol. XVIII, Part 3, p. 81.

In a series of acts Congress made it possible for homestead and preemption settlers to be absent from their claims each year following 1874 when the crops were destroyed or seriously injured by grasshoppers. Usually the time for making final proof of settlement and payment was extended a year beyond the expiration of the time of absence. Finally, in 1879 a

When the grasshoppers destroyed the crops in 1874 efforts were immediately made to meet the situation by careful conservation of local resources and the equitable use of all outside voluntary assistance. Inasmuch as the General Assembly would not meet during the following winter, no help could be expected from that source, although it was feared during the summer that private charity might prove so inadequate that a special session would have to be called. It was seen that it would be necessary to furnish aid to those who had suffered most severely. The State Grange sent word to the local granges desiring them to report the facts concerning destitution before cold weather set in. County and township meetings were held and committees were appointed to ascertain actual conditions. General Baker suggested a big convention of grasshopper-afflicted farmers, but a meeting of this kind was considered too expensive to be practical. Another plan for obtaining exact data concerning the situation was to have the Governor appoint a committee of one from each county to furnish the information necessary for intelligent action.

It was in August that Governor Carpenter requested General Baker and Thomas Sargent to visit the northwestern part of the State and report on the amount and condition of the crops, the counties needing aid, the number of settlers in such counties who would need aid to enable them to stay on their farms or homesteads, the best course to

general law was passed which provided that homesteaders or preëmption settlers on public lands where crops "have been or may be destroyed or seriously injured by grasshoppers" could leave and be absent not more than one continuous year without adverse rights attaching to the claim. The time of final proof and payment was to be one year after the expiration of the period of absence.

A number of laws enacted from time to time also extended special privileges to settlers who, because of the grasshopper ravages, were unable to fulfill the timber culture requirements.—*United States Statutes at Large*, Vol. XVIII, Part 3, p. 294; Vol. XIX, pp. 55, 59, 405, 406; Vol. XX, pp. 88, 169; Vol. XXI, pp. 11, 48.

pursue where aid would be needed, the best method of distributing contributions, the question of seed grain for the next spring, and many other such matters. It was found that Kossuth and Emmet counties and parts of Palo Alto and Dickinson counties, had suffered most intensely that year, the people in the first two counties being in need of immediate assistance. The plan of relief suggested was that the counties should send out agents, properly endorsed by the Governor, to solicit aid over the State. The Governor and the officers of the State Grange were to forward contributions to the points where they were needed.⁴⁸

While no aid was extended to grasshopper victims of 1874 by the State, the Federal government was not irresponsible to the needs of the people.⁴⁹ Congress appropri-

⁴⁸ *Humboldt County Independent* (Dakota), July 31, August 14, 21, 28, September 4, 25, 1874; *Northern Vindicator* (Estherville), August 15, 1874.

Later in the year a committee of prominent men from all parts of the State was organized at Des Moines for the purpose of aiding in the collection of supplies for the needy settlers in Iowa, Kansas, and Nebraska. Governor Carpenter was president and General Baker and Colonel Spoffors secretaries.—*Northern Vindicator* (Estherville), November 28, 1874.

A convention was held in Fort Dodge on February 2, 1875, at which plans were made for furnishing seed grain to those in need of it.—*Northern Vindicator* (Estherville), February 13, 1875.

Many schemes were devised by which the settlers would be able to help themselves. One panacea suggested was for the counties to issue bonds for the erection of a courthouse. One-half of the proceeds was to be used to begin the construction, the sufferers being hired to do the work, while the other half should be spent in relief work. This plan would afford temporary relief to the settlers and later the county would be reimbursed by the State. Another project was to allow counties to issue bonds guaranteed by the State, the proceeds from which would be used in grading railroad lines: these would be sold to the railroad companies later.—*Northern Vindicator* (Estherville), August 22, 1874; *Humboldt County Independent* (Dakota), August 7, 1874.

⁴⁹ In other States where the legislatures were in session much aid was given. Minnesota, for example, appropriated in January the sum of \$20,000 for immediate relief and in March an additional \$75,000 for furnishing seed grain. To reimburse counties for relief work \$17,300 more was used. Nebraska issued bonds to the amount of \$50,000, the proceeds from which were used to purchase seed grain for settlers who had suffered from grasshopper ravages.—*Laws of Minnesota, 1875* (General), pp. 182-184; *Laws of Nebraska, 1875* (General), pp. 173-175.

ated \$30,000 to enable the Commissioner of Agriculture to "make a special distribution of seeds to the portions of the country which have suffered from grasshopper-ravages during the past summer." Another act authorized the President to direct the issue, through the proper officers of the Army, "of supplies of food and disused Army clothing sufficient to prevent starvation and suffering and extreme want to any and all destitute and helpless persons living on the western frontier, who have been rendered so destitute and helpless by ravages of grasshoppers during the summer last past". An appropriation of \$150,000 was made for the purpose of carrying out the provisions of this law, which was to remain in effect until September 1, 1875.⁵⁰ In at least one county of Iowa resolutions were passed to the effect that no interest should accrue on delinquent taxes for a specified time.⁵¹

It was estimated in May, 1875, that Iowa had contributed over a million dollars to the relief of grasshopper sufferers since the last harvest. The relief committee of the State Grange alone paid out over \$7,727 in 1874. Certain it is that the people responded so generously to the needs of the settlers that great numbers were enabled to remain on their homesteads; while doubtless there were many who were saved from the pangs of cold and hunger.⁵²

Among all of those who worked in the interest of the settlers during the dark days of privation and suffering

⁵⁰ Two more appropriations, one in 1877 for \$288.40 and another in 1878 for \$663.99, were made to cover the deficit in the expenditures of this relief work.—*United States Statutes at Large*, Vol. XIX, p. 374; Vol. XX, p. 127.

⁵¹ *United States Statutes at Large*, Vol. XVIII, Part 3, pp. 303, 314, 315; Flickinger's *The Pioneer History of Pocahontas County, Iowa*, p. 259.

In Minnesota authority was given to abate all penalties for the non-payment of interest on the unpaid purchase money of certain public lands in the grasshopper area.—*Laws of Minnesota, 1876 (General)*, p. 113.

⁵² *Adams County Union* (Corning), May 20, 1875; *Humboldt County Independent* (Dakota), December 25, 1874.

none compared in zeal with Adjutant General N. B. Baker. He was a man "whose great heart was thoroughly aroused at the tale of woe which came from the stricken region". He took the brunt of the work of securing and furnishing relief on his own shoulders: "it was enough for him to know there was danger of people suffering for the necessities of life and every effort was made to avert it." Indeed, it was the strain and anxiety occasioned by the grasshopper raid of 1876 which contributed largely to the causes of his untimely death in September of that year.⁵³

EFFORTS TO DESTROY THE GRASSHOPPERS

When the destruction of crops by the grasshoppers began to be a regular occurrence year after year, following 1873, serious efforts were made to discover means of prevention and methods of destroying the insects. In October, 1876, a convention of the Governors of Minnesota, Illinois, Iowa, Missouri, Kansas, Nebraska, Dakota, Colorado, Wyoming, and Idaho was held in Omaha, at which resolutions were adopted urging that the States enact laws "offering a bounty per bushel for collection and destruction of eggs and unfledged insects"; that local taxation be authorized for the purpose of "systematized efforts in the way of ditching, burning, etc."; that the game laws be repealed or modified "so as to prevent the destruction of birds which feed on insects"; that prairie fires be prevented until a suitable time; that young grasshoppers be destroyed by firing the grass; and that tree culture be encouraged "as promoting moisture and harboring birds." The convention also recommended that the Federal government make efforts to eliminate the pests and appoint a special commissioner to investigate the locust problem.⁵⁴

⁵³ *Annals of Iowa* (Third Series), Vol. IV, p. 446; *Northern Vindicator* (Estherville), May 29, 1875; September 23, 1876.

⁵⁴ *Northern Vindicator* (Estherville), November 11, 1876.

Responding to the demands of the people from the grasshopper-raided territory, Congress, in 1877, made an appropriation of \$18,000 with which to establish an entomological commission whose business it was to report on the Rocky Mountain locust. During the succeeding two years \$20,000 more was appropriated for the completion of the work.⁵⁵

This commission found a great number of schemes being employed for the destruction of the locusts. Some of the States sought to avail themselves of natural agencies by passing better laws for the protection of birds. To destroy the eggs, harrowing in the autumn, plowing, irrigation, tramping by stock turned into the fields, and collection proved the most effective methods. In prairie and wheat-growing regions the surest means of destroying the unfledged locusts was by burning, either while they were in the grass or when they collected for shelter during cold or damp weather. Much could also be done by rolling the fields if the ground was smooth and hard. Trapping was successful where the young grasshoppers were traveling in armies. The use of chemicals was necessarily limited and more or less unsatisfactory. A great number of "hopper dozers", locust crushers, and other machines for killing or capturing the insects were invented, some of them being very ingenious devices. Against the mighty hosts of winged grasshoppers, however, man was practically powerless. Sometimes a swarm could be warded off by making great smudges. Constantly dragging long ropes over grain fields worked to good advantage in some cases. Destruction of insects and their eggs by concussion was tried, but little good came of it. About the only really effective remedy for locust invasions was for the settlers to turn more gen-

⁵⁵ *United States Statutes at Large*, Vol. XIX, p. 357; Vol. XX, pp. 240, 397. The report of this commission, which the writer has used extensively, is the best work that has been produced on the locust ravages in the United States.

erally to stock-raising, instead of staking their entire hope upon crops of grain.⁵⁶

In the work of preventing injury from grasshoppers, the most important factor was coöperation in a community. To encourage concerted action in fighting the insects several States passed laws relating to the destruction of grasshoppers.⁵⁷ These laws were of two kinds. The Kansas and Nebraska acts looked toward compulsory work, requiring practically all able-bodied, male residents in a specified locality to report to the overseers of road work at a certain time for the purpose of performing labor in destroying the insects. Missouri and Minnesota, however, followed the more unprofitable method of giving bounties per bushel for young grasshoppers and grasshopper eggs. No legislation of this nature was enacted in Iowa.⁵⁸

EFFECT ON SETTLEMENT AND AGRICULTURE

The Indians, with all the thirst for blood of which they have been accused, probably never retarded settlement or caused as much devastation in the country as did the grass-

⁵⁶ *Report of the United States Entomological Commission, 1877*, pp. 350-407.

⁵⁷ The Nebraska Legislative Assembly of 1877 passed a joint resolution asking Congress to offer bounties for the destruction of grasshoppers and their eggs.—*Laws of Nebraska, 1877*, pp. 253, 254.

⁵⁸ *Laws of Missouri, 1877*, pp. 335, 336; *Session Laws of Kansas, 1877*, pp. 168-171; *Laws of Nebraska, 1877*, pp. 154, 155; *Report of the United States Entomological Commission, 1877*, pp. 412, 413. Before the State law was passed in Minnesota providing for bounties, the counties were allowed to offer them, being in turn reimbursed by the State. This system was fairly successful, but the State bounty law, partly because of its complexity and partly from lack of enforcement, proved a practical failure. Governor John S. Pillsbury severely criticized the policy.

The amount of the bounties for young locusts varied, according to the time when they were killed, from about a dollar a bushel when they first hatched to ten or twenty cents a bushel at maturity. The bounty on grasshopper eggs was fifty cents a gallon in Minnesota and five dollars a bushel in Missouri.—*Report of the United States Entomological Commission, 1877*, pp. 408, 412, 413; *Laws of Minnesota, 1876*, pp. 116, 117; *Laws of Missouri, 1877*, pp. 335, 336.

hoppers on their raids. When for a series of years reports came regularly that crops had been destroyed in northwestern Iowa, when the State and Federal governments were compelled to extend financial aid to the settlers in that region, and when great numbers of those settlers were driven off of their homesteads to seek a livelihood elsewhere, emigration ceased. Thousands of pioneers became utterly discouraged. The tales of their hardships which were sent back to friends had a demoralizing effect. The tide of emigration "not only ceased but turned back, and hundreds, perhaps thousands, of homes were left untenanted, and fields uncultivated." The wonder is that so many continued to struggle on so long. "As a natural consequence, business of all kinds was in a great degree suspended, improvements stopped, and the development of the country checked. Although rich in material and life-sustaining resources, and abounding in fertility and productive forces, they were in a great degree negatived or rendered valueless for these four years [1873-1876] by the visitations of an insect scarcely more than an inch in length."

The loss of a tenth of a crop by drought or hail or even some well known insect foe was discouraging enough, but when a swarm of locusts swooped down suddenly, like a thunderbolt from a clear sky, and completely destroyed in a few days the labor of months, the effect was paralyzing. When the same spectacle occurred for several years in succession the suffering of the farmers spread to the entire population, doing untold injury to the development of the country.

With the cessation of serious locust invasions, however, and the success with which the farmers contended against them, confidence began to return. Emigration was renewed. After a period of unusually hard times prosperity

was restored. While grasshoppers still exist and at times do some damage they do not entirely destroy a crop and probably never will again.⁵⁹

In an indirect way, it may be asserted, the locust ravages did a great service to the agricultural interests of north-western Iowa by making stock-raising a necessity. Many farmers went into the dairy business. But for the coming of the grasshoppers the custom of farming exclusively for grain would probably have continued for many years, to the general impoverishment of the soil. In the struggle to produce crops in spite of the grasshoppers it was discovered that by a proper adjustment of the crops (small grain or corn) according to the time of year the insects were expected, the ravages of the insects could be avoided. When there were eggs in the ground corn planting could be postponed until the locusts had left; and when the coming of fresh swarms alone was to be feared, by sowing early wheat, oats, and barley the harvest could be effected before their arrival. This compulsory alternation of crops was of great importance in preserving the fertility of the land. The fact that the grasshoppers did comparatively little injury to prairie grass may have been a factor in the development of the grazing industry on the western plains.⁶⁰

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⁵⁹ With the settlement and cultivation of a large part of their permanent breeding-grounds, the multiplication of the grasshoppers has been vastly decreased, so that the necessity for migration is removed. Even if there should be excessive reproduction it is probable that there would be sufficient food in the cultivated portions of their natural habitat. Indeed, if a swarm should come now the land is so completely under cultivation that they would do comparatively little damage it is thought.—*Report of the United States Entomological Commission*, 1877, pp. 13, 125-128.

⁶⁰ *Report of the United States Entomological Commission*, 1877, pp. 123-129; *Northern Vindicator* (Estherville), June 27, 1874.