



Nebraska History posts materials online for your personal use. Please remember that the contents of *Nebraska History* are copyrighted by the Nebraska State Historical Society (except for materials credited to other institutions). The NSHS retains its copyrights even to materials it posts on the web.

For permission to re-use materials or for photo ordering information, please see:

<http://www.nebraskahistory.org/magazine/permission.htm>

Nebraska State Historical Society members receive four issues of *Nebraska History* and four issues of *Nebraska History News* annually. For membership information, see:

<http://nebraskahistory.org/admin/members/index.htm>

Article Title: A Survey of the Agricultural Development Program of the Chicago, Burlington and Quincy Railroad

Full Citation: C Clyde Jones (Foreword by Richard C Overton), "A Survey of the Agricultural Development Program of the Chicago, Burlington and Quincy Railroad," *Nebraska History* 30 (1949): 226-256

URL of article: <http://www.nebraskahistory.org/publish/publicat/history/full-text/NH1949CB&Q.pdf>

Date: 12/02/2016

Article Summary: Prosperous settlers were important railroad customers, so the railroads did a great deal to promote agriculture. The Chicago, Burlington and Quincy helped settlers choose locations for farms. Its special trains visited rural communities to educate farmers about diversified farming and improved livestock breeding.

Scroll down for complete article.

Cataloging Information:

Names: Thomas Doane, Hardy W Campbell, John B Lamson, Louis Bromfield, Val Kuska

Special Trains Run by the CB & Q: Livestock and Better Farming Special, Seed Corn Special, Silo Train, Alfalfa and Kindred Crop Special, Nebraska Seed Potato Special, Sugar Beet Special, Dairy Train, Nebraska Purebred Dairy Sire Special, Burlington Pig Crop Special, Profitable Pork Special, Poultry Special, Clover and Prosperity Special, Lime and Legume Train, Soil Dividend Train, Soil Fertility Train, Soil Conservation Tour

Keywords: Chicago, Burlington and Quincy Railroad, railroad land grants, credit plan, grasshoppers, tree planting, free-freight shipments, alfalfa, dry farming, county extension service, wheat smut, Potato Judging Contest, phosphate, lime, legumes, irrigation

Photographs / Images: rural schools of Fillmore County parading before the Burlington's Profitable Pork Special, October 11, 1929

A Survey of the Agricultural Development Program of the Chicago, Burlington and Quincy Railroad

By C. Clyde Jones

(With a Foreword by Richard C. Overton)

Foreword

THE Agricultural Revolution of the last century in the United States is common knowledge; viewed in the perspective of man's recorded history, it has been nothing short of miraculous. To cite but one set of figures, the value of agricultural produce has increased from a billion and a quarter dollars in 1850 to over eighteen billion in 1945. Qualitatively, the age-old methods of agriculture based on human toil and the plodding draft animal have been replaced by the marvels of science, represented both by improvements in soil care, seed, cultivation, harvesting, breeding, processing, and so on as well as by machinery that has vastly increased production and lightened man's burden. Whereas a century ago it required eight farmers to produce enough surplus to feed one city dweller, one farmer can now support, in addition to himself, eight of his urban brethren.

It has always been assumed, with what may be termed "rough accuracy," that the basic stimulus for this revolution has lain in the steadily growing demand arising from the nation's rapidly increasing population. In simplest terms, this is undoubtedly true. But it has also been recognized that the response to this demand has been, at various times and places, deliberately stimulated by specific forces and events. For example, the

popular movements resulting in the organization of the Kansas and Nebraska territories, the Homestead Act, the railway land grants, the Department of Agriculture, the Newlands Act—to mention but a few—grew out of a desire to stimulate and facilitate agricultural production. So was the perfection of the steel plow, the reaper, the twine binder, barbed wire, the tractor, and a host of other inventions.

Yet one source of direct stimulation of this agricultural revolution—the railroad—has received scant attention in this particular respect. True, countless volumes and articles have appeared describing and appraising the role of the railways as transportation agencies, as big businesses, as regulated utilities, and as colonizers. But even the works falling in this last category have treated the companies' agricultural programs simply as one of a number of means of nourishing a stable and traffic-producing territory. Such indeed these programs were, but they were more than that for they inevitably played a part, both quantitatively and qualitatively, in the nationwide agricultural revolution. It is high time that an attempt were made to measure accurately the work of the railways in this particular respect.

For the nation as a whole the task is obviously a large one. Mildred Throne, in her numerous articles and talks,¹ and the writers on railway colonization,² as well as some others interested in railways as carriers of

¹"Suggested Research on Railroad Aid to the Farmer with Particular Reference to Iowa and Kansas," paper read before the Mississippi Valley Historical Association at Rock Island, Illinois, April, 1948.

²James B. Hedges, *Building the Canadian West: The Land and Colonization Policies of the Canadian Pacific Railway* (New York, 1939), and "The Colonization Work of the Northern Pacific Railroad," *Mississippi Valley Historical Review*, XIII (December, 1926), 311-342; Paul Wallace Gates, *The Illinois Central Railroad and Its Colonization Work* (Cambridge, Mass., 1934); Richard C. Overton, *Burlington West: A Colonization History of the Burlington Railroad* (Cambridge, Mass., 1941); Howard Bennett, "The Land and Colonization Work of the Hannibal and St. Joseph" (unpublished Ms.).

agricultural produce,³ have roughly sketched the broad outlines of the job to be done. Even more pertinent are the many brochures and booklets,⁴ some of them both detailed and documented,⁵ that have been issued by various railroads with a particular stake in agriculture. But the former group of material (with the exception of Miss Throne's generalized pioneering work) inevitably treats agriculture as a side-line, while the latter, however accurate, is understandably enough written from a promotional rather than from an analytical or critical standpoint. What is needed first is a series of monographs, based as fully as may be upon primary material, and devoted specifically to the role of the railways in the promotion of agriculture. Eventually, if enough monographs appear to constitute a fair sampling of the whole, a single-volume summary would fill a serious gap in the literature of economic and agricultural history.⁶

Obviously the most logical unit of investigation is a single railroad system, since corporate archives must necessarily form the core, though not the whole, of the basic monographic material. The records of a single system, if complete, can reveal the wellsprings of policy, illustrate the detailed application and results of such policy, and provide, on a standardized basis, the statistics essential for measurement, comparison, and evaluation. Consequently, Mr. Jones has selected for analysis

³U. B. Phillips, *A History of Transportation in the Eastern Cotton Belt* (New York, 1908); F. L. Paxson, *The Last American Frontier* (New York, 1911); William J. Wilgus, *The Role of Transportation in the Development of Vermont* (Montpelier, 1945); Frederick Merk, *Economic History of Wisconsin During the Civil War Decade* (Madison, 1916); S. J. Buck, *The Granger Movement* (Cambridge, Mass., 1913) and *The Agrarian Crusade* (New Haven, Conn., c. 1920); Frederick Jackson Turner, *The United States, 1830-1850* (New York, c. 1935).

⁴Baltimore & Ohio, e. g., "The Bumper Belt, and the PLUS behind the Plow;" Nashville, Chattanooga & St. Louis, e. g., "Alfalfa" and "Lime in Agriculture;" Nickel Plate, e. g., "Along the Line." There are countless other examples.

⁵E. g., O. O. Waggener, *Western Agriculture and the Burlington* (Chicago, 1938).

⁶The same could be said about the synthesis of land grants.

the Burlington, whose rich store of accessible historical records includes a vast and sufficiently complete collection of agricultural material, as well as several helpful brochures on the subject.⁷

The purpose of the following preliminary article is to suggest, by random sampling and illustration, the type and scope of agricultural development work undertaken by at least one major system whose records are virtually intact. Neither the full story of the Burlington's work nor an appraisal of its relative significance will be possible until Mr. Jones has completed his monograph (which he is preparing in partial fulfillment of his doctoral work at Northwestern University). But it is to be hoped that the following article will: (1) establish the potential significance of railway agricultural development work as a subject for separate research, and (2) encourage further monographic studies in the field.

I

The key to the agricultural development program of a railroad is: "prosperous communities mean a prosperous railroad."⁸ Western railroads in particular depend upon farm traffic for a vital percentage of their business,⁹ and from their earliest days these roads recognized

⁷E.g., Waggener, *op. cit.*; Chicago, Burlington & Quincy pamphlet, *Irrigation: A National Asset* (Chicago, 1945).

⁸Chu Chang Liang, *A Study of the Industrial and Agricultural Development Departments of American Railroads* (Peiping, China, 1933), p. 170.

⁹*Moody's Manual of Investments, American and Foreign: Railroad Securities, 1948* (New York, 1948) gives the following figures for the percentage of agricultural and animal products hauled as freight to the total freight of the following lines in 1947:

Atchison, Topeka & Santa Fe	28.7
Chicago, Burlington & Quincy	26.8
Chicago & Northwestern	20.2
Chicago, Rock Island & Pacific	30.8
Missouri Pacific	21.8
Northern Pacific	24.9
Union Pacific	31.1

the desirability of promoting favorable relationships with farmers both along their routes and in adjacent territory. One method by which this objective could be achieved was by introducing improved methods of agriculture into the area served by the lines. The principal aim of the majority of the roads has been to increase farm income through better selection of crops, scientific techniques, and general development of areas. Most companies admit readily that their programs are designed to develop traffic,¹⁰ but the fact that increased profits to the farmers mean added income to the railroads does not detract from the merits of such work.

The agricultural development department of the Chicago, Burlington & Quincy Railroad Company is based on the foregoing principles. The entire Burlington system serves agrarian regions of one kind or another and a high percentage of its freight traffic comes directly from the farms.¹¹ Also, agriculture indirectly influences other traffic, because expanding agriculture often means expanding industry.

The Burlington has ever been aware of its close tie with the farmers of the regions within which it operates; from its inception, the company has sought to aid settlers in choosing locations for farms and to introduce the most profitable techniques and crops.¹² Diversified farming, better agricultural methods, and improved livestock breeding have been the objectives of the Burlington. A

¹⁰Liang, *op. cit.*, pp. 163-72, is a composite of statements from a number of railroads concerning the purposes of agricultural development programs.

¹¹*Moody's Manual* lists the Burlington agricultural freight at 26.8 per cent of total freight hauled in 1947. Agriculture contributed 30.3 per cent of the company's total freight revenue.

¹²As early as 1859, for example, Charles R. Lowell, Land Commissioner of the Burlington & Missouri River Railroad of Iowa, wrote: "We are beginning to find that he who buildeth a railroad west of the Mississippi must also find a population and build up a business . . ." (Richard C. Overton, *Burlington West* [Cambridge, Mass., 1941], p. 159), and again: "Keep it constantly before the farmers that we are a *railroad* company & not a *land* company—that settlers are more important to us than a high price for our land. . . (*Ibid.*, p. 150).

department was established in 1913 to stimulate this development and to help insure the success of farmers.¹³ The work has been carried forward in close cooperation with the state agricultural colleges, county agents, farm bureaus, and other local farm and business men's organizations. The program evolved from the knowledge that the interests of the railroad and of the communities along its route are virtually one and the same.

II

The Chicago, Burlington & Quincy Railroad Company had its origin in 1850 when the Aurora Branch Railroad began operations in answer to the demands of the citizens of Aurora, Illinois, for a rail connection with Chicago.¹⁴ By March, 1855, the Aurora Branch had changed its name to the Chicago and Aurora, had joined two other small lines (the Central Military Tract Railroad and the Peoria and Oquawka Railroad) to form the Chicago, Burlington and Quincy, and had reached East Burlington, Illinois, on the Mississippi River.¹⁵ Even before the Aurora Branch had been formed, another road, the Hannibal and St. Joseph Railroad (in Missouri), which later became a very important link in the Burlington System, was being organized. Backed by the promoters of the C. B. & Q., it opened service between the Mississippi and Missouri rivers in 1859, and the Burlington purchased the line in 1883.¹⁶ The extension of the Burlington westward into Iowa and Nebraska came about as a result of the investment in the Burlington and Missouri River Railroad Company in Iowa by the C. B. & Q. The B. & M. started to build across Iowa in 1856, had reached the Missouri River by 1870, and in 1872, the C. B. & Q. ob-

¹³O. O. Waggener, *op. cit.*, p. 24.

¹⁴Overton, *op. cit.*, pp. 20-23.

¹⁵*Ibid.*, pp. 31-40.

¹⁶R. C. Overton, *The First Ninety Years; an Historical Sketch of the Burlington Railroad, 1850-1940* (Chicago, 1940), pp. 7-9.

tained a perpetual lease on the Iowa property.¹⁷ The next important section of the system was added in 1880 when the Burlington and Missouri River Railroad in Nebraska (whose predecessor, the B. & M. of Iowa, had been granted permission by Congress in 1864 to build from Platts-mouth, Nebraska, on the Missouri River, to a junction with the Union Pacific near Fort Kearny, Nebraska) was acquired by the C. B. & Q.¹⁸ The system reached Denver, Colorado, in 1882.¹⁹

Expansion in Iowa, Nebraska, and Colorado was accomplished through the construction of branch lines to tap other regions; a through-route from Lincoln, Nebraska, to Billings, Montana, was constructed in the 1880's and 1890's. A line from Chicago to St. Paul, Minnesota, opened in 1886, gave the Burlington access to additional territory.²⁰ The final major link in the system was forged in 1908 when the company acquired the Colorado and Southern Railroad and its two subsidiaries, the Fort Worth and Denver City and the Wichita Valley lines. By this addition of 1,800 miles of track, the C. B. & Q. added the states of New Mexico and Texas to the number already served.²¹ In 1949, the system served fourteen states.

In this manner the Burlington built and acquired its road into the West. But the country through which the rails were laid was far from being well-developed and prosperous. Physiography had played an important role in keeping settlement sparse in the regions farther to the west, especially in the area known as the High Plains—that region which includes western Nebraska, eastern Colorado, Wyoming, Montana, and western South Dakota. Up to the time of the building of the Burlington, much of this region was virtually unsettled and unproductive.

¹⁷Overton, *Burlington West*, pp. 71, 231, 273-76.

¹⁸*Ibid.*, pp. 397-404.

¹⁹*Ibid.*, p. 461.

²⁰*Ibid.*, p. 462.

²¹*Ibid.*, p. 480.

Lack of adequate moisture prevented the growth of staple crops such as wheat, corn, and oats without irrigation, and the absence of plentiful timber supplies further added to the limitations on settlement. Even in the rich agricultural regions of Iowa and Missouri, settlement was generally confined to the river bottoms where some timber could be found and where the soil was believed to be richer. The development of this portion of the American West had to await the coming of irrigation, scientific farming techniques, and swift and certain access to good agricultural markets. Rail transportation was the first of these factors to influence the West to any marked degree.

Earlier, railroads in the East had been built through areas where established industry and agriculture offered an incentive to railway building in the form of potential traffic, but it was necessary to provide artificial stimuli for the building of railroads through the West. Encouragement was forthcoming in the nature of government aid. Tracts of public domain were given to the states by the federal Congress; the states then turned the land over to the railroad companies.

An important precedent for railroad land grants had been established in 1850 when Congress granted to the Illinois Central Railroad alternate sections (640 acres) of land for six miles on each side of its right-of-way. The railroad utilized the land grant to finance construction. By mortgaging the donated land, funds were raised; after the road was built, the lands were sold to settlers and the proceeds used to retire the mortgage. The process of disposing of land grants by railroads was a major colonizing enterprise. Advertising the regions, establishing land and colonization offices, and selling the land were all a part of the undertaking. When the colonization work of an area was completed, the job was only begun; mere settlement was not enough.²² The railroads had to meet

²²The story of the colonization work of the C. B. & Q. has been told earlier in *ibid.*

the problem of keeping the people prosperous and satisfied if settlement, and hence traffic, was to be permanent. The Burlington recognized such a necessity from the start.

One of the earliest significant forms of aid was the lenient credit policy of the company's land office. A ten-year credit plan (by which lands were sold at 6 per cent interest) was announced in 1870; the long-term offer was generally preferred by settlers over the company's cash or two-year credit (at 10 per cent interest) provisions.²³ Such long-term payments enabled farmers to work the land and establish a profitable agriculture to assist in paying for the land. During the hard times following the depression of 1873, the Burlington liberally granted requests for extension of credit on land purchases, provided the land actually was being farmed and improved.²⁴ Also, when purchasers defaulted on tax payment on lands bought on long-term credit, the Burlington aided its customers by paying the taxes and permitting settlers to redeem the land by reimbursing the company.²⁵

Subsequent aid to farmers was rendered after the great grasshopper plagues of 1874-1876. The grasshoppers struck in July, 1874, and for three years they ravaged the crops of Nebraska and other neighboring states. The Burlington furnished free transportation to settlers in order to move them to temporary places of relief, but more important, the company shipped, tariff-free, seed for new crops to the farmers in the devastated regions. The Burlington gained popular favor by such enlightened self-interest.²⁶

The Burlington also acquired a reputation as a tree-planting organization, largely through the activities of its first superintendent and chief engineer in Nebraska, Colonel Thomas Doane. While opening the Plattsmouth-

²³*Ibid.*, p. 295.

²⁴*Ibid.*, pp. 418-26.

²⁵*Ibid.*, pp. 426-27.

²⁶Waggener, *op. cit.*, pp. 10-12.

Fort Kearny line, temporarily blocked by a snowdrift in 1871, Colonel Doane conceived the idea of planting trees along the cuts of the right-of-way to prevent severe drifting of snow. He also thought the trees would encourage farmers to plant trees around their farmsteads and thereby eventually provide replacement for railroad ties. Thus, the B. & M. in Nebraska entered an extensive tree-planting campaign. The company also established nurseries at different points along its line between Lincoln and Fort Kearny, and trees were given to settlers who would plant them in areas adjacent to the Burlington. The highly important service protected thousands of acres of land from wind erosion and added beauty to the otherwise barren plains.²⁷

Colonel Doane's name lived on in the college at Crete, Nebraska, to which he donated \$10,000 to aid in making needed improvements to the college grounds. The Burlington and Missouri River Railroad had offered 600 acres of valuable land to the school, providing the college would raise \$30,000 to make improvements. Colonel Doane agreed to contribute one-third of the total as soon as the school could raise the remainder. The money was raised and the B. & M. deeded the land to the college in 1874. In memory of its benefactor, the college now bears the name Doane College.²⁸

The Burlington had countless opportunities to aid the early settlers in Nebraska and other Western states, largely because of the physical inhospitality of the area. The shortage of timber for fuel and construction purposes, and the necessity in the early years of being on the alert for hostile Indians, made life hazardous. When establishing new farms, settlers often had to find employment to tide them over until their farms became pro-

²⁷*Ibid.*, pp. 13-14. In co-operation with Nebraska, Colorado, and Wyoming Colleges of Agriculture, and the U. S. Department of Forestry, the C. B. & Q. planted 120,000 trees of various types along its right-of-way from 1928-1933 (*Ibid.*, p. 14.).

²⁸*Ibid.*, pp. 12-13.

fitable. The Burlington provided a great deal of work for those men. The company was reported to have commenced construction on its line westward from Indianola, Nebraska, in the spring of 1881, earlier than had been intended, in order to give work to a group of Russian farmers in the Republican River Valley who were destitute because of poor crop production in 1880. The Russians were able to remain on their homestead claims.²⁹ During the hard times of the eighties and nineties, work continually was created for the settlers along the line. They were given work in the Plattsmouth, Nebraska, shops and transported free from their farms to town and back again in the spring in time to begin farming operations. A more direct form of aid often was given by the company in the form of free-freight shipments. The *Adams County Gazette* of Juniata, Nebraska, on January 21, 1872, reported that the B. & M. hauled some 700 pounds of pork, along with two tons of meal, without charge, to Harvard, Nebraska, and distributed it among needy families who could not purchase it. Payments were deferred until the settlers could meet the terms conveniently.³⁰

In 1875, the land department of the B. & M. purchased a quantity of alfalfa seed and distributed it among prominent agriculturists in Nebraska for trial planting as a field crop. Even the Governor tried the new crop. Not only did it possess possibilities for profit; it also became a soil-building crop.³¹

The Burlington sponsored exhibitions at local and state fairs as early as 1872, and the company frequently sent train-loads of products to eastern points and to Europe where they were exhibited. This action was more than "advertising the region," for the Burlington's interest in fairs and exhibitions penetrated deeper. The company realized the value of such methods in developing

²⁹George W. Loomis, *Early Days of the Chicago, Burlington & Quincy Railroad in Southwestern Nebraska* (Omaha, 1929), p. 3.

³⁰Waggener, *op. cit.*, pp. 15-16.

³¹*Ibid.*, pp. 17-18.

agriculture. Farmers and their products were taken to the state fairs free of charge, and special excursion rates were frequently offered to increase attendance at fairs.³²

In a further effort to stimulate interest in agriculture, particularly in Nebraska, a newspaper, the *Corn Belt*, was established by the C. B. & Q. in December, 1895. The publication existed, according to information in its columns, "to promote Nebraska, to reveal the opportunities for colonization in that state, and to correct false reports concerning crop conditions in the West." The pages of the paper were devoted primarily to agricultural material, but other topics were often discussed. Monthly issues appeared through November, 1902, at which time publication ceased. The paper served well as an advertising agency.³³

The Burlington also offered practical instruction in better farming techniques which could be applied in the semi-arid regions of the West. George W. Holdrege, general manager of the road, understood the needs of the region, and in 1895, he hired Hardy W. Campbell, a farmer of western South Dakota, to conduct a series of meetings at which better soil cultural methods were discussed. Campbell had been a highly successful farmer under the adverse conditions of his locale because of his use of "dry-farming" techniques. The tall, red-headed farmer became a legendary figure in the West—a sort of "demigod" to the peoples of the regions in which he taught. Holdrege set aside a half-section of land near Holdrege, Nebraska, in 1903 to assist Campbell in his experiments and demonstrations. This experimental farm was supervised by Campbell, and many improvements in dry-land farming were achieved thereon. The Burlington also contributed generously to a fund to pay the cost of maintaining a Dry Farming Congress, which was organ-

³²*Ibid.*, pp. 18-20.

³³Overton, *op. cit.*, pp. 471-72.

³⁴Waggener, *op. cit.*, pp. 20-23.

ized to facilitate the interchange of ideas and to prevent the duplication of experimental work. The meetings of the congress were strong factors in the publicizing and popularizing of improved dry-farming methods.³⁵

III

The need for a scientifically trained agricultural staff was met in 1913, when John B. Lamson, of the University of Minnesota, was appointed to organize and supervise an agricultural development department.³⁶ The primary method utilized for the promotion of agriculture in the West was special educational tours and campaigns, generally conducted in co-operation with the agricultural colleges of the states through which the line was operated.

Aid in General Farming Methods

Shortly after the formation of the agricultural development department, the officials of the line realized the acute need for a larger number of trained workers; consequently, Lamson and Holdrege set about to encourage the development of county extension service. The Nebraska county officials were in favor of such an idea, but they did not have funds available to make sufficient appropriations at that time. In order to help overcome the financial difficulty, the Burlington offered to pay into the treasury of any county \$3.00 per mile of trackage in said county. A minimum of \$150 per year was established, providing for counties with less than fifty miles of track; payment was to be made for two years, providing the county would use the money toward the employment of a county agent. The company made no stipulation with regard to the activities of such an agent. The first Nebraska county (Gage) took advantage of

³⁵*Ibid.*, pp. 23-24.

³⁶*Ibid.*, p. 24.

the offer in February, 1913, and within two years, six other counties had acted on the same basis. To those seven counties the Burlington donated \$2,320.³⁷

Shortly after the first counties had begun extension work, a group of business men from Lincoln and Omaha formed an Agricultural Development Committee of Nebraska for the express purpose of assisting counties desiring to employ extension agents. They asked the C. B. & Q. for a subscription to apply toward a total of \$35,000 which they hoped to raise. The Burlington contributed \$5,000, with the reservation that the funds donated under the county assistance plan be deducted from the subscription. The committee was able to raise only \$16,000, but its influence was used to get additional assistance from the state legislature. The committee printed and distributed some 27,000 circulars explaining the need for a state appropriation; at the next session of the legislature (1914), an appropriation of \$15,000, with an increasing fund for later years, was granted. The committee also was active in securing the passage in federal Congress of the Smith-Lever Bill (1914), through which Nebraska received \$10,000 for promotion of agriculture. Those funds gave agricultural extension work the necessary boost, and from that meager beginning, an adequate organization grew in Nebraska. Of the total funds used in developing the service, the Burlington contributed at least one-third.³⁸

The company had further influence in the establishment of dry-land experiment stations in the western states. In 1907, Holdrege donated \$1,000 on behalf of the Burlington to a fund for building an experiment station at Akron, Colorado; the gift provided the necessary impetus to enable the citizens around Akron to raise an additional \$2,000 for the project. Also, in the same year, the Wyoming State Legislature appropriated \$5,000 to cover two years of experimental work in agri-

³⁷*Ibid.*, pp. 24-25.

³⁸*Ibid.*, pp. 25-26.

culture in Laramie, Weston, and Uintah counties. When the state fund proved insufficient, the company donated \$1,000 in 1908 and an additional \$500 in 1913.³⁹ This Burlington support, more in principle than in amount, illustrated the willingness of the company to aid any project which was calculated to improve western agriculture.

The Burlington System has for years operated special trains and conducted campaigns for the promotion of agriculture in general. The first of this nature was a "Livestock and Better Farming Special," operated in October, 1915, through five states. The train exhibited livestock, poultry, and silage methods, making twenty-four stops in Wyoming, twenty-three in Nebraska, thirteen in Colorado, three in Montana, and two in South Dakota.⁴⁰ The Colorado and Southern Company successfully sponsored a "Better Farming" exhibit car in 1920. This project emphasized and demonstrated principles of agriculture as applied to non-irrigated lands, and following the exhibit, the C. & S. agricultural development department received many requests for further suggestions and information.⁴¹ Early in 1922, in cooperation with the Texas Agricultural college, the same company ran an "Agricultural Demonstration Train," with stress being placed on poultry and egg production.⁴² The C. & S. also organized poisoning campaigns in 1931 for the prevention of crop losses due to damage from grasshoppers and other pests; the program was so effectively carried out that, in spite of a great number of pests, no serious damage resulted to crops.⁴³

³⁹*Ibid.*, pp. 26-28.

⁴⁰Val Kuska, compiler, [List of] "Educational Trains and Campaigns . . . Sponsored by C. B. & Q. Railroad Company and Cooperating Agencies" (Enclosure in a letter to R. C. Overton, November 5, 1948), p. 7.

⁴¹Colorado & Southern Railroad Company, *Annual Report*, 1920, pp. 12-14.

⁴²*Ibid.*, 1922, pp. 13-14.

⁴³*Ibid.*, 1931, pp. 12-15.

Improvement of Corn Culture

Since many miles of the Burlington's trackage lay within the limits of the "Corn Belt," the company assumed a genuine interest in improving corn production along its line. The first campaign which it conducted was in 1904, when a "Seed Corn Special" was operated in cooperation with the Chicago and Northwestern Railroad and the Nebraska College of Agriculture. The purpose of the program was to improve the types of seed corn used in the region, and lectures were given in the principal corn-producing counties.⁴⁴

"Seed Corn Instruction" specials were next operated in February and March of 1912 to urge the testing of seed before planting. Three trains were operated, one each in eastern, central, and southern Nebraska; 27,500 persons heard the lectures given in 127 towns. The results of the tours were reflected in the abundance of good seed corn available for planting the 1913 crop.⁴⁵

Closely allied with the program to improve corn production was the campaign to increase the use of silos, especially among dairy farmers. A "Silo Train" was operated in northeastern Colorado in March, 1913, stopping at twenty-two towns; 1,820 people attended the lectures and exhibits. The Burlington's agents urged the building of silos for storing corn in order to gain maximum benefit from corn production.⁴⁶

In addition to these educational efforts, the company distributed better varieties of seed corn to western farmers. As an example, in the period 1921-25, the Burlington gave to farmers in the Big Horn Basin of Wyoming special types of seed, adapted to the growing season of the territory. Seven hundred farmers accepted the seed, which was offered free of charge to any farmer who would

⁴⁴Kuska list, p. 1, Waggener, *op. cit.*, p. 53.

⁴⁵Kuska list, p. 1; Waggener, *op. cit.*, p. 53.

⁴⁶Kuska list, p. 1.

agree to plant and cultivate two acres of the crop. By 1925, over 9,000 acres of corn existed in the basin.⁴⁷

Encouraging the Use of Alfalfa

The introduction of alfalfa into Nebraska in 1875 did not end the Burlington's efforts to promote the production of that crop. In 1904, an "Alfalfa and Kindred Crop Special" operated over the Burlington lines,⁴⁸ and in 1913, in co-operation with the International Harvester Company, another "Alfalfa Special" ran through southwestern Iowa and northwestern Missouri. That train stopped at fifty-five towns and was visited by 12,649 people. The campaign was instigated by the International Harvester Company, which sent a representative, at no charge, to help select seed and prepare the soil for any farmer who would agree to plant twenty acres of alfalfa. Almost 1,800 farmers agreed to sow over 13,000 acres within a year.⁴⁹ In a further effort to encourage the planting of alfalfa, Lamson, the head of the agricultural development department, arranged to lease the unused portion of the Burlington's right-of-way to farmers on adjacent plots, providing the land would be planted in alfalfa. Leases were granted, rent-free, to about 600 farmers, and as late as 1937, over 300 leases were still in effect. Nebraska became for a time the alfalfa center of the world.⁵⁰

Better Wheat Production

The most significant work done toward improving wheat production was prevention of "wheat smut." In August, 1925, a "Wheat Smut Campaign" was conducted in eastern Colorado. The campaign was carried out in co-operation with the Colorado College of Agriculture, which

⁴⁷Waggener, *op. cit.*, p. 54.

⁴⁸Kuska list, p. 2.

⁴⁹*Ibid.*

⁵⁰Waggener, *op. cit.*, p. 18.

had worked out a method of treating seed wheat which would not injure the germination of the seed. The treatment was based on the elementary but effective process of using copper carbonate dust to prevent smut. Fifty-five communities in eastern Colorado were visited; 1,500 farmers witnessed the demonstrations of the effective method of treating seed wheat, 5,000 more were induced to try the method and 500,000 acres were planted with treated seed following the trip. In 1925, the loss to Colorado farmers due to smut was estimated at \$3,000,000; in 1926, the loss was reduced by an estimated \$625,000. The government grain inspector at Denver, Colorado, reported a decrease of 9.6% in smutty wheat graded in carload lots in 1926.⁵¹

Losses were greater elsewhere, however, and a repeat performance of the Colorado campaign was given in Nebraska, Colorado, and Kansas in August, 1927. On the tour, forty-one towns were visited, with 25,409 people attending; later, some 49,000 people saw the train at the Nebraska State Fair. For the 1927 tour, the Nebraska and Kansas Colleges of Agriculture and the Omaha Grain Exchange were co-operating agencies. After the special, the Nebraska Extension Service reported that an estimated 500 home-made smut treating machines were constructed.⁵²

The distribution of posters urging the farmers along the Burlington route to treat wheat for smut was begun in 1931, and since 1942, the company has distributed through Kansas posters of the Kansas Crop Improvement and the Kansas Wheat Improvement Associations.⁵³

Potato Production Improved

The West was early found to be suitable for the production of white potatoes, but the methods used in

⁵¹Kuska list, p. 4.

⁵²*Ibid.*

⁵³*Ibid.*, p. 5.

growing, harvesting, and marketing crops led to much loss. As early as 1916, a Nebraska Potato Improvement Association was organized to remedy such conditions.⁵⁴ The Colorado and Southern Railroad operated a "Potato Exhibit Car" in 1919 which gave "information and data on methods of growing the crop, use of better seed, and loading for market." Two seed potato circulars were issued by the same company that year.⁵⁵ The following year, the C. B. & Q. operated a potato exhibit and demonstration car through Nebraska which visited twenty-seven towns and was attended by 3,790 potato-growers. As a part of the program, the Burlington gave away small sacks of high-quality seed potatoes in an attempt to improve production.⁵⁶ In 1922, the company printed and mailed posters showing the advantages of proper potato storage.⁵⁷

A "Potato Judging Contest" was sponsored by the Burlington at the Smith-Hughes School in Worland, Wyoming, on November 20, 1925. Six teams of three boys each from six Wyoming towns judged samples of seed potatoes; the prizes offered were made up of thirty-five bushels of premium seed potatoes donated by certified growers in Nebraska, Wyoming, and Montana. The purpose of giving certified seed as prizes was to get comparative tests on seeds from the various states, as well as to convince the farmers of the Big Horn Basin of the desirability of using certified seed.⁵⁸

One phase of the campaign to advertise Nebraska seed potatoes and to broaden the market for them was conducted in 1926. A "Nebraska Seed Potato Special" ran from Alliance, Nebraska, to Shreveport, Louisiana, and other Southern points in January, carrying forty cars of seed from Box Butte and Dawes counties. The Southern

⁵⁴Waggener, *op. cit.*, p. 33.

⁵⁵Colorado & Southern Railroad Company, *Annual Report*, 1919, pp. 10-12.

⁵⁶Waggener, *op. cit.*, p. 34.

⁵⁷*Ibid.*

⁵⁸Kuska list, p. 3.

demand for Nebraska seed had developed through the co-operation of Boys' and Girls' Potato Clubs of Louisiana when western Nebraska certified growers furnished free to club members several cars of certified seed for demonstration purposes. The C. B. & Q. transported that seed free of freight charge. Between 1921 and 1926, Louisiana and Alabama secured 373 cars of such seed. The special of 1926 was followed up by a two-reel motion picture showing seed-potato production in western Nebraska; the film was presented through the co-operation of the Conservation and Survey Division of the University of Nebraska and the Nebraska Certified Potato Growers' Co-operative.⁵⁹

In order to advertise further Nebraska seed potatoes, the Burlington arranged and supervised demonstrations in Missouri in which certified Nebraska seed was tested against the seed normally planted in that state. The Nebraska Certified Seed Growers' Co-operative provided the seed and the C. B. & Q. hauled it without cost. The superiority of Nebraska seed was manifest in the results and the market for it was increased.⁶⁰

Development of the Sugar Beet Industry

Perhaps the best single illustration of the assistance which the Burlington has rendered in the development of western agriculture is to be found in the sugar beet industry. On reclaimed desert lands in Wyoming, Montana, Nebraska, and Colorado, a great, new enterprise arose in the form of sugar beet production. The Great Western Sugar Company, one of the largest refiners of beet-sugar, became dissatisfied with the yield of the farms in its territories in 1924, and consequently in 1925, its directors asked the Burlington to co-operate in a campaign designed to increase the yield per acre.⁶¹ The Burlington

⁵⁹*Ibid.*, p. 2.

⁶⁰Waggener, *op. cit.*, p. 34.

⁶¹*Ibid.*, p. 47.

readily grasped the opportunity and operated a "Sugar Beet Special" in 1925 which stopped in thirty-three communities; an estimated eighty-five per cent of the growers attended. The basic purpose of the campaign was to increase the yield of beets by proper methods of spacing, plant selection, and time of thinning. The train started out in May, with the slogan "Another Ton per Acre in 1925."⁶² In view of the satisfactory showing of that campaign, another beet special was operated in 1926; the slogan was "And Another Ton in 1926." Additional trains in 1927 ("A Record Yield in Every Field") and in 1929 ("More Tons per Acre") completed the sugar beet campaign.⁶³

The results were encouraging. Between 1925 and 1930, there was an average increase in the yield per acre of 2.05 tons over the ten-year average up to 1925.⁶⁴ That meant added revenue to the beet growers and a stepped-up production by the refining companies. The new production also meant more freight for the railroads serving the area; one estimate placed the freight increase at close to one and one-half million dollars per year. The Burlington shared heavily in the benefits.⁶⁵ The campaigns favorably affected general prosperity, in that increased earnings to laborers resulted. The Great Western Company had attempted to promote more careful work by awarding bonuses to the beet laborers. The increase in total wages paid the workers during the period from 1925 to 1930 amounted to \$1,028,957.15.⁶⁶

A highly important development of the beet campaign was the discovery that much of the desert soil was lacking in phosphate. Since 1928, special attention has been given

⁶²Kuska list, p. 6.

⁶³*Ibid.*

⁶⁴F. L. Taylor, Agricultural Agent, C. B. & Q. and C. & S., "A Progress Report of the Sugar Beet Campaigns 1925 to 1930 Inclusive" (Denver, Colorado, Attached to Kuska list). The average yield per acre, 1925-30, was 13.29 tons; average, 1915-24, was 11.24 tons.

⁶⁵*Ibid.*

⁶⁶*Ibid.*

to the matter and the use of phosphate as a fertilizer has been increased noticeably.⁶⁷

Aid to the Dairy Industry

Nebraska, with its native grasses and grain crops, early became an important beef-cattle state, but the production of dairy-cattle and the development of the dairying industry were slower. In 1913, the C. B. & Q. outfitted a "Dairy Train" which operated in western Nebraska in order to stimulate an interest in the industry, a project sponsored in conjunction with the Nebraska College of Agriculture. Thirty-six stops were made along the line where farmers received information regarding the increased profit which could be secured by keeping high-grade milking stock.⁶⁸ After this campaign, the interest in Nebraska dairy farming increased rapidly. In 1920, the Burlington operated a "Dairy Improvement Exhibit Car" through twenty-one Nebraska stations.⁶⁹

The Colorado and Southern Company, to promote better dairying practices along its route, ran a dairy demonstration car in 1922. The road justified the encouragement of the industry "because it is permanent and provides greater diversification of farming."⁷⁰

In 1924, the Burlington helped to establish the Nebraska Dairy Development Society, and during the ten years in which the society was active, the C. B. & Q. donated \$8,750 to its support.⁷¹ To assist the association in getting a good start, the company, in co-operation with the society, the Nebraska College of Agriculture, and the dairy breeders of the state, ran the "Nebraska Purebred Dairy Sire Special." Thirty-one purebred bull calves were traded to the farmers at various stations for scrub bulls in an effort to stimulate an interest in better sires. Some 71,335 people

⁶⁷*Ibid.*

⁶⁸Kuska list, p. 9.

⁶⁹Waggener, *op. cit.*, p. 30.

⁷⁰Colorado and Southern Railroad Company, *Annual Report*, 1922, pp. 11-12.

⁷¹Waggener, *op. cit.*, p. 30.

viewed the exhibits and heard the lectures, while another 20,000 witnessed the demonstrations. The purebred calves which were traded were valued at \$6,000, while the scrub bulls were sold for a total of \$609.85. The results of the tour were gratifying; Nebraska dairy products rapidly increased in value during the following years, as cow-testing stations rapidly appeared throughout the state; purebred sires were shipped into the area covered by the special, and during the first two years following the tour, butter fat production jumped 37½ per cent.⁷²

During the year of the purebred sires special, the company operated a special train to Wisconsin in co-operation with the Nebraska Dairy Development Society. Ninety-seven dairymen made the trip for the purpose of studying the improved methods of dairy farming in Wisconsin. Immediately following the tour, six carloads of improved Wisconsin stock were imported into Nebraska, marking a great step forward in the improvement of the Nebraska dairy stock.⁷³ Again in 1925, the Burlington ran a special to Wisconsin and to the National Dairy Show held in Indianapolis, with similar results.⁷⁴

Improvement of Livestock

In line with the improvement of dairy sires, the Burlington also promoted the use of purebred stock in beef and pork production. One year before the "Purebred Dairy Sire Special" ran in Nebraska, a Colorado Pure Bred Sires Special" was operated with considerable success. The Burlington worked in conjunction with one of its subsidiaries, the Colorado and Southern Railway, and also the Denver Union Stock Yards, the Denver Chamber of Commerce, and the Colorado College of Agriculture. The purpose of the tour was to demonstrate the value of purebred sires, to improve livestock by the use of such sires, and to promote more economical production. The campaign officials

⁷²Kuska list, p. 8.

⁷³*Ibid.*, p. 9.

⁷⁴*Ibid.*



Rural schools of Fillmore County parade before the Burlington's Profitable Pork Special, October 11, 1929. (Photo courtesy Val Kuska, Agricultural Development Agent, Chicago, Burlington & Quincy Railroad, Omaha.)

traded purebred bulls and boars for the scrub stock of the farmers at twenty-nine stations in Colorado. Over 25,400 people attended the exhibits and programs. The purebred animals were exhibited, prizes were given to participants in a contest to guess the weight of a Poland China boar, and programs were presented by committees of business men in the towns. Twenty-nine bulls and twenty-nine boars were exchanged for scrubs, which in turn were sent to the Denver yards for slaughtering. The purebred stock was valued at \$10,000, but the scrubs brought only a total of \$589.54. The loss was absorbed by the breeders who had furnished the purebred animals.⁷⁵

A most amusing incident occurred at one of the towns just as a farmer was receiving one of the purebred bulls. The farmer, standing beside his scrub bull, read the following "pedigree" of his animal:

I warrant this bull to be an inbred calf.
His form and style would make you laugh.
He will take no prize at a livestock show
But will eat and drink, and maybe grow.

He was born by chance in a suspicious way;
His mother died, his dad ran away.
He's lousy as hell and somewhat thin,
But a damn good bull for the shape he's in.⁷⁶

Follow-up tours showed that within ten months twenty-five of the boars had been bred to 406 sows, with 1,283 pigs being farrowed and saved. The farmers who had received the sires also purchased thirty-two purebred sows. Since some 80 per cent of these farmers had never before owned a purebred boar, the figures are rather striking. Results were equally satisfying with regard to the purebred cattle distributed. Twenty-two months after the special was operated, twenty-eight bulls had served 538 cows; 228 calves were born. Eighteen per cent of the recipients of the purebred bulls purchased additional purebred females.⁷⁷ During the first three years after the operation of the

⁷⁵*Ibid.*, p. 7.

⁷⁶Waggener, *op. cit.*, p. 43.

⁷⁷Kuska list, p. 7.

train, the state of Colorado reported the increases in the use of purebred sires to be 11.5 per cent for cattle and 12.6 per cent for hogs.⁷⁸

In an effort to decrease the loss to farmers from unsanitary conditions in swine-breeding and raising, the Burlington, in co-operation with the colleges of agriculture in Iowa and Nebraska, conducted campaigns in 1929. The Iowa tour, called the "Burlington Pig Crop Special," was held first, stopping at thirty-three stations; 47,694 persons attended.⁷⁹ The Nebraska section, the "Profitable Pork Special," stopped at sixty-three towns; 108,071 people passed through the train and listened to the lectures.⁸⁰ Follow-ups consisted of news articles which stressed the use of more sanitary methods of feeding, breeding, and caring for swine. The two specials greatly influenced farmers to build or purchase 24,679 movable hog houses and 3,823 self-feeders. These improvements led to larger profits to the farmers of Nebraska and Iowa and were in a large measure the result of the Burlington's educational campaign.⁸¹

Poultry Production Increased

The improvement of poultry production accompanied the developments in the dairying and livestock industries. Increases in poultry production were natural in the West as the number of farms increased and as the region was found to be free from the usual poultry diseases. With the increased production, however, vermin and diseases gradually infected the yards and the demand for good poultry and eggs grew difficult to meet. The Burlington territory began to lose its market for such products to other regions.⁸² In 1926, in order to improve the quality of poultry, the C. B. & Q. sponsored a "Poultry Special" which made

⁷⁸Waggener, *op. cit.*, p. 44.

⁷⁹Kuska list, p. 8.

⁸⁰*Ibid.*, p. 9.

⁸¹*Ibid.*, pp. 8-9.

⁸²Waggener, *op. cit.*, p. 37.

ninety stops in Nebraska and eight in Kansas with the express purpose of stimulating interest in better flocks. More economical production was urged, along with better methods of care and marketing. About 205,400 people passed through the train and 48,843 attended the lectures and demonstrations.⁸³ During the fall of the following year, the company, in co-operation with agricultural colleges and other agricultural and commercial interests, operated a "Better Poultry Special" through Colorado, Montana, Wyoming, South Dakota, and New Mexico. In seventy-seven towns, 55,760 persons visited the train. Once again the purpose was to stimulate an interest in better poultry production. As a feature of the tour, two Colorado state poultry producing champions—young girls from Logan County—gave poultry demonstrations.⁸⁴

The co-operation of local organizations with the officials of the tour made the enterprise a success. Local committees were formed to organize meetings and to provide entertainment which would attract people to the poultry demonstrations. They did much advertising, at community expense, to insure good attendance. Egg shows and poultry exhibits, together with guessing contests and disease clinics, formed a part of the multi-featured campaign. A pronounced increase in the sale of improved poultry feeds and equipment followed the special. Greater efficiency of production was generally believed to have resulted, in view of the increased shipments of eggs and poultry from the region visited.⁸⁵

The encouragement of turkey production in the West became a part of the Burlington's program as early as 1923. In that year, in co-operation with several other interested agencies, a campaign was instituted to place turkey production on a commercial basis. A Big Horn Basin Co-operative Marketing Association was formed and began to secure markets for turkeys raised in that region of

⁸³Kuska list, p. 10.

⁸⁴*Ibid.*

⁸⁵Waggener, *op. cit.*, pp. 39-40.

Wyoming. Turkey production was stressed as a feature of the "Poultry Special" in 1927; and in the two years following, Colorado, Wyoming, and Nebraska experienced increases of 126, 119, and 31 per cents respectively. Since then, the C. B. & Q. has participated in a program designed to improve the industry. Turkey management, killing, grading, and marketing schools are conducted by the company, together with the Colorado Agricultural College and other interested agencies. Turkey production became an important source of income for the region.⁸⁶

Soil-Building and Soil-Conservation

The abundance of fertile farm land in the United States encouraged from the earliest colonial days wasteful methods of farming. Soils were depleted with little concern, because there was always new land to be obtained. The use of fertilizers and the application of soil-conserving techniques did not come into general practice until the early decades of the nineteenth century, and then it was only in areas where land prices were higher and new lands more scarce. The American West did not feel the need for caution until the beginning of the twentieth century, but even so, the farmers of that area needed encouragement and guidance.

Lands along the Burlington route were plagued by a double problem of soil exhaustion and wind erosion. The territory served by the railroad was subject to the latter evil because of the light, unprotected nature of the soil. The use of lime and the growth of cover crops were believed to be partial solutions. In 1927, the company sponsored a "Clover and Prosperity Special" in the state of Missouri to encourage the use of lime as a fertilizer and the growth of legume crops. Some twenty-two stations were visited by the special train and 7,130 persons attended lectures and demonstrations. Included in the make-up of the train was a soil-testing laboratory in which 797 soil

⁸⁶*Ibid.*, pp. 40-41.

samples, representing 13,464 acres, were given tests for acidity. Nearly all of the samples proved sour. As a result, eighty-eight farmers signed contracts agreeing to co-operate in legume demonstrations. Also, blueprints and instructions for the construction of home-made lime spreaders were sold to many.⁸⁷

Virtually at the same time, a "Lime and Legume Train" was touring Iowa, engaged in a similar campaign. Twenty-four stops attracted 11,006 people; 884 soil tests were made, of which over 90 per cent tested sour. Local quarry companies co-operated by giving twenty-three carloads of lime in drawings, while lime storage was arranged at eight points in the state. A great deal of lime was sold to the farmers, none of whom had used it before.⁸⁸

The following year, 1928, a less extensive tour to enlarge upon the one of 1927 in Missouri was conducted. A "Soil Dividend Train" made twenty stops, once again testing soil samples for acidity. In addition, the plan included the dissemination of information and the establishment of more demonstrations to obtain the most profitable use of legumes through judicious management of livestock and poultry.⁸⁹

Efforts to promote the growth of cover crops led to demonstrations and meetings to encourage the sowing of red clover in 1929. The C. B. & Q. furnished seed for two and one-half acres to each farmer who would supply an equal amount. About fifteen co-operators were found in five Wyoming counties. Later demonstrations and meetings, together with much newspaper publicity, followed the campaign, forming the foundation for the increased growth of soil-building crops in the Big Horn Basin.⁹⁰

The company has always advocated the growth of drought-resistant sorghums in Nebraska. During the years 1936 and 1937, the Burlington supplied seed of improved

⁸⁷Kuska list. p. 11.

⁸⁸*Ibid.*

⁸⁹*Ibid.*

⁹⁰*Ibid.*

varieties to 4-H Club boys for demonstration plantings. Probably as a result of the demonstrations, a great increase in the acreage devoted to the crop followed, and certainly a direct effect was the publicity received and the active co-operation of the Nebraska College of Agriculture.⁹¹

By far the most extensive campaign for increased use of fertilizers and production of soil-building crops occurred in 1940. A "Soil Fertility Train" toured Colorado, Nebraska, Wyoming, and Montana, visiting thirty-two towns (eleven, five, twelve, and four for the respective states). The Great Western Sugar Company and the Holly Sugar Company, along with the Anaconda Sales Company, co-operated in the program, which had as its specific purpose a more profitable crop production through the use of manure, legumes, and phosphate. A threat of a water shortage in 1940 prevented the desired increase in the use of phosphate, but the better practices were expected to be put into use later.⁹²

One of the latest efforts along these lines was a "Soil Conservation Tour" in November, 1947. A seventeen-car train carrying bankers, industrial men, and railroad executives (178 in all) passed through Texas on a campaign which featured Louis Bromfield, well-known author, as a lecturer. The sponsors, in addition to the Burlington, were the Second National Bank of Houston and the Texas A. & M. Extension Service.⁹³ The purpose was to encourage techniques conducive to soil conservation.

The Burlington and Irrigation Farming

The C. B. & Q. has been officially recognized by the United States Reclamation Service for its valuable efforts in promoting irrigation farming in the West. About 1900, George Holdrege became interested in the possibilities of irrigation in the North Platte River Valley. He participated in the organization of the Tri-state Irrigation Canal there

⁹¹Waggener, *op. cit.*, p. 59.

⁹²Kuska list, p. 12.

⁹³*Ibid.*

and invested heavily in other irrigation projects in Wyoming and Nebraska. Although failures from a financial viewpoint, his ventures were none-the-less important for the encouragement of the development of irrigation farming.⁹⁴

Val Kuska, Land and Colonization agent of the Burlington since 1922, has carried forward the work begun by Holdrege and other company officials. He has prepared much literature concerning the development of specific projects in the West and has vigorously encouraged better and increased irrigation farming. Numerous speeches and newspaper articles, prepared by Kuska, have been directed toward such a purpose.⁹⁵ Through the diligent efforts of Kuska and others like him, the Burlington has been instrumental in obtaining federal legislative action for irrigation projects.⁹⁶ A part of the long-time program to conserve soil and water was the publication in 1945 of a sixteen-page pamphlet, with illustrations, entitled "Irrigation: A National Asset."⁹⁷

IV

The influence of the Burlington on the development of western agriculture cannot be denied, regardless of the inherent difficulties in an objective measurement of that influence. There are countless other factors which must be constantly kept in mind; climate, relative soil fertility, foreign elements in the population of western states, scientific advancement of agriculture, and the relative significance of the development work of other agencies (including competing railroads) are factors which have had pronounced effects on farm income. Furthermore, it is virtually impossible to determine the exact results of any edu-

⁹⁴Waggener, *op. cit.*, p. 28.

⁹⁵Overton, *op. cit.*, pp. 484-85.

⁹⁶Waggener, *op. cit.*, p. 29.

⁹⁷This pamphlet is available for distribution at the company's Chicago office located at 547 West Jackson Boulevard.

cational program because its impact cannot be isolated from that of other conditioning factors. Yet, preliminary evidence indicates that the Burlington's influence has been both substantial and productive. The mere fact that a modern business organization has continued to expand its agricultural development work and that communities consistently welcome such a program is a pragmatic measure worthy of consideration. More specifically, surveys of conditions in the western states before and after the coming of the railroad suggest the positive results of the company's efforts and further suggest what conditions might have been if those efforts had not been made.

Subsequent investigation will be necessary to provide more complete answers to certain basic questions. For example, which activities have been most successfully encouraged, and why? How was the railroad's program fitted into the general agricultural development work elsewhere? How has the Burlington's work compared with that of other railroad companies under substantially similar conditions? And, from a broader view, what effect, if any, has the work had in public relations? Was the opposition of the local Grangers and Populists toward "big business" in general and the Burlington in particular softened as an incidental result of the agricultural program? Do the farmers agree with the company's claim that it is "the farmers' railroad?" Impartial inquiry into the sources alone can supply the answers to these questions. Such inquiry seems adequately justified.