

THE KING ROAD DRAG IN IOWA, 1905-1920

By George S. May*

Thomas MacDonald, the first chief engineer of the Iowa State Highway Commission and head of the United States Bureau of Public Roads from 1919 to 1953, once declared that the year 1904 marked the end of an era in the history of American roads. There had been no important changes in road construction methods for over a century. Macadam and gravel, the two principal forms of surfaced roads, gave adequate service for the type of traffic which the roads had borne up to that time and were the ideal toward which most good-roads enthusiasts pointed as their ultimate goal. But then around 1904 a radically new form of highway transportation began to become less of a novelty on the road and more of a common sight. Whereas in 1895 there had been only four experimental motor vehicles in the country, by 1904 there were 55,290 in actual use. By 1910 a total of 468,500 motor vehicles were registered, and ten years later the figure had risen to nearly 9,240,000.¹

It was soon discovered that the roads of the horse-and-buggy age, even those of gravel or macadam, were completely unsuited to the type of vehicle that replaced the horse in the twentieth century. However, in most parts of the country the good-roads movement, which was some two decades old by 1904 when the automobile forces began to exert an appreciable influence, had little to show for its efforts in the way of obtaining all-weather surfaced highways.² During the 1880's and 1890's, as the cycling craze swept the country, bicycle manufacturers and enthusiasts had set up a loud clamor for road improvements. Great gains had been made in improving road administration. The federal government had been brought

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¹ Spencer Miller, Jr., "History of the Modern Highway in the United States," in Jean Labatut and Wheaton J. Lane (eds.), *Highways in Our National Life: A Symposium* (Princeton, 1950), 102; *Historical Statistics of the United States* (Washington, 1949), 223.

² The best available analysis of the good-roads movement is in Charles L. Dearing, *American Highway Policy* (Washington, 1941), 219-65. Philip P. Mason of the Michigan Historical Commission is completing a study of the bicycle groups and the early good-roads movement, based on important manuscript sources.

back into the picture with the establishment in 1893 of the Office of Road Inquiry, later known as the Office of Public Roads, and finally as the Bureau of Public Roads. By 1904 state highway departments had been created in ten states, including Iowa, and by 1917 all states had some such agency, putting into practice more efficient and modern administrative and engineering methods.³ These were essential reforms, but the dirt road still remained the standard American highway, a fact clearly set forth in the first national road census taken by the Office of Road Inquiry. It revealed that only 7.14 per cent of the country's 2,150,000 miles of rural roads had any surfacing other than their natural dirt.⁴ The modern network of hard-surfaced highways which spanned the nation by the 1930's did not exist in 1904.

The major obstacle blocking construction of surfaced roads in the early 1900's lay in the problem of financing the work. As it developed, the automobile, in addition to furnishing the demand for hard roads, eventually provided much of the necessary money as well, through motor vehicle license fees and gas taxes. At the beginning of the present century, however, nobody realized that such a solution to the financial problem was in the offing. Instead, road policies were postulated on the belief that owners of the land adjacent to a road would, as in the past, continue to be assessed for most of the cost of improvement. The thought of having to assume such burdens did not appeal to the rural population, and when farmers heard such good-roads leaders as General Roy Stone, first director of the Office of Road Inquiry, advocate the paving of most of the country's rural roads,⁵ they naturally became alarmed. Efforts of good-roads leaders to convince the farmer that the economic and social gains of all-weather roads would far outweigh the initial expense to him seem to have been largely unsuccessful.

Actually, the farmers were interested in better roads but from an entirely different angle than that from which the bicycle and automobile forces looked at the problem. Whereas the latter wanted surfaced highways which could be used for travel from city to city and state to state at any time of

³ W. Stull Holt, *The Bureau of Public Roads: Its History, Activities and Organization* (Baltimore, 1923), 5-9; Dearing, *American Highway Policy*, 54-5.

⁴ John E. Brindley, *History of Road Legislation in Iowa* (Iowa City, 1912), 276-7.

⁵ Dearing, *American Highway Policy*, 256n.

the year, rain or shine, the farmers were chiefly interested only in getting their products to a nearby market town, and a good dirt road served this purpose adequately most of the time. An Iowa editor expressed the farmers' viewpoint when he wrote: "The Iowa farmers can not afford to spend \$2,000 a mile for city folks and devil wagons — they simply want a fairly good road to haul their stuff to market and nowadays most of the stuff goes to market on the hoof."⁶ Not until the second and third decades of this century, when the farmers became motorized, was this breach in the ranks of the good-roads forces healed and a united demand made by urban and rural automobile owners alike for hard-surfaced highways.

Iowa provided an excellent example of the problems which beset the good-roads forces in the early 1900's. According to the road census of 1904, the state had 102,448 miles of rural roads, a total exceeded by only two states, Texas and Missouri. Only 1.62 per cent of this mileage could be classified as "improved," that is, surfaced roads. Thus, over 100,000 miles of Iowa's roads were still only dirt.⁷ For several weeks each spring and fall, these roads were impassable, while during the summer any heavy rain would make travel difficult for several days afterward. During a dry spell the roads were dusty, while at all seasons most of them were rough and full of ruts. Under favorable conditions, the State Highway Commission declared, Iowa's dirt roads were by no means bad, "but they are unreliable always."⁸

In Iowa, as elsewhere, the automobile age was just dawning. In 1905 only 799 motor vehicles were registered in the state. Ten years later, however, there were 147,078.⁹ How inadequate Iowa's roads were to meet the needs of this wave of the future was graphically demonstrated in the spring of 1905. Two Oldsmobiles were being raced from New York to Portland, Oregon, with a prize of \$1,000 awaiting the winner. The weary drivers, upon reaching Des Moines, told "a rather pitiful tale of the generally bad roads of Iowa." Well they might, since it had taken them three days to

⁶ Cedar Rapids *Republican*, Apr. 30, 1905. See also Wayne E. Fuller, "Good Roads and Rural Free Delivery of Mail," *Mississippi Valley Historical Review*, 42:80-81 (June, 1955).

⁷ Brindley, *History of Road Legislation in Iowa*, 276-7.

⁸ Iowa State Highway Commission, *Manual for Iowa Highway Officers* (Ames, 1905), 6. For other comments on Iowa's dirt roads, see George S. May, "The Good Roads Movement in Iowa," *The Palimpsest*, 36:1-6 (January, 1955).

⁹ C. H. Sandage, *The Motor Vehicle in Iowa* (Iowa City, 1928), 4.

make the trip of about 180 miles from the Mississippi to the state capital.¹⁰

The Iowa farmer was not satisfied with the existing condition of the roads, which frequently made it difficult or impossible for him to market his products at the most favorable moment. But, as Henry Wallace observed, the farmer "has figured up the cost of macadam, of gravel and paving and has concluded that the lowest cost at which the roads generally advocated could be furnished would involve him hopelessly in debt, if not bankrupt him entirely."¹¹ It was reliably estimated in 1905 that it would cost a minimum of \$200,000,000 to macadamize 25,000 miles of Iowa's main traveled roads; the added problem of the absence of road materials in many parts of the state would undoubtedly make the cost considerably greater.¹²

Some good-roads enthusiasts argued in 1905 that the state should finance such a construction program, but the prevailing opinion seems to have been that this plan was impracticable and hopelessly visionary. J. S. Trigg, editor of the farm weekly, the *Iowa State Register*, expressed this view when he told the Iowa Good Roads Association that he thought it was no exaggeration "when I say to you that practically during your life time and I think during the lifetime of the succeeding generation [Iowa] as a whole will never have anything but a dirt road." It was "utterly useless," in view of the expense, for any group to preach road improvement in the state on the basis of macadam roads.¹³ Since this was the case, it was obviously an opportune moment for the introduction of a new road tool which would improve the quality of the dirt road. About this time a Missouri farmer, D. Ward

¹⁰ Des Moines *Register and Leader*, May 22, 1905. For other examples of the difficulties which Iowa's dirt roads presented to owners of motor vehicles, see May, "Good Roads Movement in Iowa," 3-5.

¹¹ Henry Wallace, "Good Roads in Iowa," *Good Roads*, 4:66 (August, 1893).

¹² Anson Marston, in *Proceedings of the Seventeenth Annual Meeting of the Iowa Engineering Society . . . 1905* (Iowa City, n. d.), 76-8. Marston was dean of engineering at Iowa State College and one of the two original State Highway Commissioners appointed in 1904.

¹³ J. S. Trigg, "Cheap and Effective Road Maintenance," *Proceedings of the Iowa Good Roads Association, June 15-16, 1905* (n. p., n. d.), 21-2. For examples of similar views, see John Scott, *Iowa Road Manual: A Digest of the Road Laws of Iowa . . .* (Iowa City, 1884), 12; Thomas F. Cooke, "A Query and a Reminder," *Good Roads*, 4:51 (August, 1893); Cedar Rapids *Republican*, editorial, Apr. 16, 1905; Henry C. Wallace, "A Practicable Road for Iowa," *The Midwestern*, 4:20 (March, 1910). For the contrary opinion, see the remarks of Harvey Ingham and Governor Albert B. Cummins to the Iowa Automobile Club, *Des Moines Register and Leader*, Apr. 15, 1905.

King, began with the zeal of a crusader to spread the good news of the wonders of a road drag on dirt roads.

King was born in 1857 in Springfield, Ohio, where as a youth he became accustomed to somewhat better roads than he found when he moved west and began farming near the town of Maitland in northwestern Missouri. The wretched condition of Missouri's gumbo roads disturbed him as it did most farmers, but King was not content to grumble and let it go at that. On his farm there was a wooden contraption consisting of two halves of a split log fastened together, one in front of the other, about two and a half feet apart. A former tenant had probably used it to level his wheat fields, but after some experimentation King discovered that dragging it over a dirt road following a rainfall smoothed the road surface and left it rounded toward the center. When the road dried the surface hardened, like a child's mud pie. After each such treatment the road became harder, which fact, together with the crown of the road, caused water to run off without soaking in, thus greatly reducing the length of time that the road might be unusable following a heavy rain.

King made this discovery some time in the mid-1890's. For about five years he proceeded religiously to drag a half-mile stretch of dirt road with a team of horses from his own gate to that of his neighbor. Eventually the fame of King and his road spread. In December, 1901, he was invited to explain his work to a farmers' institute held at Chillicothe, Missouri, under the auspices of the Missouri State Board of Agriculture. So convincing was his talk and the tangible success that his method had achieved that the Board of Agriculture hired him to go throughout the state lecturing and demonstrating to people how they, too, could have better dirt roads. Thus began King's public championship of the split-log drag or King Road Drag, as it was called, which continued for about a decade, carrying him throughout the Middle West and beyond and making his name almost certainly the most widely known of all good-roads advocates of the period.¹⁴

Actually, it is incorrect to refer to King as the inventor of the road drag, as the newspapers and many of King's supporters constantly did, and as others have done since. Road drags similar to those used by King had been

¹⁴ *Wallaces' Farmer*, 45:820 (March 5, 1920); King's speech to the Iowa State Farmers' Institute, Dec., 1905, in Iowa Dept. of Agriculture, *Sixth Annual Iowa Year Book of Agriculture . . . 1905* (Des Moines, 1906), 24; and *Manual for Iowa Highway Officers* (1906 revision), 66.

known in the East at least as early as the 1830's.¹⁵ Nor were they unknown in the Middle West before King's day. He himself told of a farmer at Mount Ayr, just north of the Missouri border in southern Iowa, who came down to King's farm when the latter was just beginning on his drag work, and told him of his own similar activities in Iowa.¹⁶ When King's fame spread throughout Iowa, a resident of Le Grand declared that they had been dragging the roads in that township for thirty years, while a former resident of Cerro Gordo County in northern Iowa recalled that back in that county's pioneering days a Mr. Chilson had built and used a road drag on the roads of Clear Lake Township.¹⁷ Thus the King Road Drag was something of a misnomer. Neither his drag nor his method of treating the roads were original with King, but he was certainly the first to make the people of the Midwest generally aware of the drag's usefulness. His importance as a popularizer of the drag is as great as it could have been had he actually invented it.

King always believed that a drag built of split logs was the best. With the flat sides in front, the split logs offered a sharp cutting edge which a drag made of squared timbers lacked. But whether a split-log or a plank drag was used, the method of operation was the same. The drag was set at a 45 degree angle to the center of the road so as to push the dirt toward the middle and build up the desired crown. King warned that a drag should not be made too heavy, since if it was it might gouge the road's surface more than it smoothed it. On top of the drag was a small platform upon which the operator stood. In addition to driving the horses which pulled the drag, the operator, by shifting his weight about on the platform, could control the movement and action of the drag itself. Users of the implement were warned not to attempt to drag more than about a half-mile stretch of road at one time. Since the drag was only seven feet wide, this meant that only half the road was worked at a time, the other half being dragged on the way back. The most effective use of the drag was shortly after a rain, when the soil was still wet. Thus, there was danger that the soil might dry

¹⁵ The Genesee (New York) *Farmer* in August, 1838, carried an article describing in detail a device similar to King's road drag. *Manual for Iowa Highway Officers* (1906 revision), 65-6.

¹⁶ *Iowa Year Book of Agriculture . . . 1905*, 24.

¹⁷ *Iowa State Register*, June 9, 1905; *Iowa State Register and Farmer*, Apr. 20, 1906. See also a detailed account of road drag work in Lamoni, in "Has Dragged His Roads for 30 Years," *The Road-Maker*, 4:7 (October, 1913).

out too much to achieve maximum results before the road had been completely dragged, if one attempted to cover a long stretch of road.

King advised those who had just begun dragging operations that it was not until the fourth year that the greatest benefits would be obtained from their work. It was necessary to have patience and great diligence; once or twice over the road in a season would not do much good. For those who faithfully did their work on the roads after each rain, however, King declared there were three satisfactions:

1. The maintenance of a smooth, serviceable earth road free from ruts and mudholes.
2. Obtaining such a road surface with the expenditure of very little money and labor in comparison with the money and labor required for other methods.
3. The reduction of mud in wet weather, and dust in dry weather.¹⁸

In January, 1904, King made his first appearance in Iowa when the good-roads association of Sac County in west central Iowa invited him to demonstrate the use of his drag. The result of his efforts was to transform the highway into Sac City into a road which, it was said, was "so smooth and nice that owners of trotting horses invariably chose the public roads for speedways in preference to the race track."¹⁹

Early in 1905 King wrote to Henry Wallace, editor of *Wallaces' Farmer*, asking him if he thought any railroad in Iowa would be interested in promoting the use of the road drag by sponsoring a demonstration tour along its line. Wallace was already aware of the King Road Drag, considering it a "first-class idea," and he was therefore receptive to King's suggestion. Not long afterward he happened to run into the assistant general manager of the Chicago & North Western Railway, Richard H. Aishton, a personal acquaintance. Upon learning of King's desire to publicize the drag, Aishton agreed to put the resources of the North Western behind him. A tour was arranged beginning on April 10, 1905, at Onawa, proceeding eastward

¹⁸ D. Ward King, *The Use of the Split-Log Drag on Earth Roads* (U. S. Dept. of Agric., *Farmer's Bulletin* 321, Washington, 1908), 14. See also King's speech to the Iowa State Farmers' Institute, Dec., 1905, in *Iowa Year Book of Agriculture . . . 1905*, 18-30. Most Iowa newspapers in 1905 printed diagrams of a King Road Drag and instructions as to how to use it. A lengthy review of the subject is found in *Manual for Iowa Highway Officers* (1906 revision), 65-83.

¹⁹ *Iowa State Register*, Apr. 14, 1905.

through fifteen rural towns in central Iowa, and concluding with a stop at De Witt on April 28. A special car took King, Wallace, the latter's son (the future United States Secretary of Agriculture, Henry C. Wallace), Thomas MacDonald of the State Highway Commission, J. S. Trigg, and others to each town for a day-long series of talks and demonstrations of the use of the drag. The railroad paid all expenses.²⁰ This tour was such a success that the North Western considered engaging a man to promote the road drag on a full-time basis. The Burlington Railroad sponsored a similar tour through southern Iowa between October 19 and November 1, 1905, starting in Council Bluffs and taking in fifteen other towns along the line to the east.²¹

Newspapers and the railroads made certain that the tours were well advertised and that King's message sounded sufficiently dramatic to draw a crowd. King, the North Western declared, would expound on his "'Hard Earth Road' idea, or, as it is sometimes known, 'Making Road Without Money.'" Authorities throughout the Midwest were said to be in agreement "that Mr. King has solved the problem. Those who have heard him say his arguments are convincing, while those who put his plan into operation are enthusiastic and declare that Mr. King did not tell its benefits."²² The *Iowa State Register* urged farmers to attend the meetings. King's "invention is not high flown, not theoretical. What he recommends is cheap, common and practical. . . . If Mr. King can suggest a home-made device that will make the gumbo of Missouri passable, it ought to make the highways of Iowa ideal. Let Mr. King be heard. He has a mission."²³

D. Ward King was indeed a missionary. A special stop in Cedar Rapids was arranged so that members of the Commercial Club could hear of the

²⁰ Henry Wallace, *Uncle Henry's Own Story of His Life: Personal Reminiscences* (3 vols., Des Moines, 1917-1919), 3:97-9; *Cedar Rapids Republican*, Apr. 28, 1905. The complete schedule of the North Western tour included the following towns: Onawa, Odebolt, Holstein, Denison, Lake City, Jewell Junction, Ames, Eagle Grove, Luverne, Bancroft, Rolfe, Eldora, Gladbrook, Belle Plaine, and De Witt.

²¹ *Boone Evening Republican*, May 4, 1905; *Iowa State Register*, Oct. 20, 1905. There appears to be no evidence that the North Western actually hired a full-time drag lecturer. The complete Burlington tour schedule included the following towns: Council Bluffs, Red Oak, Villisca, Creston, Bedford, Greenfield, Osceola, Leon, Chariton, Fairfield, Mount Pleasant, Burlington, Donnellson, Bloomfield, Centerville, and Corydon.

²² *Boone Evening Republican*, Apr. 6, 1905.

²³ *Iowa State Register*, March 31, 1905.

drag's wonders. Those who attended compared the experience to an old-fashioned revival meeting at which everyone present was converted to the gospel of the King Road Drag.²⁴ This was the case at all of the towns on both tours. Everywhere the same pattern was followed. Good-sized crowds of farmers and townspeople met the visitors, sometimes with brass bands, and some of the schools were adjourned for the day to allow the older students to profit from the practical instruction of King and his colleagues. In the morning a meeting was held in the local opera house or other large building, and Wallace, Trigg, and MacDonald gave short talks before King was introduced. Usually in the morning King confined his remarks to good roads in general. Sometimes he turned the meeting over to the audience, letting them discuss, for example, the relative merits of Iowa's old road laws as compared with those of the law enacted in 1902. In the afternoon he described how his drag was built and how it should be used. He then proceeded to demonstrate the drag by going up and down one of the town's streets, which, if necessary, had been put into a state of disrepair in order to show the drag to the best advantage. As the climax of the day's proceedings, the local Commercial Club would announce that several hundred dollars had been raised among the town's businessmen as prizes to the farmers who had the best dragged roads leading into town at the end of the summer. Usually, however, many farmers, without any such promptings, had already promised to try out King's system in the coming months.²⁵

The interest of the railroads in promoting road improvement in this fashion was not unusual. In 1901 both the Illinois Central and the Southern Railway had run "good-roads trains" through the Mississippi Valley and the southeastern states, building model roads, demonstrating a wide variety of road machinery, and stimulating a good deal of good-roads enthusiasm in general. Many other such trains toured the nation in subsequent years. The road-drag promotion of 1905 in Iowa was a modest example of this activity.²⁶ More immediate precedents for such action in the state, however, were the special trains which the railroads had run for some years to

²⁴ Cedar Rapids *Republican*, Apr. 28, 1905.

²⁵ *Iowa State Register*, Apr. 14, 1905; *Eldora Semi-Weekly Herald*, Apr. 22, 29, 1905; *Cedar Rapids Republican*, Apr. 28, 29, 1905; *Des Moines Register and Leader*, Apr. 30, 1905; *Council Bluffs Nonpareil*, Oct. 20, 1905; Trigg, "Cheap and Effective Road Maintenance," 22-3; Wallace, *Uncle Henry's Own Story*, 3:98-9.

²⁶ Martin Dodge, "The Good Roads Movement," *Review of Reviews*, 25:69-72 (January, 1902); Dearing, *American Highway Policy*, 231-2, footnote.

promote more extensive dairy production and the use of improved seed corn.²⁷

In return for their sponsorship of these trains, the railroads expected to receive a certain amount of good will, a goal at which they had some success. For example, the *Des Moines Register and Leader*, noting the popularity of the North Western road-drag special, observed "that whatever prosperity may attend its travels is to be credited to the intelligent interest taken in Iowa and the output of Iowa farms by the railway managers of the west."²⁸ An official of the Office of Road Inquiry felt that the example of the road-drag special was one that every state in the country ought to copy.²⁹ Such activities partially offset the bad publicity and ill will that resulted from arguments over high railroad rates.

But there was a further, more immediately practical, reason for the railroad to urge the widespread use of the King Drag on Iowa's rural roads. Representatives of both the North Western and the Burlington frankly admitted that they hoped that the drag would reduce the number of days when the roads were unusable and the farmer could not bring his produce into the railroad depot. The superintendent of the North Western's Iowa division declared that in the spring of 1905 his line was better equipped than it had ever been to handle the state's business. "But five days after the frost went out of the ground, the business dropped off so much that there was not more than thirty per cent of the maximum business left. The business was there, but the farmers simply could not get their produce to the railroads because of the fearful condition of the roads." The railroads' interest was thus basically selfish, but it was an enlightened selfishness since, as they pointed out, good roads meant not only more business for the railroads, but more trade as well for the towns and more security for the farmers.³⁰

The reasons for the enthusiastic support which local businessmen gave to the road-drag movement were similar to those of the railroads. Improved

²⁷ Wallace, *Uncle Henry's Own Story*, 3:79-81, 93-6.

²⁸ *Des Moines Register and Leader*, Apr. 30, 1905. The *Iowa State Register*, Apr. 14, 1905, referred to the "useful and gratuitous service" which the North Western was rendering the farmers.

²⁹ *Des Moines Register and Leader*, May 25, 1905.

³⁰ *Cedar Rapids Republican*, Apr. 28, 1905. For a similar statement by W. H. Manss, industrial agent of the Burlington, see the *Council Bluffs Nonpareil*, Oct. 20, 1905.

dirt roads into town would make it easier for the farmer to sell his products and buy those of the merchant. In addition, there was the matter of good will involved here, as well. A Boone newspaper told its town's businessmen that promoting road dragging would "let the farmer know the people of Boone are interested in their problems. Boone is not so large a city that it can ignore the farmer trade. . . ." The Commercial Club should furnish farmers with a few road drags, suggested the editor. This would not cost much, "and the club could not invest the money better in promoting the interests of Boone."³¹

If the businessmen of Boone were slow to join the road-drag movement they were in a minority in the state during the weeks immediately following the North Western's tour. J. S. Trigg and Henry Wallace both continued to promote the drag in their publications and on the lecture platform. Pictures and descriptions of the King Road Drag appeared in numerous papers, while for several weeks hardly an issue went by without mention of the increasing popularity of the drag in all parts of the state. King later declared that no one "has done more for me and the roads in Iowa than the newspaper men have."³² In addition to the prestige which the support of the newspapers lent to King's efforts, official interest was indicated by the State Highway Commission. Not only did Thomas MacDonald, Commission secretary, participate actively in both of the railroad tours of 1905, but King was also hired to lecture during the first annual good-roads school for road officers which the Commission conducted in Ames in June, 1905. Those in attendance, it was reported, recognized that in King's method, "or something closely related to it, lies the true solution of the worst part of Iowa's road problem."³³

The enthusiasm which the road drag inspired was contagious. Within a few days after the North Western tour, it was said, "the reception that has been given to it by practical men has been so enthusiastic and the work already under way in consequence is so important that the road making in a large part of the state cannot but be revolutionized."³⁴ J. S. Trigg consid-

³¹ Boone *Evening Republican*, June 20, 1905.

³² *Iowa Year Book of Agriculture . . . 1905*, 25.

³³ *Iowa State Register*, June 23, 1905.

³⁴ *Des Moines Register and Leader*, Apr. 30, 1905. For almost the identical same thought, see *Iowa State Register*, Apr. 14, 1905; *Bedford Free Press*, and *Parkersburg Eclipse*, quoted in *ibid.*, May 12, June 28, 1905.

ered the road-drag movement the most important event of the day. Arguments over tariffs, railroad regulation, who would be the next governor—all were “but wind work compared with the real and beneficent reform—which has really come to the state almost unheralded in the matter of improving the highways of the state.”³⁵

The Elkader *Argus* expressed the opinion in May, 1905, that the road-drag movement was already “the strongest ever started in this state.”³⁶ J. S. Trigg estimated that a thousand road drags would be put in operation by the end of the North Western tour, as a direct result of that brief campaign.³⁷ Trigg sometimes allowed his enthusiasm for the road drag to lead him into exaggeration, but in June the northern Iowa division of the North Western, which included less than half of the towns on the railroad tour’s itinerary, reported that 274 drags were operated in and around towns on its line. A survey of sentiment in the 37 towns that the North Western served indicated that in only two had interest in the drag failed to develop.³⁸ There were other concrete evidences of the widespread acceptance of the drag in Iowa during 1905. The Bedford *Times-Republican* began printing an honor roll of all those in Taylor County who used the drag. By November the list included over a hundred names. In September the businessmen of Eagle Grove gave a banquet for fifty farmers who had faithfully dragged the roads leading into that town since the spring.³⁹

The drag’s popularity in Iowa continued to grow in succeeding years. In 1908 King’s system of dirt-road maintenance was officially designated by his own state as the “Missouri Idea,” but although its use in Missouri and in other states was considerable, Iowa seems to have adopted the drag more than any other state.⁴⁰ The well-informed Iowa good-roads writer, Joe L.

³⁵ *Iowa State Register*, June 16, 1905. See also Trigg, “Cheap and Effective Road Maintenance,” 23.

³⁶ Quoted in *Des Moines Register and Leader*, May 23, 1905.

³⁷ *Ibid.*, Apr. 22, 1905.

³⁸ *Iowa State Register*, June 16, 1905.

³⁹ *Ibid.*, Oct. 6, Nov. 10, 1905. For further evidence, see *Ida Grove Ida County Pioneer*, June 1, 1905, and the issues of the *Iowa State Register* during April and May, 1905.

⁴⁰ Walter Williams and Floyd C. Shoemaker, *Missouri: Mother of the West* (5 vols., Chicago, 1930), 2:602. In December, 1905, King referred to speeches he had made in Ohio, Michigan, Indiana, and Nebraska, in addition to his activities in Missouri and Iowa. *Iowa Year Book of Agriculture . . . 1905*, 19, 25. In 1906 he invaded Kansas, with notable success. Fuller, “Good Roads and Rural Free Delivery of Mail,” 71n.

Long, told a congressional committee on roads in 1913 that he believed it was safe to say that Iowa had more drags in operation than any other five states combined.⁴¹ King himself several times testified that Iowa was in the forefront in the use of the drag. "I feel that a large share of the impetus that has been given to this movement," he stated, "comes from you Iowa people."⁴²

The results which the drag wrought in the improvement of the dirt roads were, of course, a major reason for its success. Henry Harlow, mayor of Onawa and president of the Iowa Good Roads Association, made a drag after listening to King and began to work on a block of his town's main street that had been virtually impassable. "At 5 o'clock, just four hours after beginning to use the drag, wagons loaded with 4,000 pounds of baled hay were being driven over the block and were making scarcely a perceptible rut." But upon crossing over onto the undragged portions of the street, "the wheels again sank nearly to the hubs in the mud."⁴³ Little wonder that farmers were excited about the road drag as they had rarely been before about any other development respecting the roads.

But results alone were not enough to account for the drag's special appeal, because, as a New England paper, somewhat puzzled at the excitement which King had aroused, pointed out, the idea that a dirt road that was crowned and closely scraped would shed water was scarcely new. In reply, the *Des Moines Register and Leader* acknowledged that this was true, but the real discovery was how to do this "without much labor or expense."⁴⁴ This feature was the key to the road drag's popularity. It was cheap to make and to operate. Any farmer could easily build one with materials to be found lying around his farm. It was so easy and simple to operate that a boy could drag the roads as well as a man, and it was the perfect weapon in the farmer's fight against the good-roads advocates who desired to build expensive surfaced highways. "No complicated organiza-

⁴¹ 62 Congress, 2 Session, Joint Committee on Federal Aid in the Construction of Post Roads, *Good Roads: Hearings Before the Joint Committee . . .* (Washington, 1913), 144.

⁴² D. Ward King, "The Split-Log Drag — Its Use," *Proceedings of the Iowa Good Roads Association, February 7-8, 1906* (n. p., n. d.), 6. See also the *Waterloo Daily Reporter*, Aug. 12, 1908.

⁴³ *Iowa State Register and Farmer*, Apr. 20, 1906.

⁴⁴ *Springfield (Mass.) Republican*, quoted in *Des Moines Register and Leader*, May 11, 1905.

tion required, no bonded debt and burdensome rate of taxation, no high-salaried civil engineers, only just some horse sense and gumption applied to an old log, a bit of iron, a saw and an auger, and good roads, good enough for a trotting course, are secured at an annual expense of \$2.40 per mile."⁴⁵

For years the townships had invested in expensive road machines which cost hundreds or thousands of dollars and absorbed all their road funds for a year or more. The agents of the manufacturers were able to achieve impressive results in demonstrations on the roads, but the amateur road makers who had charge of Iowa's roads down into the second decade of the twentieth century found it difficult to get the same results. In their inexperienced hands these huge machines often did more harm to the roads than good. In addition, they were so large that several teams of horses were required to pull them, which meant as many farmers going along, seeing that their teams were not worked too hard, and taking them off the machine as soon as their road taxes were worked out.⁴⁶

The road drag, on the other hand, cost almost nothing, under normal circumstances required only two horses and one driver, and could be operated successfully with little experience. Some people, indeed, were suspicious of it for these reasons, causing one writer to declare "that if the King road drag cost \$300, and required twelve horses to operate it, the implement would be in common use everywhere within a year or two."⁴⁷ However, most road officials were not so snobbish, and soon after the North Western's road-drag special had gone across the state, testimonials began coming in that the humble drag did the same or better work than machines costing many times as much. One county cancelled a \$600 order for machines after seeing what the drag could do.⁴⁸ The *Sac Democrat* reported that road workers in Sac County "all unite in saying that [the drag] is the most economic method of road working that has so far been devised."⁴⁹

⁴⁵ *Iowa State Register*, Apr. 14, 1905.

⁴⁶ Arthur Pickford, *Westward to Iowa* (Mason City, 1940), 66-7. For an account of an early demonstration of road machinery at a competitive trial staged by the Iowa State Road Improvement Association in 1884, see Scott, *Iowa Road Manual*, 33-44.

⁴⁷ *Brooklyn Chronicle*, quoted in *Boone Evening Republican*, June 1, 1905. When an Iowan announced that he had improved upon the King drag by adding some metal parts to it, the *Tipton Advertiser* observed that you could not "keep Yankee ingenuity down. They'll soon have King's drag as complicated a piece of machinery as a modern road grader." Quoted in *Des Moines Register and Leader*, May 11, 1905.

⁴⁸ *Iowa State Register*, May 12, 1905.

⁴⁹ Quoted in *ibid.*, May 19, 1905. See also *ibid.*, June 30, 1905.

During 1905 road dragging in Iowa was carried forward by the voluntary efforts of farmers throughout the state. Aside from the few who won the prizes that were offered by Commercial Clubs for the best dragged roads at the end of the season, the farmers received nothing except the satisfaction of performing a service for the community and for themselves. Typical of the awards which towns offered were those set up in Holstein. The Commercial Club offered \$50 for the best mile of dragged road within six miles of Holstein, and \$25 for the second best mile. On each of the five rural mail delivery routes \$15 would be given for the best half mile and \$10 for the second best half mile of dragged road at the close of the season.⁵⁰ However, during the first year the enthusiasm and pride of the farmer was probably a much more effective incentive than any prize money. Farmers delighted in taking visitors out to see the smooth dirt roads which they were making with their road drags.⁵¹

But the enthusiasm did not last. Even in 1905 it was recognized that the voluntary method of road dragging could not be depended upon another year to get this important work done. Although, as road-drag enthusiasts pointed out, the most effective time to drag the roads was immediately after a rain, when the farmer could not do much work in his fields anyway, it was evident toward the end of 1905 that the volunteer spirit was wearing thin. "People like pay for labor," one farmer remarked. "A little praise don't go far or pay bills." In 1902 the Anderson Act had supposedly inaugurated a new era in which roadwork would be done by men paid by the township and not by farmers working out their road taxes, as under the old system. "Then the farmer was too lazy and ignorant to be trusted with the repairs of the roads," an angry farmer noted. Now he was being coaxed to keep the roads in repair for nothing. Where was the money he had paid in road taxes, he asked.⁵² Road dragging was a job which required constant attention throughout much of the year. Even the most enthusiastic farmer

⁵⁰ *Ida Grove Ida County Pioneer*, Apr. 20, 1905. Only one of the fifteen towns on the North Western tour's schedule failed to raise a fund for prizes of this nature. *Des Moines Register and Leader*, Apr. 30, 1905. Commercial Clubs were not the only ones to offer prizes. In December, 1905, the board of directors of the Fayette County Agricultural Society voted unanimously to reward road drag workers in 1906. This was done, they said, because "Good roads, and their economic maintenance, is one of greatest importance to our agricultural interests, and its proper development." *West Union Argo*, quoted in *Iowa State Register and Farmer*, Jan. 19, 1906.

⁵¹ *Iowa State Register*, June 30, 1905.

⁵² *Iowa State Register and Farmer*, Oct. 20, Nov. 3, 1905.

might eventually become weary of the task unless something more substantial than occasional praise in the papers and the possibility of a prize from a Commercial Club was offered in compensation for his labors.⁵³

In 1905 some local authorities had recognized the justice of this argument and did what they could to help those who dragged the roads. Road supervisors in some townships built drags and furnished them free to all farmers who promised to use them faithfully. Other townships permitted farmers to work out their poll tax with their road drags. This procedure was of dubious legality, but it got the roads dragged by remitting a tax that was always difficult to collect anyway.⁵⁴ A movement also began to secure legislation in the next General Assembly which would require the local governing units to make rebates to any farmers who undertook to drag their roads. This met with opposition from State Highway Commissioner Anson Marston, who felt that unless the law was very carefully worded to guarantee that farmers who received rebates actually made "a real and conscientious" effort to maintain the roads, grave abuses could result.⁵⁵

The solution which was adopted by the legislature in 1906 was to permit township trustees to contract with farmers for road-drag work. This had been suggested in May, 1905, by State Representative M. Z. Bailey of Diagonal, chairman of the House committee on roads and highways, and had received the support of the State Highway Commission, newspapers, and D. Ward King himself.⁵⁶ Under the new law, which went into effect immediately in the spring of 1906, the road superintendent, acting upon the authorization of township trustees, could make arrangements for road dragging contracts with farmers, preferably those occupying land abutting the roads to be dragged. A maximum of fifty cents per mile was allowed for each time the road was dragged, with a limit of five dollars per year per mile.⁵⁷

⁵³ See Anson Marston's remarks in *Proceedings of the Eighteenth Annual Meeting of the Iowa Engineering Society . . . 1906* (Iowa City, n. d.), 90-92.

⁵⁴ *Iowa State Register*, June 9, 1905; *Boone Evening Republican*, June 30, July 5, 1905.

⁵⁵ *Proceedings of the Eighteenth Annual Meeting of the Iowa Engineering Society*, 92. Marston also spoke for the society's committee on roads and pavements.

⁵⁶ *Boone Evening Republican*, May 24, 1905; *Iowa State Register*, May 19, 1905; *Elkader Argus*, quoted in *Iowa State Register and Farmer*, Dec. 15, 1905; *Proceedings of the Eighteenth Annual Meeting of the Iowa Engineering Society*, 92; *First Annual Report of the Iowa State Highway Commission . . . For the Year Ending July 1, 1905* (Des Moines, 1906), 73; *Iowa Year Book of Agriculture . . . 1905*, 26.

⁵⁷ *Laws of Iowa*, 1906, Chap. 62.

This law, which, it was hoped, would provide a more extensive and uniform system of road dragging than existed under the voluntary method, proved a disappointment. The law did not make it mandatory for trustees to initiate road dragging contracts, and it soon became apparent that not enough townships were taking advantage of the choice that had been given them. The Highway Commission declared in 1909 that the road-drag law had been applied "to such a limited extent that it cannot be regarded as an effective measure." It estimated that of all the road dragging that had been performed since 1905 fully three-fourths had been done voluntarily by the farmers or through the efforts of Commercial Clubs and similar associations. The Commission recommended that the law be made mandatory in application and that the limit of five dollars a year for the dragging of a mile of road be removed, at least on main roads, where more work was required than this limit permitted.⁵⁸

Under prodding from the State Highway Commission and the Iowa Good Roads Association a new road-drag law was enacted in 1911. Trustees were now required to appoint a superintendent of dragging, in addition to the regular road superintendent. The township was to be divided into numbered road dragging districts, and the trustees were to designate from time to time which districts were to be dragged. All rural mail routes and main traveled roads within the township were to be kept up at all times, however. One mill of the township's road taxes each year was to be set aside as a road-drag fund. The superintendent of dragging was to contract with farmers, but no one was to be permitted to drag more than six miles. Written contracts were to be drawn up, and the individual notified by postcard each time he was to drag his road. These cards were then to be returned within twenty-four hours after the work had been done. Fines were to be levied on those who failed to obey orders in accordance with their contract. The maximum payment allowed remained at fifty cents per mile each time out, but the five dollar maximum for the year was removed. Instead, the trustees, at their regular meeting, would pay all claims which had been approved by the superintendent. The provisions regarding written records of

⁵⁸ *Third Annual Report of the Iowa State Highway Commission . . . For the Years 1907 and 1908* (Des Moines, 1909), 22. The commission earlier indicated that the road drag act had had some effect during its first year of operation in spreading the use of the drag into all parts of the state. *Second Annual Report of the Iowa State Highway Commission . . . For the Year Ending July 1, 1906* (Des Moines, 1907), 36-7.

road dragging work were strengthened in 1913, while the county boards of supervisors and county engineers were given responsibility for the dragging of the newly-created county road system.⁵⁹

Prior to this legislation, written drag contracts were virtually unheard of. "Did it never occur to the people of Iowa," a State Highway Commission official asked in wonderment, "that they were paying over a million dollars each year for dragging the roads of the state and scarcely a written record of the disposition of this amount of money?"⁶⁰ Elaborate contracts were now made out and signed in many counties, but because of the multitude of local governing units in the state the uniformity which had been hoped for still was not found. County engineers reported that it was often difficult to enforce road-drag contracts. "The obligations of such contracts seem to be regarded lightly when the holders have other work to do," the engineers complained.⁶¹ Township trustees sometimes were lax in putting the law into effect. The State Highway Commission declared that "there can be no excuse in Iowa for Iowa roads being undragged." The laws were on the books, and the people of every community were entitled to have them enforced.⁶²

The reliance upon voluntary dragging of the roads remained in many areas the only way in which the work was done, however. To stimulate this type of activity, various schemes were employed. Beginning in 1910, with the establishment of the River-to-River Road Association, businessmen, townspeople, and farmers began forming organizations to promote the improvement of roads across the state. Shortly the state was dotted with picturesquely named roads, such as the Great White Way, Waubonsie Trail, White Pole, North Iowa Pike, Blue Grass Road, and many others. Efforts were made to arouse a feeling of pride in a particular road among the residents of the communities along it, and also a spirit of competition between rival routes. It was thus hoped that farmers along the roads would be more eager to drag their allotted portions, either on a voluntary or on a

⁵⁹ *Laws of Iowa, 1911*, Chap. 70; *Laws of Iowa, 1913*, Chap. 122.

⁶⁰ *Iowa State Highway Commission Service Bulletin*, 2:6 (March, 1914).

⁶¹ *First Annual Report of the Iowa State Highway Commission [1913-1914]* (Des Moines, 1915), 151. (After its reorganization in 1913 the Commission began renumbering its reports, ignoring the ones that had gone before.) For an example of a county road drag contract, see *Iowa State Highway Commission Service Bulletin*, 2:7 (February, 1914).

⁶² *Iowa State Highway Commission Service Bulletin*, 3:14 (June, 1915).

contract basis. These efforts were not without success. One morning in June, 1911, for example, all but two miles of a 160-mile stretch of the Waubonsie Trail were dragged at the same time. The farmer who refused to drag his two-mile strip was boycotted by his neighbors during the fall harvest season.⁶³

A second scheme to stimulate renewed road-drag enthusiasm was through the formation of clubs. Around 1910 what became known as the Mount Ayr plan was developed in that town by H. C. Beard, subsequently a member of the State Highway Commission, and others. The plan was to offer prizes to the farmers in the neighborhood with the best dragged road; but in order to qualify, the farmers were required to organize themselves into road clubs. Each club was to take charge of a road at least six miles in length which connected with some other road within two miles of the corporation limits of Mount Ayr. The clubs themselves selected the judges who were to award the prizes. By 1912 there were ten clubs competing for a total of \$400 in prizes, and it was estimated that the members, without any aid from the township or county, had done over \$7,000 worth of labor. The success of the Mount Ayr plan caused it to be adopted by other communities.⁶⁴

Still another method which became popular around 1913 was the holding of so-called drag days. On a specified date the merchants of a town would award prizes in cash or merchandise to the individuals who drove their drags the longest distance to come into town. Governor George W. Clarke proclaimed June 14, 1913, State Drag Day, but many towns held their own days both before and after that date. The results were sometimes amazing. On State Drag Day a total of 166 drags were driven into the town of Diagonal. The east division of the Corn Belt Road arrived in a body of 23 drags, while Washington Township also appeared as a unit, with 38 drags. Earlier, in May, the town of Centerville staged a drag day at which prizes

⁶³ Huebinger's *Map and Guide for Waubonsie Trail* (Des Moines, 1912), 12-16. See also Huebinger's *Map and Guide for River to River Route* (Des Moines, 1910); Huebinger's *Map and Guide for Iowa Official Trans-Continental Route* (Des Moines, 1912); and other such guides.

⁶⁴ "Iowa Road Boosters Hold Big Meeting," *The Road-Maker*, 2:10-11 (January, 1913). The clubs graded and drained their roads in addition to dragging them. Beard's appointment to the Highway Commission in 1913 reportedly stemmed in part from the success of the Mount Ayr plan. *The Road-Maker*, 3:8 (May, 1913). Clubs somewhat similar to those at Mount Ayr had existed earlier in Missouri. See *Elkader Register*, Nov. 2, 1905.

totaling \$2,000 were awarded. A twenty-year-old girl who drove 31 miles with her drag won the grand prize of \$110 in cash and \$9 in merchandise for coming the longest distance. The married women's purse was won by a mother who drove 13 miles with a seven-month-old baby. A six-year-old boy won the prize as the youngest contestant. Altogether, 1,744 miles were dragged by contestants that day. Most astounding of all, however, was the performance late that summer of a fourteen-year-old girl, Lena Maurer of Gillette Grove Township. Determined to win the prize at Spencer's drag day, Lena left her father's farm at 12:02 A. M., and drove 52½ miles, arriving at the courthouse in Spencer about eleven hours later.⁶⁵

These schemes were all successful in rekindling enthusiasm for the road drag, and some people were even moved to express their feelings in music and poetry. At a drag day in Owasa in 1912 seven young girls were the hit of the day (so it was reported) when they sang a piece that one of their fathers had written especially for the occasion. The chorus went:

Dragging the roads, dragging the roads,
 Dragging the roads with the King road drag;
 Hard as a bone, smooth as a hone,
 The roads that lead into Owasa.⁶⁶

This man was obviously sold on the virtues of the road drag, but the time eventually arrived when it was widely realized that his efforts and those of the many others like him were not enough to provide the kind of dragged dirt roads that were needed throughout the state. In 1914 the Polk County Automobile Club sponsored a drag day at the State Fair Grounds, but only two drags showed up. This fiasco moved the Marshalltown *Times-Republican* to observe that "the day of 'road hurrah' is over." Drag days, like the old-time pioneer house raising "bees," were things of the past. "We have come to the serious business of building roads with hard money and main-

⁶⁵ *The Road-Maker*, 3:17 (June, 1913); *ibid.*, 3:10 (July, 1913); *ibid.*, 3:14 (August, 1913). Several changes of horses were made during Miss Maurer's marathon performance.

⁶⁶ *Ibid.*, 2:10 (October, 1912). Some years earlier, a Missourian had written an elegy to the King Road Drag which began:

If your road is soft or rough,
 Drag, brother, drag.
 Once or twice will be enough,
 Drag, brother, drag.

Paw Paw (Mo.) Bazzo, quoted in *Elkader Register*, July 20, 1905.

taining highways as we maintain other necessities and conveniences in a business fashion. . . . Agitation must now give place to planning and action. Good roads will not be made by 'road drag days' and trivialities like that which the farmers of Polk classified and treated as a triviality."⁶⁷

The solution, finally arrived at in 1917 with the adoption of the patrol system of maintaining the roads, was a recognition that the care of the roads was a full-time job, not something men could do in their spare moments. The act putting this system into operation was sponsored by State Senator John W. Foster of Guthrie Center, for many years one of the leaders of the good-roads forces in Iowa. It provided that the board of supervisors in every county was to employ enough road patrolmen to maintain the county roads. These patrolmen were to "give their entire time to road work, from the beginning of the road working season in the spring until its close in the fall of the year and such additional time as the board of supervisors may direct." The duties of the patrolmen were "to drag or cause to be dragged, after each rain and at such other times as may be necessary, all the county roads that lie within their respective sections." This act applied only to county roads, but some additional help was provided for township road officials when another act, adopted in 1917, permitted townships, whenever the regular road dragging fund had been exhausted, to transfer from the general road funds "such an amount as in their judgment will best maintain the township road system."⁶⁸

The adoption of the patrol system was hailed by good-roads forces as one of the most important pieces of road legislation ever passed by the Iowa General Assembly.⁶⁹ Although not all counties immediately complied with the law, the Foster Act was a major step toward a modern road system in

⁶⁷ Quoted in *The Road-Maker*, 5:13 (July, 1914). Drag days continued to be held for a few years. One in 1916 at Malloy attracted 23 drags. *Iowa State Highway Commission Service Bulletin*, 4:15 (April, 1916). As late as 1926 the Dubuque Chamber of Commerce awarded \$300 in cash prizes to the road workers who did the best job of maintaining the county's secondary roads, even though these workers were now employed directly by the county. *Ibid.*, 14:11 (July-September, 1926).

⁶⁸ *Laws of Iowa, 1917*, Chaps. 316, 398. Upon the suggestion of the State Highway Commission several counties, including Woodbury, Black Hawk, and Clinton, in 1915 had adopted the patrol system or modifications of it on an experimental basis. *Iowa State Highway Commission Service Bulletin*, 3:14 (April-May, 1915).

⁶⁹ See the report of the good roads committee, *Proceedings of the Thirty-first Annual Convention of the Iowa Bankers Association, Des Moines, June 14-15, 1917* (n. p., n. d.), 169; "Progress Made in Road Legislation," *The Iowa Magazine*, 1:13 (April-May, 1917).

Iowa. After 1921 it was possible for a township to turn its road work over to the county, and in 1929 the Bergman Act made this mandatory. Thus control over secondary roads was centralized in the same way that control over the state's primary roads was placed entirely in the hands of the State Highway Commission by the terms of the Shaff Act of 1927. During this period, also, the financial problems involved in building surfaced roads were overcome, with the result that the main highways were paved and more and more secondary roads were graveled during the 1920's and 1930's.⁷⁰

Thus ended the old system of dirt roads and volunteer or part-time road work. With it also went the road drag. Although in the 1920's it was still recognized as the most effective method yet devised of maintaining dirt roads, the road drag gradually was discarded in favor of more modern implements. Patrolmen who had to cover many miles of dirt roads found the horse- or mule-drawn drag too slow, while truck-drawn drags moved too fast to achieve the best results. As a consequence, by 1920 the State Highway Commission reported that "the humble split log road drag and its mule team is fast losing prestige in its contest with the light grader and the gas engine as the road patrolmen's 'right hand man.'" The light grader did not produce as good results as did the drag, but it was faster. Eventually, the road drag disappeared entirely from the state's roads.⁷¹

In the spring of 1920, about the time the road drag began to lose ground in face of the demands of progress and efficiency, D. Ward King died. For the last years of his life he had been a director of the Federal Loan Bank in St. Louis and had been largely inactive in promoting the implement which bore his name. *Wallaces' Farmer* commented at the time of King's death that he had "rendered a very great service to the farmers of the entire country." It was unlikely, the journal declared, that any one else had done more than King had to bring about improved dirt roads. The *Clarinda Herald* said that men of King's character "are noted for one reason, because, like the diamonds, they are rare."⁷²

There was a sharp difference of opinion, however, about King and his

⁷⁰ May, "Good Roads Movement in Iowa," 23-4, 29-31, 32-51.

⁷¹ *Iowa State Highway Commission Service Bulletin*, 8:1 (April, 1920); Andrew P. Anderson, *Modern Road Building and Maintenance: Principles and Practice . . .* (n. p., [1921?]), 110-11; Bernie Kooser, assistant secretary, Iowa State Highway Commission, Ames, Iowa, to author, May 25, 1955.

⁷² *Wallaces' Farmer*, 45:820 (March 5, 1920); *Clarinda Herald*, quoted in *Iowa State Highway Commission Service Bulletin*, 8:9 (April, 1920).

service to the cause of good roads. Although one enthusiastic King fan in Iowa once declared that King had made the greatest contribution to road improvement since John Loudon McAdam himself, the director of the Office of Public Roads, Logan Waller Page, considered that King had "done far more harm than good to the good roads cause."⁷³ For one thing, King was inclined to take himself too seriously and believe that he knew all there was to know about the road drag. He maintained that the split-log drag which he used was far superior to any other type. When the United States Department of Agriculture withdrew a bulletin which he had written on the use of the split-log drag and published another one in which other types of drags were displayed and different instructions for their use were given than the ones King had given, he issued a public protest. The new bulletin, he charged, was full of errors. If some of them were applied, the life and limb of the individuals following them would be in serious danger. In addition, he added, the new bulletin was "obstructing my work and injuring me personally."⁷⁴ In reply, Page answered that the charges were ridiculous. The new bulletin was based on the latest and most accurate information which could be gathered from the experiences of road workers throughout the country.⁷⁵

More serious than these disagreements, however, were King's reckless statements about other phases of road work. These caused Page to declare that King knew "little or nothing regarding the fundamental principles of road building."⁷⁶ King was guilty of raising false hopes in his followers when he permitted such terms as "Making Road Without Money" to be applied to his method. The one lesson that the history of road improvement makes absolutely clear is that good roads are expensive. The road drag furthermore was a maintenance tool, not a road builder. Although it was the cheapest method known of maintaining the dirt road in good condition, it did not remove the need for adequate drainage of the road bed, for road graders, and other road implements. King, however, frequently

⁷³ Thomas D. Murphy, "Good Roads for Iowa," *The Road-Maker*, 1:16 (June, 1912); "Page Replies to King," *ibid.*, 3:14 (December, 1915).

⁷⁴ "D. Ward King Protests Bulletin," *ibid.*, 3:15 (November, 1915).

⁷⁵ "Page Replies to King," 14. Page reported that the earlier bulletin which had appeared under King's name actually had been rewritten by officials of the Office of Public Roads because of the errors which had appeared in the copy submitted by King.

⁷⁶ *Idem.*

made statements to the effect that matters of drainage, for example, could be virtually ignored if one used the road drag. Such a statement caused a heated argument between King and Henry Wallace, who insisted, as did professional engineers, that unless provision was made for the adequate drainage of a dirt road, much of the effectiveness of road dragging would be lost.⁷⁷ King replied, "Men ought to be willing to believe I know something of what I am saying."⁷⁸

But perhaps the greatest harm which the road-drag movement may have done to the cause of good roads in Iowa was in raising entirely ungrounded beliefs that the battle for good roads would be over when the drag was used throughout the state. When the North Western road-drag special began its tour of Iowa in 1905 the *Iowa State Register* printed above its story of this event a headline which boldly declared: "Good Roads Problem Is Solved."⁷⁹ Nine months later the paper was still optimistic, stating that if all of Iowa's dirt roads were placed under the King system of care "the problem of better roads is practically solved."⁸⁰ Extravagant claims were also made as to what the drag could accomplish. State Representative Thomas Geneva of What Cheer maintained that a stone road could not compete with a dragged road, while Henry Wallace told the Cedar Rapids Commercial Club that dragged roads were better than paved roads.⁸¹

Such remarks served to strengthen the arguments of the rural forces in their contention that expensive surfaced roads were not necessary. The road drag may, therefore, have served to delay somewhat the day when a majority of Iowans recognized that surfaced roads were a necessity on the main traveled thoroughfares under twentieth century conditions. In addition, important administrative reforms, such as the creation of the office of county engineer to supervise county road work, were held up for several

⁷⁷ Wallace, *Uncle Henry's Own Story*, 3:98; Professor J. B. Davidson of Iowa State College on road drainage in *Proceedings of the Annual Meeting of the Iowa State Drainage Association, Held at Fort Dodge, Iowa, February 11 and 12, 1908* (n. p., n. d.), 75-80. See also Anson Marston in *Proceedings of the Eighteenth Annual Meeting of the Iowa Engineering Society*, 90.

⁷⁸ *Iowa Year Book of Agriculture . . . 1905*, 25-6.

⁷⁹ *Iowa State Register*, Apr. 14, 1905.

⁸⁰ *Iowa State Register and Farmer*, Jan. 26, 1906. See also *Ida Grove Ida County Pioneer*, Apr. 13, 1905; *Eldora Semi-Weekly Herald*, May 3, 1905.

⁸¹ *Des Moines Register and Leader*, Apr. 7, 1905; *Cedar Rapids Republican*, Apr. 28, 1905.

years in part because of the belief of some legislators that the road drag had solved the road problem, making further reforms unnecessary.⁸²

D. Ward King, however, whatever his personal idiosyncrasies may have led him to do in other subjects, did not make the mistake of some of his followers in believing that the dragged road removed the necessity for surfaced roads. Although the road drag was his special interest, he also lectured on the need for stone roads. He told the Iowa Good Roads Association in 1905 that wherever land was worth at least \$30 an acre and a good supply of stone was available, "the community that does not macadamize its main traveled roads is behind the times."⁸³ Far from believing that the drag provided the answer to the road problem, King regarded it as a bridge leading to still better improvements. The drag, he told one audience, "keeps the old mud road in the finest condition and creates a desire for the best."⁸⁴

This, after all, was probably the most important contribution that the road drag made to the good-roads movement. During the following years long rainy seasons demonstrated time and again that even the most diligent application of the road drag could not make dirt roads passable at all times. In 1915, for example, during an especially wet summer, the State Highway Commission reported that "the dragging organizations of county after county gave up in despair because of the little results accomplished on roads which never dried."⁸⁵ But the Commission also declared, on another occasion, that "the considerable advance that has been made along the line of road improvement in the state is more directly due to the agitation for, and the results obtained by, the use of the drag than to any other factor."⁸⁶ The drag served to educate the people of the state. By giving them good roads during nine months of the year, it suggested the advantage of good roads the year round. Meanwhile, however, in the transitional years between the old dirt-road era and the modern age of paved highways, the

⁸² See Brindley, *History of Road Legislation in Iowa*, 227.

⁸³ D. Ward King, "Stone Road," *Proceedings of the Iowa Good Roads Association*, June 15-16, 1905, 50. See also *Iowa Year Book of Agriculture . . . 1905*, 18.

⁸⁴ *Eldora Semi-Weekly Herald*, Apr. 29, 1905.

⁸⁵ [Second Annual] *Report of the State Highway Commission for the Year Ended December 1, 1915* (Des Moines, 1916), 15. See also Anson Marston in *Proceedings of the Nineteenth Annual Meeting of the Iowa Engineering Society . . . 1907* (Iowa City, n. d.), 10-11.

⁸⁶ *Third Annual Report of the Iowa State Highway Commission . . . For the Years 1907 and 1908*, 19.

widespread use of the road drag gave Iowa the reputation of having some of the finest natural roads in the entire country.⁸⁷ Iowa's roads, in short, would have been far less durable in the period from 1905 down into the 1920's, and the movement for better roads would have been appreciably weaker, had not D. Ward King, together with such Iowans as J. S. Trigg, Thomas MacDonald, and Henry Wallace, introduced Iowa to the road drag in the spring of 1905.

⁸⁷ Harvey Ingham, "Good Roads Are Coming," *The Midwestern*, 4:23 (March, 1910). For praise of Iowa's dirt roads, see the comments of the Glidden Tour leader in *Des Moines Register and Leader*, July 22, 1909; John Gibson, "Roads and Automobiles," *The Midwestern*, 4:13 (June, 1910); J. C. Burton in the *Chicago Tribune*, quoted in *Iowa State Highway Commission Service Bulletin*, 10:9-10 (November, 1916); and *Omaha World-Herald*, quoted in *ibid.*, 11:2 (June-July, 1922).