

THE NEW AGRICULTURE*

By Earle D. Ross

The decade and a half before the outbreak of World War I was, all things considered, a period of relative well-being and advancement for the agricultural interests of the nation. More nearly than at any time since the coming of the new industrial influences, the farmer was able to direct the forces of the new technology and business enterprise to his advantage, and to approach, for the time being, more nearly to parity of opportunity with other interests. Whether or not the agricultural share of the national income was equal to that of pre-Civil War days, as compared either with the unstable readjustments that preceded or the hectic expansion and consequent collapse that followed, the too-brief span from 1897 to 1914 brought unexampled progress and security. Of necessity the opportunities and possibilities of the different regions and areas varied considerably. With its unmatched resources of soil and climate, its adaptability for the utilization of new methods and machines, and its accessibility to primary markets, the Corn Belt set the pace for the "new agriculture."

This expressive term, which included technical, business, and social transformations, was meant to signify that agriculture had passed from pioneer existence to modernized economy and living. The changes were reflected in a new spirit of self-confidence and assurance among the farmers. With good crops and good prices, and with the extending facilities for enlightenment and better living, those who complained of their hard lot were regarded as simply anachronistic "calamity howlers." This spirit of buoyancy was especially manifested in the Middle West. "Gentlemen," asserted an orator at a corn carnival in 1899, "from the beginning of Indiana to the end of Nebraska there is nothing but corn, cattle, and contentment."¹

In their surveys and interpretations of the rural outlook, agricultural

*This article is a chapter from Dr. Ross's book on the history of Iowa agriculture, soon to be published by the State Historical Society of Iowa.

¹ Ray Stannard Baker, *Our New Prosperity* (New York, 1900), 192; cf. for regional tendencies and conditions, John D. Hicks, "The Western Middle West, 1900-1914," *Agricultural History*, 20:65-77 (April, 1946).

journals were prevailingly optimistic. They could well afford to be, with extended pages of advertising of blooded stock and its patent feeds and remedies, of fertilizers, machinery, and general equipment for farm and home as well as a wide and varied assortment of consumer's goods for the family's personal comfort, adornment, improvement, and recreation. The older papers of the state, *Iowa Homestead* and *Wallaces' Farmer*, grew steadily in influence and prosperity. In 1902 Edwin T. Meredith, who had gained experience on a Populist paper, founded the first of his notable group of widely-appealing publications, *Successful Farming*. The agricultural trade journals and organs of breeders' associations had a corresponding growth in their respective fields.

Journalists, special writers, publicists, and, of course, politicians recognized freely the new status of the son of the soil. The composite picture, disregarding the underprivileged submarginal producers, was that of an up-to-date businessman, and hence a gentleman. Agriculture was thus accorded a prominent place in the procession of "Triumphant Democracy." The press, popular magazines, and books on current affairs described with copious illustrations the wonders of the new agricultural science and recorded and forecast the economic and social attainments of farming.

Albert Shaw, a native Iowan, in a survey of the nation in his *Review of Reviews*, from the first gave prominent place to agricultural achievements, particularly those of the Middle West. Walter Hines Page in his *World's Work*, a monthly panorama of national achievements and achievers, put agriculture next to democracy and education in his emphasis.² Other journals and reviews gave generous space to the transforming industry. Free-lance writers like Ray Stannard Baker and Charles M. Harger found the pages of the "quality group" as well as the "populars" open to such success stories. L. H. Bailey, the noted horticulturist and educator, reached a large group of sympathetic readers with essays and poems that emphasized the "psychic income" of country life. With the improved status and repute of Middle Western farmers, Hamlin Garland for the time being turned from the realism of the prairies to the romanticism of the plains. At the same time the rural adventures of amateurs and the nostalgic longings of city dwellers were ministered to by the ornate *Country Life in America*. Social

² Burton J. Hendrick, *The Life and Letters of Walter H. Page* (2 vols., New York, 1922), 1:71-2. For typical articles, see *World's Work*, 6:3766-79 (August, 1903); 16:10779-97 (October, 1908); 23:718 (April, 1912).

science reviews ceased to treat the occupation mainly from the pathological point of view and even the *Nation* moderated its condescension.

With disregard for past experiences and superficial and inadequate analysis of present forces, it was assumed that the existing favorable relationships between output and demand would be permanent and that farming opportunities, especially in regions of natural advantages, would advance progressively. Such a complacent interpretation and confident forecast was voiced by William C. Brown, president of the New York Central, whose earlier career had been in the service of Middle Western lines, in his address before the Iowa Society of New York City in 1910:

The farmer, after long years of discouraging struggle, has come into his own, and his prosperity will increase with the years.

Until the end of time, population will continue to increase, but the large increase in acreage of arable land is a thing of the past.

Gradually improved methods will increase the yield per acre of the Nation's farms, but the supply will never again catch up with the demand.

I doubt if those who are not, like myself, farmers, appreciate just what the past ten years really mean to the farmers of Iowa and the Nation. They are getting sixty-nine per cent. more for their wheat, and paying thirty per cent. less for binding twine than they did ten years ago.

They are selling their corn for ninety-seven per cent., oats sixty-three per cent. and hay for forty per cent. more than they received ten years ago, and they are paying twenty-seven and one-half per cent. less for barbed wire with which to repair fences and build new.

They are receiving fifty-four and one-half per cent. more for butter, milk and cream, and paying forty per cent. less for good cream separators than they did ten years ago.

With an average increase of eighty-seven per cent. in the price of all kinds of farm produce, they are paying only five per cent. more for their binders and mowers, four per cent. more for corn binders, three per cent. more for hay tedders, and one per cent. more for side delivery rakes and loaders.

Sugar costs three per cent. and salt four per cent. less than it did ten years ago.

The State of Iowa has grown from a wilderness to a great agricultural and industrial commonwealth within the allotted life of man.³

As always, the basis of the relatively favorable conditions for agriculture

³ *Address of William C. Brown . . . Iowa Society of New York* (pamphlet, n.p., 1910), 9-10.

was the strong demand for staple products. In the export trade the opening years of the new century marked the culmination of the phenomenal sales of cereals and meats to western Europe that had been steadily mounting since the seventies. For countries whose industries were on the make and not yet subjected to the extreme competitive struggle that the new century was to inaugurate, and before the dogma of national self-sufficiency had been carried into planned economy, the American prairies and plains seemed the most available source of food supply.⁴ For the United States the demands of the enormous overseas bulk food market, instead of providing the basis for permanent areas of specialization and systems of production, caused a final spurt in extensive exploitation of resources. However, with the settlement of the last increments of available cultivable lands and the extension of cultivation in pioneer countries like Canada, Argentina, and Australia, the American grain grower and stockman could no longer compete in the foreign market. At the same time, that market was shrinking because of the deliberate resort by other countries to policies of colonial preference and of economic nationalism.

For the immediate present the export shrinkage, sharp and relatively sudden as it was, was not seriously felt. Expanding industrialization, involving intensified attractions, extended utilities, and urban concentration realized measurably the Henry Clay-Horace Greeley vision of the home market. An industrial population with a relatively high purchasing power must eat; and if the appetites of factory and office workers were not equal to those of earlier days, the food processors and distributors did much to stimulate desire for variety. The large volume of trade led to the systematizing and standardizing of marketing facilities and agencies. The organization of the primary markets was perfected, the commission agencies and line buying companies were established, and specialized shipping devices and services were extended and improved. Where selling agencies were inadequate or seemed unduly monopolistic, cooperative associations were formed, while encouragement and supervision of marketing brought new extensions of state and federal activities in aid and regulation.⁵

⁴ William Trimble, "Historical Aspects of the Surplus Food Production of the United States, 1862-1902," *American Historical Association, Report, 1918*, 1:224-39; Edwin G. Nourse, *American Agriculture and the European Market* (New York, 1924), 28-42; Grover G. Huebner, *Agricultural Commerce . . .* (New York, 1924), 498-509.

⁵ Nourse, *American Agriculture and the European Market*, 226-7; Joseph S. Davis,

With expanded markets and improved marketing facilities, new scientific applications found their opportunity. The agricultural colleges and experiment stations were called upon to apply their teachings and researches to the problems of modernized technology and business in the profession; and their demonstrated achievements brought recognition. Graduates of the colleges found attractive openings in governmental and commercial work at home and abroad. Enrollments grew remarkably, courses multiplied, textbooks and laboratory techniques were standardized, and popular writings found increased demands.⁶

In discussion and scientific investigation alike, Iowa's progress was regarded as typical of the outstanding achievements of the new agriculture in production and marketing. As a provisioner to the Nation, her place was certainly a dominating one. In 1916 it was estimated that 53 per cent of the livestock receipts at the Chicago stock yards were from this State. At the same time the State's own packing industry, either in branches of the Chicago "big four" or in competing establishments, was becoming stabilized and was absorbing a steadily increasing proportion of the local livestock supply. After pioneer ventures in meat packing, growing out of early merchandising in the river towns, the industry with modern organization, equipment, and capitalization had come to center in Sioux City, Ottumwa, Cedar Rapids, Waterloo, and Mason City.⁷

When the cash grain, dairy, and poultry receipts were added to the returns from livestock, the total was stupendous; by 1914 the gross farm income of the State grew to well over a half billion. This was 8.71 per cent of the total for the Nation, a proportion increased two years later to the all-time high of 9.06 per cent.⁸ The investment basis for such a return

On Agricultural Policy, 1926-1938 (Stanford University, California, 1939), 78; Louis M. Hacker, *The Farmer is Doomed* (New York, 1933), 19; J. L. Coulter, "Agricultural Development in the United States, 1900-1910," *Quarterly Journal of Economics*, 27:1-26 (November, 1912).

⁶ L. H. Bailey, "The Revolution in Farming," *World's Work*, 2:945-8 (July, 1901); W. S. Harwood, *The New Earth* (New York, 1906); Alfred Charles True, *A History of Agricultural Education in the United States, 1785-1925* (U. S. Dept. of Agric. Misc. Publ. No. 36, 1929) and *A History of Agricultural Experimentation and Research in the United States, 1607-1925* (U. S. Dept. of Agric. Misc. Publ. No. 251, 1937); George A. Ide, *History of Union County, Iowa . . .* (Chicago, 1908), 68-70.

⁷ *Iowa Year Book of Agriculture, 1916*, 395; H. H. McCarty and C. W. Thompson, *Meat Packing in Iowa* (Iowa Studies in Business, No. XII, 1933), Chapters 1-3.

⁸ Howard Bowen, *Iowa Income: 1909-1934* (Iowa Studies in Business, No. XIV, 1935), 36-7.

was indicated by the growth in the value of Iowa farm property in the decade of 1900-1910 by 104.2 per cent. Of the total valuation for the latter year, land and buildings accounted for 87 per cent, implements and machinery for 2.5 per cent, and livestock for 10.5 per cent. The high general level of the enterprise was demonstrated by the increase of the average property value per farm from \$8,023 to \$17,259.⁹

The increased value of land was the most sensational development of the decade. From an average of \$36.35 per acre in 1900, Iowa land had advanced to \$82.58 in 1910, an increase of 127.2 per cent. This rise in farm values in a period of relatively good prices was generally viewed optimistically as a natural condition of the progressing development of farming in a most favored region. At the state agricultural convention in December, 1913, the president, Charles E. Cameron of Buena Vista County, expressed this wholly complacent, not to say boastful, view of the land market situation:

They talk about the increase in the price of land in other states, but in my opinion there is no state in the Union whose land values have advanced so rapidly as right here in Iowa. I know of land in my own community that ten or twelve years ago could have been bought for \$50.00 per acre and today is selling at \$200.00 per acre, or an average yearly advance of almost \$15.00 per acre, and still advancing.¹⁰

With such an impressive increase and with an upward trend in market prices, there was an incentive to improvement in cultivation, husbandry, and management such as the prairie farmer had never before experienced.

The first decade of the new century marked definite advances in the mechanization of the farm, especially in harvesting machinery. High-priced and specialized crops grown on high-priced land created a need for standardized cultivation and harvesting within the optimum time limits. There was a natural desire, too, in an age of prevalent mechanization, to share in the lessening of the physical exertion which characterized other lines of production. The Corn Belt farmer and his sons were becoming increasingly machine-minded. For Iowa the most significant addition or extension of the basic principles, before World War I, was in the devel-

⁹ *Iowa Year Book of Agriculture, 1910*, xxiv-xxv.

¹⁰ *Ibid.*, xxiii; 1913, 67. The superior labor return of the State was emphasized in these years. *Ibid.*, 1906, 552-66; E. A. Goldenweiser, "Iowa and Bavaria Crop Yields per Acre and per Man," in Thomas Nixon Carver (ed.), *Selected Readings in Rural Economics* (Boston, 1916), 148-50.

opment of corn harvesting machinery. In the nineties the binder was perfected and a shocker was soon added; for the processing of the whole plant a combined husker and shredder was made available; and, for what was coming to be the prevailing practice in the utilization of the great crop, corn pickers with husker attachments were put on the market about 1902. These machines, with their great labor-saving possibilities, were wasteful and had various imperfections, the correction of which awaited later improvements.¹¹ The chief addition that remained to be made for the complete mechanization of the farm and home was cheap and adaptable power. The truck, the tractor, and electrification were still in the experimental stage.

In this period, the growing utilization of verified scientific principles, in place of lingering empirical procedures, while less spectacular, was more important in determining the standards and size of the production of the average prairie farm than the use of new machinery. The agricultural experiment stations were becoming established in organization, method, and aims and were gaining the confidence of farmers. Increasingly their findings and recommendations would stand up under the ultimate test of crop growing, livestock fattening, and milk production. In its initial issue in 1902, *The Iowa Agriculturist*, the student publication of the agricultural division of Iowa State College, reported confidently the harmonious conjunction of science and practice:

The prejudice against what was formerly styled "book-farming" has died out and not without good reason. During recent years in open competition the stations have demonstrated their ability to put theory into practice, and by this means have won the confidence of practical men. About the only prejudice that seems to exist is found in the halls of the State Legislatures.¹²

While public pressure for immediate results and the desire for personal publicity by an occasional investigator made at times for superficiality, there was always a dependable nucleus of thorough and devoted scientists who were concerned with the ultimate results, no matter how protracted

¹¹ C. J. Zintheo, "Corn-Harvesting Machinery," U. S. Dept. of Agric., Office of Experiment Stations, *Bulletin No. 173* (1907). An abstract of this bulletin, with illustrations, was published in the *Scientific American Supplement*, 63: 26048-50, 26064-6, 26084-5 (March 2, 9, 16, 1907). See also *Harper's Weekly*, 48:1440 (September 17, 1904); *World's Work*, 6:3766-79 (August, 1903).

¹² *Iowa Agriculturist*, 1:6-9.

and laborious the investigations or how inadequate the reward and recognition.

Basic in the improvement of crop production was the improvement, proper utilization, and conservation of the soil. William H. Stevenson, the head of the agronomy department of the State College and of the soil section of the Agricultural Experiment Station, was the pioneer and guiding influence in this work in Iowa. He instituted and supervised the system of county soil surveys and led in working out programs of drainage, proper tillage, liming, and rotation. The bulletin on the soil areas of the State, issued in 1905 by Stevenson with the collaboration of G. I. Christie and O. W. Willcox, was termed by President Storms, "an authority and a classic in this department of the State's agricultural work."¹³ In this period the drainage of the wet area in the north-central part of Iowa was entered upon seriously. In 1884 it had been estimated that one-third of the State's acreage would be improved by drainage; by 1904 the soils section of the Experiment Station found over four million acres in need of such treatment. Through the efforts of Professor Stevenson, in cooperation with Director Anson Marston of the engineering experiment station, a State Drainage Association was formed and more definite and favorable legislation on drainage districts was secured. With the advice of the stations on soil and engineering problems, the reclamation of highly productive areas proceeded steadily. The pressure for increased crop land during World War I further stimulated such enterprises and by 1920 over one-half of the potential area had been thus improved.¹⁴

Both in soil building through the use of legumes, in new rotations, and in the development of better adapted varieties of grains and forage plants, the work of Professor H. D. Hughes was notable. No less so was Dr. Louis H. Pammel's work for weed identification and eradication. In agricultural engineering J. Brownlee Davidson pioneered in farm structures, equipment, and machinery. Near the end of this period John M. Evvard's research in mineral feeds made a distinctive contribution in

¹³ Iowa State College, *Report, 1903-1905*, 57; Iowa State College Agric. Exp. Station, *Bulletin No. 82*.

¹⁴ W. H. Stevenson and G. I. Christie, "Drainage Conditions in Iowa," Iowa State College Agric. Exp. Station, *Bulletin No. 78*; Iowa State Drainage Conventions, *Proceedings, 1904-1905*, Iowa State Drainage Association, *Proceedings, 1908-1915*, Jay J. Sherman, "Drainage Districts in Iowa," in Benjamin F. Shambaugh (ed.), *Applied History*, 4:534-75.

animal nutrition, and Bertrand M. Hammer's bacteriological investigations resulted in better grades of butter and new varieties of cheese.¹⁵

The new agriculture involved problems of business management and of rural social organization no less than those of production. Conditions and policies of marketing, tenancy, credit, and taxation brought the study of "farm management" to a major coordinate status. From a sub-section under agronomy, it was made a separate section in 1915, the same year that the Office of Farm Management was created in the United States Department of Agriculture. At the same time the problems of rural living as subjects of scientific investigation were getting recognition. Interest in this realm was stimulated greatly if not always understandingly by the investigations and findings of President Theodore Roosevelt's Country Life Commission in 1908 of which Henry Wallace was a member.¹⁶ Rural sociology became a subject of instruction at Iowa State College in 1913 and three years later became a section of the program in the Station.

Whatever the degree and significance of scientific findings, there remained the method and procedure of connecting Station and farm, of getting principles into practice and systems into action in growing and harvesting crops, fattening livestock, marketing the products, modernizing the farmstead, and in encouraging the formation of rural institutions. Farmers' institutes—with characteristic values and limitations—continued to function down to the second decade of the century when they began to give way to more effective and up-to-date agencies of appeal and participation. Modern extension contacts and programs were made possible by improvements in transportation. Beginning in 1898 Farm and Home Excursions conducted with the cooperation of the railroads brought visitors from all parts of the State to view the agricultural work of the State College. In 1900, at a time when interest in livestock judging was becoming keen, a two-weeks course in that work was conducted at the College. The work proved of such serious appeal that the scope was broadened and there was inaugurated a Farm and Home Week for farmers and their wives.¹⁷

¹⁵ The record of the research projects and accomplishments of the period may best be traced through the annual reports of the Iowa State College Agric. Exp. Station, beginning in 1888. See also Iowa State College Staff, *A Century of Farming in Iowa, 1846-1946* (Ames, 1946).

¹⁶ "Report of the Commission on Country Life," Senate Document 705, 60 Cong., 2 Sess., Henry Wallace, *Uncle Henry's Own Story of His Life . . .* (3 vols., Des Moines, 1917-1918), 3:100-104.

¹⁷ Earle D. Ross, *A History of Iowa State College* (Ames, 1942), 229.

The more systematic extension service, in which the State was a pioneer, was started by a leader with untiring enthusiasm and remarkable powers of popular appeal, Perry Greeley Holden. He was brought from Illinois, nominally as the head of the agronomy department of the College, but really to promote farm demonstration work in corn improvement. To attract him from a commercial seed house with which he had become connected, after a varied career of teaching in Michigan and Illinois, public spirited individuals contributed part of his salary.

Holden promptly inaugurated three lines of extension effort: county farm demonstrational work in widely-separated areas; regional short courses; and, most notable and characteristic of his activities, the "seed corn gospel trains." Demonstration trains had first been employed by dairy enthusiasts led by Henry Wallace, but it remained for Holden to give the institution nation-wide publicity. No message could have been more appropriate and timely than that of improved seed corn selection. Agricultural writers like "Father" Clarkson and "Uncle Henry" Wallace had long been urging this basic improvement, but Holden gave the farmer graphic demonstration with evangelical fervency of appeal. He was in no way restrained or inhibited by professional convention and phraseology; he was not above a resort to the vernacular when it would drive home the point. The classroom was too confining for his appeal and he had neither the training nor temperament of a scientific researcher. He was the man of the demonstrational mass meeting as truly as Sam Adams was of the town political meeting. While his standards of seed selection and methods of propagation were not those of the modern geneticist and plant breeder, they dominated the corn shows in the pre-World War I years and had the permanently desirable result of emphasizing in unforgettable manner the necessity of careful planning in accord with the best available information in the growing of the main crop of the State. Henry A. Wallace, speaking from personal experience, believed that Holden "probably stirred the imagination of farm boys from 1902 to 1912 more than any one else who lived in Iowa at that time."¹⁸

¹⁸ *Wallaces' Farmer*, 57:589 (November 12, 1932); H. A. Wallace, "The Civilization of Corn," *The Palimpsest*, 11:273-7 (July, 1930); Iowa State College Agric. Exp. Station, *Bulletin No. 77*, Iowa State College, *Report, 1903-1905*, 56; *Review of Reviews*, 30:563-7 (November, 1904), 36:186-94 (August, 1907); *World's Work*, 8:4921-2 (June, 1904), 9:5881 (February, 1905); E. G. Ritland, "The Educational Activities of P. G. Holden in Iowa" (typescript M.S. thesis, Iowa State College); Paul de Kruif, *Hunger Fighters* (New York, 1928), 187-92.

The effectiveness of Holden's preliminary work was recognized by the General Assembly in 1906 by the creation of an extension department at the State College with Holden the first head. Holden's methods of appeal and his over-extended interests aroused opposition that centered in one of the rival agricultural papers and led to his involvement in partisan politics. After an unsuccessful primary campaign for the governorship in 1912, he accepted a position with a harvester manufacturing company in Chicago, leaving the nucleus of an extension service to be developed in future years in a more systematic if less spectacular manner. Following temporary appointment, Ralph K. Bliss, one of Holden's first assistants, was made director of an independent agricultural extension service in 1914, the year of the Smith-Lever Act which, in providing federal aid and cooperation, gave direction to the modern extension organization and program.¹⁹

Already in Iowa the main lines of the future coordinate extension service were forming. As early as 1904 the alert county superintendent of schools of Keokuk County, Cap E. Miller, organized boys' agricultural clubs and conducted trips to the State College. This was just at the time when the former Iowa agricultural leader, Seaman A. Knapp, as the representative of the United States Department of Agriculture, was developing the club idea in the South as a part of his farmers' cooperative demonstration work.²⁰

In the other essential part of the extension organization, the State was also an early participant. In the fall of 1912, the year following the initial move in New York, the State's first county agents were employed by Clinton and Scott counties. By the entry of the Nation into World War I, twenty-four Iowa counties had such leaders. In the early years the work was financed in part by private enterprises directly concerned in the prosperity of the rural communities, but state legislation and a federal aid act made definite provision for public support.

The administration of the agency work involved a new type of agricultural organization that combined public and private support and local and centralized control. Obviously, to function understandingly and pro-

¹⁹ *Laws of Iowa, 1906, Ch. 185; Ross, History of Iowa State College, 259, 287-8; Barton Morgan, A History of the Extension Service of Iowa State College (Ames, 1934), 34-5.*

²⁰ *Morgan, History of the Extension Service of Iowa State College, 44-5; Rodney Cline, The Life and Work of Seaman A. Knapp (Nashville, 1936); Joseph C. Bailey, Seaman A. Knapp, Schoolmaster of American Agriculture (New York, 1945).*

gressively, a definite group of farmers committed to and actively participating in the program was essential. The impracticability of assigning the new work to anyone of the existing organizations was soon apparent; a new departure was clearly indicated. In 1913 the legislature made provision for county agricultural associations for the support of which the supervisors, upon popular vote, might levy a tax. From these "Farm Aid Associations" the Farm Bureau movement, in its extended levels of organization and functions, was to develop.²¹

In contrast to the previous period of agitation, farm organizations in the State in the pre-World War I years emphasized the special interests of certain groups of producers rather than the general interests of the occupation as a whole. The Grange did not regain a large membership and the Farmers Union failed to attract any appreciable following for its program. Instead there was a remarkable evidence of breed and crop consciousness. To the pioneer horticultural, stock breeding, and dairy associations were added those of the leading special breeds of horses, cattle, swine, and sheep, and of bee-keepers, poultry raisers, and small grain farmers. Local, regional, and state fairs continued to grow in interest and support and the unique Dairy Cattle Congress was started at Waterloo in 1910.²²

Iowa was a foremost trail-blazer in the modern cooperative movement which was making a tentative start in the early years of the century, but which a quarter of a century later a leading agricultural editor was to acclaim the most determining influence upon the farmers' business and living conditions.²³ Marketing was one of the earliest and continued to be the central line of cooperative effort.

The early farmers' elevators in Iowa and in the rest of the Middle West, as an alternative to the alleged restrictive and monopolistic tendencies of the line elevators and grain syndicates, had been generally poorly managed and short-lived. They were usually easy victims of the established

²¹ *Laws of Iowa, 1913, Ch. 140; 1917, Ch. 90; Morgan, History of the Extension Service of Iowa State College, 37-40; Iowa Writers' Project, Scott County History (1942), 62-4; Iowa Year Book of Agriculture, 1915, 43-8.*

²² John C. Hartman, *History of Black Hawk County, Iowa . . .* (2 vols., Chicago, 1915), 1:405-406; William J. Petersen, "The Dairy Cattle Congress," *The Palimpsest*, 15:357-86 (November, 1934). For directories of organizations, see the *Iowa Year Book of Agriculture, 1905*, and succeeding numbers.

²³ E. R. Eastman, *These Changing Times* (New York, 1937), 68-9.

agencies; a cardinal difficulty was in keeping the loyalty of the members in the face of temporary enticements of higher prices. This strategy was largely countered by the introduction of a penalty clause in membership agreements, exacting a fee on all grain sold whether to the cooperative or to outside dealers. This plan originated at Rockwell in 1889 and came to be generally adopted in the State and throughout the Middle West, in spite of bitter and at times unscrupulous opposition from grain dealers' associations. In 1904 an Iowa association of farmers' grain dealers was formed at Rockwell with 20 members; the next year 78 elevators were included and by 1913 the number had increased to 347. Livestock shippers associations were later and slower in getting underway. The first local association was formed at Postville in 1904 and by 1916 there were still only 57 such organizations.²⁴

Elevator and shipper associations, while devoted mainly to marketing, soon came to add the buying function to a considerable range of products. In contrast to the hectic business methods of Granger days, the cooperative movement in this period in general was building upon a sound and enduring basis. Business cooperation had its effect upon social relations in promoting a community spirit and common effort in educational, religious, and recreational activities. Farmers' mutual telephone associations did much to break up the old farmstead isolation.

With all the attainments reached in the new agriculture by individual and cooperative effort, there remained problems that necessitated governmental aid and regulation. Educational improvement, in accord with changing standards, was one of the most obvious needs of the open country. The weaknesses of the old district system were increasingly evident. Small enrollments, irregular attendance, crude and antiquated equipment, poorly trained, impermanent teachers, all created a patent and increasing disparity between the learning opportunities of the town and the country child. The inadequacy and ineffectiveness of the district system of administration and the inequality of support were at the basis of the problem. Iowa, it ap-

²⁴ E. G. Nourse, "Fifty Years of Farmers Elevators in Iowa," Iowa State College Agric. Exp. Station, *Bulletin No. 211*, Oscar N. Refsell, "The Farmers' Elevator Movement," *Journal of Political Economy*, 22:872-95 (November, 1914), 969-91 (December, 1914); C. W. Barrett, *The Mission, History and Times of the Farmers' Union* (Nashville, 1909), 250-51; E. G. Nourse and C. W. Hammans, "Cooperative Livestock Shipping in Iowa in 1920," Iowa State College Agric. Exp. Station, *Bulletin No. 200*, 403.

peared, was one of the three North Central States that levied no state tax for schools. Such conditions provided the background for the consolidation movement in the State. Long advocated and tentatively tried here and there in the East, the movement was seriously entered upon in the nineties; Ohio and Indiana were the pioneers in the Middle West.

The initial venture in Iowa was made at Buffalo Center, Winnebago County, in 1896 in organizing one township district under a law of 1880. Later, without express legal authorization, all but three of the districts in this county arranged to transport their pupils to the city school. The following year such an arrangement was definitely legalized. Districts in other counties did not hasten to take advantage of the act. The next consolidation was not made until 1901 and by the spring of 1913 only eighteen schools had so organized. There was the reluctance to give up complete local control, the prejudice against innovations in subjects and methods, and, mainly, the opposition, especially from taxpayers with no children of school age, to the anticipated increased cost. The latter objection was overcome in part in 1913 by provision for state aid. By 1916, 187 such schools in 70 counties were in operation and no such establishment to this time has been abandoned. The provision in most cases for a complete high school course brought educational opportunity through the secondary level to an increasing number of rural communities.

To adapt the school program to rural needs and interests, provision was made in 1911 for state aid to approved high schools for training teachers in elementary agriculture and home economics. Two years later these subjects, plus manual training, were required in all public schools. It remained for the Smith-Hughes Act of 1916 to systematize and standardize vocational instruction for all of the states.²⁵

Another significant step toward the greater equality of the rural population in enlightenment and social outlook was the inauguration in the nineties of the system of rural free delivery of mail. The first routes were started in October, 1896; in November one was opened in Iowa at Morning Sun. By March, 1901, Iowa with 292 was fourth in number of routes, led by Illinois, Indiana, and Ohio, and second to Ohio in application for 516 new routes.²⁶

²⁵ *Laws of Iowa, 1911*, Ch. 131; 1913, Ch. 248; Iowa Superintendent of Public Instruction, *Report, 1914-1916*, xxvi-xxxii; V. L. Sanders, "History of the Consolidated School Movement in Iowa" (typescript M.S. thesis, Iowa State College).

²⁶ U. S. Dept. of Agric., *Yearbook, 1900*, 752; Thos. L. Cook, "The Development

Consolidated schools and rural mail delivery, along with increasing marketing and supply needs, accentuated the major problem of highways which had long outgrown the facilities and resources of local provision and maintenance. A law of 1904 provided that the Iowa State College should act as a "State Highway Commission," and the board of trustees appointed the deans of engineering and agriculture as joint directors. The duties of the commission were to make investigations of road construction and engineering, give demonstrations, and to advise local officials regarding their highway plans. Thomas MacDonald, later chief of the United States Bureau of Public Roads, was the first secretary and highway engineer. In 1913 a commission of three members separate from the College was created. Investigations of materials, contours, drainage, and bridge construction as well as the devising of road-working machinery was of great importance for the modernization of highways.²⁷ The actual construction of a great primary system came with the needs and resources that automotive transportation brought and with the federal aid that followed the grant act of 1916.

Grants-in-aid, whether for education, transportation, or as later, for credit and finance, involved the extension and concentration of government regulation which was beginning in these years. Both the federal and state departments of agriculture were changed from fact-collecting advisory bodies to directive and determining agencies by the necessities of regulating to an ever-increasing degree the activities of production, processing, and marketing of crops and livestock. The federal establishment, under the humble commissionership status, gained respect and recognition only through the work of the Bureau of Animal Industry in combating contagious diseases in connection with the inter-state movement of stock and the foreign meat trade. Raised to cabinet status by the pressure of organized farmer interests, the early secretaries, coming in the days of depression and controversial protest, were uncertain and unassertive in their presentation of the farmers' needs.

The selection of Iowa's James ("Tama Jim") Wilson in 1897 marked the beginning of the federal Department as a political and administrative of the Rural Free Delivery Movement in the United States" (typescript M. S. thesis, Iowa State College).

²⁷ *Laws of Iowa*, 1904, Ch. 105; 1913, Ch. 122; S. C. E. Powers, "The Iowa State Highway Commission," *IOWA JOURNAL OF HISTORY AND POLITICS*, 29:42-103 (January, 1931).

agency that had to be increasingly reckoned with by future presidents. The appointment of a shrewd politician, practical farmer, agricultural journalist, and college professor from Iowa—a key agricultural state as well as the most dependable center of party support in the Middle West—was dictated by motives of special appeal to the farming interests as well as from considerations of regional balance in appointments. So successful did the selection prove to be from both of these motives that Wilson was given the unprecedented distinction of continuous service as a department head for sixteen consecutive years under three presidents. “Tama Jim” was admirably suited to extol and champion the new agriculture under William McKinley, the “advance agent of prosperity,” to whom he referred in his first report as “the people’s President” who sympathized “with those who toil in the field, the factory, the forest, and the mine. He is solicitous that the Department become useful to all sections of our country, to the end that the greatest possible assistance may be given rural home makers.” Throughout his long service, in line with past traditions, Wilson put chief emphasis upon extended and improved production. He rejoiced, in his final highly personal report, at the material progress made under his stewardship during which the Department had “progressed from the kindergarten through the primary, middle, and upper grades of development until now it has a thousand tongues that speak with authority.” If the canny Secretary was hesitant to speak about, or perhaps not sufficiently sensitive to, the growing business problems of farming, he prepared the way by attracting to the Department men with the true research spirit. The appointment of graduates of the Iowa State College to important positions in the Department and the continuing interest of the Secretary (who was listed as dean of agriculture on leave until 1902), in the work of the College and in the farming problems of the State brought to Iowa agriculture unusual national attention.²⁸

Meanwhile, by the act of March 21, 1900, an Iowa department of agriculture was created to supervise and administer the regulatory and promotive activities to which the State was committed. The governing board consisted of the governor, the president of the State College, the state dairy commissioner, and the state veterinarian as members *ex officio*, and a president, vice-president, secretary, treasurer, and one director from each

²⁸ U. S. Dept. of Agric., *Yearbook*, 1897, 58; 1912, 258-9; Wallace, *Uncle Henry's Own Story*, 3:79-80; Ross, *History of Iowa State College*, 232.

congressional district.. The specific duties assigned were to hold an annual state convention and farmers' institute, to conduct the state fair, to cooperate with the Agricultural Experiment Station in investigations, and to publish the *Iowa Year Book of Agriculture*. This annual volume, which replaced the report of the State Agricultural Society, was to provide an indispensable record of all phases of the agricultural conditions and changes in the State. The specified topics of information to be included were the reports of the dairy commissioner, the state veterinarian, the director of the weather and crop service, the State Dairy Association, the Stock Breeders Association, and selected Experiment Station bulletins. The annual convention, in which representative farmers from the different production areas of the State discussed and argued issues of current interest, and to which experts from the State College and federal department brought information and advice, perpetuated in the new day one of the best features of the old state society.²⁹

The most generally appealing function continued to be the state fair. That institution expanded in these years to a great industrial exposition reflecting the progress in agriculture and the mechanic arts and afforded a cross section of the life and culture of the Corn Belt. Along with the informing aspects in exhibition, judging, and demonstration, amusement features continued to multiply and grow in spectator appeal. Horse racing reached the height of its attraction and the carnival was disturbingly obtrusive and dominating. To maintain a proper balance between exhibition and entertainment, to attract both rural and urban spectators, to remain solvent with all the risks of the weather and without admitting questionable attractions and concessions were perennial problems for the management here and elsewhere. So well was the balance kept and so compelling were the attractions that the Iowa fair was generally recognized as one of the greatest agricultural expositions.

The fair unquestionably attracted the most general attention of any

²⁹ *Laws of Iowa*, 1900, Ch. 58; John Henry Haefner, "Iowa State Department of Agriculture: Its Evolution," *IOWA JOURNAL OF HISTORY AND POLITICS*, 41:113-75 (April, 1943); George W. Willoughby, "Iowa State Department of Agriculture: Its Administration," *ibid.*, 41:225-86 (July, 1943). In 1898 after long agitation the office of state entomologist was created; the appointment was vested in the head of the department of the Iowa State College. In 1927 the office was made a division of the state department of agriculture. *Laws of Iowa*, 1898, Ch. 53; 1927, Ch. 68; *Iowa State Agric. Soc., Report*, 1878, 38; 1881, 11; 1882, 8; 1883, 9-10; 1885, 8; 1887, 37; *Iowa Year Book of Agriculture*, 1927, 15-16; 1933, 69-70.

of the state department's activities, but of even more determining concern for agriculture, as a whole and in special branches, were the regulatory functions. The high standing of the dairy industry, for instance, depended upon standards of production and products which were secured and maintained only by competent inspection and impartial enforcement of regulations. The perpetuation and expansion of the meat industry necessitated the effective combating of contagious diseases. Hog cholera was recognized as enemy number one. The disease, under various names, had been a menace since the sixties, with recurring years of especial destructiveness. After severe outbreaks in 1886 and 1897, the climax was reached in 1914 with the frightful toll of 6,304,320 deaths involving a direct loss of \$67,697,461. The suggestion of the president of the state board of agriculture in 1913 that the disease had tended to stabilize the price of pork by checking overproduction was a view that did not appeal to the average breeder who constituted a large proportion of Iowa farmers. Such primitive natural selection and uncertainty in the reduction of supply involved far too great a risk to the major undertaking. Instead there was a considerable fear lest the State's great industry might be vitally endangered. Obviously science and the agencies of governmental control were faced with a major responsibility and challenge. Iowa, the state with most at stake, became the battleground for a prolonged and relentless campaign waged by the federal Bureau of Animal Industry for the eradication or effective control of the disease. For some years the belief that hog cholera was caused by a bacillus made all efforts at immunization ineffective. However, as in other similar challenges, research perseverance was not to be frustrated. Three specialists of the Bureau, Doctors Marion Dorset, Charles N. McBryde, and William B. Niles, by intensive investigation from 1903 to 1908, traced the infection to a filtrable virus and developed a preventive serum. In 1913 the legislature established the State Biological Laboratory in the Veterinary Division of the State College for the production and testing of this serum. So effective were the new immunization treatment and improved sanitary measures that by the entry of the Nation into World War I the loss had been cut from twenty to thirty-fold under the peak years. This safeguarding of the Nation's meat supply was of supreme importance for the role of international provisioner which was about to be thrust upon the American farmer.³⁰

³⁰ *Laws of Iowa*, 1906, Ch. 170; 1909, Ch. 151; 1911, Ch. 114; 1913, Ch. 227; 1917,

By that time in the Tall Corn State individual effort, organized activity, and governmental aid and direction had gone far in realizing the possibilities of the new agriculture. In 1913 the State Department of Agriculture organized a publicity division "for the purpose of keeping before the people of Iowa the many natural advantages they enjoy; to disseminate information pertaining particularly to opportunities offered on Iowa farms; to publish pamphlets concerning agricultural problems, crop and farm statistics, etc." The official organ was the monthly publication, *Greater Iowa*, which reported achievements and opportunities.

The next year, as a suggestion of improvements that might be made in the existing system, the Extension Service of the State College began the publication of *Better Iowa*. Both achievements and undertakings as reported in these publications, in the *Year Book of Agriculture*, and elsewhere were most impressive. By the second decade of the century the State was leading in the production of corn and oats; alfalfa, which was not reported as late as 1905, had become a part of the standard rotation. Ensiling was being rapidly extended and perfected. The dairy industry, the main interest in its particular area and of supplementary importance in all areas, had adopted modern techniques and reached stabilization. Specialized, well-bred animals were coming to be a feature of a regularly practiced economy. Full mechanization was being attained; the crowning power element, the tractor, was available for effective utilization in war production. Cooperative buying and selling, directly and indirectly, were bringing an increased stability to marketing and finance.

As a result of the new agencies of transportation and communication, of the improved school system, agricultural extension, and the redirected community church, rural isolation was being overcome. As a local historian records the change in a northern county in the early years of the century, "we were indeed a proud neighborhood with King road drags, daily mail and the telephone. We felt that we had arrived."³¹ At the same time the new ways, with all their benefits and opportunities, occasioned new problems and responsibilities.

In spite of the feeling and evidences of prosperity and relative well-

Ch. 329; *Iowa Year Book of Agriculture*, 1913, 69, 519; 1914, 645-6; *Greater Iowa*, 4 (July, 1917); U. S. Dept. of Agric., *Yearbook*, 1922, 216; de Kruif, *Hunger Fighters*, Ch. 3; *Iowa Agriculturist*, 14: 61-7 (October, 1913).

³¹ Arthur Pickford, *Westward to Iowa* (Mason City, 1940), 87.

being of the farmer in these years, there were tendencies that were ominous for the future and certain immediate conditions that occasioned discontent and a measure of protest. Increasing land values, out of proportion to prices, involved the question of prudent investment as opposed to the risks of speculation. There were other signs of growing maturity, of the passing of the frontier and its opportunities for the small investor. The decrease of the State's population by over seven thousand, shown by the census of 1910, was to be explained mainly by the movement of home seekers to cheaper lands to the South, the Plains area, and Canada. Tenancy had grown from 23.8 per cent in 1880 to 37.8 per cent in 1910 with an increase of 2.9 per cent during the previous decade. In the same decade the number of farms had decreased slightly more than 5 per cent and the average size had increased 5.1 acres. In spite of the relatively favorable price trend in the decade, the reduction of farm mortgages was only 1.2 per cent; the credit problem was appearing in its modern phases.³² There was the optimistic interpretation of these conditions as natural results of the great and steadily increasing prosperity,³³ but to thoughtful observers the lack of satisfactory adjustment between production systems and investment structure was evident, while the unfavorable economic and social effects of tenancy were matters of common observation.³⁴

The perennial questions of tariff revision and of the regulation of public utilities appeared again in connection with the complaint against the disparity of agricultural prices in a period of sharply rising costs of living. To allay the discontent, a "counter-reformation" move was made by the regulars in the Republican state convention of 1901 in resolutions condemning discrimination in railroad rates and endorsing such modification of tariff schedules as "to prevent their affording a shelter to monopoly." Deliberately mild and ineffective as the declarations were, in a period of growing unrest against corporate abuses, they were hailed as the "Iowa Idea" of protest.³⁵ This gesture, however, did not allay the discontent.

³² *Iowa Year Book of Agriculture*, 1910, xxii-xxvii; Benjamin F. Reed, *History of Kossuth County, Iowa* (2 vols., Chicago, 1913), 1:325-8.

³³ *World's Work*, 9:6815-16 (November, 1905); Joseph B. Ross, "The Agrarian Revolution in the Middle West," *North American Review*, 190:376-91 (Sept., 1909).

³⁴ Benjamin H. Hibbard, "Tenancy in the North Central States," *Quarterly Journal of Economics*, 25:710-29 (August, 1911); Theodore M. Stuart, *Past and Present of Lucas and Wayne Counties, Iowa* (2 vols., Chicago, 1913), 1:152-3, Iowa State College Agric. Exp. Station, *Annual Report, June 30, 1915*, 31-2.

³⁵ George E. Roberts, "The Origin and History of the Iowa Idea," *IOWA JOURNAL OF HISTORY AND POLITICS*, 2:69-82 (January, 1904).

In 1905 the Iowa Corn Belt Meat Producers Association was organized to oppose discriminatory rates against Iowa shippers. Henry C. Wallace was secretary and Clifford Thorne, an energetic young lawyer of Washington County, was secured as counsel. In 1910 Thorne was elected to a reorganized state railroad commission which became increasingly aggressive in the protection of the Iowa farmer's marketing interests. The Association claimed a large share of the credit for preventing serious rate increases in 1915 and 1917.³⁶

The Progressive movement, which had been started rather prematurely by Governor Larrabee, was continued by Cummins both as governor and as United States Senator. During the Taft administration, Cummins was an outstanding leader of the insurgent group which was also joined by the erstwhile party regular, Senator Jonathan P. Dolliver.³⁷ The consequent Progressive revolt, while sufficient to give the State's vote to Wilson in 1912, did not have permanent effect upon the regular party alignment. The Iowa farmer was naturally conservative and would depart from established party allegiance or would support marked extensions of social control only under great provocation. The new agriculture was confronted with new risks and complications, but so long as times were relatively good few would be greatly disturbed over future trends. However, the critical test was not long delayed. Pioneer agriculture had met the demands of a great internal war at heavy and long continuing cost; how would the new agriculture with its intensified and accelerated means of production along with its increased sensitivity, meet the requirements of a global struggle, and how would it be affected by that test?

³⁶ *Iowa Year Book of Agriculture*, 1919, 455-61.

³⁷ Elbert W. Harrington, "A Survey of the Political Ideas of Albert Baird Cummins," *IOWA JOURNAL OF HISTORY AND POLITICS*, 39:339-86 (October, 1941); K. W. Hechler, *Insurgency: Personalities and Policies of the Taft Era* (New York, 1940), 16, 20, 26, 92-3, 107-111; L. Ethan Ellis, *Reciprocity, 1911: A Study in Canadian-American Relations* (New Haven, 1939), 131.