

Grade Two

# The **P**ALIMPSEST

JULY 1930

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### THE PURPOSE OF THIS MAGAZINE

THE PALIMPSEST, issued monthly by the State Historical Society of Iowa, is devoted to the dissemination of Iowa History. Supplementing the other publications of this Society, it aims to present the materials of Iowa History in a form that is attractive and a style that is popular in the best sense—to the end that the story of our Commonwealth may be more widely read and cherished.

BENJ. F. SHAMBAUGH

*Superintendent*

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### THE MEANING OF PALIMPSESTS

In early times palimpsests were parchments or other materials from which one or more writings had been erased to give room for later records. But the erasures were not always complete; and so it became the fascinating task of scholars not only to translate the later records but also to reconstruct the original writings by deciphering the dim fragments of letters partly erased and partly covered by subsequent texts.

The history of Iowa may be likened to a palimpsest which holds the records of successive generations. To decipher these records of the past, reconstruct them, and tell the stories which they contain is the task of those who write history.

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# THE PALIMPSEST

EDITED BY JOHN ELY BRIGGS

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## The Civilization of Corn

The idea seems to be widespread that the Indians developed the corn plant only part way and that the white man has improved it marvelously. The truth is that the Indians had every kind of corn that is grown to-day and a number of other varieties. White men have not put anything into the corn plant which did not exist there when the Indians ceased their corn breeding labors. What a marvelous job the Indians did with corn during the past ten thousand or twenty thousand years!

It is all a guess as to what may have been the wild prototype of corn. Botanists who have studied the question agree, however, that quite unusual work must have been done many thousands of years ago by the early Indian corn breeders in order to develop corn from its wild prototype to the state of perfection in which it existed when the white man first came to the North American continent.

Having given this tribute to the early Indian corn breeders, I must hasten to protect myself against those who know the type of corn grown by Iowa Indians and have compared it with the corn grown by present-day Iowa farmers. It is undoubtedly true that the corn now grown in Iowa does not trace its descent from the corn grown by Iowa Indians a hundred years ago. Most of our Iowa corn traces back to ancestry which came into the State from the East during the period extending from 1840 to 1910. It came mostly from Illinois and previous to that from Indiana or Ohio and still further back from Tennessee and Virginia, with some Pennsylvania and New England blood mixed in.

It is fairly certain that the Indians in Iowa grew eight-, ten-, or twelve-rowed flint and flour corn with rather broad shallow kernels. This corn was of blue, red, white, and yellow colors and the early settlers referred to it rather disrespectfully as "squaw" corn. The flour varieties of "squaw" corn were easy to grind and the Indians thought they had a finer flavor than the larger-eared, deeper-kerneled dent varieties brought in by the settlers from the East. The flint varieties were used for hominy.

The perfecting of dent corn is a story which probably will never be told. Undoubtedly dent corn existed long before the white man came to the continent, but apparently the Indians did not hold it in as great esteem as they did flour and flint varieties.

Possibly the climate was different several hundred years ago, which would account for the fact that dent corn was grown to some extent by the Indians of the southern States but not in the region now known as the Corn Belt. The Indians of Virginia, Tennessee, Missouri, and farther south apparently cultivated a kind of corn which the farmers to-day would call a shoe-peg dent corn. This extreme shoe-peg type of corn is now almost non-existent because it is so starchy that it will not withstand the diseases which accumulate where corn is grown on the same land several years in succession.

During the eighteenth and nineteenth centuries the farmers of Virginia, Maryland, and Pennsylvania both deliberately and accidentally crossed this deep-grained, starchy, shoe-peg corn from the South with flint corn from the North. These crosses between starchy shoe-peg corn and flint corn found their way west with the early settlers into Tennessee, Kentucky, and Ohio. To what extent corn grown by Indians in Tennessee and Ohio may have been incorporated with the corn from the seaboard is impossible to say, but the literature of the early nineteenth century indicates that there was a continual mixing of the flints and the shoe-peg strains.

The oldest of the varieties now grown extensively in Iowa is Reid yellow dent which traces to a cross accidentally made in 1847 in Tazewell County, Illinois. Robert Reid had come from Brown County in

southern Ohio in 1846 and had brought with him a late-maturing, large-eared corn which evidently was of the shoe-peg type. This corn did not germinate well in the spring of 1847 in central Illinois and so the poor stand was replanted with an early small yellow flint corn. The cross of the two gave a great diversity of type but Robert Reid and after him his son, James L. Reid, set themselves to pick out ears almost as large as shoe-peg corn but carrying kernels which were not so rough and had a larger germ and more hard starch. They tried to retain the high yielding power of the late Ohio corn and at the same time get earlier maturity. Most of this work was done from 1870 to 1890 and Reid's most striking triumph came in 1893 when he won a prize at the Chicago World's Fair.

Corn tracing to Reid yellow dent is probably grown on more millions of acres of land in Iowa today than all the other varieties put together. Yet Reid yellow dent did not come into Iowa in any large quantity until 1902. Previous to that time the most popular variety was Leaming. Leaming was not originated as early as Reid yellow dent but it came into prominence earlier because of winning a prize at the World's Fair in Paris in 1878. As a result J. S. Leaming of Ohio distributed his corn far and wide over the Corn Belt, and in Iowa previous to 1900 it was probably the most popular variety in the southern half of the State. Leaming was just as good a yielding corn as Reid yellow dent but it had a

slightly larger shank and was, therefore, harder to husk. Moreover the ears were not quite so pretty because the rows were not as straight, and there was a taper to the Leaming ears, whereas the Reid yellow dent ears were cylindrical.

Previous to the days of Leaming and Reid yellow dent corn in Iowa, the farmers grew very similar sorts which usually were just a little earlier, a little smaller eared, and a little shallower kerneled. These sorts, however, were of the same general mixture as Reid yellow dent and Leaming but had not been so carefully selected for pleasing appearance. Hundreds of these early unnamed varieties undoubtedly were just as good from a yielding standpoint as Leaming and Reid yellow dent. It should also be said, however, that hundreds of them were definitely inferior.

Real corn consciousness did not come upon Iowa farmers until 1902. Illinois had waked up a few years earlier and P. G. Holden, a graduate of the Michigan State College of Agriculture, was supposed to be one of the prominent young men in the Illinois corn movement. My grandfather, Henry Wallace, editor of *Wallaces' Farmer*, had always felt a very keen appreciation of the importance of corn in the welfare of Iowa. He watched the corn situation in Illinois with the greatest interest and urged the agricultural college at Ames to bring Holden into the State. I can remember the rather frequent corn conferences which Holden used to have

with both my father and grandfather. Incidentally I think they paid part of his salary for the first year or two.

With the college and *Wallaces' Farmer* behind him, Holden was able to stir up an enormous interest in corn during the following ten years. He was an evangelist with an unusual understanding of human nature. He established corn shows all over the State and brought with him Reid yellow dent corn. The corn show standards which he promulgated were of the sort which made it inevitable that Reid yellow dent would have things pretty much its own way in corn show competition. Reid yellow dent was a little later than most of the corn customarily grown in Iowa at that time and hence it was a better yielder in a good season on rich land. The better farmers on the richer soil took up with Reid yellow dent and profited very greatly thereby. Probably ninety per cent of the corn grown to-day in the southern two-thirds of Iowa contains at least some Reid yellow dent blood and is a result, directly or indirectly, of the genius of P. G. Holden for popularizing corn style.

There have been many men in Iowa who have spent all their spare time breeding corn. One of the earliest and most successful of these workers was A. J. Goddard of Fort Atkinson. More than half a century ago he began to work with the problem of finding high yielding early strains of both white and yellow corn for northern Iowa. Apparently he used

seed which came originally from Indiana and his problem was to pick out the early types. His yellow corn, called "Pride of the North", became popular in 1886 as a result of winning a prize at a Chicago exposition. His white corn known as "Silver King" won a prize at the World's Fair at New Orleans in 1884 and again at Chicago in 1886.

The publicity obtained in this way resulted in both Pride of the North and Silver King becoming quite popular in the northern part of the Corn Belt. Pride of the North is not grown extensively any more, but a selection from it by the Minnesota Experiment Station known as "Minnesota 13" is one of the most popular yellow dent varieties in the northern part of the Corn Belt. Goddard's Silver King is still the most popular white variety in northern Iowa. In my opinion A. J. Goddard was the most important Iowa corn breeder during the period extending from 1870 to 1900.

During the period from 1902 to the outbreak of the World War, corn shows animated by the spirit of P. G. Holden were the guide followed by the corn breeders of Iowa. Hundreds of farmers caught the contagion and bought seed corn from men who had won prizes. They then spent every spare hour during the late fall and early winter picking over thousands of ears in the hope of finding a few with just the right length and circumference and straight rows with wedge-shaped kernels of just the right depth and width and that intangible thing which

might be called corn character or corn personality.

Judges trained by Holden at Ames set the standard. While utility was not lost sight of the standards of the corn shows were fundamentally artistic. Hundreds of farmers developed a sense of the beautiful through the corn show. Other farmers who had no sense of beauty nevertheless had their attention centered on corn by the corn shows and as a result began to take a greater practical interest in selecting their seed corn.

After the World War the corn shows lost influence rapidly. H. D. Hughes, who had been professor of farm crops at Ames since 1910, experimented with a number of the different show strains of Reid and found that their yielding power varied tremendously, and that there was no particular relationship between the performance in the corn show and the performance in the field. Some strains of Reid yellow dent would actually yield twenty bushels an acre more than other strains. Apparently there were factors invisible to the eye which were of immense practical importance to farmers.

To discover these hidden yet valuable genetic factors, Professor Hughes launched the Iowa Corn Yield Test. Farmers sent in their seed to the Agricultural Experiment Station at Ames where these different kinds of corn were grown side by side on the same land, not only at Ames but also at a number of other places in the State. Some of the men who formerly had been active with Holden in the

corn show work turned their attention in this new direction and became quite successful. Among these were H. F. Osterland of Franklin County, Clyde Black of Dallas County, Fred McCulloch of Iowa County, and George Steen of Muscatine County. But in addition to these spiritual descendants of Professor Holden, other men who never had any use whatever for corn shows became interested — practical men who declared that they cared nothing about appearance just so the corn yielded well.

For the first time corn began to feel the compelling touch of modern efficiency standards. The men who picked corn for the corn shows had not been especially different in their methods of selection from the Indians. While their standards were somewhat different their methods were essentially the same. But now science came into the picture and with it careful methods of measuring — measuring not only the yields but also the percentage of moisture, the shelling percentage, the stiffness of stalk, the height of ear, and a great many other things.

The influence of this shift in point of view was demonstrated in 1925 when hybrid corn won the yield test for the first time. Each year since then hybrid corn has continued to produce the greatest yield. Hybrid corn in the modern sense of the term was developed by a method which was unknown to the Indians. The method was first discovered about a quarter of a century ago by George Shull now of

Princeton University and at that time located at Cold Spring Harbor on Long Island. The first to try to make a practical application of this method in Iowa were H. A. Wallace and Simon Casady, Jr., of Des Moines. In 1922 Mr. Casady had a contract with the Iowa Seed Company to produce an acre of corn by crossing two inbred strains. But this commercial venture was not very successful because the wrong inbreds were used.

Since then, however, Wallace and others have perfected the technique until now several firms are selling hybrid corn to Iowa farmers. In the spring of 1930 about five thousand bushels were sold or enough to plant about thirty-five thousand acres. Compared with the total acreage of Iowa corn this was a drop in the bucket but it is expected that during the next ten years the shift to hybrid corn will come rapidly. Since 1922 the Experiment Station at Ames has been inbreeding corn on a very extensive scale. So also have most of the other Corn Belt experiment stations. They have found large numbers of promising inbreds and know how to combine them with other inbreds to produce heavy yields. Distribution of this splendid genetic material will take place within the next four or five years.

When the Corn Belt shifts over in considerable measure to hybrid corn there will be some rather strange developments. A few farmers will do nothing but maintain inbred strains in isolated plots. This inbred corn will be remarkably uniform but

rather poor in appearance. Its redeeming feature will be the fact that previous experiments have positively proved that it will combine with certain other inbreds to do remarkable things. While only a few farmers will maintain inbred strains, a larger number will cross inbreds. Strain A in one row will inbreed in strain B in another row if all of the tassels are pulled out of strain B in July. This is the primary crossing stage. Final commercial corn will be produced by crossing two primary crosses the following year. For example corn A-B will be crossed with corn C-D. To produce the necessary seed will require the detasseling of three out of four rows on thousands of acres of corn. The process is detailed and technical but follows the normal laws of heredity.

The corn of the future, produced by these new methods, will not look especially different from the corn of the past. It will merely be more efficient in the use of soil fertility, and the stalks will be stiffer and more wind resistant.

In one sense corn will never be civilized. Probably it will not contain any valuable factors which were not there when the white man first came to the North American continent. The white man with all of his corn shows, his science, and his hybridizing will not have added anything new. The arrangement of the genes in the corn plant will be somewhat different than when Indians were engaged in corn breeding. The corn plant will respond more defi-

nately to the particular needs of the white man as they change from decade to decade. But no matter how much the white man may accomplish in rearranging the corn genes, he may well remain humble as he contemplates the accomplishments of the corn breeders of ten thousand years ago. Corn has done more for the white men of Iowa than the white men have done for corn.

Corn growing methods, of course, have changed very rapidly during the past century. The Indians grew corn in hills just as the white man does, but they did not use horses or iron tools. Their bone hoes were big and clumsy and it took six or seven hours of man or squaw labor to produce a bushel of corn.

The first white men in Iowa grew corn like the Indians except that they used iron tools and horses. At first they planted their corn by hand and cultivated it with a plow having one or two shovels and drawn by a single horse. Two-horse cultivators of the single-row type were first used in Iowa during the early sixties. Horse-drawn corn planters were also introduced in the sixties but they required an extra man stationed on the machine to control the dropping mechanism.

To-day four-row corn planters, four-row cultivators, and two-row picking machines are pulled by tractors. With this machinery it is possible to produce a bushel of corn with five minutes of man labor and five minutes of tractor labor, though most of

the farmers of Iowa still require about twenty minutes of man labor and fifty minutes of horse labor to produce a bushel. Most Iowa corn is still planted in hills, but with this exception our corn growing methods are totally different from those of the Indians. Iowa in the days of the Indians produced only a few thousand bushels of corn. To-day 11,000,000 acres are planted to corn and the crop is usually worth over \$250,000,000.

Our machines and large scale operations have changed corn production methods steadily decade by decade ever since the white men took possession of the State about eighty years ago. Although a bushel of corn can be produced now with only two or three per cent as much labor as the Indians used, we have not yet accomplished anything very marvelous in corn breeding. There is reason to believe, however, that the next eighty years will see more significant changes in corn breeding than the past eighty years, and that the changes in corn machinery will be equally great.

H. A. WALLACE

## The Passing of the Herds

Whenever a group of old Iowa settlers get together the chances are that sooner or later the conversation will turn to the herds of cattle that marked the first use of the prairies of Iowa by the white man. These herds appeared at the beginning of settlement, and from that time until about 1890 cattle were herded on such land as had not yet been taken into farms.

In the southeastern part of the State settlement progressed so rapidly that the herds lasted but a short time. To the west and north there was a longer period during which sections of land were still available for grazing, and consequently herding lasted longer. Settlement progressed across the State from southeast to northwest so that the same stage of development appeared from thirty to forty years apart in different sections of the State.

In Wapello County there were herds in the late fifties, but only for a few years, until settlement took up all the available grazing land. In Jasper County there were enough cattle to start herding between 1860 and 1862. Immediately after this, settlement was greatly slowed down for four years during the Civil War. In the late sixties there was still a good deal of unused land in Delaware County, but there seem to have been but few regular herds

on it. For the most part the cattle there ran loose on the prairie.

About 1870 the business of herding began to be more highly developed and herds were organized coöperatively by settlers in the older sections to make use of the free pasture still available for a good many miles to the west and north. In the *Iowa Homestead* in 1872 it was said: "Stock can be herded anywhere in the state, by good reliable herdsmen, at a cost not to exceed \$2.00 per head for the season. In such case they can be salted and cared for, and be subject to the inspection of the owner at any time; while if turned loose, on the prairie, the time spent in hunting, together with the loss by straying, would amount to more than two dollars per head. . . . This is now becoming the practice in many counties where farmers have not range left in the vicinity of their home."

In Black Hawk County there were a few herds in the sixties, but during the seventies herding came to an end and cattle were driven from the neighborhood of Cedar Falls to Cerro Gordo and Kossuth counties for summer pasturing. Between 1875 and 1880 the same process of transition from keeping herds near home to driving them farther northwest was in progress in Lucas County and somewhat farther to the west along the Mormon Trail. In 1880 herds were being driven west and north from Fremont, Cass, and Dallas counties as well as from Black Hawk. By 1885 most of the land that was

not already in homesteads was being used for grazing by these herds, and the new comers generally had a hard time finding pastures. In the northwestern part of the State public land was available longer, and there a few herds were still to be found in 1890.

The herds were made up in the spring as soon as there was pasture, and were driven to the grazing ground. There the herder usually had a shack in which to live. He tended the herd on horseback during the day and generally, though not always, corralled the cattle at night to prevent straying.

Herds numbered from one to two hundred head. Sometimes they were much larger, and herds of four to six hundred were not rare. The herder who received from \$1.50 to \$2.00 per head per season, was fairly well off for a working man. In addition to these wages he often owned some of the cattle in the herd himself, if he were ambitious. There was a real opportunity in the business which some of the herders used to good advantage.

In 1879 Robison Baxter bought up a hundred calves in and around Delaware County and drove them to Ida County where he had recently settled. In addition to these he collected a large herd of cattle from the farmers of Ida County and tended them with the help of one other man. At one time the whole herd amounted to nearly fifteen hundred head. The Delaware County calves were run with the herd at very little expense until they were four years

old. Baxter was unusually fortunate because these calves were sold during the period of high cattle prices in 1883 at \$6.50 per hundred pounds, bringing nearly \$100 per head.

In all sections of Iowa it was realized that the practice of herding was to be shortlived and would come to an end as soon as enough settlers appeared to take most of the land into farms. The herds simply withdrew from each section as settlers moved in. But on the actual frontier of settlement there was frequently a conflict between herders and settlers whose crops were injured by the herds. In most counties, also, there was at some time a political battle for the adoption of the herd or fence law.

Along with the crops came fences. Strange as it may now seem, fencing was a much debated question in Iowa in the early years of its settlement. In the first place fencing material was scarce and expensive. Consequently there was an incentive to use it as sparingly as possible. As a general thing the men whose chief interest was in cattle felt little need for fencing. It was cheaper for them to herd their cattle or else to turn them loose on the prairie and round them up from time to time, at least in the fall.

On the other hand the small settler was ordinarily poor and did not have enough capital to own very many cattle. He was forced to get most of his income from crops or at least to raise as many acres of crops as he could handle. If a near-by herder was

careless of his charges for a single night the settler might wake up in the morning to find the greater part of his season's crop trampled down or eaten off. Consequently fencing of some sort was essential to the settlers, but it was a matter of considerable debate whether it was most economical to put the fence around the pasture to keep the cattle in or to put it around the crops to keep the stock out.

The lack of fences in the early communities was a serious obstacle to the improvement of the stock. In 1865 H. B. Hoyt said, "Until we have a more stringent law in regard to male animals roaming at large, those who would improve their stock, cannot." Consequently most of the more progressive farmers were heartily in favor of a law to compel herding or fencing, and preferably the latter.

But the argument was not all on one side. There were those who had invested what little capital they had in cattle. They soon discovered that the "poor man's rights" were being invaded. It was said by Warren Spurrier of Johnson County in a debate in the "Farmer's Club" of the legislature, "The poor man with eighty acres of land can keep as many cattle as the man with his many sections, as long as he is not required to fence them in."

J. W. Cessna of Nevada said in the *Iowa Homestead* that the free pasture would be lost by the herd law, to the serious injury of the man of moderate means. "As it is he can invest every spare dollar in young stock, turn them out on the unbounded

pastures of Iowa, and by a few dollars thus expended, he would receive a greater return with less labor than from all the rest of his farm. But deprive him of this privilege by your herd laws, and compel him to herd his cattle through thick and thin, at cost of \$2.00 per head, and you have taken away one of the greatest inducements to men of small capital, in the East, to emigrate to Iowa."

In 1871 it was said concerning cattle running at large that "it is a part of our peculiar civilization which demands that stock shall be free commoners, and any law to the contrary will work an injury instead of a blessing."

As the State filled up with settlers the arguments in favor of the herd law increased in number and urgency. Consequently in 1870 the legislature passed a law making owners of live stock running at large liable for any damage done by them. The owner of any cultivated land was given a lien on any wandering stock, and means were provided by which he could collect from the owner for any damage done. The enforcement of the law was left to local option.

The board of supervisors of each county was given authority to determine each year whether the county should vote on the adoption of the law. In 1872 the local option feature was extended to the township, which was to vote on adoption of a petition signed by one-third of the voters of the township. In 1874 the features of the law were extended

so that on a petition signed by one-fourth of the voters of a county, or on their own initiative, the county supervisors might submit to a vote the restraining of stock from running at large, or of restraining them between sunset and sunrise, or between such dates as might be named in the ballot.

The local option feature did not seem to please any one very much. "In many cases adjoining counties voted in opposite directions upon it, and the border wars which have ensued, make matters worse than before. We have need of a general statute or nothing, and it is the duty of our representatives to put this matter at rest this winter. Petitions for such a law will not be wanting; the whole bent and tendency of civilization is in its favor, and there is nothing opposed to it but the vestiges of a very early condition of things, which still lingers about the timber, and looks with ill concealed dislike upon those who are toiling to make homes upon the prairie, and by making them are 'spiling the range'.

"What more direct argument in favor of the herd law, in an economic point of view, personal to every farmer in the northwest, are the columns of the *Homestead* filled as they are every week with estray notices of cattle and horses which have been turned into space in the fashion common here, and who have wandered aimlessly off, to be recovered only at an expense, as often as any way, equal to their value."

On the whole, it seems that the local option feature was at this time one of the most valuable features of the law. Some sections of the State were already well settled and in need of the protection to crops which the herd law gave. In other sections, still relatively unsettled, there were two reasons for leaving the prairies unfenced. In the first place, it was cheaper to fence the few small areas in crops. In the second, to compel the fencing of the pastures would have diverted an important part of the scarce capital of the owners of live stock into a relatively less productive use than the enlargement of their herds. Thus the herd law moved westward along with increasing density of settlement.

In the eastern and central parts of Iowa there was but little conflict between the settlers and the herders. Of course, a large number, perhaps most of the herds, were coöperative and belonged to the settlers. But even the herds owned by cattle men rather than farmers generally moved whenever settlers became numerous. As long as they could secure other grazing land at little or no cost there was no reason for their staying in a neighborhood where their cattle were likely to stray into settlers' crops and cause unpleasantness.

Even the much discussed fence laws were not aimed at the herds which were regularly tended on the prairies, but rather at the straying cattle of other settlers who did not bother to fence them in. However, the fence laws put the herders at a disad-

vantage to some extent by forcing a closer watch of the stock and by putting the responsibility more definitely on the herders. Consequently the business came to have more and more unpleasant features as time passed.

The settlers, protected by the fence laws, and with a growing sentiment against live stock running at large, were inclined to plant their crops with little or no fence. If the cattle of a near-by herd wandered into a settler's corn field the peace of the neighborhood was pretty likely to be broken. If a herder unwittingly drove his herd into a patch of wild hay that a settler intended to cut for his winter's forage, an argument was likely to occur in which each party considered himself fully in the right.

This was by no means a new cause of trouble in the settlement of the country. In the early settlement of New England it is said that the straying of cattle from the settlements into the Indian's corn fields was among the most frequent causes of trouble. The Indian liked beef as well as venison, however, and had less compunction about shooting the trespassing cow than did the white settler in Iowa over two hundred years later.

In Iowa the herders and the settlers seemed to come into actual conflict only in the last years of herding. At this time, however, the relationship between the adherents of the two systems of production became very unpleasant. In Pottawattamie County during the late seventies and early eighties

encounters occurred between armed groups of settlers and herders whose cattle had ranged over the unenclosed wild hay and occasionally broken into the crops.

At last the herders had no place to go. The country to the east was already settled. To the west was the Missouri River and across it in Nebraska the country was rapidly filling up with settlers. Consequently they were inclined to insist more stubbornly than before on staying where they were. The herders were warned to take their herds out of the neighborhood. They protested vigorously, but finally complied. A few of the herds crossed the river at various places and moved on westward with the frontier into Nebraska and the Dakotas. But most of them "went west" in another sense. The herds were gradually disbanded and simply ceased to exist.

JOHN A. HOPKINS, JR.

## The Coming of the Legumes

There is no indication that legumes occupied an important place in the early agriculture of Iowa. An abundance of pasture and forage crops greeted the early pioneer; his problem was the production of concentrated food such as wheat and corn. And by the time he had developed an interest in legume crops certain of those introduced from Europe were so well adapted to the American environment that he escaped many of the discouragements encountered by his predecessors.

There are many legumes possessing varied characteristics, one serving best one set of requirements and another others. Of these, the first introduced and generally grown in the colonial States, from which many early Iowa families migrated, was red clover — which probably accounts for the fact that possibly ninety-nine times out of one hundred when an Iowan thinks of legumes he has red clover in mind. But between its introduction into America and its arrival in Iowa is some interesting history, intimately associated with our present-day use of the crop.

It is now a matter of common knowledge that many years, sometimes decades, are required to acclimate a crop to a new environment. Evidence recently available indicates that the lapse of a century

was required for red clover, through natural selection, to become sufficiently hardy to survive Russian winters. Strains from central Europe are unsuited to conditions a little to the north; likewise, seed from Italy and southern France is poorly suited for use in central Europe.

So, looking backward, the difficulties and discouragements encountered by the pioneer farmers of the eastern States may be imagined. Each farmer was of necessity his own seedsman as well as his own "experiment station". When first brought into New England, clover seed was clover seed, and little attention was given either to its origin or its potential adaptation to local requirements — a condition which has continued almost to the present day. For indeed it was less than a dozen years ago that the first serious attempts were made to determine the relative value of clover seed from different sources.

Not enough red clover seed for planting has been produced in this country. Consequently a considerable amount of seed was imported, most of it from Europe, particularly southern Europe — an average of nearly 12,000,000 pounds annually. During the past ten years, through the coöperation of the Federal Department of Agriculture, hundreds of samples of seed from different parts of Europe have been tested at the Iowa Experiment Station, while other hundreds, taken from cargo import shipments, were also grown for comparison with Iowa and other domestic seed. While perfect stands were

secured with the European seed, the imported clover lacked winter hardiness and if the conditions were at all severe the plants were likely to be almost entirely dead the following spring. In those cases where it did not winter-kill, the growth was likely to be so inferior in the second year to that secured from domestic seed that farmers could ill afford to plant it even if supplied at no cost.

It was evident much of this imported seed was being sold in Iowa and there was no way in which either the seed dealer or the farmer buyer could identify it. As a result, through the influence of the Iowa station and others, Federal legislation was enacted requiring the United States Department of Agriculture to stain all imported seed, in order that its identity might be positively known both by the dealer and the farmer.

While testing the imported lots of seed, comparing them with the domestic lots, differences other than winter hardiness became apparent. The imported clover was very susceptible to certain disease organisms which often proved fatal, and to which American strains grown under the same conditions were almost immune. But in many seasons the imported clover became almost wholly non-productive in the second cutting — the seed crop — and the trouble could not be traced to disease injury. What was the difficulty?

The American clover differs from the European not only in winter hardiness and disease resistance

but also in certain other ways. One of the most noticeable of these is that the American strains of clover are all hairy, with the hairs extending at right angles to the surface of the stems, while the European strains are smooth, or if not entirely smooth, with the few hairs compressed. The cause or causes which brought this about has been a matter of speculation. The answer was found only some three years ago when E. A. Hollowell, a former Iowa State College student, discovered that the imported clovers often were almost destroyed before the end of the second season of growth from injuries inflicted by a minute leaf-hopper, the same insect which it was discovered some fifteen years ago was responsible for tipburn in potatoes.

Working with the different types of clover and alfalfa available he found that the degree of injury was almost in direct proportion to the hairiness of the plant. By midsummer the smooth European clover was so weakened that it could not produce a seed crop, while the American type, with its hairy surface, was largely immune from injury. Thus it became evident that the leaf-hopper was one of the enemies this clover encountered in its fight for existence under the new environment, and the warfare waged generation after generation, unseen by the eye of man, ultimately evolved a truly American type of red clover.

Still another evolution has been suggested as a result of the general disappearance of the bumble

bee, brought about by plowing the wild grass land where these insects are wont to nest. It is now generally accepted that self-fertilization in red clover is practically impossible, and that for every seed produced it is necessary for an insect to crowd its proboscis deep into the heart of a clover flower. The bumble bee was the only insect generally prevalent with a proboscis sufficiently long to reach the nectar. Of late years a relationship between clover seed crops and the proximity of honey bees has been observed; and the theory has been advanced that the present-day clover has a corolla tube somewhat shorter than in previous years, that this has come about as a result of variation in the length of the corolla tube on different flowers, only those with the shorter tubes being visited by honey bees and producing seed. And so the process of change goes on, producing plants best suited to survival and of the greatest value under existing conditions.

Through a considerable period of years red clover may be said to have been the only legume grown as a field crop in Iowa. Mention made of red clover in the reports of the various county agricultural societies in the early fifties would indicate that scattering plantings were being made at that time, but with much more attention given to tame grasses and especially timothy. By 1880 the acreage of red clover was considerable. In fact "clover" was listed separately from other hay crops in the statistical reports of the State for that date. While red clover

had become an established crop, the acreage in proportion to other crops remained small. "Uncle Henry" Wallace was probably more largely responsible than any other one individual for the high appreciation which Iowa farmers have come to have for red clover. Ever and anon, through a long period of years, "Uncle Henry" stressed the value of this clover as a feed and as a soil improver.

Considering our combined need for hay, pasture, and soil maintenance, red clover is probably better suited to our soils and cropping systems than any other legume of which any one knows. But the high prices demanded for red clover seed — as much as \$25.00 per bushel — led many farmers to substitute other legumes. At the time red clover seed was most costly, the price of sweet clover seed was very low due to a rapid increase in seed production.

Perhaps no development in the legume history of Iowa is more romantic than the successful emerging of sweet clover as a desirable field crop after a long battle in which this particular plant was regarded as a persistent and troublesome weed. It was finally recognized as a soil improving crop before its value was conceded for any other purpose except as bee pasture. To-day it is everywhere regarded as a valuable legume crop, and in due time its increasingly extensive use as one of the most nutritious and valuable of our forages, as well as a green manure capable of improving our soil as few crops can, will entirely obliterate the prejudices of the past. Its

present position in our agricultural program is accurately indicated by the experience of one Iowa seed firm which in 1926 sold 18 carloads of the seed, as compared with exactly 18 bags just ten years previously.

Frank Coverdale of Maquoketa was more largely responsible than any other man in creating interest in sweet clover as a field crop. First growing sweet clover about 1900 for bee pasture, he also farmed extensively and was soon convinced that the clover had great value for pasture and soil improvement as well as some value for hay. Mr. Coverdale wrote constantly for the agricultural journals regarding the results which he was securing. Judge William B. Quarton of Algona also did much in popularizing this legume through his articles in the press. While there were other men in the State who used sweet clover extensively as a field crop before Mr. Coverdale took it up, they had little influence in popularizing it except in their immediate communities.

From the time that sweet clover was first handled commercially as a field crop great dissatisfaction had been experienced because of the difficulty in securing stands. Many seedsmen were about to abandon the handling of sweet clover entirely when the Farm Crops Section of the Iowa Experiment Station announced the perfecting of the Ames hulling and scarifying machine, providing a practical means for scratching the "hard" seed coats of sweet clover seed, making it possible for these seeds to absorb

moisture and germinate promptly. The scarifier came into almost immediate use throughout the country, so that within a very short time little or no sweet clover seed was offered which had not been scarified. It is altogether probable that sweet clover would never have become an important field crop except for the scarifying of the seed.

Previous to 1916 the only known types of sweet clover which were of any value under Iowa conditions were biennial. These clovers had large succulent roots and, when seeded in small grain and fall plowed, volunteered profusely in the following spring—in many cases producing almost as good a stand as existed before plowing. While this difficulty could be avoided by delaying the plowing until late in April of the second year, many farmers reported that their soils were heavy and in many seasons the land was in no condition to plow from early spring until the corn should be planted.

In 1916 a large number of lots of biennial white sweet clover were planted at the Iowa Experiment Station, in one of which a few plants were discovered which came into bloom and set seed that year, proving them to be annual. It was found that when planted alone in the spring on soil of fair fertility this new clover often made a growth of four to seven feet while seedlings made with small grain would produce a crop following small grain harvest. The value of this clover for seeding in small grain as a green manure crop which could be plowed down in the fall

of the first year without any danger of the crop volunteering in corn the following season was readily apparent; but not until the past two years has the cost of seed of this annual type, known as Hubam, become sufficiently low to permit its general seeding in this way. Where plowing can be delayed until the following spring the biennial types give a considerably greater return in nitrogen and organic matter.

There remain two other legumes which have come into general use in Iowa within the last twenty-five years. For many years alfalfa had been successfully grown on the Missouri loess soils in the western part of the State. And following splendid results secured at Ames from 1900 to 1910, without either liming or inoculation, it was concluded that alfalfa could be successfully grown throughout Iowa without any soil treatment. However, in 1910 the Experiment Station asked the coöperation of individual farmers scattered throughout the State in making experimental plantings on their own farms.

The results secured, which were published in Iowa Experiment Station Bulletin 135, in 1913, did much to stimulate interest in alfalfa growing and to make possible the satisfactory results which have been secured in all parts of the State. For these studies showed that on approximately ninety per cent of the soils inoculation was essential, and that for the successful production of alfalfa it was necessary to apply lime before seeding on fully two-thirds of the soils of the State.

In 1910 alfalfa was being grown on less than twenty-five thousand acres in Iowa, with practically all of this in the southwestern part of the State. Following the report of the Iowa Station studies, the acreage increased rapidly with over two hundred thousand acres in 1920 and approximately four hundred thousand at the present time. During the past twenty years alfalfa has received several serious setbacks owing to excessive winter-kill. However, an increasing per cent of the more recent seedings have been made with varieties and regional strains known to be winter hardy, especially the Dakota common and the Grimm.

But both alfalfa and sweet clover require soils either naturally sweet, or those to which lime has been applied, and we have many soils, particularly in the southern half of Iowa, which are distinctly acid. It is on such soils that the soy bean is of particular value. This legume will grow well on almost any soil, heavy or light, rich or poor, wet or dry, acid or alkaline. It is a very sure crop, one which can be seeded at any time through a period of several weeks, with the practical assurance of a return before frost of from one and a half to two and a half tons of hay per acre — hay which approximates alfalfa in feeding value. If hay is not desired, a yield of from fifteen to twenty-five bushels of beans may be had. The demand has been such that in the past most of the good quality beans have been marketed as seed. With the recent establishment of two soy

bean oil mills in the State, with the prospect of others soon to follow, a home market for the beans is provided which will stimulate production.

Of the varieties of beans first introduced many shattered very badly when mature while others gave low yields. Hundreds of unnamed strains introduced from the Orient, as well as all promising varieties, have been compared to determine their adaptation to Iowa conditions. It was not until the Manchu and Black-Eye-Brow varieties were distributed from the Iowa Experiment Station that a rapid increase in acreage began. The Manchu has been grown almost to the exclusion of other varieties for a number of years and only now is giving way to superior types. By far the largest acreage of beans is found in the southern part of the State, particularly in southeastern Iowa, where from two to five thousand acres per county is common.

Of the five to eight thousand queries on crop problems annually received by the Farm Crops Section of the Experiment Station at Ames, more have to do with legumes than with other crops. This fact indicates the trend of thought of Iowa farmers. The acreage of legumes in proportion to other crops is still lamentably low — in a number of counties less than five per cent. Legume planting must become much more general if our cereal crops are to be fed most profitably and the productivity of our soils maintained.

H. D. HUGHES

## Hogs to Feed

“Take down the bars, boys, and stand back.”

The gate was down. A long legged, sharp nosed, thin backed creature detached himself from his mates and went sniffing toward the opening. The long bristles stood up on his back. He was wary, he was truculent, but he was hopeful. In that pen surrounded by a fence ten rails high (for a razorback could jump like a greyhound) twenty hogs had been kept for six months. Most of them were two years old; they had been fed corn steadily since they had been shut up; the heaviest weighed less than two hundred pounds.

Back from the pen, on the side away from the road, six boys on horseback waited. Eight men and older boys were on foot, armed with heavy clubs.

The leading razorback stepped gingerly over the bottom rail, sniffed the air, gave a sidelong glance at the men and at the open road ahead. “Whoof”. It was a snort that made the horses jump. The razorback was off down the road, and after him the snorting herd.

“It looked to me like they were going twenty feet at a jump”, an old timer says. “The fellows on foot couldn’t begin to keep up. The boys raced their horses for half a mile after them and then the hogs scattered into the timber.”

Nobody was very much alarmed. After all, the hogs had started in the right direction. Nobody expected to do much driving the first day.

"They'll find each other in a couple of hours," said the owner comfortably. "Then we'll herd 'em back on the road again."

Sure enough, in two hours a scout on a pony found the herd. The drivers came up. The hogs, a little tired by this time, were edged back to the road. Two miles farther along, however, the herd began to gallop again and finally to scatter. The men waited; the herd reassembled; it was herded back on the road; by late afternoon, the hogs were driving well. By evening, they were worn out enough to be driven into a corral. The extra herders had gone back; the men who were making the drive went into the farmhouse for supper. They slept that night on straw on the barn floor. Next morning the drive would go on.

This was the way they marketed hogs in Iowa before the Civil War, in sections where the hog had to furnish its own transportation to market.

We do it differently to-day. Breeds are different; feeding methods are different; so are marketing methods. One thing remains the same in 1850 and in 1930. The hog was then, as he is now, the major source of income for Iowa farmers. Listen to J. H. Wallace, secretary of the State Agricultural Society, at the January meeting in 1860. After noting that the pork sold from Iowa would amount to

\$1,800,000 in the previous year, he added: "The hog crop of Iowa the past two years has been the salvation of the state. Without it, many farmers could not have paid their taxes. It has saved the state from bankruptcy."

In 1929, the Iowa farmer had a gross return of \$262,938,000 from hogs. This was 36.4 per cent of the gross agricultural income for the State. The hog is still important, but we raise a few more.

Where did the first Iowa hogs come from? Early settlers found lean sows rooting for acorns in the timber of southeastern Iowa. De Soto brought hogs with him in 1540; some escaped as far north as Arkansas and probably worked up into Missouri. There may have been Spanish blood in the early Iowa razorback. More likely is the guess that hogs moved westward faster than the pioneers. Settlers brought hogs with them as they worked into the back country east of the Alleghenies; some hogs escaped to the timber; the hardiest survived and went rooting westward. This process was repeated as the frontier moved west, so that the wild hogs were being replenished by hogs only less wild that had tired of the pen.

How did they escape wild animals? Apparently most wild animals were glad to stay out of their way. In the fifties, a sow got out of her pen on a Webster County farm and started down the river. An incautious she wolf and three cubs attacked her. The farmer who was trailing her found the bodies

of the wolves; the sow herself, unhurt, was picked up a mile or two farther on.

A Van Buren County farmer, who has listened to stories from his father and uncle who came into Iowa in the forties and fifties says: "Father tells of being sent to the timber to feed the mother sow. Tales of her prowess in defending her young and the manner of her appearing from the nest, caused him to throw the corn and make a dash for home. . . . These hogs were rather tall, with extremely heavy ears, of no particular breed but resembling in color the Spotted Poland of to-day. These hogs sported plenty of bristles which were wont to stand erect when anything went wrong; a disposition to wander far in search of food; and a disposition unpleasant, to say the least."

Before the railroad, the main markets for hogs were at river towns, though some drove clear to Chicago. One Clinton County pioneer says: "We tried to get these pigs to 125 or 150 pounds and then join with the neighbors in November and start for Chicago. I think it took over a week to get there. And to-day you wouldn't call them hogs. They had plenty of legs, but no hams."

At the river a number of small packing plants sprang up, and some not so small. Alexandria in Missouri got the hog business of southeastern Iowa, though its real boom days came after the Civil War. Pork was salted down in barrels for the southern trade. It was a big item in steamboat freight.

Not all hogs were driven in and killed. At many points, farmers killed at home in winter, dressed the hogs, racked the frozen carcasses up like cordwood on sleds, and drove into town to the packing plant.

The day of the wild hog passed quickly. Along the river, he began to be displaced as the steamboat trade offered a handy market for pork. Back from the river, better and heavier hogs were brought in as the railroad crept West. By the time of the Civil War, railroads had reached Cedar Rapids, Iowa City, Washington, and Ottumwa. As "Uncle Henry" Wallace said, "the railroad had shortened the nose, shortened the legs, done away with the bristles, put a more lovely kink in the tail and changed the color from mixed white and black to black, white or red."

It was not until the sixties, however, that breeds we recognize now began to show up clearly. Before that there were white hogs, something like our Chester Whites, black and white hogs with a sandy mixture in the white, that resembled our Spotted Polands in color. But they were great improvements on the first razorbacks. An Adams County pioneer says of the hogs that succeeded the wild hogs in the fifties: "As I look back now over those earlier years, I am more than impressed at the splendid quality of some of the hogs raised on our farm. They were not as good as the present-day hogs, but they were far better than what many people would expect."

Marketing troubles were not over when the rail-

road came. Early trains ran on uncertain schedules and accommodations for live stock were bad, stock cars being nothing more than flat cars with side boards. Up in Fayette County, the first stock train ran into difficulties. A farmer of that section reports: "The engine brought only one car. It was so cold that the little streams around here were frozen over, so water was hauled in barrels a distance of four or five miles. The engine boiled it away as fast as it was hauled. Finally the engine with the loaded stock car moved out of town to a big slough, where the train men tried to get a supply of water but failed. The buyer unloaded his hogs, bought all the corn and straw he could find and kept them until the weather warmed up sufficiently to warrant the engine coming back."

Out in the prairie country, where railroads had not come, the settlers were under a double handicap. They were a long way from market; drives of one hundred and seventy-five miles or more are on record; and they apparently did not have wild hogs trained for long distance work. The razorbacks stayed in the timber, and the prairie settlers brought out better hogs, but hogs that had a harder time on a long trip. Many butchered at home, stored the meat and sold to settlers going West; some hauled the meat to the nearest towns. When they did make long drives, the distances traveled each day were shorter and wagons followed the herd to pick up the cripples. One long drive in 1865 was from Monona

County to Yankton, South Dakota. Ox teams went ahead to leave corn for feed; wagons followed to bring up cripples; the hogs, disliking bridges, had to swim the Floyd and Big Sioux rivers. Since a hog, in swimming, may cut his throat with his sharp fore hoofs, drovers who swam herds across rivers often had to stop and butcher to save the carcasses of hogs that were killed in this way.

Feeding methods, even of these better hogs, remained primitive. "Hogs were turned out on the range in the spring and allowed to forage until fall", writes a Lucas County man. "The sow farrowed out on the range and produced one litter a year. Pigs farrowed in late May or June were not put in the fattening pen until the following year after the new crop was ready to feed." A Crawford County farmer says: "Hogs ran at large, finding shelter in timber tracts and feeding on grass roots, acorns, hazelnuts, wild fruits, artichokes, etc. Rye was sown in small plots and hogs allowed to feed in it until it matured. The shattered grain reseeded itself for several years. Corn and pumpkins were planted and the hogs turned in when they were ripe." It will be noted that "hogging down" is not a modern invention.

Supplementary feeds were rare then. One northwestern Iowa farmer astonished the buyers with hogs that outweighed his neighbors'. He had a fish trap on the Little Sioux and fed fish to the hogs, thus giving them a balanced ration. Another man

reported: "To make pork profitably, hogs should be pastured in the summer; shut up the first of September and started on cooked swill made up of pumpkins, potatoes, beets, carrots, etc., adding two bushels of corn and oatmeal to the barrel. Increase the meal gradually — using little or no roots for the last six weeks — feeding cooked meal, dry corn and water, alternately." Another advanced feeder said: "Hogs should be fed regularly twice a day, should have salt, water, rotten wood and be kept quiet."

With the sixties and seventies, modern breeds began to come in. In addition to the Essex, which arrived early, there were Poland Chinas, Berkshires, and Chester Whites. More corn was fed to hogs; they were shut up longer; and attained a greater weight. With corn cheap and lard comparatively high, hogs were fed out to weights ranging from three hundred to six hundred pounds.

Feeding methods, and hog types have shifted back and forth since the first hogs came into Iowa. Now we market at seven or eight months, at a weight around two hundred twenty pounds, keep hogs on pasture as long as we can, try to get less lard and more lean meat in the finished product, use a variety of supplementary protein feeds in addition to corn, feed minerals, and vaccinate against disease. Yet the hog is still, as he was in 1855, the chief market for Iowa corn; farm income goes up or down with the quotations on hogs at Chicago.

DONALD R. MURPHY

## Immigrants from Russia

"I am mad because the known varieties of fruits are not hardy and I don't know what to recommend." Thus wrote the venerable horticulturist and first director of the Iowa Agricultural Experiment Station, Captain R. P. Speer.

It was a perplexing problem to find hardy varieties of fruits for the Iowa planter. Settlers from the East brought with them grafts and seeds of the varieties grown at their homes. The foundation stock of these varieties came mainly from England and France, countries having comparatively mild winters and a humid atmosphere. They were, therefore, illy adapted to the low winter temperature and the hot dry winds of the Iowa prairies.

In the first annual report of the Iowa Experiment Station made in 1888, Director Speer stated, "although there is nothing to encourage farmers who intend to follow old methods of tilling the soil, yet they have less to complain about than the horticulturists as the winters of 1884 and '86 furnished proof that there is not a single American variety of apple, pear or cherry which is adapted to Iowa." Such was the situation when Professor J. L. Budd assumed the position of Horticulturist at the Iowa Agricultural Experiment Station in the early eighties.

In casting about for a solution for this problem Professor Budd decided that the answer lay in the introduction of varieties from regions of the Old World having soil and climatic conditions similar to ours. Such varieties would be likely to withstand the hardships of Iowa climate. He therefore turned to the rigorous regions of northern Europe, particularly Russia and northern China. Upon securing a leave from the college he spent months making a horticultural survey of these regions.

On this trip every possible means of conveyance, including "shanks hoss", was employed. He traversed inland Russia, a prairie country some two thousand miles across, where the summers are hotter and drier than they ever are in Iowa while winter temperatures often fall as low as forty and fifty degrees below zero. Along the Volga he found pear trees used as street trees. Numerous families of apples, hardy to the terminal bud and with thick leathery leaves adapted to the scorching winds of summer, were encountered. He also discovered many varieties of cherries of enticing color and firm of flesh. Even peaches were found in northwestern China and Bokara. From Siberia he secured many attractive varieties of trees and shrubs including lilacs of many shades, while the Russian olive and the dwarf maple he brought from the land of the Tartars. The Japanese rose and various honeysuckles were also included in his list of horticultural immigrants.

Budd returned from this strenuous journey, tired and worn in body, but happy and buoyant in spirit. His importations included over one hundred varieties of apples, many of which he announced were as hardy as the Duchess and bore a fruit that stored well. Some twenty-five varieties of pears and thirty-six kinds of cherries were also imported.

The next task was the multiplication and dissemination of these varieties for trial. Here began a most interesting, and at that time, the most extensive experiment of its kind in America. Professor Budd planned to sell the trees at a nominal price for testing, and through the coöperation of the growers, determine their value for this State. Before resuming his college activities he operated a nursery and was an unusually successful propagator. In a short time thousands of his Russian fruits were planted throughout the upper Mississippi Valley.

Unlike many seed crops there is an interval of six or seven years between planting time and the first harvest. Thousands of enthusiastic amateurs cared for these buds of promise, feeling that their troubles were over, but, alas, they had only begun. On the Iowa prairies, where the soil has a high nitrogen content coupled with ample rainfall and abundant sunshine, these horticultural immigrants flourished beyond measure. Like starved city waifs turned loose in the country, they grew with a joy unbounded, but not for long. The bees in going from

flower to flower carried the twig blight. This disease found an ideal lodgment in the soft sappy twigs. In some instances the disease wrought havoc in a single day blackening the leaves and twigs as if scorched by fire.

Neither were these soft spongy-celled twigs prepared to withstand the rigors of winter. Thus through blight and winter killing the list of "iron clad" varieties, as Professor Budd termed them, were rapidly decimated. Futhermore, instead of these Russian immigrants supplying winter fruit, most of them ripened very rapidly in the warm autumn of central Iowa. They simply added to an already over-burdened list of summer and fall varieties, and hardy winter varieties were still lacking.

In the State Horticultural Society in which Budd served energetically as secretary, the merits of the Russians became an issue. Dissension arose which resulted in his temporary retirement from that office.

The Russian list of ornamental trees and shrubs fared better and many of them proved hardy and attractive. The Russian olive is widely planted and is much esteemed for its silvery foliage and musky fragrant flowers.

In the regions farther north Professor Budd's fruits made a better score. In the Dakotas, Minnesota, and across the Canadian border many of his varieties of apples succeeded where all others failed. Indeed, had this experiment been planned two hun-

dred and fifty miles farther north it would have probably met with a much greater degree of success.

At the close of half a century since his experiment was inaugurated, a few varieties such as the Charlamoff and Hiberna have been able to maintain a place in the list of commercial varieties for northern Iowa and farther north. On the other hand, for central and southern Iowa, generally speaking, the Russian apples have failed, though, like a fond parent, Professor Budd could never see it that way.

Indirectly, however, his importations have made an important contribution to the horticulture of both this State and the entire upper Mississippi Valley. As a hardy foundation for apple breeding stock they have served as a parent in innumerable crosses. Professor H. L. Lantz in charge of the apple breeding work at Ames states that the Russian apples have proved to be a valuable parentage for improved kinds of apples. Some of these varieties such as the Hiberna are also valuable as a stock upon which to graft more valuable but less hardy sorts. In a word, while these horticultural immigrants have not played the leading rôle that their friends expected, they have contributed indirectly offspring which give promise of becoming useful citizens of the horticultural world and the future will hear more of them.

A. T. ERWIN

## Comment by the Editor

### THE NATURE OF AGRICULTURE

Agriculture is more than an occupation. Historically it is a stage in the progress of economic evolution. Typical of a simple civilization, the production of food by tilling the soil and raising live stock persists as a basic industry.

Agriculture is more than an industry. It is a mode of living. Rural life is essentially different from urban life the world over. Folks live in the country: people in cities.

Agriculture is more than a means and a mode of life. It is a profession as well. Some people think that farming is unskilled employment for yokels who have neither the wit nor the ambition to get out of the furrow and into the highway of commerce. But scientific farming does not depend upon new land, favorable seasons, and natural selection. Successful agriculture requires the broadest knowledge, the keenest intelligence, the soundest judgment, and the most versatile ability. It is no El Dorado for amateurs.

### MASTER FARMERS OF AMERICA

Convinced that farming is conducted as efficiently as manufacturing, banking, or any other business,

Clifford V. Gregory, editor of the *Prairie Farmer*, in 1925 awarded the honorary title of Master Farmer to twenty-three men who fulfilled the qualifications for that high distinction. The next year *Wallaces' Farmer* and other agricultural journals adopted the idea, and the establishment of standards for successful farming became a movement. In the course of five years over five hundred Master Farmers have been selected in twenty-eight States. Sixty-one of them live in Iowa.

Agricultural mastery is not measured in profits alone. Efficient management, intellectual progress, home life, and community service are more important factors, judging by the *Wallaces' Farmer* score card, which is an adaptation of the motto "Good Farming — Clear Thinking — Right Living". The movement is a study of the methods, achievements, spirit, and character of the ablest farmers in America. "To dignify agriculture by recognizing and dramatizing its successes; to encourage farmers to take pride in their calling; to encourage farm boys and girls by showing them that outstanding success is possible in agriculture as in other occupations, not only the success that is measured in money, but what is more important, the success that comes from an upright and useful life in family and community" — that is the avowed purpose of the Master Farmer movement. Honor to the distinguished farmers who produce crops and live stock profitably, who manage their business efficiently, and who convert their prof-

its into better homes and happier living for themselves and their community.

#### THE TYPICAL MASTER FARMER

According to Oliver S. Hamer, who has studied the attainments of nearly four hundred Master Farmers, the composite of them all was born in a midwestern farm home fifty-two years ago, attended a one-room country school, and went to high school one year. Before he was twenty, this typical Master Farmer decided to follow the occupation of his father because of his home training and love for farm life. For six years he worked as a hired man and renter. When he was twenty-three, he had a capital of \$400, and later inherited \$1200. Since then he has prospered. The farm on which he has lived for more than twenty years was purchased in 1910 and, together with improvements and live stock, is now worth \$42,000. From this farm of 277 acres he derives a net income of \$3200 a year, which is 8.7 per cent on his investment. The income of the average American farmer is only \$883 from a farm of 145 acres.

The Master Farmer has constantly increased the fertility of his land until the yield of corn and wheat is more than ninety per cent above the general average and fifty per cent greater than he first obtained on the same farm. Most of the grain he produces is fed to live stock, for he raises 116 hogs every year, has a dairy herd of 45 head of tuber-

culin-tested cattle, and a flock of poultry consisting of 337 birds. Though he works about twelve hours a day, he finds time to serve on the local school board, to participate in community affairs, to belong to two coöperative organizations, to perform his duties as a bank director, and to take an annual vacation of fourteen days.

He is well informed, for his library contains one hundred and seventy-five volumes and he subscribes to six farm journals, four general magazines, two dailies, and one religious paper. Ever on the alert for new ideas, he has learned more about farming since he was forty than before. The best method of solving the farm problem, he thinks, is through co-operation and control of surplus production. He hopes that his four children will go to Ames.

#### AND HIS WIFE

The typical Master Farmer's wife was born and reared in a farm home too. While she attended high school a year longer than her husband did, the subjects she studied were not as well adapted to her needs as they might have been, for she learned nothing of nutrition, cooking, nursing, child training, home management, interior decorating, sewing, or poultry and vegetable raising. Besides her regular household duties, she indulges her hobby of flower gardening, and sells enough chickens and eggs every year to contribute \$400 to the annual income.

Mrs. Master Farmer attends a social affair of the

women's club at least once a month and goes to home demonstration meetings nine times a year. Her vacation is the same length as her husband's. Perhaps they go to the State fair or on a motor trip together. She belongs to the church and attends forty times a year. But her husband, who is also a church member, goes only thirty-nine times, which may account for his seeing six motion picture shows and his wife only five. The Bible, good fiction, the poetry of Guest and Longfellow, biography, and travel constitute the literature she prefers. Of course there is a piano and a radio in the home.

J. E. B.

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