Pioneers in Iowa Horticulture

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By

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A home for him on the prairies anywhere . . . would be an uninviting one, if it were not surrounded by trees and shrubs and flowers and fruit. In his daily meditations and in his night visions, he sees arising around him a changed and beautiful landscape. . . . It makes no difference that 49 out of 50 declare that he cannot grow fruits. He knows that he can; and behold, they grow. . . . You see him . . . going into the open, storm-swept prairies . . . the laughing stock of the whole train of pessimists who always cry "can't." . . . Twenty years have passed and his visionary imaginings have taken on tangible forms. . . . His home is surrounded with trees and orchards.—C. G. PATTEN.

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I.

THE SOUR APPLE TREES

For the first apple tree and the first orchard in the soil of Iowa, one must go back to the days when this was not Iowa at all, but wilderness belonging to Spain, known only as the country of the Ioway Indians.

In 1783 a wiry little French-Canadian named Julien Dubuque, smelling lead, settled with a band of Fox Indians on Catfish Creek within the confines of the county now named after him. Accounts of the exploits of this adventurer over a period of nearly 30 years read less like sober history than the pages of some old romance.

Dubuque was adopted into the Fox tribe. He took to wife Potosa, the daughter of the chief. Soon he had persuaded the Indians to turn from hunting and trapping to lead mining. Bringing other French-Canadians to help with the enterprise, in time he controlled all the mines in the region, not only in Iowa but also the lead regions of what later became Illinois and Wisconsin. He drove all competitors from the Mississippi River. Those were ruthless days. Since his smelting operations were the largest in the west, almost fabulous wealth flowed through his hands.

Near the banks of the Mississippi stood his fortified settlement, with his barns, his warehouses, his stables, the cabins of his helpers, all within palisades guarded by an old brass cannon he had picked up from some ship in St. Louis.

This picturesque figure was Iowa's first farmer. He had cleared an extensive tract which he cultivated, and he operated a horse mill. And he or one of his followers planted an apple tree, probably the first on Iowa soil. Dubuque died of pneumonia in 1810, and the lead mines were taken over by the Indians. The apple tree remained.

When the settlers began to come into Iowa in the eighteen-thirties, that tree was found by W. H. Guilford of Dubuque. It was 14 inches in diameter in 1835, and was accounted an enormous bearer of fine winter-keeping apples.

As late as 1915 samples of the Dubuque apple were brought to a meeting of the Iowa State Horticultural Society by Elmer M. Reeves, though apparently they were not from the same tree.

LOUIS TESSON'S APPLE ORCHARD

It remained for another French-Canadian adventurer—and there were few other white men on the Mississippi then—to plant the first apple orchard in the pre-Iowa days.

In the seventeen-nineties the Sauk Indians had a town at the head of the Des Moines rapids in the Mississippi, later the site of Montrose.

The sharp eyes of Louis Honore Tesson, the bragging, hypocritical son of a St. Louis trader, had been on this town. He had seen the advantages a trading post might have there. The town lay half way between the Dubuque mines and the trading town of St. Louis, and

he could serve the Indians of the surrounding territory with little interference.

In 1799 Tesson got a grant of land at the spot from the Spanish government. From St. Louis he brought a load of goods to trade with the Indians, and from St. Charles, Missouri, he hauled in by Indian ponies 100 seedling apple trees.

The terms of his grant included planting trees and sowing seeds, teaching the Indians agriculture and the Catholic religion, and keeping them loyal to Spain. Now he built his trading house, where he lived with his family, and fences, and set within the inclosure the first orchard in Iowa.

But the Indians had their own version of Tesson, whom they called "che-wal-is-ki," a rascal, saying that he had lived round about with the different Indians in their lodges, that they fed him, he being very poor, and that he never bought any of their land from anybody whc had authority to sell.

At any rate, Tesson did not make ends meet. He was in debt to a St. Louis trading house, and at length they sold him out, for $150. Later this Tesson grant, which included a square mile of good Iowa land, resold for $63.

After that, Tesson vanished. There is no further record of him.

When the territory west of the Mississippi River was thrown open to settlement the Tesson orchard was already old. Some of the trees had been blown down, others had decayed, and a new growth was springing up, while forest trees had begun to encroach.

But about 15 trees were still bearing. The settlers marveled at this orchard in the wilderness. The Indians had learned the value of the apples and came and picked the fruit green, never waiting for it to ripen. The settlers agreed that the apples were mediocre, from common seedlings. Captain James Campbell, one of the earliest, spoke of eating from the "sour apple trees," the first fruit of any kind he had ever eaten.

D. W. Kilbourne, however, had a different opinion. "I have eaten of their fruit and can bear witness it is very good," he said. The fruit was of medium size, ripening in the fall.

The town of Montrose came. The orchard dwindled. The last trees were cut down about 1895, according to Wesley Greene, former secretary of the State Horticultural Society. George B. Denison, who once owned the site, planned to turn it over as a trust for the Old Settlers' Association, with an iron railing about the location, but nothing came of the idea.

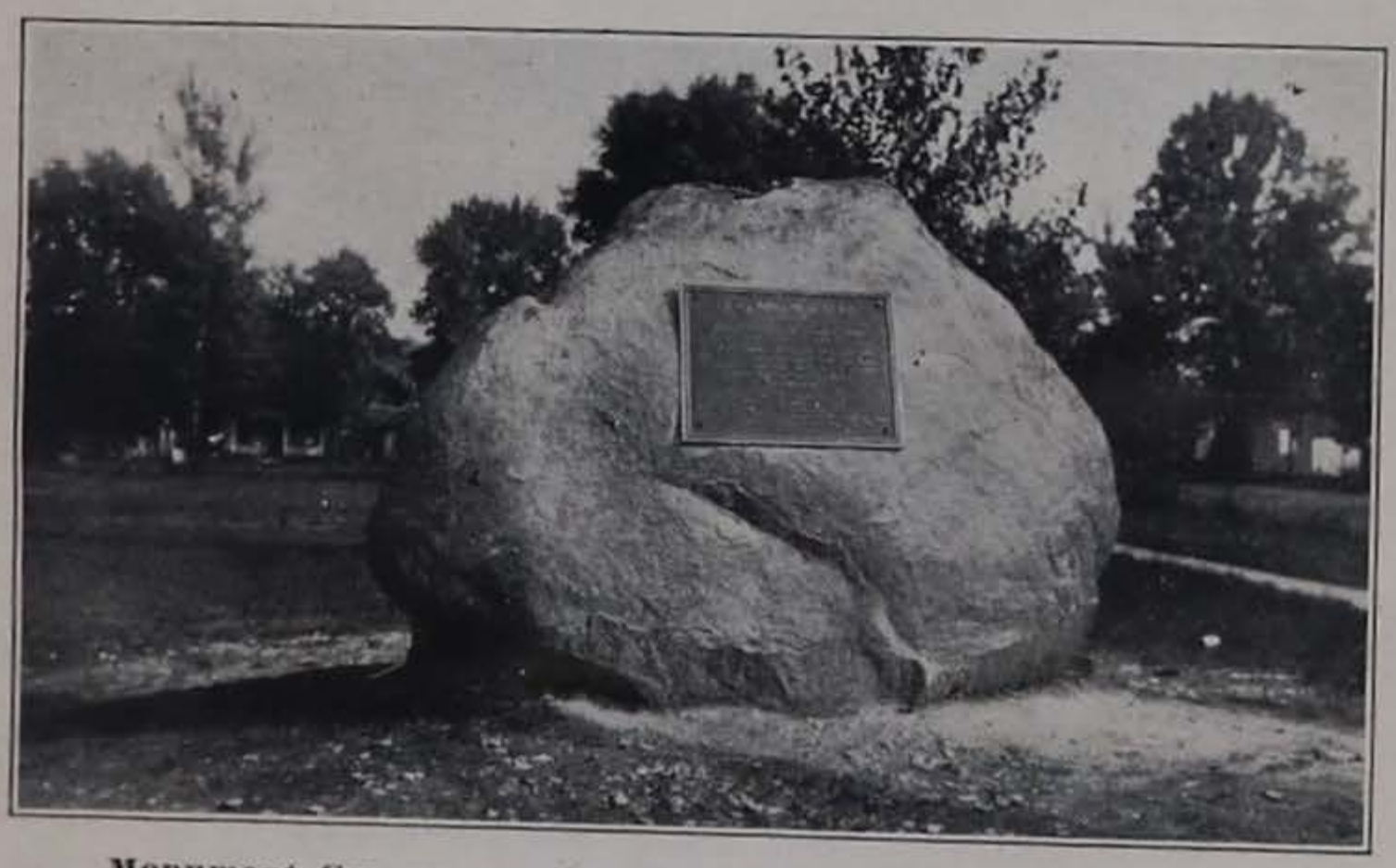
But in 1930 a fitting monument to the first Iowa orchard was dedicated at Montrose by the local Women's Civic Club, the Iowa State Horticultural Society, the Historical, Memorial and Art Department of Iowa, and by popular subscription.

DAVENPORT AND LeCLAIRE

Two other pioneer orchardists in the days before the settlers were George Davenport and Antoine LeClaire, two men of extraordinary

girth, who were associated with the garrison on Rock Island years before Iowa was thrown open to settlement.

Early Scott County history was altered by two events in Davenport's life. First, he was a British sailor who broke his leg when he jumped off his ship into New York harbor to save a comrade. Davenport's ship set sail while he was in a hospital, and he never went back to England. Second, he joined the American army, but became so big he was no good either for cavalry or infantry service, so he was transferred to the commissary of the fort on Rock Island.



Monument Commemorating the First Apple Orchard in Iowa

He stayed there to become an Indian trader. He was almost illiterate, the sea having been his only school, but he was capable of tremendous enterprise, and could stand the danger and privations of the Indian trails that wrecked most men. He traveled back and forth among the Indian towns, sometimes on foot, sometimes by canoe, sometimes on horseback. By his trade in furs and later his dealing in real estate when the settlers began to appear, he made himself a very wealthy man. He helped to found Davenport, Iowa, and Moline, Illinois.

Davenport's home on Rock Island was one of the palaces of the West. A man of his type hardly would have been expected to engage in the gentle art of horticulture, yet a visitor to his estate in 1844 found an extensive garden with arbors covered by Catawba and Isabella grapes loaded with fruit, and numerous large peach trees on the lawn full of luscious peaches, while under the trees were bushels waiting to rot. And many large Morello cherry trees.

"A veritable second garden of Eden," thought the enchanted visitor. Davenport, then an old man, informed him that to grow the choicest fruit it was only necessary to plant and give them ordinary care—an opinion of the environment later settlers would not share. This

garden was not on Iowa soil, being on Rock Island, but since Davenport had claim to being an Iowa man, it is worth mentioning.

Antoine LeClaire, a halfbreed, was an associate of Davenport's. He came to Rock Island as an interpreter for the Sauk and Fox Indians, who had their town a stone's throw from the island. He was involved in many of the early enterprises of Davenport, Iowa, being its first postmaster, and running there a famous hotel, the LeClaire House. A short man, he was also a very heavy man, weighing between 300 and 400 pounds.

After the Black Hawk War the Indians gave him some land within the present limits of the city of Davenport. Here he built a house and planted an orchard of 400 apple trees, which he had brought by boat from Cincinnati. This was the first orchard in Scott County.

II.

HENDERSON LUELLING AND THE TRAVELING NURSERY
1809-1878

Henderson Luelling, Iowa's first commercial nurseryman, remains the most glamorous figure of all the state's fruit men. Like Johnny Appleseed, he wandered westward over the rugged continent planting fruit trees in the van of the settlers. But unlike Johnny Appleseed, who remained barefooted, with never any better dress than a grain sack, Luelling made fortunes and lost them, and while Johnny only covered a few hundred miles, Luelling scattered his trees over the entire continent.

His immortal achievement was the hauling of 700 grafted fruit trees in an ox wagon from Iowa across the plains to Oregon in 1847, which founded the fruit industry on the Pacific coast. As Ralph C. Geer has put it, Luelling's oxen "brought more wealth to Oregon than any ship that ever entered the Columbia River."

Luelling was a Quaker of Welsh ancestry. (The name was also spelled Lewelling, but he used the first spelling.) There is a tradition that the family had been nurserymen for several generations before Henderson was born. His father, Meshack Luelling, was a doctor as well. In 1825 he moved from North Carolina to Indiana, where he followed both professions. Ten years later Henderson and his brother John went into the nursery business together.

But in 1836, Henderson, having heard glowing accounts of the new territory then still part of Wisconsin, came to Salem, Iowa. The following spring he set out a small nursery on Cedar Creek, and an orchard with 35 varieties of apples, and pears, peaches, plums, cherries, and small fruit. In 1841 his brother joined him.

The brothers prospered, selling trees to the thrifty fruit-growing Quakers settling the section. Almost every homestead of the south part of Henry and the north part of Lee County blossomed with trees from their nursery. Salem became the apple-growing center of early Iowa. Teamsters did a business hauling apples during the fall until freezing weather. Their wagons went as far as Ottumwa, Oskaloosa, Marshalltown and Cedar Rapids. The Luellings made 14 trips to Indiana and other eastern points for new tree stock and other plants.

Luelling was prominent in the anti-slavery movement. His father had freed his slaves brought from North Carolina, in Indiana. The Salem church split over the issue, and when the Anti-slavery Friends were formed, Henderson Luelling sat as head of the meeting.

In ten years he acquired a competence at Salem, selling fruitstock to the settlers as the Iowa population doubled and redoubled. He was the leading citizen of the community. He built an imposing yellow limestone house.

But already settlers were moving on. Luelling had heard tales of the wonderful fertility of the Willamette Valley in Oregon, and he

dream. He would found a colony in Honduras! He had crossed the Isthmus of Panama, and was impressed by its mild climate, cheap land and heavy crops.

He sold his property at Fruitvale, bought a ship and supplies, and with a band of eager converts set sail. Now for the first time his luck deserted him. He went broke in Honduras.

Back in California he came to raise fruit, gave up his wandering and died, without regaining his old wealth.

He rented a little plot in the suburbs of San Jose. There one late December day he was busy burning off the weeds and grass, getting ready to put in a crop. When he did not come in to dinner his brother-in-law investigated.

He was dead, in the fire, his hair and beard and much of his clothing burned off.

The heart of this rugged dreamer and builder of fruit empires had at last stopped, and left him at the mercy of the flames.

* * * * *

On February 23, 1924, the Women's Clubs of Oakdale, California, sponsored a meeting at Diamond Park, which had once been part of Luelling's estate. There they planted two redwood trees as memorials to Luther Burbank and Henderson Luelling, the two great horticulturists of the west coast.

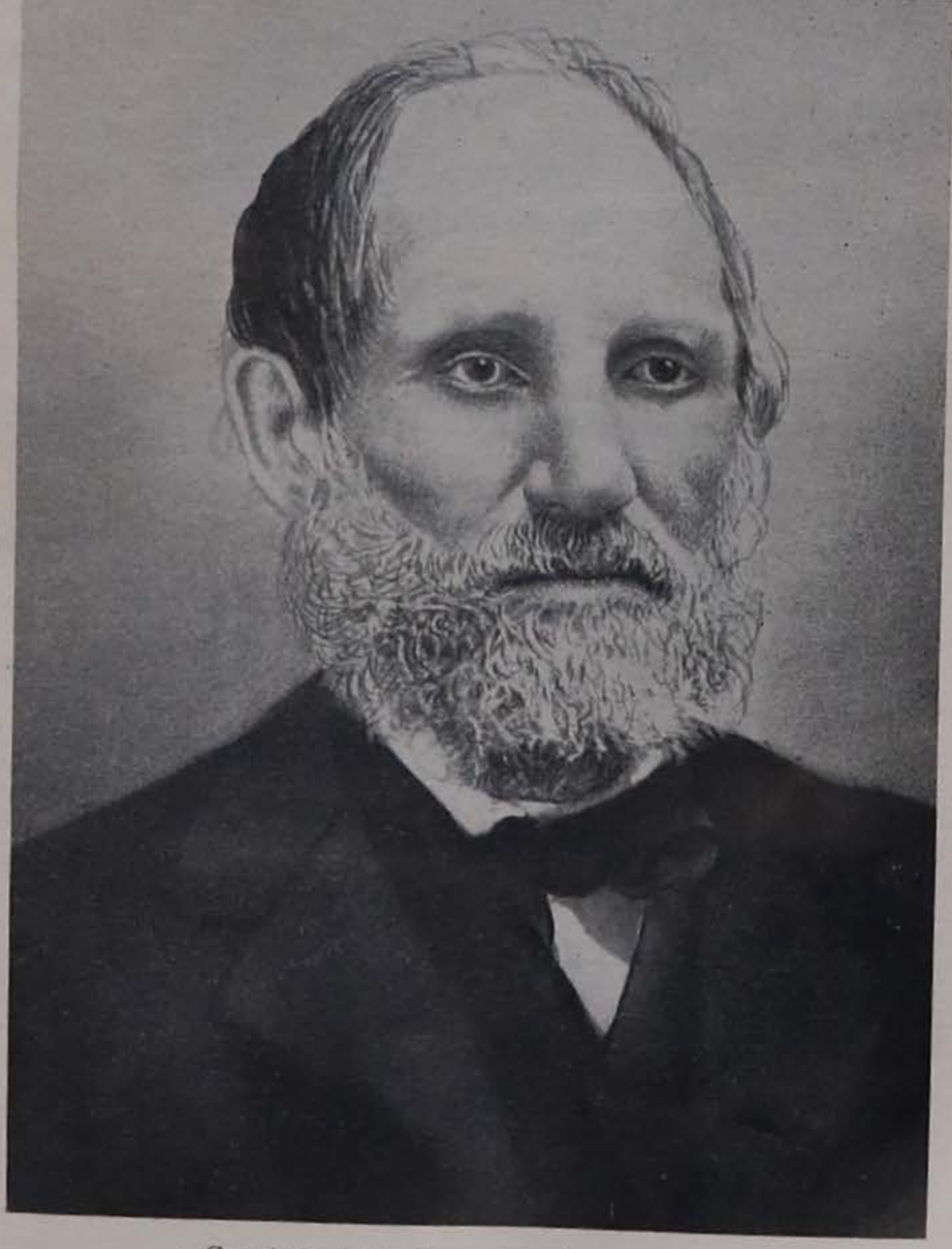
Four miles from Olympia, Washington, stands a giant Black Tartarian cherry tree, measuring nine feet in circumference. It has borne as much as 40 bushels of cherries in a season. It bridges the gap from Luelling's fruit-growing days in Salem to the present, for he planted the pit in Salem in 1845. He grafted the tree, then carried it in the cargo across the plains.

III.

SUEL FOSTER OF FOUNTAIN HILL
1811-1876

When Henderson Luelling brought his first fruit trees into Iowa, Suel Foster was already here.

Foster was a tall, angular New Englander, the "best example of the Yankee ever seen in this section," and one of the two homeliest men in Bloomington, later Muscatine. He came there in 1836, when the town boasted two log houses, and bought a one-sixth interest in the township.



—Courtesy Iowa Department of History and Archives.
Suel Foster

Iowa was still in the hands of the Indians, except for a little strip along the eastern border, and the Indians had scarcely loosened their grip on that. Foster made the acquaintance of withered old Black Hawk, the once mighty monarch of the Iowa prairies.

Foster was traveling, selling groceries and dabbling in real estate when he first came to Iowa.

Bloomington's other homely man was Theodore Parvin, also prominent in Iowa history.

Foster was known as the gallant of the town in his younger days in spite of his homeliness, being sharp, quick-witted, an agreeable talker.

Later he married Sarah J. Hastings and went overland to California, where he took a clerkship in the postoffice of Sacramento and helped with the state census.

He returned to Bloomington in 1852 and began to plant a nursery. But he knew nothing at all about the nursery business. So he took a partner, Isaac Negus, an old hand at the game. By then Foster was 40.

Such was the unimpressive beginning of one of the greatest forces ever felt in Iowa horticulture.

Suel Foster was born on a farm at Hillsboro, New Hampshire, August 26, 1811. He attended the common schools. He admitted that the lessons he read from trees were more impressed on his mind than those he learned in the school books. He was born and raised in a land of evergreens. As a boy he wandered alone in the woods, among the beech, the birch, the "rough hemlock, the noble pine, the symmetrical spruce," and soon without conscious effort was familiar with every tree, knowing it by name.

Some men come to fruition late. In spite of his early love of trees, Suel Foster was 40 before he thought of a nursery as a means of livelihood. "I can see now what a wonderful improvement I could have made, had I learned the trade in my youth," he said. His nursery became the famous Fountain Hill Nursery. Here he had well over 100 acres, which are now in the heart of Muscatine. The nursery was so named because of the fountain which he constructed by forcing water uphill from a spring by a hydraulic ram and spurting a single stream seven feet into the air. This was considered quite a feat in the days before the advent of city water systems. The piping for the fountain is still in place.

Being a Yankee, Foster went to meeting—meetings of every sort. When the old stage coaches rumbled along to the conventions and meetings, this angular, scraggly-bearded man rode and helped pry the coaches from the mud, and attended the gatherings where a few pioneers talked earnestly of fruits, farming, schooling, liquor or God. He was one of the members of the Northwest Horticultural Society.

Nursery stock was dribbling in from eastern nurseries and blossoming on Iowa farms. But in two years after the start of the Fountain Hill Nursery came the great drought of 1854, and on its heels the terrible winter of 1855-56, when people and fruit trees alike died in

the polar blasts. Scarcely a trace of Iowa fruit plantings remained the next year.

Following the scourge, people came desolate and desponding to the meeting of the Northwest Society. They were saying Iowa could never grow fruit.

Foster was still hopeful. He preached that fruit growers would have to hunt for varieties that could be adapted to the state's fitful climate. But when he predicted that Iowa would yet take its place among the fruit-growing states, people shook their heads as if doubting his sense.

Yet, within a few years, gullible settlers alternately planted everything the tree peddlers offered and then cried, "This is no fruit country!" when it froze down. Every eye was strained to the west and tongues clacked, "Kansas! Nebraska! Pike's Peak or bust!" But Foster was looking on such overloaded trees at Fountain Hill that he invited his pigs to a feast, and started a cider press.

He set up an Alden dryer, and with it preserved apples, sweet potatoes and chestnuts. The dryer was four stories high. It was heated by a wood burning furnace on the lower floor and equipped with an endless chain elevator. On the elevator chains the vegetables or fruit were loaded. By the time they reached the top they were dried for preserving. This method of preserving apples and sweet potatoes created a demand for them in eastern markets.

Foster also tried to dry watermelons and tomatoes in the same way, but he was not very successful.

While he was getting his nursery started he did not neglect the great passion of the New Englander, education. He was writing for the "Iowa Farmer and Horticulturist," published at Burlington, and in February, 1856, he took up the subject of schooling for farmers. "We must have a Farmers' College, with a large experimental farm attached. . . . I hereby pledge my influence. . . ." This, the first public call for a state college, was a full year before the first agricultural college was established in Michigan, six years before President Lincoln signed the act providing federal aid for such colleges.

Having tackled the project, Foster kept at it. Four more times that year he wrote articles advocating the farmers' college. In 1857 he was again busy, and in January of the following year the legislature created Iowa Agricultural College, passing the act he had framed and pushed. He was a member of the first board of trustees, and later its president.

The first task was picking the college site. The choice narrowed down to Ames and a spot near Des Moines, with the board almost evenly divided. Foster cast the deciding vote, for Ames.

It did not seem to be a happy choice. The college was to grow on raw prairie in a thinly settled part of the state, separated from a miserable little town by an impassable creek bottom. There was not even a railroad!

For years the location was ridiculed. People could not believe the college would ever amount to anything. Only when the beauty of the grounds began to unfold under the magic of landscaping and architecture was Foster's choice vindicated.

He was one of the most enthusiastic supporters of the college. Yet, after he left the board, when the college did not come up to his expectations, he was one of the first to criticise.

In 1871 he complained that the experimental farm had been operating ten years, but had nothing to report from tree planting experiments. He said the board "should have been reminded of this great need of our State . . . every year, and every week."

He also looked with disapproving eyes on the spectacle of college students digging in the college ditch. What education was there in that? he asked.

When the Iowa State Horticultural Society was formed he became one of its pillars. It could not have been otherwise. The meeting house was part and parcel of him. Men were dreaming dreams and seeing visions. And he had a vision of the future of the prairie state then bare to the "terrible rake of the winds," when a share of the land should be in orchards and groves.

His speeches at the society meetings revealed him as a poet, though he may never have written a line of verse. Perhaps every fruit and flower lover is a poet. It would be pleasant to imagine that all truly great poets have been inspired to pen their immortal lines while spading in sunny gardens, not while sitting in dark garrets as we have been told.

Foster had a gift for expression that has been equalled by only one other leader in the society, Eugene Secor. Listen to a few words of his address as president in 1872:

"How beautiful to study and contemplate a tree. . . . How beautiful, that the plant has power to form such beautiful leaves, flowers and fruits. Its language is by signs; when thirsty, it tells us; when hungry and starving . . . it tells us . . ."

And again, "The garden . . . furnishes not only profitable employment, but health. What is health worth? What is health worth to our young women who are delicate and feeble, who are hunting about to see if they can marry some money, and money is the only suitable match. Far better to marry a rosebush and a basket of strawberries."

Foster had three loves in his garden, his pears, the Wealthy apple, and the hardy catalpa.

In 1869 he exhibited 25 varieties of pears at the state convention. But after 11 years, in 1880, he was forced to admit, "I have had a change come over the spirit of my dream. They cost too much. I would rather buy the few we want." He concluded pears would not pay in Iowa. And a year later he was reporting his pear trees all dead.

In 1874 he was enthusiastically heralding the Wealthy. He had planted some trees sent him by Peter M. Gideon, Minnesota man who had beggared himself and his family bringing forth new fruit in the north. No other man except Gideon himself so early appreciated the value of the Wealthy. Years later a member of the Horticultural Society said among his first memories with the group was that of Foster rising in meeting to say one of the greatest things that could be done for humanity was the planting of a Wealthy apple tree.

He did more than Gideon to spread its fame. He said he had sent the Wealthy into every state.

He early began the planting of catalpa trees, and championed them ardently. "He couldn't get on the floor but he was talking about the hardy catalpa," it was said. But time has proved the catalpa, like his pears, largely a failure.

He acted as a director of the society as long as he lived. He was preparing a talk when he was stricken by his last illness. Mrs. Foster sent it to the convention in unfinished form.

* * * * *

Foster was always championing improvements. He was a reformer and dreamer rather than a practical man. The general impression around Muscatine seems to be that he never made much of a go with his personal affairs. He took an active part in various railroad schemes. He was a strong prohibitionist, being on a committee that prepared charges against Judge W. J. Hayes for dereliction of duty in dealing with the liquor question. It was related of Foster that although he was forced to make cider from his waste apples, he never permitted it to become hard.

Once he decided to attempt the reform of the law profession, and appeared in court asking for the court to make changes in its procedure. He got no further than to make himself a laughing stock.

Foster wrote on all manner of subjects for the newspapers. Sometimes he wrote about the weather. Once he flouted the ground-hog story. This began a newspaper controversy with another "gentleman of our city."

At that time Muscatine had a comic artist, John McGreer, in the hat business. He advertised his hats by painting comic pictures everywhere, on all the barns and fences. During the ground-hog argument he drew a charcoal sketch of "Foster watching for the ground-hog to come out," and hung it in the postoffice.

This created quite a hubbub.

"Mr. Foster seemed singled out by fate to be a man of sorrows," says Louis Fitzgerald. "Shortly after his marriage his home was destroyed by fire. A son and daughter, his only children, both died before they reached maturity.

"His constant experimentation had taken its toll of his finances. When he died his property was heavily mortgaged and, after his demise, passed to the Stein interests so that today it is known locally more often as the Stein estate than as the Fountain Hill Nursery."

Note: There will be erected on the campus of Iowa State College, Ames, in 1941, a Suel Foster memorial tablet.

IV.

J. L. BUDD, PROPHET OF THE COMING APPLE
1835-1904

"I talk of the coming apple all the time," said J. L. Budd.

That was what he did all his life—talk of the coming apple. He was prophet, seer and builder.

From a fruit farm at Shellsburg, Iowa, Budd took over the chair of horticulture at Ames when there were no text books, no classroom technique, no established practices. Nor were there any professors of horticulture. Men were learned in botany and other theories, it is true. But no man knew Iowa fruit-growing. No man had with-

J. L. Budd

stood with his trees and his shrubs the vicissitudes of Iowa winters and summers. Professor Budd fashioned the course of study at the college out of his own hard-won experience.

It was a difficult role, that of prophet of the coming apple. The director of the state experiment station exclaimed in 1888, "There is not a single American variety of apple, pear or cherry which is adapted to Iowa!" Budd had to start with Genesis. But it was a role he played with courage, with vision, and with equanimity. Being a prophet, he was the storm center of the State Horticultural Society, and the most criticised man among Iowa fruit-growers.

J. L. Budd was born of mixed English and French parentage at Peekskill on the Hudson. "His nature was such a peculiar one that

I have reflected on the matter many times," said Professor N. E. Hansen, his pupil. "The answer is, I think, in his ancestry. In his veins flows some of the best blood of the Anglo-Saxon and Latin races. . . . His nature combined the sturdy independence, the aggressiveness, the steadfastness of the Briton with the grace, vivacity and sprightliness of the Gaul."

After a boyhood in New York state he taught school, became a good geologist, and wrote excellent poetry. For a time he was professor of an academy at West Rockford, Illinois.

In 1856 Budd bought a large farm near Shellsburg, and he planted on it 40 acres of orchard. When his orchard came into bearing he was a "true believer" in varieties of the hardiness of Willow, Jonathan and Ben Davis. But five years later came a dry season and what he termed a test winter. "When contemplating the wreck of my own orchard and that of hundreds of others, I grew a little sick," he said. He was to see even greater wrecks in Iowa.

Now he was listening to the advice of old Father Whiting of Illinois, who said, "Plant no trees but those that stood the winter of 1855-56," the worst winter in the memories of the pioneers.

Budd was a successful enterpreneur. Soon he had perhaps the leading nursery in the state. His agents were busy in counties as far away as Boone, Dallas and Guthrie and he had accumulated a comfortable fortune.

In 1860 he married Sarah Breed, of the revolutionary Breeds. They had two children, Allen J. and Ethel M.

He was elected secretary of the Iowa State Horticultural Society in 1873, and became "an oracle in meeting." It was said, "Questions by the score are fired at him and he answers them in his modest way so thoroughly and so accurately that when he is done there is nothing more to be said on the subject." He served as secretary from 1873 to 1885 inclusive and from 1892 to 1895 inclusive and prepared a total of 17 reports.

When the State Agricultural College found itself without a professor of horticulture the trustees turned to Budd, then at the head of his profession in the state. He went to Ames in 1877 and served on the faculty for 22 years.

There he soon learned it would be necessary to create something out of nothing. The college was destitute of all facilities for storage, propagation, and even for classroom instruction.

He became superintendent of the experiments, teacher, correspondent and writer. In a typical day he looked after his outdoor work and taught his classes; then to his large correspondence with his followers all over the state; and at last to his office to write his contributions to the farm press. There were no 40-hour weeks for the pioneers!

Budd was a rapid, voluminous writer. He poured hundreds of articles into the Des Moines State Register for over 25 years, "week by week, line upon line, precept upon precept," until his influence extended to every corner of the state, and his correspondence became so great he could not take care of it. It was said that the rural circulation of

the Des Moines Register was originally built on the writings of two men, Professor Budd and Father C. F. Clarkson.

Budd's enthusiasm bred a classroom contagion. One of his students said, "When we started in freshman horticulture all decided to go into the horticultural business." Many did. One of his pupils was N. E. Hansen, whose work in prairie horticulture has brought fame to him at South Dakota State College. By 1900 three-fourths of the men engaged in teaching horticulture were Budd's "boys," while the United States Department of Agriculture bid eagerly for men trained by him.

It has been stated many times that Liberty Hyde Bailey, now dean of American horticulturists, was inspired to take up his calling by a series of lectures he heard Budd deliver at Michigan Agricultural College. But Dr. Bailey writes, "The report . . . is new to me." But he also states, "I was always impressed with . . . his strong conviction that he would be able to make a positive contribution to the fruit-growing of the prairie states."

Budd relied little on notes, either in his experiments or in the classroom, for he had a remarkable memory. Yet his enthusiasm and a vivid imagination sometimes got him into difficulties. Once he stated that the north half of Iowa was drained into the Polar Sea, to the derision of his class. He erred only by 200 miles! Another time, in talking of his trip to Siberia he said he had gone so far north as to be directly under the north star.

* * * * *

The year 1871 was one fruit season in 20. The exhibit hall of the State Society that winter had twice the capacity of any former year. Crops had been abundant. Now the displays were generous, and the apple was king. Apples, apples everywhere—from the north, south, east and west. Visitors saw the display and went away exclaiming at the glory of the Iowa apple crop.

But there followed closely on the heels of this goodly season the winter of 1872-73, when the work of the fruit-men was literally wiped out. Only the ghosts of other years remained, with dead or dying trees. At the next show the people were stricken, ready to sit and fold their hands.

"Their idols have been thrown down and destroyed, and they are ready to cry, 'What have we more?'" Budd observed.

In the midst of the wreckage, however, the professor had scarcely a dead tree in his nursery at Shellsburg. He had followed the advice of old Whiting.

Nor was he sitting with folded hands. He had a remedy. De Candolle had said that species of plants have not advanced 100 miles north of their natural limits in the history of man. But Iowans were trying to grow fruit that had originated in southern Europe. Now they must hunt further north. In the secretary's report for that year he recommended sending a special agent to the steppes of Asia for varieties.

Nine years later he was to be that special agent.

In 1874 the Society appropriated $100 for the importation of Russian scions. Budd corresponded steadily with the scientists and fruit-grow-

ers of Sweden, Russia and China, and began predicting a new era of prairie fruit-growing. In four years he had the first importation of scions. He had 200 varieties of apples from Moscow, together with cherries, peas and plums.

Budd went abroad in 1882, in company with Charles Gibbs of Canada. He visited schools, agricultural stations and parks all over Europe. He was in the Kew Gardens in England, the valley of the Mozelle, France, the gardens at Vienna, and at the Tartar city of Kazan, Russia. He ate cherries in every spot from sunny France to 600 miles east of Moscow.

On the Volga he saw watermelons coming in on the backs of camels, hardshelled watermelons, pride of Asia. On the Volga, too, he saw the Russians watering their apple crop, twice in a season. Twelve years later he would be advising Iowans to water their apples.

And it was on the Volga that the professor, talking to the farm women, learned they had never heard of canning. They did not even have fruit jars! So he rolled up his sleeves and showed them how, using whatever jars they had, most of them fantastically large. But the fruit kept somehow, and years later he had the satisfaction of learning that he had started a new occupation. Everybody on the Volga was canning.

He traveled across 2,000 miles of hot, dry Russian prairies, riding in every sort of vehicle. Sometimes he walked. Here he gathered scions of the thick-leaved Russian apples.

He returned home with 100 varieties of apples, and many of pears and cherries and shrubs.

Now he was conducting the most extensive experiment in apple-breeding in America. He operated a nursery to sell these experimental trees at nominal prices and spread them widely. Budd was always a good promoter. Soon he had thousands of his Russians scattered over the upper Mississippi Valley.

But the nurserymen howled at this competition from the college. One of them said sarcastically the Agricultural College had two sources of revenue, the legislature and Budd's nursery!

Budd was writing about his Russians in the press, and at first all was enthusiasm. It seemed that perhaps all problems were solved, and the fruit men could now turn their backs on the bugbear of Iowa winters. The strangers from the other side of the planet, however, soon encountered their own peculiar troubles, and suddenly there were dissenting voices in the state society, reports that the Russians were blighting and winter killing. The dissension became bitter, the Horticultural Society was split into Russian and anti-Russian camps, and to preserve harmony Budd had to step out for the moment as secretary.

The Russians were growing in the rich Iowa soil like starved city waifs who for the first time had enough to eat. But the bees carried the twig blight, which sometimes blackened the plants in a single day. And the soft, spongy twigs winter-killed until it began to appear that there would be few "iron-clads" among them. They also ripened early,

adding to the list of summer and fall apples. Iowa was still without winter apples.

Orange-Judd Farmer published a cartoon depicting Uncle Sam and the Czar of Russia in a sparring match. It was symbolic of the struggle in Iowa between the Russian and the American apples.

In 1890 C. G. Patten, who was carrying on apple breeding work at Charles City, in a speech before the society blasted the professor and his Russian apples. He entitled his speech, "The Czar Knocked Out." He charged that attempts had been made to choke him off lest he break up the society, but he had kept on, and "the society still lives."

Budd had said on his return from Europe that he had "40 varieties of winter apples that were absolutely hardy." Patten challenged Budd to produce his 40 hardy varieties. "Who can name them?" He said never again should they get lost in the "inextricable jungles of the Czar's fruit garden." He also jibed at Budd's Russian pears and peaches, lower in quality than an ordinary field turnip, he said.

And again he complained of Budd's exhibits of his Russians. "The effort made at the state fairs of Iowa and Minnesota the past season to exhibit from cold storage and keep before the public such a large number of small, inferior and wholly worthless sorts, is to my mind an insult to the intelligence and candor and manhood of the horticulturists of Iowa. It has been written up repeatedly as an 'Educational Exhibit,' but in what sense it was educational is difficult to see, unless it was for the purpose of advertising broadcast the most conspicuous failure in modern horticulture." When such hot words as these got into print, it is not hard to imagine the heat beneath the surface.

Patten made himself Budd's chief opponent. He was never able to give the professor much credit for his work, even after his death.

A few years later G. B. Brackett in a paper before the society declared it was definitely proved that the Russian varieties were no good for the south half of Iowa, and that there were no long keepers among them. And in 1895 Patten reported that at his experiment station "the great bulk of them have gone to the brush pile."

When Budd left the state experiment station in 1898 apparently at least a fraction of the Horticultural Society breathed with relief, for C. L. Watrous complained that Budd had been "flooding our orchards with foreign fruits, most of which . . . were worse than worthless," and that "he had a fad that nothing was going to be of any use unless labeled Russian."

Budd took all his abuse with good nature, never replying to criticism or fighting back. But his enthusiasm was untouched. He pointed out that fully 400 amateurs and nurserymen were reporting favorably on his apples, and claimed that the Russians were doing well all the way to the east coast.

Time, however, proved his opponents right, so far as Iowa is concerned. A few varieties only, such as Charlamoff and Hibernal, are on the commercial list for north Iowa. The importations failed in the southern half of the state. But the Russians have served as a hardy

foundation for apple breeding stock, and as parents in innumerable crosses.

To the north the environment has been kinder to Budd's fruit children from Asia. On a Minnesota recommended apple list all but one were Russian. And that one had a Russian parent. In the Dakotas and Manitoba nearly all the apples are Russians. Professor N. E. Hansen says many regions now grow fruit that could not have done so were it not for the work of the determined Iowa professor.

Many of his shrubs have found congenial soil here. The Russian olive, the dwarf maple, the Japanese rose and various honeysuckles now familiar were first set in Iowa soil by the hand of Budd. As late as 1926 L. H. Pammel was saying, "As I go about the state now I can see the influence of . . . Professor Budd."

In the meantime he had been working with native plums. At a meeting of the Horticultural Society at Ames in 1883, he tested a large number of wild plums by cooking, and serving them to the members. He found three free from acerbity. He sent out samples of the best producing plums to over 1,000 stations. With only the Miner to start with, he collected scions of many other varieties and disseminated them.

Budd had been made the literary legatee of the great Charles Downing, who had willed him his library. He published the *American Horticultural Manual* in collaboration with N. E. Hansen and he planned to revise Downing's *Fruits and Fruit Trees of America.*

But friends and his family warned him he was overworking. He would reply, "A machine rusts out sooner than it wears out. I don't intend to rust out." At length in his late sixties he had to quit. His health was failing rapidly.

When Budd died in 1904, L. H. Bailey said, "Professor Budd's death marks the end of the first epoch in the teaching of horticulture." The epoch of the pioneer teacher.

V.

BRACKETT AND HIS APPLES OF WAX
1827-1915

Fourteen-year-old Gustavus Benson Brackett washed half a bushel of apple seeds from the pomace of a cider mill on the bluff above Cincinnati.

This half-bushel of seed started the first nursery in Lee County, Iowa. The boy's father, Reuben Brackett, a farmer, clockmaker and nurseryman, moved that year, which was 1841, from Ohio to Denmark in Lee County. Denmark had been founded the year before by three families from New Hampshire. Reuben Brackett became one of the four pillars of apple culture in early Iowa.

The boy, Gustavus, was to remain in this nursery and orchard for 56 years, until at 70 he was called to head the division of pomology in the Department of Agriculture at Washington. That was in the days before people had heard of the superstition that a man should retire at 40 or 50 or 60.

Young Brackett attended Denmark Academy which the Yankees had established, then he joined his father in the nursery and orchard, where he spent most of his life.

He married Anna M. Houston in 1849. During the Civil War he became a chief engineer on the staff of General U. S. Grant. He was one of the engineers who laid out the line of march for Sherman "from Atlanta to the sea." Fifty years later he was to go back to Atlanta and see some of his work for that march still remaining.

When he returned to Denmark from the army he found his pear orchards grown up in thickets.

He was a member of the Iowa State Horticultural Society from its inception in 1866, served as its president for four years, and later as its secretary. He directed one of the 19 state experiment stations on his farm for many years, and for a while served as the state director of experiment stations. One year under his direction 8,500 fruit blossoms were pollinated. Another year he visited 15 of the state stations, in the days before the automobile, when Iowa seemed much larger than now.

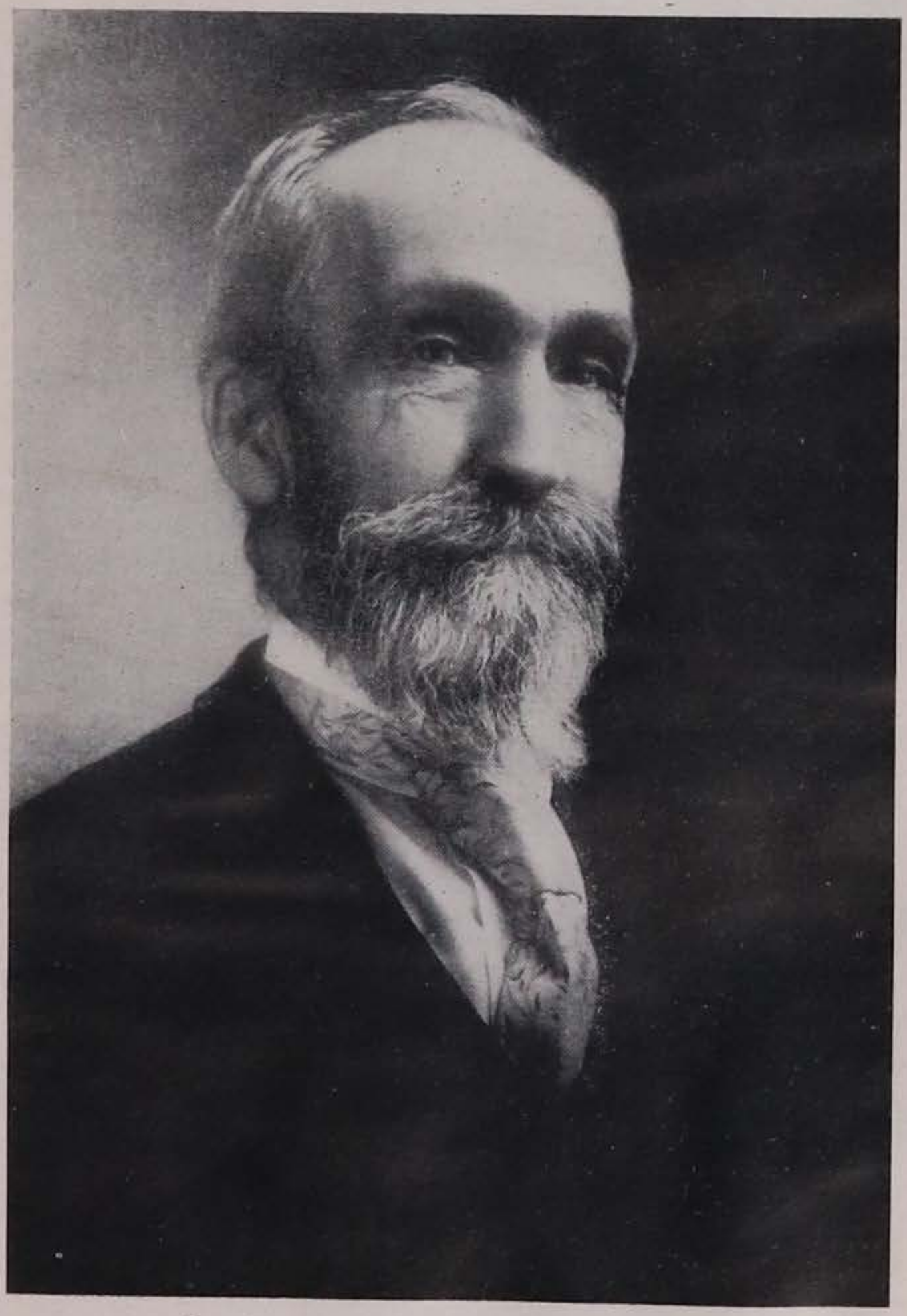
His specialty was pear culture, yet he grew all kinds of fruit. But he admitted after the Brackett nursery had been in existence for 50 years that all the commercial orchards had vanished from his part of Iowa. Bad weather had destroyed them. "Instead of those beautiful orchards laden with golden fruit we see naught but dead and dying trees. . . . The axe is being applied freely, and many a farmer is now enjoying the comfort of a cheerful fire made of apple wood . . ." he said. Apple men were still groping for the hardy varieties that would withstand the fitful Iowa climate.

He planted the first osage orange in Iowa in 1848. Prairie settlers were distraught for fencing material. They grasped eagerly at Brackett's idea of a hedge fence. Hedgers went about the counties planting

these osage oranges and guaranteeing a fence that would turn stock in three to five years. It was only after the coming of barbed wire in the seventies that the osage orange lost its importance.

But Brackett's moving passion was the exhibits. He was always attending some exhibition, usually as a delegate from the state society. He became a recognized authority on fruit varieties. More than once it was said of him that he was the best judge of fruit in the United States, and perhaps in the world.

In 1876 he had charge of the Iowa exhibit at the Philadelphia Centennial. Since the exposition opened before the Iowa fruit crop was



—Courtesy Iowa Department of History and Archives.
G. B. Brackett

ripe, he with the help of a Mrs. Greenland made 1,000 wax models of 300 varieties of Iowa fruit, all grown in the state the year before. These Brackett put in the space allotted to Iowa. So fastidious had been his work, so perfect were the models in color and so evenly marked, that people reached under the glass to smell and feel of them to make sure they were wax. Experts could not always pick out the real fruit sprinkled among the dummies. No other state attempted to make such an exhibition.

When the Iowa crop ripened, 60 barrels of fruit sped to Philadelphia to replace the wax. Due to Brackett's effort Iowa won the prize for the largest and best exhibit.

So far as is known, there had been only one previous American collection of fruit models, 3,000 hand-painted plaster cast specimens made by Townend Glover of New Rochelle, N. Y., about 1841-49. This collection was also on exhibition at the same show.

Following the Centennial, Brackett complained that due to the show he had neglected his nursery, so he refused to accept the presidency of the state society another year. But if the expositions caused him to neglect his business, he must continually have neglected his business, for they were a temptation he was never able to resist.

For years the wax fruit models rested in glass cases in the corridor of the Iowa capitol. They were destroyed in 1924 after having been in existence almost 50 years.

Brackett was a delegate to the convention of the American Pomological Society at Baltimore, and again at Boston. When the National Cotton Exposition was held at New Orleans, he was there with the Iowa fruit display. And twice he represented the United States at the Paris Exposition, where he was awarded the "Chevalier du Merits Agricole" by the French government. His wax models were also shown at Paris.

During the years he was in charge Iowa was a leader in the world's fruit displays.

He did a big job in collecting the fruits for the Iowa exhibit at the National Cotton Exposition. The state society appropriated $600 for the show. He visited orchards all over the state, and collected 40 barrels of apples. But when he and the apples arrived in New Orleans in December, 1885, there was no cold storage to be had. And the exposition was still six weeks away! The interval was spent in unpacking and repacking the 40 barrels to keep the whole from spoiling.

At New Orleans was collected the largest display of fruit in America up to that time, in the largest horticultural hall ever built. The fruit came from Canada, from the West Indies, Mexico, England and France. But the building was under glass, in a warm climate! Brackett said he could not see the purpose of this, unless it was to preserve the fruit by drying. If so, he thought it a success.

He was well rewarded for his work, however. Iowa took the gold medal and premium of $200 for the best and largest fruit display for the north.

He knew the problems of fruit classification, and he continually advocated a systematic and scientific nomenclature. The Iowa Columbia

commission in its report said, "No other state made so large an exhibit of its apple production. . . . None other displayed so great a number of distinct varieties."

But Brackett remarked, "No other state displayed such . . . ignorance or dishonesty as shown by the list of fruits claimed to have been exhibited at the World's Fair." He pointed out instances of one variety being shown under as many as four different names, and he rapped the state society for being so lax.

When the United States Department of Agriculture decided to send a collection of wax fruit models to the Columbian Exposition in Chicago in 1893, Brackett was asked to prepare it. He went to Washington and spent three and one-half years at the work. It gave him a recognized standing both as a pomologist and an artist. Portions of this collection were later shown at other leading shows.

After the Columbian Exposition he spent three years at his home in Denmark, then he resumed his fruit modeling in the Division of Pomology at Washington. In 1897, at the age of 70, he was appointed by James Wilson, then secretary of agriculture, to the post of chief of the division, which he held for the 18 years until his death.

Here he was recognized as an expert on apples. Specimens were sent to him from all over the country, and he was usually able to identify each apple and give the complete history of the variety.

"Probably no other combined such outstanding artistic talent and skill in the accurate reproduction in color of the essential varietal characteristics, together with intimate personal knowledge of so wide a range of our leading fruits. . . . No other developed such expertness and artistic skill as marked his production of a wide range of exact and lifelike facsimile models of our important tree fruits." I am quoting William A. Taylor, of the Bureau of Plant Industry.

Taylor adds, "It is rather remarkable that most of his numerous published bulletins and papers on a wide range of pomological topics were written after he had attained the age of 70 years, being thus based on his long and varied observation and practical experience in fruit culture . . ."

* * * * *

Brackett, like many of the Denmark Yankees, was a temperance advocate. He even held soda pop under suspicion. He himself had sometimes lived three or four days on fresh grapes alone, he said.

* * * * *

A large photograph of him embellishes the rooms of the Iowa State Horticultural Society. It has hung there long. When Wesley Greene retired as secretary in 1920, he told his successor, R. S. Herrick, "Now don't let anyone take this picture down. It is of one of the greatest Iowa horticulturists—Colonel G. B. Brackett."

No other man is thus honored.

VI.

CHARLES GRANDISON PATTEN, "GREATER THAN BURBANK"
1832-1921

Charles G. Patten himself wrote the best epitome of his life in a paper before the State Horticultural Society in 1898. "The true horticulturist . . . has something of the creative genius," he said. "A home for him on the prairies anywhere, and especially in the cold north, would be an uninviting one, if it were not surrounded by trees and shrubs and flowers and fruits. In his daily meditations and in his night visions, he sees arising around him a changed and beautiful landscape. . . . It makes no difference to him that 49 out of 50 declare that he cannot grow fruits. He knows that he can; and behold, they grow. . . . You see him . . . going into the open, storm-swept prairies of southern Dakota, the laughing stock of the whole train of pessimists who always cry 'can't'. . . . Twenty years have passed and his visionary imaginings have taken on tangible forms. . . . His home is surrounded with trees and orchards . . ."

Only Patten never went to Dakota. He stayed at Charles City, which, it was frequently affirmed, had the worst climate in the United States.

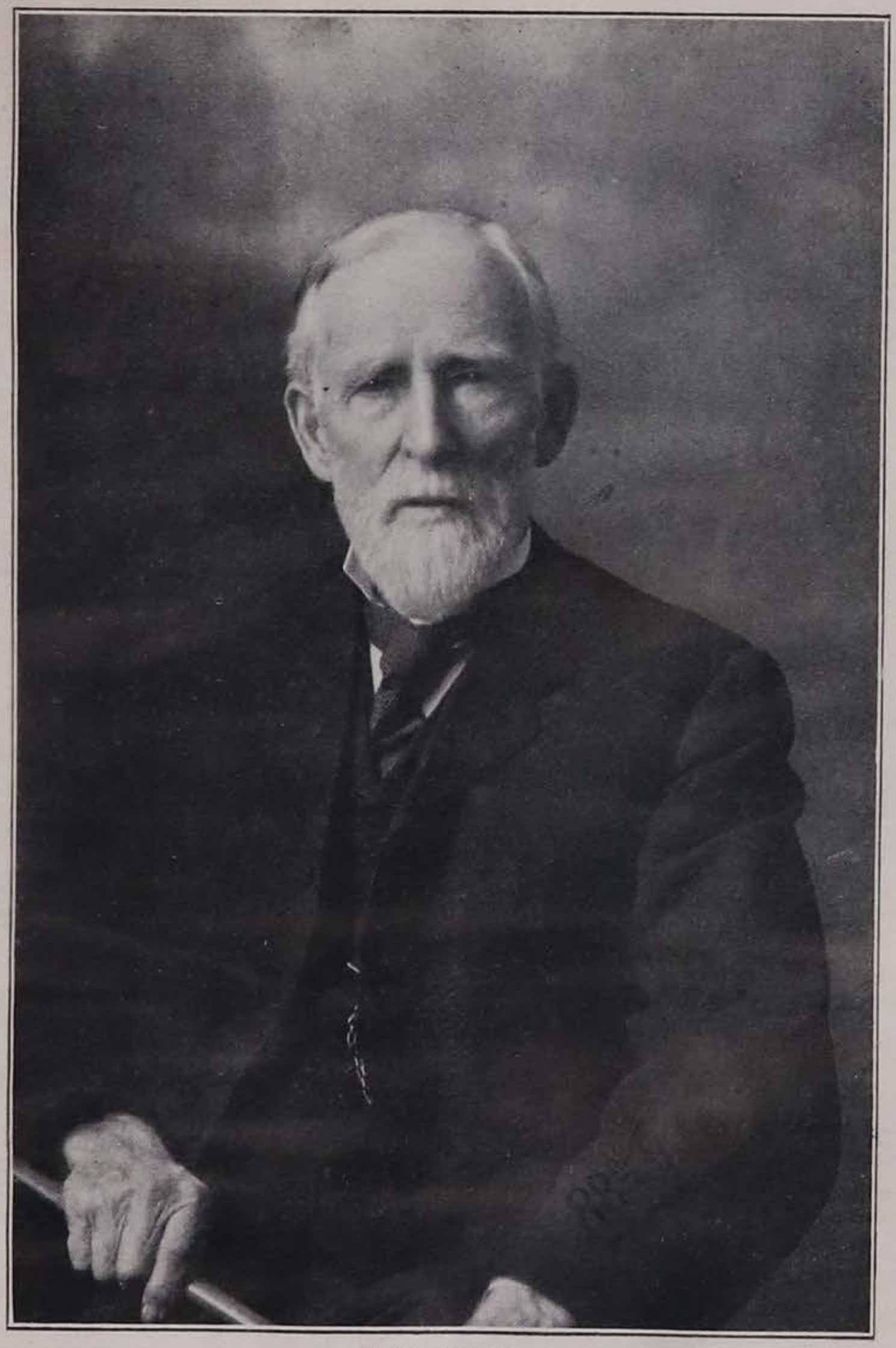
Neighbors watched him with his early tree plantings in the sixties and seventies, and said, "What is the use for that man to make so much fuss about fruit . . . for he cannot raise fruit where he lives." Few thought Iowa could grow anything superior to Siberian crabs or wild gooseberries.

He knew little more about it than his neighbors, on the start. He had no training for nursery work, and as for plant breeding—nobody had ever heard of such a thing in 1868, when he made his first plantings. He was to present the second paper ever given on the subject before the State Horticultural Society.

He bungled and blundered at first trying to grow fruit at Charles City, but at length he evolved a scientific system of breeding, and acquired probably the keenest "plant sense" of anybody in the midwest. He kept on through repeated failure, ill health and financial handicaps for 50 years, until his methods were proved a success, and he had brought forth several varieties of hardy apples that have become standard in the north. Then he was called "greater than Burbank," and lionized at the meetings of the state society as no other member was ever lionized.

Was not Patten greater than Burbank? reasoned the local fruit men. Burbank had hunted a congenial climate for his experiments, but Patten had stuck it out at Charles City and had developed varieties that would grow there.

Charles Grandison Patten was born in Theresa, N. Y., in 1832. His boyhood was spent on the farm, where he learned the mixed farming of New York state, and attended the common schools until he was 13. After that his schooling was irregular. He followed railroad construction work two years in Wisconsin, then attended an academy in Sauk



C. G. Patten

County two terms, and at 24 went on a Wisconsin farm. Here he planted a small patch of seedling apples, his first attempt at a nursery.

In 1863 he married Anna Whittier. A year later the couple moved to Charles City, where he engaged in lumbering and farming.

Now his natural love for trees, combined with the hunger of all

prairie settlers for fruit, asserted itself. He started his nursery. Yet he had no nursery experience except for his small patch in Wisconsin. He had never even seen a graft made.

In 1868 he planted a barrel of apple seed from a yellow Belleflower from Wisconsin, and got 1,000 seedlings. These he failed to mulch. The snowdrifts blew away from most of them in the worst part of the winter, and scarcely a dozen survived. He was not deterred by this or any subsequent disaster, and 21 years later he said he had planted some apple seed every year.

His next plantings were of Oldenburg and quite a few Siberians. From these he began to tackle his problem of growing more hardy varieties for the northwest. From an Oldenburg seedling planted in 1869—his second planting—came his Duchess No. 3, a yellow-green apple. Twenty years later he was to exhibit the apple proudly at meeting: "A seedling of my own growing. I call it the Patten Greening."

It had been doing well. For 20 years he had been comparing it with many other varieties on his grounds, and had found it superior to all. But it would be five years more before he would offer the apple for general planting, for he was careful not to release it before he was sure it had no serious defects.

When the fatal freezes of 1872-73 came, Patten knew the task cut out for him was much greater than he had expected.

Thus he evolved his philosophy of planting and planting, then more often than not, of digging and burning. First one, then another of the eastern varieties were weeded out as they did not suit, then even the Wisconsin trees that had come into the state.

He expressed this philosophy at the horticultural meetings and tried to prod the members into similar action. "If I could send a voice that would go ringing through the harvest days of our fruits for the next 15 years . . . saying, 'Save the seeds of the largest, most perfect in form, most beautifully tinted, from the finest bush, the strongest and most fruitful vine, from the hardiest and best tree, of the most delicious fruit of every kind, and plant and replant the best, in every county and voting precinct in Iowa, the work would be accomplished. . . . Plant seeds everywhere and in unstinted quantities. . . . Let us plant seed by the ten and hundred thousands . . . and the day will hasten rapidly when Iowa will stand pre-eminent in horticultural progress'."

And again: "*Plant the seeds of the best* should be rung in the halls wherever florists or gardeners or orchardists meet. . . ."

But it was inevitable that the worker in a new field should find his steps dogged by discouragements. He succeeded in crossing a Soulard crab and a large Pippin apple, the first cross on record between a native crab and a cultivated apple. This seemed to be the beginning of a new strain. After the hybrid had borne three years he placed it under a muslin tent and hand-pollinated the blossoms. The tree bore well and he saved a hundred seeds, and planted them. They came up, but a myriad of black midges destroyed the seedlings and so put an end to the experiment.

Another time he had 60,000 seedlings of yellow and red Siberian

crabs. On them he grafted 17 varieties of apples, which he exhibited for three years at the horticultural society meetings. But only a year later they began to fail because of small, feeble roots.

Such difficulties were without number.

But most Iowans were wandering away from seed planting during the large Russian importations of the seventies and eighties, wandering, as Patten expressed it, in the "jungles of the Czar's fruit garden." For 20 years the society followed the expected Russian short cut.

Patten stuck to his seed planting and crossing. He did not object to importation for experiment, he said, but he insisted fruit would have to be grown from Iowa seedlings, whether from Russian or other parentage. He had the scientist's regard for facts, was doubtful of theory.

Captain R. P. Speer said of the Russian apples, "Thick leaves are an indication of hardiness."

But Patten exclaimed, "If a tree has a leaf as big as a cabbage leaf, and it is tender, the theory of big or thick leaves amounts to nothing!"

He predicted that the vaunted 40 winter varieties of Russian apples would have to be cut down to five, and these would be of little account. "A poor showing, but it will have to be written." A prediction that later was borne out. As the fruit-men had rooted out the eastern and Wisconsin apples in disgust, now they had to root out the Russians.

By the turn of the century Patten was beginning to get wide recognition for his work. When he entered the room of the Minnesota Horticultural Society meeting the members of that body rose as one man to honor him. Minnesota had three of his apples on its list for hardiness.

At the meeting of the American Pomological Society at Kansas City in 1905 he exhibited the first collection of cross-bred apples in the United States. This old and conservative society awarded him the Wilder silver medal. Again at the meeting of the society at the Jamestown Exposition he exhibited 60 varieties of his own origination, and once more received the Wilder medal.

About 1910 Liberty Hyde Bailey visited Patten in his orchard and found him a small, slender man of sensitive and retiring nature, much of whose life had been spent in ill health. He was then 76, but had more than 10,000 apple seedlings growing, was planting more seedlings and making more crosses than at any time of his life. He had orchards that would normally occupy 40 acres crowded into less than 20 for lack of room. He was so crowded that he could not properly till and prune his trees.

He had given to the trade only a few of his varieties: University, Eastman, Summer Pear, Brilliant, Silas Wilson, Iowa Beauty, and Ben Davis Sweet. As Bailey passed through the orchards noting tree after tree of new apples he had a feeling of regret that these fruits had been so long withheld from the people. But Patten was cautious. He was fearful he might send out a fruit before it was fully proved, and lead some farmer into planting an unworthy tree.

He had been working on peaches, plums, raspberries and pears, as well as apples. For 40 years he had been developing hardy strains

of pears and was predicting Iowa would yet produce the hardiest pears known.

Time and again men have been ruined financially by carrying on experimental work. Patten had crippled his resources by devoting too much time to his breeding, too little to a commercial nursery. His efforts were largely responsible for launching the state experiment stations in the eighties. It was his resolution passed by the society in 1883 that led to the legislative appropriation of $1,500 for the work. But at first the station keepers, of which he was one, were paid $10 a year. Later $25. "What does $25 signify to a man who has spent his life?" he asked.

At last in his late seventies, after years of discouragement and scant money returns, he rose in meeting and said, "I want to say to this society, had I my life to live over again, I could never consent to do what I have done in this line."

After that, there was an earnest movement in the society to give him greater help. Captain C. L. Watrous pointed out that no man could serve two masters, that Patten's service had been in plant breeding, and was worth more than all the rest of the breeding work in the state put together, and that the state should reward him. Watrous pled for the society to give him funds to "keep him alive and at work. . . . Gentlemen, if I could, I would be eloquent."

Keep him alive and at work. At 75! Surely a man should not be asked to buffet uncertain financial seas much longer.

The society gave him $350. A year later the United States Department of Agriculture was paying him $50 a month. But this amount could have been expended several times over to get the best results from his breeding work.

In 1917, 17 acres of his plots, orchards and nursery were bought by the state for the state experiment station, and he was placed on the staff. His title was associate of fruit breeding.

At last the bold swimmer had come to shore and his financial worries were ended. But he was 85. He had only four more years to live.

VII

JESSE HIATT AND DELICIOUS

1826-1898

The Delicious apple represents the crowning point of achievement in the origination of American varieties.—C. I. Lewis.

It is difficult not to wax poetical over Delicious.

An apple may be an apple to the average person. He may be in a fog about the difference between Patten's Greening and Wealthy and Ben Davis, or even Jonathan.

But not Delicious.

Every school kid knows Delicious. Give him one taste and Delicious is his for life.

This apple has everything, not merely a taste that has captured the world. It is a producer equalled by few, and it is hardy enough so that it grows where most other apples will grow.

But in spite of the apple's importance, it would be easy to underrate the achievement of Jesse Hiatt, the man who discovered and tended it. Delicious came from an unknown seed, and it might be dismissed with the statement that it might have sprung up in any farmer's orchard, that only luck gave it to Hiatt.

It is true the apple might have grown in any orchard, given the variety that produced Delicious. But would it have come to fruition? And having come to fruition, would it have been introduced to the world?

Hiatt had at least three claims to distinction. First, he recognized that he had an exceptional apple, a recognition not shared by other horticulturists. Second, he gave the tree, which was crippled early, unusual care and kept it alive and bearing. Third, he had the stubbornness to put the apple forward year after year until at last he found a man who would propagate it.

The world is full of chances. Perhaps it is by some fortuitous chance that the world is here at all. Perhaps it was only one chance in a million that Delicious sprouted, one chance in a million million that it fell into the hands of a man who would know it and fight for it.

Jesse Hiatt was the youngest of 12 children, and had ten of his own. He was born February 19, 1826, in Randolph County, Indiana, of Quaker parents. His father, William Hiatt, owned a farm and orchard and was known among his neighbors as an authority on fruit. He had developed some apple varieties of his own. So Jesse early learned the art of planting and pruning and grafting, and acquired an enduring love for it.

By the time he was 17 he was alone with his parents in the home nest. They gave him the management of the farm, with the understanding that he was to keep them as long as they lived. His mother died in 1848, and he was married the same year to Rebecca Jane Pearson. His father died seven years later. A year after that, Jesse, now with five children and poor health, sold his farm and pulled up stakes for Iowa.

He already had bought two half-sections of land in Madison County, Iowa, where his brother Aaron lived. The Hiatts were to assume some prominence in the new community. Aaron laid out the town of Peru.

One of Jesse's half-sections, on Clanton Creek, was in good timber that would build his and many other buildings in early Madison County. The other, north of Peru, was prairie, with 40 acres broken and a one-room log cabin into which the family moved. In this cabin, with the addition of only one room, he raised all of his 10 children.

He went through the usual pioneer hardships, scrimping and toiling to break land, split rails, saw lumber and get up the buildings. But over a decade and a half, with the improvements completed, the land broken, the feedlots full of steers and hogs, the children growing up to work in the fields, he began to get on and make money.

Jesse Hiatt and Wife

In the meantime, he had not neglected his fruit-growing. He had brought a few trees with him from Indiana. He and his brother had hauled a wagon-load of fruit trees from Oskaloosa, 77 miles away, and each had started an orchard. When he had a little time he was working on his trees, and he kept adding to them until he had a large orchard.

He made his homestead the beauty spot of the neighborhood. There were willow groves at two sides of the spacious lawn, and on it evergreens and lilacs and such native wild fruits as plums, black haws, crabs and choke cherries. The house was a two-room whitewashed affair, one room of logs, but he had morning glories running to the roof, while in the dooryard were balsam and four o'clocks, peonies and snowballs and roses that bloomed all summer.

He was a slow moving, slow talking Quaker, known as a kindly man. All who knew him remember and are impressed by his goodness. He was a man "whose honesty could not be doubted." As is often true of Quakers, his religion molded his life in a vital way. There was no Quaker group in Madison County, so the Hiatts became charter members of the First Christian Church in Peru. They were intensely religious. It was said of brother Aaron that he was convinced the "only way to heaven was through the water of Clanton Creek and the Christian Church."

On a Sunday morning the family would ride into Peru in a spring wagon, Jesse and his wife on a spring seat in front, the family on boards behind. Their church attendance was so regular that the people of Peru, hearing a wagon, would call to one another, "It is time to go to church, there comes Uncle Jesse's."

In 1874 Hiatt built the largest barn in Madison County, a basement barn 36 by 56 feet. It stands today in excellent condition. When it was completed he still had $3,000 in the bank. He planned a new house to grace his lawn the next spring.

But instead, he listened to friends who urged him to put his money in a flour mill. Wheat was a staple crop. A brother-in-law was a miller. All said "it would be a good project." So, during the next two years he built the Centennial Mill, a large three-story frame building, a three-burr mill with the machinery shipped from Indianapolis.

By the time it was completed it had cost $11,500, much more than he had planned. He had to borrow money at 10 per cent. Later he was to pay as high as 20 per cent on these loans.

All went well for two years. Then chinch bugs and drouth caused a wheat failure and after that little wheat was grown for some years in that section.

The mill was operated for 10 or 12 years, always at a loss. Roller mills began to take the place of burr mills. Hiatt belonged to a mutual fire insurance company, and so many mills burned that he had to pay continual assessments. Taxes were kiting.

Those were strenuous years for the Hiatt family. But Jesse managed to meet all payments and escape suit. At last the grown sons divided the land, each assuming a portion of the obligation. This they eventually paid off entire, leaving the home clear.

But the older man was worn out. For several years after this disaster he had the courage to do little. He puttered around with his melons and grapes, apples and vegetables. He had always enjoyed experimenting. Now he found it a rest from weariness and worry.

He had made a practice of grafting several varieties on one tree. He was pleased when he grafted a pear on a wild crab, and it bore fruit. He had practiced seed selection for years, and had developed a variety of potatoes still to be found in the gardens of the Hiatt family. He had two apple varieties of his own, the Hiatt Sweet and Hiatt Black—good apples.

He now became a familiar sight in Winterset, peddling watermelons and other farm products from the wagon.

During these years a seedling had been growing in his orchard, a seedling that was to be very famous although it would not bring him fame. Nobody knew just what kind of a seedling it was, although its fruit later partook of the qualities of his apples, Hiatt Sweet and Hiatt Black. He cut the seedling down in 1870—it was out of the row! That might have been the end of Delicious right there. But the next spring it was up again, larger than before.

He looked at it and said, "If you must live you may." He had a natural sympathy for anything that could withstand adversity. He trimmed off some thorns, cut off the top, and left it. When he noticed it again it was making some progress, with a round, bushy top.

When the tree was ten years old, Jesse said one day, "Ma, there is bloom on my new apple tree."

One apple hung on to maturity. It was large, streaked, of strawberry color. He took his pocket knife and carefully pared and tasted the apple, then exclaimed, "Ma, this is the best apple in the whole world!"

He never changed his mind.

After that the tree produced every year, until it was filling a barrel.

He named the apple the "Hawkeye."

But when the tree trunk was six inches through, the top was blown to the northeast, leaving the body exposed to sun and wind, and it was sunburnt, with the bark cracked and peeling off. Hiatt put a heavy cover about the body, tying it securely. This cover remained on the tree for many years. One year a late freeze killed three-fourths of his orchard, but it did not harm his "Hawkeye" tree.

It is one thing to be convinced you have the best apple in the world. It is quite another to convince the world of it. Hiatt sent the apples to the Iowa fairs, but they got little notice. The premiums went to established varieties.

He tried to persuade his friend, Judge W. H. Lewis, a Winterset nurseryman, to graft and sell the trees. Lewis was a good nurseryman, but he saw no future in the apple.

Hiatt began carrying some of the apples around with him, trying to interest people in them. Arthur Goshorn, publisher of the Winterset News, tells a story of being in company with his father and meeting Hiatt on the road one day. Hiatt gave them each an apple, then

tried to interest the elder Goshorn, who had two large orchards of his own, in propagating and selling the trees.

When Hiatt had gone, Goshorn said the old man was batty, the apples no good.

But Jesse Hiatt did not give up. He still was certain he had the world's best apple.

At last, after 11 years, in 1893, he sent four specimens to a fruit show at Louisiana, Missouri. There they fell into the hands of a man who was looking for just such an apple. He was C. M. Stark, senior member of the Stark Bros. Nursery, who staged the annual show.

Stark always carried a little red book in his pocket. In this he was continually jotting down appropriate names for new fruit varieties as they occurred to him. So when he discovered a new variety he usually had the name all ready in the little red book. For years his book had retained the name Delicious. He was waiting for a fruit worthy of it. This superb name should name a superb variety.

But when he bit into the first apple in the lot from Madison County, Iowa, he had a sensation he never forgot. He knew at last he had what he sought. Here was the Delicious apple!

Stark would have written Hiatt at once. But in the confusion of the show his name and address had been lost. Nobody knew where the apples had come from. There were exhibits from all parts of America.

Stark could do nothing but wait for another show on the bare chance that the unknown exhibitor would enter again. And while he waited, the fate of Delicious hung in the balance.

But not really. If there was one thing the old Quaker had learned, it was patience. He forwarded more apples to the Missouri show the next year.

Stark went through the exhibits anxiously. He knew the apples with their streaked strawberry color the moment he unwrapped them. Now he wrote to Hiatt.

The old man replied: "I am nearly 70 years old and have raised apples all my life and would not willingly overestimate this apple . . . but if it is not a better apple than any in your large list, it will cost you nothing. . . . Once you introduce it there will be little call for Jonathan. The original tree is now about 22 years old. . . . Both fruit and tree are perfect models . . ."

He predicted his apple would supersede Jonathan. He was wrong. Jonathan is still one of the nation's leading varieties. But his apple surpasses it in popularity.

Now the Starks bought the propagating rights to the tree. Usually it takes a long time to introduce a new variety. But the Starks did not want to wait 50 years for the public to know Delicious. They slipped a few young Delicious trees into the various orders going all over the country, acting on the gamble that they would produce in different regions. In a few years letters flooded in from everywhere. People wanted to know the name of this new apple that tasted like no other apple in the world. They wanted to plant more of them.

The first commercial display of Delicious was at a horticultural con-

gress at Council Bluffs. One hundred bushels were sliced for samples and given to visitors and growers. Stark Bros. spent three-quarters of a million dollars to introduce Delicious, and in a quarter of a century they sent out nearly eight million trees. By 1922 it was estimated that the annual value of the Delicious apple crop was 12 million dollars.

* * * * *

In the meantime, Hiatt had finished on his homestead the few years remaining to him. On Sundays his house and yard were full of people. His wife and daughters were good cooks and entertainers, and everybody sampled the old man's abundance of fruit and melons.

In 1896 he was failing with a cancer of the eye, and in continual agony. But one late summer day he dramatically announced, "Mother, I am going to build a new house next summer!"

The next spring he did build the spacious new home that had been waiting so many years, and there he was able to rest a little over a year before his death. But he had provided a comfortable dwelling for his wife for 12 years longer.

At the time of his death Delicious was still unrecognized and was not mentioned in his obituary. His death was not noticed by the state horticultural society.

* * * * *

In 1922 a suitable boulder monument was dedicated in beautiful Winterset Park to the discovery of the Delicious apple. Taking part in the dedication were the State Horticultural Society, the Historical Society of Madison County, and the Historical, Memorial and Art Department of Iowa.

The original Delicious apple tree still stands, a rickety old grandmother, rotten at the heart, kept up by braces and cement. But it produced apples this year (1940).

Note: The tree was killed by the 1940 Armistice Day storm which also killed the great majority of the Delicious trees in Iowa.

VIII.

H. A. TERRY, WIZARD OF THE PLUM THICKETS
1826-1909

Among the early settlers on the Missouri River slope was a tall, wiry youth who came to Honey Creek in Pottawattamie County to teach school.

During his spare time he used to hunt the game that then graced western Iowa, the deer, elk and turkeys along the Missouri River bottoms. Sometimes he stumbled into wild plum thickets just as they had been left by the Indians, and picked the plums off the ground by the handsful. His imagination being fired by his youthful appetite, he thought this the finest fruit he had ever tasted.

Years later Henry Terry revised somewhat his high estimate of that early fruit. Yet he never lost his interest in it. And due to his efforts some of the choicest plum varieties ever originated in Iowa descended in direct line from the seed of those thickets.

For he turned from school teaching and after some vicissitudes became a nurseryman and fruit breeder in the days before it was recognized that there was such a calling as fruit breeding. "Terry," states *Plums of New York*, "is the originator of over 50 sorts, nearly all from the native species—a record unsurpassed in point of numbers for new varieties by any other plum breeder."

According to the *Cyclopedia of American Horticulture* (1901) 300 varieties of native plums were being propagated by nurserymen. If this be true, one out of six of the total were Terry plums. Such well known varieties as Gold, Hammer, Hawkeye, Nellie Blanche, Crescent City, Downing and Milton were the originations of this teacher who hunted deer on the Missouri River bottoms.

Yet he was as well known for his work with peonies as he was with plums. If he originated 50 varieties of plums, he pushed forward 100 of peonies, 39 of which were at one time generally recognized. Most of these have passed out of cultivation. Yet today Grover Cleveland, Carrie, Vera, Defiance, Sarah Carstensen, Etta and Hercules are still to be found in American gardens.

Henry A. Terry was born in Cortland County, N. Y., of Scotch-Irish extraction, in 1826. His father was a general farmer and raiser of vegetables, who later moved to Michigan and then to Nauvoo, Illinois, having become a Mormon.

Henry left his parents at Nauvoo when he was 20, and made his first money teaching school in Mercer County, Missouri. The next fall, in 1847, he taught school on Honey Creek, in Pottawattamie County, Iowa. A year later he married Mrs. Rachel Sirrine. The couple moved to the town of Crescent. Crescent did not have a store, so Henry opened one, the second in the county. The store must not have portended much in the way of a fortune, for he later was clerking with a brother-in-law in Connecticut.

The east did not hold him, however, and in a few years he was back

in Pottawattamie County, running a seed and grain business at Kanesville (Council Bluffs). In 1857 he returned to Crescent, where he had already established a nursery. He continued the seed and grain business for three years, then he closed it out, and after that he devoted himself entirely to his nursery.

At Crescent he carried on a general nursery and seed business. For years he had the entire Missouri River slope to himself, being the only seed merchant in all that region.

He went through the usual trials of the pioneer. At the state horticultural meeting in 1876 he said that the fruit growers of his region had "progressed backward" the past year.

H. A. Terry

Two years later the picture was darker. In his report to the state society that year he said: "Most of our nurserymen would go out of business if they could get out without loss; but when a man gets into this business he is almost compelled to stick to it until he either brings up at the poor-house, or else adds some other business to his original calling. In western Iowa the nurseryman must either grow fruit, farm crops, cattle, hogs, or bees, in addition to his nursery, in order to make a fair living. Probably my fellow-members of this society will think this is discouraging. If they do they think the same as I do. Twenty-two years in the nursery business in western Iowa has given me some sad experience. . . ."

He listed as contributing to his "sad experience" inclement winters, hot, dry summers, blight and grasshoppers.

But he had good years as well as bad, so that he neither added any

other business to his calling, nor did he "bring up at the poor-house." Instead, he gathered a comfortable competence. It was said that during the Cleveland panic, when most of his neighbors were reduced to barter, Terry still had cash in his pockets.

He was thin and wiry of frame, five feet eleven, with dark hair and eyes, a well-liked, jovial man, full of fun, but not boisterous. He was extremely careful not only of his own appearance, but of that of his house and grounds as well. A professor from Cornell University who visited the nursery declared in a magazine article he had never seen such cleanliness. He had walked over some 150 acres of flowers and orchard and said he could have carried away all the weeds he saw in his vest pocket.

Terry always carried his pruning knife. When neighbors asked, "Well, is it time to prune?" he answered, "Prune when your knife is sharp."

In 1873 his wife died, leaving him three children. That same year he married Esther Hough. Three children survived this marriage also.

He acquired 30 varieties of peonies from Prince, of Flushing, Long Island, the year he opened his nursery. Many of these produced seed freely, and soon he had thousands of peony seedlings. This work of originating peony varieties he was to carry on well over 50 years until the end of his life, although it was not until much later that he would obtain recognition for it.

But it was not until he had been in his nursery 20 years that he seriously bent to the task of breeding up the native plums. In 1880, at the state horticultural society meeting, he said: "The improvement of the plum by growing seedlings is just now attracting attention, and . . . western Iowa in particular is coming to the front with some really choice varieties. Fellow members should plant choice pits, and let them fruit, and some of these fine mornings we shall wake up and find that we have made a hit, and got something that everybody will want." Apparently he himself had begun about five years before.

Somewhat later he stated his principles of plum breeding: "My plan has been to plant in close proximity the very best varieties of trees that I could get so as to have the most perfect pollinization, and when those trees bear fruit I select the very finest and most perfect specimens and plant as soon as possible after they are fully ripe, and the next season, when these trees are one year old, I select again, discarding those that in general do not suit me. Those that are most promising, say perhaps 40 or 50 out of a hundred, are transplanted for fruiting, and when these trees come into bearing, if one or two out of every 50 bears of satisfactory value to render it worthy of propagation, I consider it a success."

His attempts at crossing were all with the Americana and Chickasaw families. In 1888 he said he had probably fruited 5,000 seedling plums. A year later he had in cultivation about 100 native plum varieties and thought that less than 25 possessed merit. In 1897 he had named 36 of his best seedling plums and "all are good." At that time he had 150 varieties in his plum orchard.

He also had been working with apples. In 1877 he had 200 seedling apples bearing in his orchard, and had named at least four varieties of his own origination. His brother-in-law says he had 50 varieties of crab apples.

Toward the turn of the century he gave up his nursery and after that devoted himself entirely to his beloved peonies. He said, "I am now in my eightieth year, and do not know how long I will continue to grow peonies, but I want to be surrounded by them as long as I live. They are like my children, very dear to me."

Already he had traveled a long road with his peonies, for he had found the selections from the east to be shy bloomers, unsuited to the rigorous Iowa climate. The plants sometimes waited four or five years after planting to bloom, and then they were capricious about it, being sensitive to frost. He had determined to breed a race of peonies that would bloom the first year, and every year after that, and at last after several decades of work his plants would "go through a frost, a freeze, a drouth, and bloom as brightly as ever."

He had been selecting for bright colors until his grounds abounded in "deep, intense reds, pure whites and lovely pinks." It was said that no such brilliant deep red peonies existed anywhere outside of his gardens.

In 1903 he gave his first paper on peonies before the state society. He told something of his work with them, how he had been growing them for 40 years, planting pound after pound of seed. He had grown perhaps 100,000 seedlings. Of this number he had possibly 100 plants worth propagating. (It is generally recognized now that even 100 were too many, that perhaps a dozen varieties would have been enough.) This, he said, might seem poor encouragement to the beginner, but "the excitement and anxiety in watching a lot coming into bloom pays the flower lover very well."

It was not until a year later that his peonies were brought into general notice, through the first edition of Reverend C. S. Harrison's *Peony Manual.*

Reverend Harrison tells of his visit to Terry that year: "Mr. Terry's home was a poor, small, dilapidated affair. His barn had been burned. . . . Everything had a woebegone look except that great field of peonies of which he had the finest collection in the west. I asked him, "How many do you sell a year?'

"'Only about $100 worth.' I knew he needed some printer's ink so I gave him a cordial endorsement. . . . The next time I visited him happened to be his eightieth birthday. He seemed hopeful and happy.

"'How many did you sell last year?'

"'Thanks to you,' was his reply, 'I sold $1,000 worth.'"

Harrison must have drawn on his imagination in part for this description, as Terry was not hard-up but modestly well-to-do by the standards of his day, with money in the bank. His barn had burned but was rebuilt that fall.

It is probably true, however, that his peonies had got little notice until this time, and that Harrison's publicity helped their sale.

Harrison also told about Terry's method of naming his peonies, and how he named the Carrie: "He was bothered to find names for his numerous family of peonies. He had been using the names of all the school teachers he could hear of but there were not enough. Then he took up the generals. We were examining one of rare beauty when he asked, 'What is your wife's name?'

" 'Carrie.'

" 'Then this is Carrie,' and he staked it accordingly."

Although Terry was never one of the most prominent of the state horticultural society members, he was greatly interested in its proceedings and usually presented a paper each year. For a number of years he conducted one of the society's experiment stations.

Now known as Father Terry, he attended the meetings until within two or three years of his death at 84. At the last he took along a companion to answer questions for him, for he had become quite deaf.

Henry Field, who purchased Terry's peonies after his death, found a large block of six- or seven-year seedlings that had never been culled or named. Apparently he had continued his breeding work until the final year of his life, although it was said during the last season he had to entrust most of the care to hired help.

IX.

ELISHA GALLUP, THE BEGINNER'S FRIEND
1820-1903

You may call Gallup the new beginner's friend, and hit it right every time. Just such a blunt, outspoken putty-head is wanted to write for the Bee Journal.—Elisha Gallup in *American Bee Journal*, 1868.

In 1870 the *Illustrated Bee Journal* published a series of biographies of the prominent beekeepers. Elisha Gallup, of Iowa, at the behest of the editor wrote a bit of his life history which appeared together with his picture in the March issue.

Editor N. C. Mitchell said that he printed extra copies of the paper for the occasion. But so many people wrote and asked for the picture of Gallup, and the story about Gallup, that the supply soon was gone. And still the letters came. The bee men all wanted to read about Gallup, the famous Iowa writer. So the editor published his story again, in the July issue!

The interest his readers showed in Gallup gave an idea to the editor, who was also an Indiana bee supply dealer. Gallup surely had a hold on the beekeepers. Mitchell wrote him: Why not, he asked, write exclusively for the *Illustrated Bee Journal?* He would be very glad to pay Gallup a handsome bonus if he would do so. Mitchell had a patented hive on the market and he suggested that Gallup might be very glad to boost this hive in his writings.

Another editor, H. A. King of the *Beekeepers' Magazine* in New York City, also saw the influence of this Iowa farmer. He, too, had a hive for sale, the American hive, and did not want to be left out. He dispatched a letter offering Gallup a tidy sum if he would write only for the *Beekeepers' Magazine* and mention the American hive.

Gallup told about it later. "Both King and Mitchell tried their soft soap on a man about my size and build," he wrote, "but their pipes failed to connect."

He did not take the trouble to try out the hive of either of these men. Instead, he began an unpleasant attack on the general lot of hive venders. "We do not need another hive patent in a thousand years," he said. All the various contraptions on the market were rubbish. "I give Mr. Langstroth the credit of introducing the moveable frame hive, and he ought to be paid for it. Let all the other hive men whistle. Don't give them your money for nothing." Mitchell and King were uncomfortably astonished at this outcome of their advances. And not long afterward King was the defendant in a suit Reverend L. L. Langstroth brought against him for infringement of patent.

Samuel Wagner, the scholarly old German who published the *American Bee Journal,* which he had established some years earlier, came to Gallup with a different story. He had no hive or supplies to blow the horn for, but in his quiet way he was supporting Langstroth as being the true inventor of the movable frame hive, and he was trying to publish a journal that would succeed on its own merit. But he said

he had lost nearly $1,500 in the venture and he felt he would have to discontinue it.

The hard-headed Iowan was not so resigned, however. He had talked the matter over at a beekeepers' convention at Indianapolis. Other subscribers had heard that the *Journal* was in financial difficulties. The trouble was, Gallup said, that a large proportion of the beekeepers, even those who attended the conventions, never had heard of the *American Bee Journal* or of the Langstroth hive.

Elisha Gallup

He wrote Wagner, "Now I do not wish to advise, but if you can hold on until after the Cincinnati convention, we, the old subscribers, are bound to make a tremendous effort to increase your subscription list, and place the 'Old Reliable' on a firmer foundation."

Wagner held on, and Gallup, who had refused to go drumming for the *Illustrated Bee Journal* or the *Beekeepers' Magazine*, went drumming for the modest editor of the *American Bee Journal* at the Cincinnati convention—without pay. He secured many subscribers, got the names of hundreds of other beekeepers, and sample copies were sent to them. Some time later Samuel Wagner wrote him a letter, expressing his thanks. He said the *Journal* had paid all its losses and more too. It now was standing on its own feet.

The *American Bee Journal* continued. Gallup never received any money for the scores of articles from his pen that found place in its pages. He took his pay in the thanks of the scholarly old bank cashier who tried through study and effort to do something for beekeeping. Gallup wrote for the *Journal* for 35 years, and recorded long afterward in its pages the demise of the magazines of both King and Mitchell. "Both journals went where woodbine twineth, as they deserved," he said.

He belabored the peddlers of patent hives while continually upholding Father Langstroth. He pointed out that he himself did not use the exact Langstroth hive, since he did not think the hive frames deep enough. But it was the Langstroth hive all the same, and covered by the Langstroth patent.

Yet in 1871 he suddenly announced in the Journal that he now had a new hive of his own, with 26 frames, not patented. He jestingly called the hive his "Youreka, back action, extractor, reversible, revolvable, movable comb, twin bee hive," and said he would send its description to anyone who would pay him a dollar.

The readers of the Journal got up in arms. Some of them might have been duped by the patent hive men, but who was Gallup, to charge a dollar for his secret? He had said when he had started writing that he would answer all questions free of charge!

Gallup replied that he was a hard working farmer with a family, and he was not overburdened with greenbacks. Beekeepers had been piling their questions on him. He had received 36 letters in a single week on the hive question alone, to say nothing of many letters on beekeeping in general. He had to stay up at night answering letters after other people were sound asleep. And all he got in return was kicks, cuffs, abuse.

He merely had tried to cut down on his correspondence by putting a price on his hive description. Well, that had done it! People quit writing when they had to pay a dollar.

After this outburst, Gallup sent the description of his big hive to the journals—for nothing, and continued to answer the letters. "My private correspondence would fill a goodly volume, of which I am proud," he wrote.

* * * * *

Elisha Gallup was born August 22, 1820, in the town of Milbourne, County of Sherbrook, in what was then called Canada East. His first 39 years he lived in Canada. Then he moved three times: to Wisconsin in 1859; to Osage in Mitchell County, Iowa, six years later; and after 13 years in Iowa, to Orange County, California, where he passed his last 25 years and died at the ripe age of 83.

The story-tellers have it that when he was not more than a baby his mother would look for him first by the bee hives when he ran away. It is true that he kept bees all his life even from his very early youth, with the exception of a few years after he first became a water-cure doctor. Then his patients were so numerous that he had no time for the bees.

Gallup got his first swarm when he was 12 years old. His father kept bees, but concluded that he never could have any luck with them. He told young Elisha he might try his hand, and counseled him to buy somebody else's lucky swarm. The bees would not do well, the elder Gallup said, unless their purchaser also bought their luck. He coached Elisha carefully on the rules for the right start in beekeeping. He was not to pay money for them, but he must exchange something. Sheep were the best to trade for bees.

Elisha learned there were plenty of swarms to be had for three dollars but no one would sell his lucky swarm. Finally he persuaded a widow to trade her lucky swarm for seven dollars' worth of hemlock timber. She agreed that her luck was to go with the swarm as part of the bargain.

Gallup later said the consequence to the widow was bad, as her bees would go into the woods after she sold her lucky swarm. But he had the best of luck. He kept the colony 12 years on the same comb. He always had two new swarms every season, sometimes three, and always a box of honey.

Soon young Gallup lost all faith in the superstition of his father and the widow, and sought to learn how to make all his swarms lucky swarms. He decided that having the comb built right when a new swarm was hived in a box was a great part of the secret. In later years, after he had traded charms for system and knowledge, he was able to say, "I make all lucky swarms now, and I do not consider a swarm in proper working order until it is made into a lucky swarm."

He was fooled by superstition in his youth, so he attacked it in his old age, and many a quack felt the sting of his pen or tongue. Prof. F—— was selling a bee charm to keep the bees from stinging. "If you put one drop of Prof. F——'s Bee Charm on your right ear, it will prevent the bees from stinging your left heel," he wrote, "providing you keep on your boots, and do not let the bees get inside of them."

Gallup in early life had no bee books or magazines, and he saw his first movable frame hive when he was middle-aged. He got his first real insight into beekeeping from an old man named Wellhuysen, from Holland. Wellhuysen had kept his bees in basket-shaped willow hives that he covered inside and out with cow manure. The old Dutchman knew how to make rapid increase in his colonies, and he showed Gallup how to keep them all the same strength. The younger man often went out into the apiary, turning over hive after hive and marveling that they all were equal in numbers and prosperity.

Gallup was a miller as a young man, and then a farmer. He had little book learning, but he managed to keep his eyes open. One year he sowed a piece of land to buckwheat for his bees. He went through the hog lot with some buckwheat still in his sack. The hog lot soil was rich and mellow. He decided to sow it to buckwheat also, and to keep the hogs out. To his surprise when the buckwheat was in bloom, the bees would not go to the buckwheat in the field, but they covered the blossoms in the hog yard, and harvested a good crop of honey from it. Keep the ground rich for honey, Gallup decided.

Years later in Iowa a neighbor same to Gallup for advice. He had been growing buckwheat for his bees for eight years on the same piece of land, he said. At first they had harvested good crops of honey, but of late years they would not trouble to work the flowers and he was getting no crop at all. He thought perhaps his bees were "getting sick of buckwheat."

Gallup intimated the buckwheat was not yielding nectar, and told the neighbor about the buckwheat he had grown in the hog lot. The

neighbor went home and plowed up his cow yard and planted it to buckwheat. Once again he got a good crop of honey.

Gallup built an observation hive and often watched his bees late at night through the glass. He got his first movable frame hive about ten years after its invention, and it was then that he made a real gain in his knowledge. He bought the first edition of Quinby's *Mysteries of Beekeeping Explained.* He thought it an excellent book, and hastened to buy the second edition when the publishers announced it. He was disappointed. According to his mind, Quinby had been standing still. Gallup thought he had not taken advantage of the movable frame hives to bring his instruction up to date.

Gallup felt there were many features of beekeeping on which he could instruct, since Quinby had not done so. He decided that he would write for the beekeeping magazines. He was nearly 50 years old, with little schooling, and could not write more than a scrawl. But this did not stop him. He went to a writing school in the winter of 1865, learned to write a legible hand, and began to send letters to the American Bee Journal. For years few wrote so much for any magazine as Gallup did for the Journal. In one year, this magazine published 24 letters from his pen. His private correspondence also was enormous. One correspondent alone said he had a stack of letters on beekeeping four inches high from Gallup. And he wrote to hundreds of people. Many adopted his hive, which was in wide use for years.

Elisha Gallup was no reader. It is doubtful if he ever read much on beekeeping outside of the bee magazines and Moses Quinby's book. Yet, so well did he understand beekeeping practice that G. M. Doolittle, probably his most able pupil, spoke of him as one of the greatest beekeepers who ever lived.

In 1898, after Gallup was nearly 80 years old, Charles and C. P. Dadant sent him a copy of their revised Langstroth book. He read it with interest and surprise, then sat down and wrote a letter to the journals. People might believe, he said, that he had been plagiarizing all these years from Langstroth's book, since he had been putting forth as his own ideas many of the things that were in the book. But that was not so, he pointed out, since he had never read it until the Dadants sent him a copy.

During the late seventies Gallup disappeared from the pages of the *American Bee Journal.* Beekeepers wanted to know what had become of him. J. W. Lindley wrote from Osage that Gallup now was a doctor, a hydropathist. "He is performing," he said, "some remarkable cures, having treated over 30 cases of fever this spring, without the loss of one." Lindley said that he had taken over Gallup's bees.

Gallup in some way lost his grip on affairs in Iowa. Broken in health, he shook the dust of the middle west from his feet and went to California. The mellow climate brought back some of his youthful vigor. At the age of 67 he married a second time, and began anew the raising of a family. His wife died, leaving him three children. It seems that he married a third time, for the *American Bee Journal*

in 1900, when he was 80 years old, carried a notice that his wife had just died in childbirth.

He carried on his work as a hydropathist in California, and kept a few bees which did well in the California sunshine. The bee magazines printed little about Gallup for many years. Then, in 1893, George W. York, who had become editor of the *Journal*, learned his address, wrote to him and suggested that he contribute once more to its columns. Gallup came back as vigorous as ever and sent a contribution for almost every issue of the ten years until his death. Even on his death-bed he dictated a letter correcting a mistake that had appeared in one of his recent articles.

X.

EUGENE SECOR, "CO-WORKER WITH THE ALMIGHTY"
1841-1919

No barbarous nation ever cultivated fruits, and no war-like people ever signalized a victory by planting an orchard. Mars is an enemy of Pomona. She flies before the red badge of war.—*Eugene Secor, Transactions Iowa Horticultural Society, 1897.*

It was at the annual banquet at Des Moines in December, 1917, that Eugene Secor read his last paper, save one, to the Iowa State Horticultural Society. That was in war time. Governor W. L. Harding, supreme Iowa orator, addressed the gathering with a ringing plea for patriotism. John Wallace made an appeal for the Red Cross. The horticulturists at the Oriental tea room that evening of December 12th gave ear to the cause of the nation's destiny.

But iron-gray, stern-faced Eugene Secor told them the "Story of a Garden," which he admitted was also the story of his life. He said gardens, like children, developed with the years. He quickly cast the sound of drum beats from his listeners' ears when he raised his spare form above the table. He took them back through his years rich with living and told them of his garden, the finest fruition of his life.

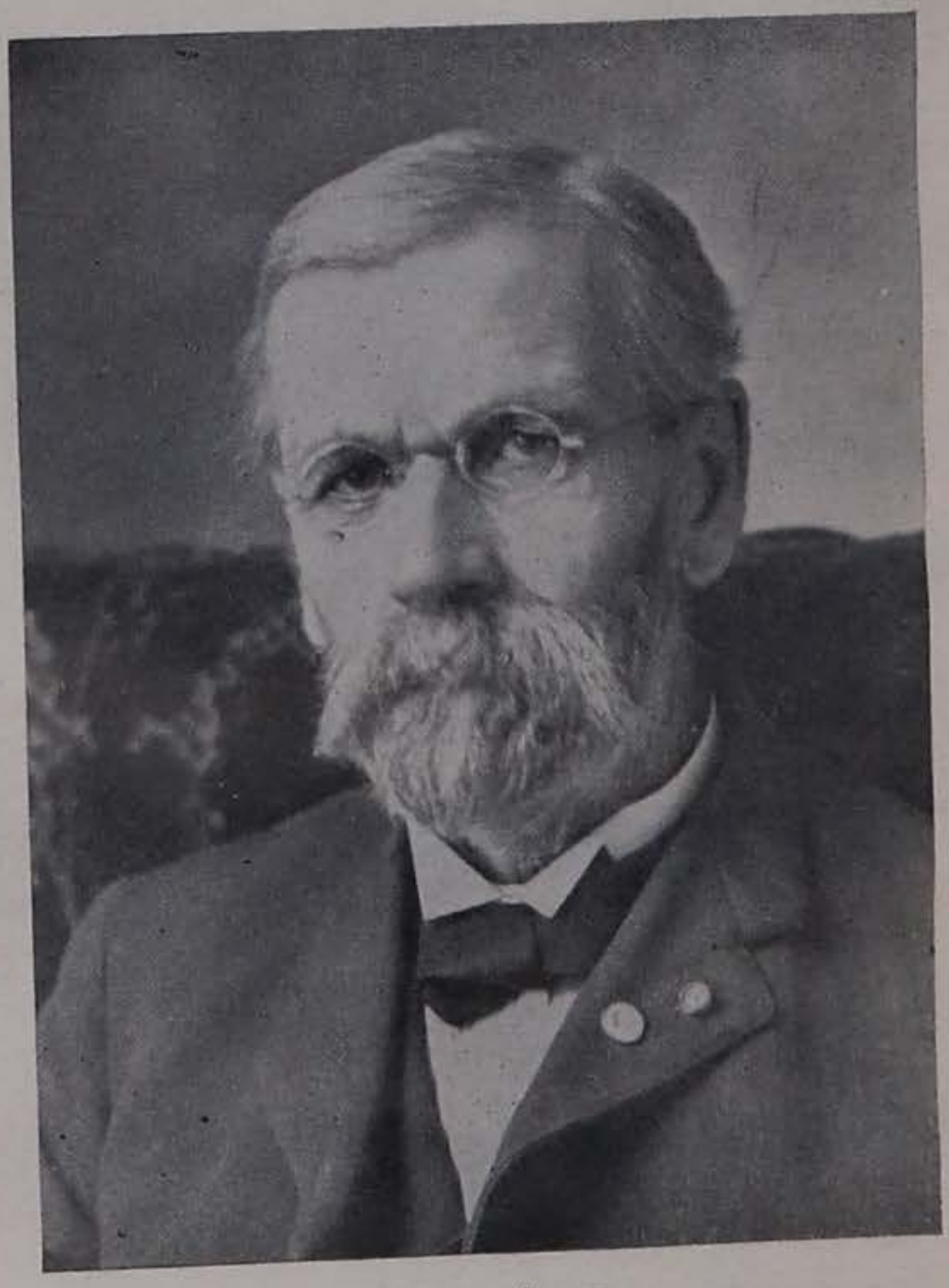
Each year for nearly 35 he had been coming to these annual meetings of the society at the state capital. Each year he had read a paper, now rejoicing with his fellow members over a good season, now consoling with them over a poor year, now telling them how to plant a grove of trees, or about the propagation of new varieties of peonies, and again urging the protection of the Iowa wild flowers or reading one of his poems. Always he had held out hope and an ideal for the future when Iowa would be the state of attractive homes, and the "spirit of home adornment" would take hold of the people.

This year he was 76 and could be justified for turning back the pages for a few minutes and telling his own romantic story that started in the days when as a tow-headed boy in New York he had driven the cows on his father's farm. In that land of the immortal Downings, the first of America's landscape gardeners, his father had caught their spirit, and had budded and grafted and experimented—had tried every new fruit brought to the locality. And in his father's seedling apple nursery the boy first had tried grafting.

As he grew older the boy's thoughts turned to the west, where he dreamed of establishing an Eden of his own.

When he turned 21 he followed his brother David to Iowa, then one vast prairie garden. He stood upon the margin of his western Eden. "Before the breaking-plows of the pioneers had turned over the flower beds that God had planted, how beautiful they were!" he said that night to his listeners. "And before the cruel axe had crippled the native forests, what a splendid border for God's prairie garden! The memory of the summers spent in Iowa in the early days is but the reminder of lost pictures that can never be restored."

The young man drank in the beauty of the virgin prairie but he longed too for the plants of his New York home and procured seeds and scions and trees from the old home and elsewhere. But he found out it "was a long way climatically from the forty-first degree of latitude north on the Atlantic coast, tempered by the Gulf Stream, to forty-three degrees north in the middle west, distempered by a different current from the regions of Alberta," and the peach trees and quinces and sweet chestnuts disappointed him. The roses grew only with special care.



Eugene Secor

Among the fruits, the farmers said, only sour gooseberries and the wild crabapple would grow in this inland wilderness. The new settlers were destined to leave behind them forever the gardens of their youth. But young Secor and his brother found encouragement after a while when some little white pines did well, and when the red cedar lived. The currant, the raspberry and the strawberry succeeded from the first, and Siberian crabapples grew to be the finest ever seen.

Secor found the old-fashioned lilac would grow in his yard. "It is like the faithful dog that will follow his master uncomplainingly to

the ends of the earth and will be the last one to pay homage at his grave." And the peonies grew. "They laugh at 30 below." The bush honeysuckles stayed, "pure white and rose pink," and the snowball and two varieties of phlox, and as time went on a great variety of herbaceous plants and bulbs "that sleep sweetly and safely in their winter beds covered by nature's ermine" came to grace the home among native trees where he took his bride and reared his family.

As the years passed, the dreams he had had as a tow-headed boy partly came true. "In the improvement of the herbaceous peony he has brought out of the unknown a few forms and rare colors of delicious fragrance that have anchored his heart to the garden of his early dreams," he told his listeners. "If only *she* (his wife) could walk with him among the expanding beauties of these new creations as she used to, the sun of their bliss would never set . . . until something should be produced like her—the sweetest and loveliest flower that ever caught and revealed the smile of God."

This was the talk Eugene Secor gave at that last meeting, but one, which he attended. Full of love for growing things, he wove the story out of his poetic thought. He touched but lightly on the fact that his home, "The Shelter," at Forest City, which he had taken from the virgin prairie, had become one of the show places of the middle west for its flowers and its shrubs and its fruits—even for its bees and its Shorthorn cattle. He touched only lightly on his early hunger for "eastern apples of precious memory," how he had learned that they would not produce in Iowa, and how the quest for apples that would grow there was begun, how he had tried everything the farm papers recommended, with "seed planting and world-searching going forward" until he and others had found that the Wealthy, Northwestern Greening, Malinda and Patten's Greening, with many others, were to do well in midwestern soil. He only mentioned that the native Iowa plums had been kept and cultivated and improved until at last the easterners were depending first on western plums rather than those of Europe. He did not mention that he had been a regular exhibitor at his county fair, and that one year he had shown 36 varieties of apples grown on his own farm.

That was the talk Eugene Secor gave. He mentioned not at all his long years of work for the society. His listeners all knew of that. He did not tell them of his bees and the fact that he was one of the most prominent beekeepers in the United States, or of his work with Shorthorn cattle. He did not tell them of the rhymes he had written. He did not tell them of his many sorrows, of the adversities he had encountered which would have shattered a weaker man. Many knew of those things also. He confined his story to his garden.

A year later Secor read a paper, entitled "Posies," at the horticultural meeting. And before another meeting came he met his death. He was killed by one of his bulls.

Eugene Secor had but little schooling. He attended for a few terms a log schoolhouse near his home in Putnam County, N. Y. When he came west in 1862 he entered Cornell College at Mt. Vernon, Iowa. But

his brother David, who was acting as county recorder and treasurer as well as postmaster at Forest City, decided to enlist in the Union army, and Eugene dropped his college course to take care of David's work while he was gone. That finished his schooling, although Cornell College later conferred on him an honorary degree in recognition of his ability and his service, and gave him a place on its board of trustees.

In 1868 Eugene was elected clerk of the district court of Winnebago County in his own right, and from that time until almost 1890 he either held county office or was mayor of his city. He served also as postmaster and later a term in the legislature.

During the eighties he began his business career and started writing for the farm papers. He ran an abstracting office in the daytime, and studied and wrote for the papers at night. He helped to found the City Bank. Realizing his limited schooling, he read incessantly, and surrounded himself, as later told by his son, with the "best of books, periodicals and people." When he was not confined to his study he often read Shakespeare, Longfellow and other classics to his children and to his wife, who was an invalid the latter part of her life.

He began keeping bees in 1867, about the time he was married. His apiary never was large. In his "fourth annual report" he mentioned that he had harvested 1,200 pounds of honey, an average of 86 pounds per colony, and that he would not be satisfied until he could average more than 100 pounds per colony. In 1892 he was keeping 75 colonies of bees. He wrote much for the bee magazines on subjects all the way from breeding bees of peculiar traits to extracted honey and bee pasture from alsike clover.

The Secor family were heavy users of honey, and Eugene often told that it was served on the table 365 days in the year. A visitor related that a Secor boy plastered honey on all his victuals, even on his potatoes and hash.

Secor tried to develop the market for honey at an early day, urging that if beekeepers would put up their honey in attractive containers and use neat labels the demand would be increased. At that time most food products were sold in bulk.

He often served as judge of honey and beekeeping exhibits, at the Iowa State Fair, at the World's Columbian Exposition in Chicago in 1892 and 1893, and at the Omaha exposition a few years later. In addition to writing for the beekeeping magazines, he was beekeeping editor of a number of farm papers, including *Iowa Homestead, Farmer and Breeder*, and the *Northwestern Agriculturist*.

But it was for his attendance at the beekeepers' conventions and for his work with their organizations that he became best known and was longest remembered by the beekeepers. He was vice president of the International Beekeepers' Association, president of the North American Beekeepers' Association and for several years president of the first Iowa Beekeepers' Association.

In those days conventions were social occasions to be remembered the year around. Leading beekeepers traveled the breadth of the continent to take part in the meetings and festivities. And a speech by

Eugene Secor was a flower that would adorn any meeting of beekeepers or gardeners. His rhymes became as much an institution at these meetings as the bright talk and singing of Dr. C. C. Miller. Often Secor wrote songs which Dr. Miller or George W. York set to music for these conventions. These songs were published in a book, *Songs of Beedom*. No meeting was complete unless "Beekeepers' Reunion Song," "Buckwheat Cakes and Honey," "Dot Happy Bee Man," or some other Secor songs were sung.

He wrote a poem for a convention in 1887:

At Chicago they met, a right jolly set,
On a soft, balmy day in November,
Such a buzz and roar I heard once before—
At an old cider mill in September.

They talked about bees, their legs and their knees,
Of the God-given nectar in flowers,
Of its value as food, of bareheaded brood,
Of the late sad failure of showers.

The nineties, for all the improvements that had provided new opportunities, were years of grievous problems for the beekeepers. Extracted honey in the days before the pure food laws were passed was an easy mark for the adulterators. Many cheap products were sold under the honey label and customers became wary of buying honey. The beekeepers were so harassed that Secor was led to exclaim that the honey extractor was one of the worst improvements ever made, since its advent made it necessary for the beekeeper to defend the purity of his product for the first time.

In 1897 he helped form the United States Beekeepers' Union, an organization to combat adulterators and to defend the legal rights of the beekeepers. He was elected the first manager of the union, a post he held for six years.

Newspapers of large circulation often published the report that comb honey was made of glucose and paraffin. Secor sedulously ran these stories down, explained to the editors that it was impossible to imitate comb honey, and pointed out that the A. I. Root Company had a standing offer of a thousand dollars to anyone who would find a comb of imitation honey, but so far nobody had come forward for the reward. Often the editors corrected the stories, which gave the bee men good publicity at a time when they sorely needed it.

Secor instigated a suit against an adulterator in Chicago. The man was acquitted, but much publicity was given the case. Then he moved against a Michigan honey dealer, who was convicted and fined.

He also had a hand in one of the most famous cases connected with bees ever to be tried. Two brothers named Utter in New York, one a peach-grower, the other a beekeeper, quarreled because the peach-growing Utter claimed the beekeeping Utter's bees had ruined his peach crop. This was a question often mooted between beekeepers and their neighbors, whether or not bees could harm fruit. They took their case

to the justice of the peace, who decided against the beekeeper. He appealed to the district court. The union put some of the most prominent beekeepers in the United States on the witness stand. They testified that the mandibles of bees were not adapted to biting or cutting, that they could not harm peaches not already broken open. The beekeeping Utter was acquitted.

In many cities and towns beekeepers were so hampered by regulations or outright prohibitions from keeping bees that Secor was led to write in disgust about "two by four fathers of two by four towns" who tried to ban every bee "that might be found on a honeysuckle or in the act of appropriating a drop of water from a reeking back alley," and predicted that "when some so-called horticulturists and so-called municipal fathers had their way and drove the industrious bee into retirement or bankruptcy, one would see an army of two-legged pollinators going around the country with their camel's-hair brushes and pots of yellow dust, endeavoring to restore the fertility to garden, farm and orchard that existed before the fall—of human greatness!"

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Secor's dream was to leave his business duties and devote himself to his flowers and orchard, his bees and his cows. His dream was about to come true when he was 60, but an employee of the bank of which he was a director misappropriated a large sum of money. Secor was in no way liable. But he elected to pay the money in full to the bank. This ruined him financially. He returned to his work. He had to put forth more effort than he had at any time in his life, and only after another decade was he able to retire. Mrs. Secor died in 1912.

A reserved man, rather seclusive for all his associations, and set apart even from his children, he yet found happiness in his family. When, after seven sons, a daughter was born in the eighties, he celebrated by writing to one of the magazines, "That first baby girl created an enthusiasm in the neighborhood among the old maids and young maidens, the married women and little children equal to a beekeepers' convention."

But that little girl and six others of ten children died, and added to his sorrows and those of the invalid mother. The trials that beset him, however, were not able to break his outward calm or dim his friendships. Another daughter, Nina, was his constant companion.

Secor's last love in the garden was the peony. He had brought the double red Officinalis Rubra from New York, where farmers each had a single clump in their front yards, when he had come to Iowa, and the peonies had been with him ever since. "The poor man's friend," he called them.

But he and others had improved them until in their fragrance and profusion of bloom they were eagerly sought by the rich as well as the poor. For 30 years he had known only the common red and two other varieties, a double white and a double pink called Fragrans.

Then in 1900 he had sent for six other varieties. Every year afterward he had added to his list from the best growers in America and abroad. He started planting seeds in 1904, labeled the plants, and kept

a record of their lineage on their mother's side. Some of the seedlings including the Nina Secor were pronounced of great merit.

Many of his papers before the horticultural society in his later years were on peonies. "This is the month of peonies in the north," he wrote. "It has brought us a bit of the oriental splendor of which our childhood dream. . . . This new queen of the floral kingdom . . . yields itself to the landscaper's art and to the enjoyment of the humblest cottager . . ."

And he ended contemplatively, "Creation is not finished. Every seed holds the secret of a new revelation. Oh, my soul, may I not be a coworker with the Almighty in making fair the face of the earth?"

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Song of the Willows

By Eugene Secor

Come, my charming pussy willows,
Shake again your fluffy pillows,
In the lap of tardy spring;
Let me hear once more the wing
Of the priestess honey bee,
As she earns her marriage fee—
Claiming gold for every rite
Whispered ere she takes her flight.
Ye are first of all the cousins
To unfurl your flags by dozens.
Brave and hardy as an oak,
Every flower wears a cloak.
March winds do not frighten ye,
Mad and spiteful though they be.
Welcome, pussy willow friends,
First to bloom when winter ends;
We shall hear the bluebirds sing
When ye tell them it is spring.

XI.

LOUIS HERMANN PAMMEL AND THE IOWA PARKS
1862-1931

But while there were men groping for fruits that would endure the Iowa climate, others were engaged in a struggle that seemed even more hopeless.

They were trying to save what remained of the state's natural beauty after the pioneers' plows and the pioneers' axes had swept across it.

The word "Iowa" may not mean "beautiful land" as some romancers imply. But Iowa *was* a beautiful land. The hand of God had left a beauty here that fairly caught the breath. Here were the prairies studded with flowers as countless as the stars, and in a variety equally as countless. Here were the lakes and rivers, and the landscapes with soft rolling contours and trees with harmonizing canopies of their own.

But perhaps unfortunately, this matchless beauty overlaid the most fertile land man had dug with spade. Few were the crags and gorges good for nothing but to gaze upon.

The prairie flowers might be plowed under. The trees might be cut, the lakes drained, the rivers straightened and polluted with sewage. The contours might be eroded. And they were. The pristine beauty of Iowa quickly melted away.

Here and there a few souls arose to protest, but they were scarcely heeded. People were too busy in making livings to note what they were doing to mar the surroundings in which they had to live.

Three men were prominent in these early efforts to rouse the people before it should be too late. They were two botany professors and a congressman.

The congressman was Major John F. Lacey, who in the house of representatives from Iowa became one of the nation's conservationists and wrote most of the early national park and forestry legislation.

Of the two botany professors, the first was Thomas H. Macbride, who in his later years was president of the state university. At the turn of the century he was a beacon light when beacon lights were sorely needed.

The other was Louis Hermann Pammel. For years he carried the burden of the movement to save Iowa's wildlife almost alone on his broad shoulders. Under the driving power of his will and enormous energy the state parks at last took shape. Due to him, Iowa was one of the first states to have a comprehensive plan of conservation.

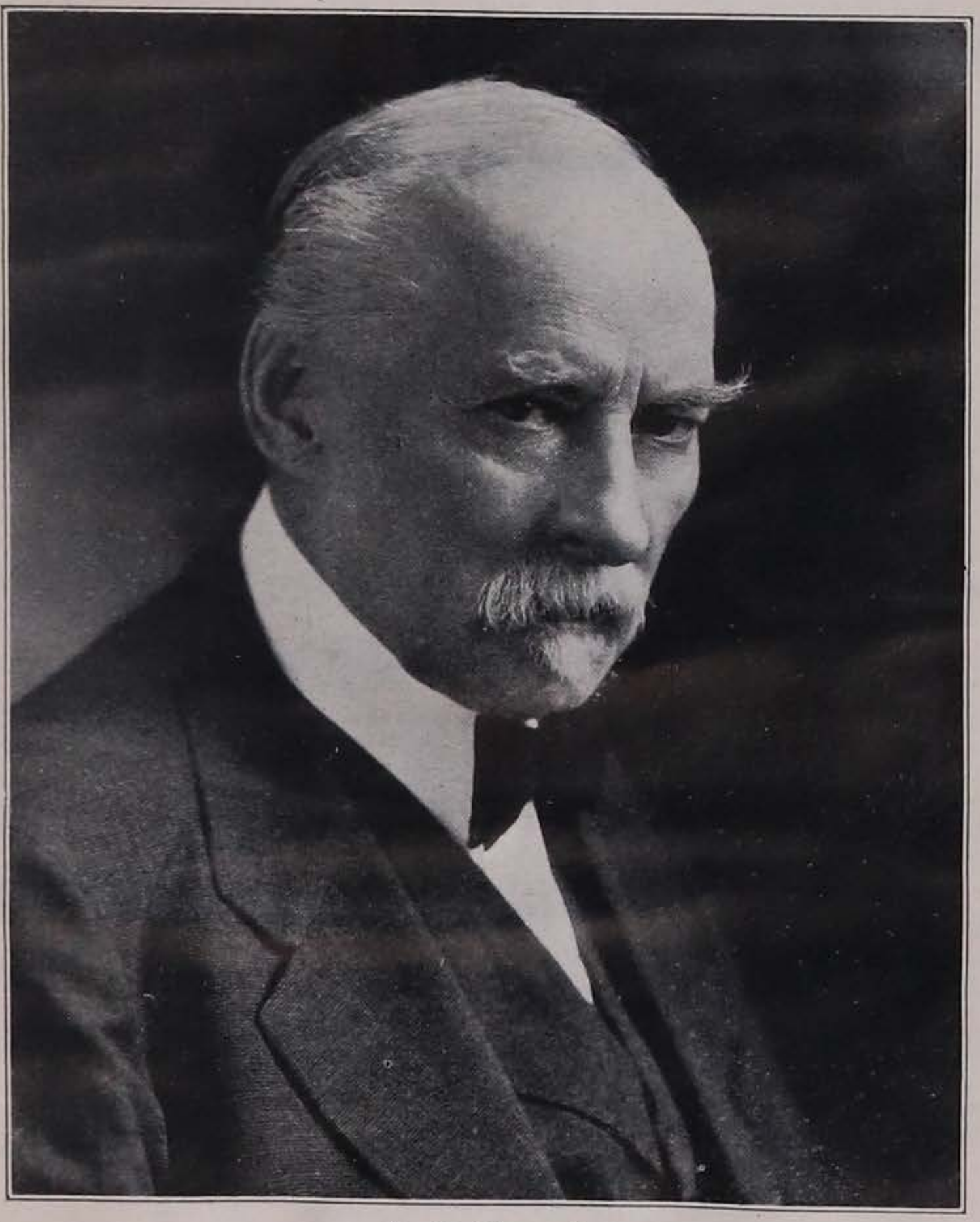
Practically every one of the state's 74 parks either was acquired while he was chairman of the state board of conservation, or if later, because of his interest in it.

During his lifetime Pammel *was* the conservation movement in Iowa.

In the early eighteen-nineties forestry in Iowa was at ebbtide. Barbed wire fences had come in and removed an earlier incentive to grow trees for fence. The land was enclosed. Woodlots were rapidly being converted into stovewood. On the eastern seaboard the idea of parks as

great democratic playgrounds might have begun to take hold. But there was little evidence of it in Iowa.

It is true that in 1896 Thomas H. Macbride was complaining that "our rural population is wearing itself out in an effort to wear out 'labor saving machinery.'" He was urging that a natural park in every county "well cared for would be a perpetual object lesson to the whole community."



L. H. Pammel

Yet even after 1900 there were only 1,300 acres in city parks in the whole state, and no others. In 1908 county auditors in 77 counties were reporting no parks, "but the cemetery was used every pleasant Sunday."

A decade later, except for the cities, not ten acres of woods, water landings or prairie were open to the public. Nobody could run a race, fire a shot, cast a fly, or spread a lunch except by trespassing or special permission of some owner. Laws protected property, but not people.

"Boyhood's only province in Iowa was in trespass," observed E. R. Harlan.

It was inevitable that friction between farmers and townsmen should be endless. Picknickers and hunters too often left fences down, livestock running loose, crops despoiled. And in righteous wrath farmers destroyed their groves of hickory, sold walnut trees and cleared plum thickets to rid themselves of trespassers.

The only group making a concerted effort to change the situation were the scientists. They may scarcely have glimpsed the needs of the people, but they were solicitous about saving wildlife refuges before it was too late!

Then with the coming of the automobile that took people in droves to the country clamoring for a chance to shatter legitimately the monotony of life, the two movements were ready to be joined.

Suddenly everybody wanted parks.

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A leader was needed, and he was at hand—the botany professor at Ames, in his fifties.

Dr. L. H. Pammel was a man of international reputation in his field. In addition to turning out many of the nation's leaders in his classes, he was doing a vast amount of writing on taxonomy and phytopathology.

Yet he had time to head the park movement.

Louis Hermann Pammel was born at La Crosse, Wisconsin, of German ancestry, in 1862. When his parents moved to a farm near La Crosse, the family lived in a log house, and Louis attended a country school. As he was extremely fond of plants, his most cherished recollection of his boyhood days was of picking the pasque flowers on the hill back of the farm home. Neighbors looked on these as well as the moccasin flower, the shooting star and the columbines as weeds. Louis did not consider them so. In later life he was to regret that some of these plants were no longer to be found on the old farm, humble plants that only a sensitive soul could enjoy.

And he observed, "The little child that gathers these plants has a keen sense of culture, I think."

After taking private tutoring and attending a business college Louis entered the University of Wisconsin at 19, and graduated in agriculture four years later.

Botany was not considered a vocation worth a man's full time. Perhaps that is why he took up the study of medicine at Chicago. If so, he stayed with it only a few months. He soon went to Cambridge, Massachusetts, to become the private assistant of Professor William G. Farlow. Farlow was a distinguished botanist who also had started in medicine because botany was not considered a vocation. But he had thrown it aside to become the founder of American phytopathology.

After all, it is men who make vocations important, or unimportant.

Less than a year later Pammel became assistant to Dr. William Trelease in the Shaw School of Botany in St. Louis. He was rapidly pushing to the front. During the summers of 1888 and 1889 he was in Texas making a study of the cotton root rot, and asserting his pioneering instincts by claiming a fungus as the cause of the disease when other scientists were looking for the cause in the chemical deficiencies of soils.

In 1889 after obtaining his master's degree he went to Iowa State College to head the botany department. Later Washington University would award him his doctorate. The department at Ames consisted of one man, himself. Here began a tremendously busy life, for botany was not to remain unimportant at Ames. During the 41 years he headed the department the staff increased to 15, with 56 courses of instruction offered. Today, silent testimonials to his mountains of labor during those years are the six-foot shelf of his papers and books at the Iowa State College library, and the college herbarium with the thousands of plants gathered by him.

The doctor, as he was affectionately known to his associates, was essentially the pioneer. In most of his publications he was breaking new scientific ground. For example, he pointed out the futility of seed treatment for corn smut. He started the work in bacteriology at the college, the second such course offered in the United States.

At least three plants were named in his honor, the grass Hordeum pamelii Scribn. and Ball, the smut Entyloma pamelii Hume, and Senecio pamelii Greenman, named for its discoverer.

His works included *Grasses of Iowa, Ecology, A Manual of Poisonous Plants*, called the largest and most exhaustive book ever written on the subject, *Weeds of the Farm and Garden, The Weed Flora of Iowa*, and *Honey Plants of Iowa*. But there were hundreds of less pretentious papers. His contributions to the proceedings of the Iowa Academy of Science alone numbered 110.

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Here was no man with his personality swallowed up by his devotion to science, however. In his zest for the quiet pleasures of life he would have delighted some old Chinese sage.

Pammel was a German with all the German's pride of race, and he was often taken for a native of Germany. Yet he was far from being a typical German, if there is such a one, who is supposed to be devoted to logic and order to the exclusion of all else. The doctor was the sort who could like his pipe and his dog and his prayer book, as well as his science.

He was married to Augusta Emmel, and was the father of five daughters and one son, all of whom became alumni of Iowa State College.

His home was known for sociability and good meals. He liked to meet people, and mingled with all sorts, enjoying his contacts whether the person he met happened to be a national dignitary or a toothless old Irishwoman. Having a nice regard for courtesies, he never went

through a certain town without telephoning the mother of one of his associates to learn if all were well with her.

On a trip to Los Angeles his companions noted that he avoided the popular cafeterias. He preferred to sit at a table with its personal service.

Trains always fascinated him, and it made no difference whether he were on branch line or transcontinental route. But he had a gust for all travel, whether by train, horse or automobile. And his quest for botanical specimens took him all over the continent.

He was ruthless with himself. On a Canadian trip he tramped the mountain slopes all day without seeming to become tired. He ascended above the timber line, and trod over glaciated areas without the thought ever occurring to him that he and his companions might reach an end of their endurance.

So he was one scarcely to take with good grace the suggestion that plant collecting was a sissy occupation.

At Glacier, Canada, he and his companion came into a hotel each loaded with plants.

A small boy watched them curiously and asked the doctor, "Do you like to pick flowers?"

"It is my business."

He would return to the hotel after one of his jaunts and engage the clerk or some acquaintance in conversation. If there were nobody to talk to, he would sit down, fill his corn-cob pipe, and write. We are told he was always writing in spare moments.

In the doctor's private office on the top floor of Central building at the college was a large revolving bookcase packed with scientific works, autographed books, class records and travel books. On its top within easy reach was his small leather-bound prayer book, and he often took it down when he was confronted with knotty problems.

His pipe also was his constant companion, and he derived keen pleasure from it. A friend tells of going to consult him and finding him not in his regular office, but in the attic, and guessed that he habitually retired there so he could work and smoke in comfort, unharassed by rules forbidding smoking in college buildings.

Attached to the Pammel household was a small white dog. When she first came to the door as a waif, she was fed and asked to go away again. She did not go, and thereafter was a companion of the doctor on his automobile trips. One afternoon in a far corner of the state he left her in the car while he and his student driver tramped through the woods. When they returned the dog had disappeared. It was late, a crisp autumn night was ahead. The driver was anxious to go, but the doctor would not start until he had found his pet.

"He was kind and gentle beyond words," the Iowa State College Alumnus reports.

Such a man could not avoid being enormously interested in his pupils. His "special students" were nearer to him than anybody with the exception of his own children.

He chose one or two of the more able from each sophomore class

for special attention. These he would give an assistantship if it were open, or other work. When he had turned over a field of work to an assistant he gave him the utmost confidence. In any discussion he would say, "You know more about this than I do," and immediately resume his own task. He encouraged his workers by becoming co-author with them of many papers. In later years he kept in touch with these men and women, never lost contact with them. He followed their progress, read and abstracted their publications, and praised their accomplishments.

Out of his system came dozens of the country's present leaders in botany and natural sciences.

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This was the man chosen to lead the Iowa conservation movement. And he was ready.

"I have pledged my every spare moment to the cause of conservation and the state of Iowa," he once confided. He kept his pledge. He had been writing, traveling constantly, speaking and preaching conservation throughout the country. He was at the beck and call of everyone interested in the work, and was inclined to do more than was asked of him.

He, too, like Dr. Macbride, was urging a park for every county in the state. "Every county and city . . . . must provide parks where the daily toiler can find solace and comfort." His associates thought him extreme.

On a passenger train between Cedar Rapids and Strawberry Point he exclaimed over the prairie flowers growing on the right-of-way. He was talking with the brakeman. "You have a beautiful area of wild flowers here. They should be preserved for the benefit of the passengers who make use of this railroad."

"Oh, yes," said the brakeman, "they are a lot of weeds and ought to be cut down, because the farmers complain they will be destructive to their crops."

Pammel prodded the railroads about saving the prairie flowers until two preserves were set up, one of approximately 20 miles between Des Moines and Moulton, and the other on a right-of-way north of Audubon. Unfortunately, neither is maintained today.

As early as 1901 the doctor had called a meeting of conservationists in Des Moines. There he proposed to set aside large enough areas in the state to save vanishing species of both plant and animal life. His far-reaching plan seemed hopeless to most of those present. Yet out of the meeting grew the Iowa Park and Forestry Association.

In 1917 when the doctor gave a paper before the Iowa Conservation Association he felt that his dream was near realization. He suggested about 30 acres to each state park. If the land could be bought for $40 per acre, the cost need not exceed $6,000.

"I hope the present legislature will see its way clear to pass a law creating state parks," he said.

And in the course of a year the state park plan had become law,

the state board of conservation had been created, with $50,000 appropriated out of the hunters' license fees. The next general assembly appropriated $100,000 for the purchase of state parks. Pammel himself wrote the bill.

Yet he had been asking for $6,000!

Pammel had been made chairman of the conservation board, with Joseph Kelso, J. F. Ford and E. R. Harlan, curator of the state historical department. The board was to buy park lands for the state on the approval of the Iowa executive council. And the administration under Governor W. L. Harding was ready to make the parks a major concern.

With such a prospect, the doctor was not slow to adjust his vision. Now, instead of asking for 30-acre parks, he was saying, "If I can have my way about it, none of the state parks, the larger ones, shall have less than 1,200 acres."

Nor was he one to waste time. The first meeting of the board was held December 23, 1918, to consider purchase of 1,300 acres of the Devil's Backbone region in Delaware County. Pammel was pointing out the white pines there. "The Indians protected these pines and why should we not do the same?"

Just five days later the members were reconvening in Council Bluffs, and recommending the acquisition of the Lacey-Keosauqua area on the lower Des Moines River. At this New Year's Day meeting the doctor was enthusiastically describing the lotus beds perhaps planted there by the Indians, and, "I saw a hackberry at least three and one-half feet in diameter on the Des Moines below Farmington. I think that it was the largest hackberry I have ever seen."

The board met twice in February, then again in April to inspect the Palisade area in Linn County. And so on through the year. There were four meetings in July as the members went from Keosauqua to Davenport, Tama and McGregor. They were considering the Buckingham area in Fremont and Mills Counties, with its numerous old Indian and bison trails, the Wild Cat Den in Muscatine County, Bellevue and Maquoketa Caves in Jackson and Dubuque Counties, Steamboat Rock in Hardin County, the Ledges near Boone, Monkey Mountain near Ottumwa, the Sandstone bluffs of the Des Moines River in Mahaska County, and the Yellow River region with its cool temperatures and caverns.

During the nine years Pammel was chairman of the conservation board 38 parks were laid out. Sixty thousand trees had been planted. In 1928 more than seven and one-half million people found recreation in Iowa parks. The park idea had taken firm root.

During all this time he had been working tirelessly. He knew the value of propaganda, and contributed to newspapers, magazines and legislative reports. When he visited a town he would often call on the newspaper editor and explain why he was there. Then through the editor he would learn the trend of local sentiment. He ferreted out the key people in each community, got them behind his projects, and was so successful that in almost all cases he got local financial

assistance in buying the parks, thus stretching the park funds further.

Often a friend would transport him to his next destination. "Hitchhiking was an unknown term in those days, but in retrospect I have thought that he was a hitchhiker par excellent," says M. L. Hutton, state conservation director. "But, although Dr. Pammel obtained free transportation, the one furnishing it received in return a free education in conservation matters."

When he spoke he asked his hearers to petition the conservation board! He took two friends to the edge of Backbone State Park, pointed downstream to the bluff edge of the river and a grove of trees, then urged them to petition the board to buy this area. It must belong to the park, he said. Years later it was acquired, under the federal CCC program, but because the doctor had planted the idea in another's mind that day.

When he retired from the board Pammel State Park at Winterset was named after him.

* * * * *

"When I think of Dr. Pammel I always see a picture of a very large man leading a class through the tall prairie grass in the intense heat of an Iowa summer day, coatless, towering above the group, powerful and active," says Mrs. Henry Frankel, former member of the board.

Pammel took it for granted that others were as willing to work as he. Once in the middle of winter he invited a large group of legislators to a banquet of the Iowa Conservation Association at Ames. Then he notified the Des Moines Garden Club to transport them, a distance of 33 miles in icy weather!

There was consternation in the ranks of the club, but the legislators were taken to the meeting.

"Field trips lasting far into the night are among our memories," says Mrs. Frankel. "No matter how long and how difficult, Dr. Pammel was always ready and eager for them. The caravan of cars might be stopped at any time to see some fine flora—a certain wild cherry on the high road west of the Ledges State Park that he had seen in Michigan but never before in Iowa, a magnificent sycamore somewhere near the road to Red Rock, a pine tree and balsam in northeast Iowa, the buttonbush and arum lilies and cardinal flowers of a certain prairie near Ames, and the chestnut oak near a buffalo wallow northeast of the college. And how he loved to lead the nature students up the steep cliff at the Ledges to show them the reindeer moss and other rare specimens of that floral island left by the glaciers!"

Yet the doctor was the despair, too, of the officers of the conservation association. They would arrange full programs in advance for the meetings, only to have him insist on calling everyone of any interest whatever to the platform to speak.

When Pammel State Park was to be dedicated, Mrs. Frankel made several trips from Des Moines to Ames to go over the program with him. She wanted to be sure of keeping it within the limit of an hour in length. "He heard me quietly and I went to the dedication happy."

But the program was scarcely started before the doctor turned to

Mrs. Frankel and said, "There is Dr. Trelease, my old botany teacher, who has come from Illinois. He must come up here on the platform." And he arose and invited him.

The man took from his pocket a sheaf of papers and proceeded to read an address!

* * * * *

Six years before his death Pammel had a serious illness from which he never fully recovered. Yet he was not relieved of the administrative work of his department until four years later. After that he worked constantly to complete the book on the honey producing plants of Iowa.

In 1930 he was urging that the native flowers be allowed to take root and remain on Iowa highways, but holding up his hands in horror at the idea of planting hollihocks there. "We have enough foreign plants . . . now that are weeds."

He and Mrs. Pammel were steadfast supporters of the Episcopal Church at Ames, of which he was a lay reader. When the new St. John's Church was to be built, they quarried stone from the old Pammel farm in Wisconsin and brought it to Ames as their contribution. The church was built of that stone.

The doctor and his wife left the campus just before the holidays of 1930 to visit their daughter, Mrs. Edna Needham, in California. There, the doctor suffered a heart attack and was in bed for nearly a month. Then he was up again, visiting former students and places of interest. In late February he was talking to the students of San Jose State College at a science seminar.

A former student took the couple to the train when they departed for Iowa. The doctor never left it alive. He died en route near Ogden, Utah.

At Ames friends gathered to pay their final respects. His was the first funeral to be held in the new church, among the stones from the Pammel farm.

BIBLIOGRAPHY AND ACKNOWLEDGMENTS

The work and thought of so many people living and dead must go into the compilation of even the most modest biography that it may seem somewhat presumptuous for any individual to allow his name to go on the title page, unless it is that he thus signifies his intention to take the responsibilities for inadequacies and inaccuracies in the finished product. Several of these stories could not have been written if it had not been for the unselfish help given me.

Much valuable newspaper and other research was done by the Federal Writers' Project under Raymond Kresensky as the state director. I have drawn heavily on the 70-odd volumes of the Transactions of the Iowa State Horticultural Society for almost every one of these biographies, so references to the Transactions are not separately noted in most cases.

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