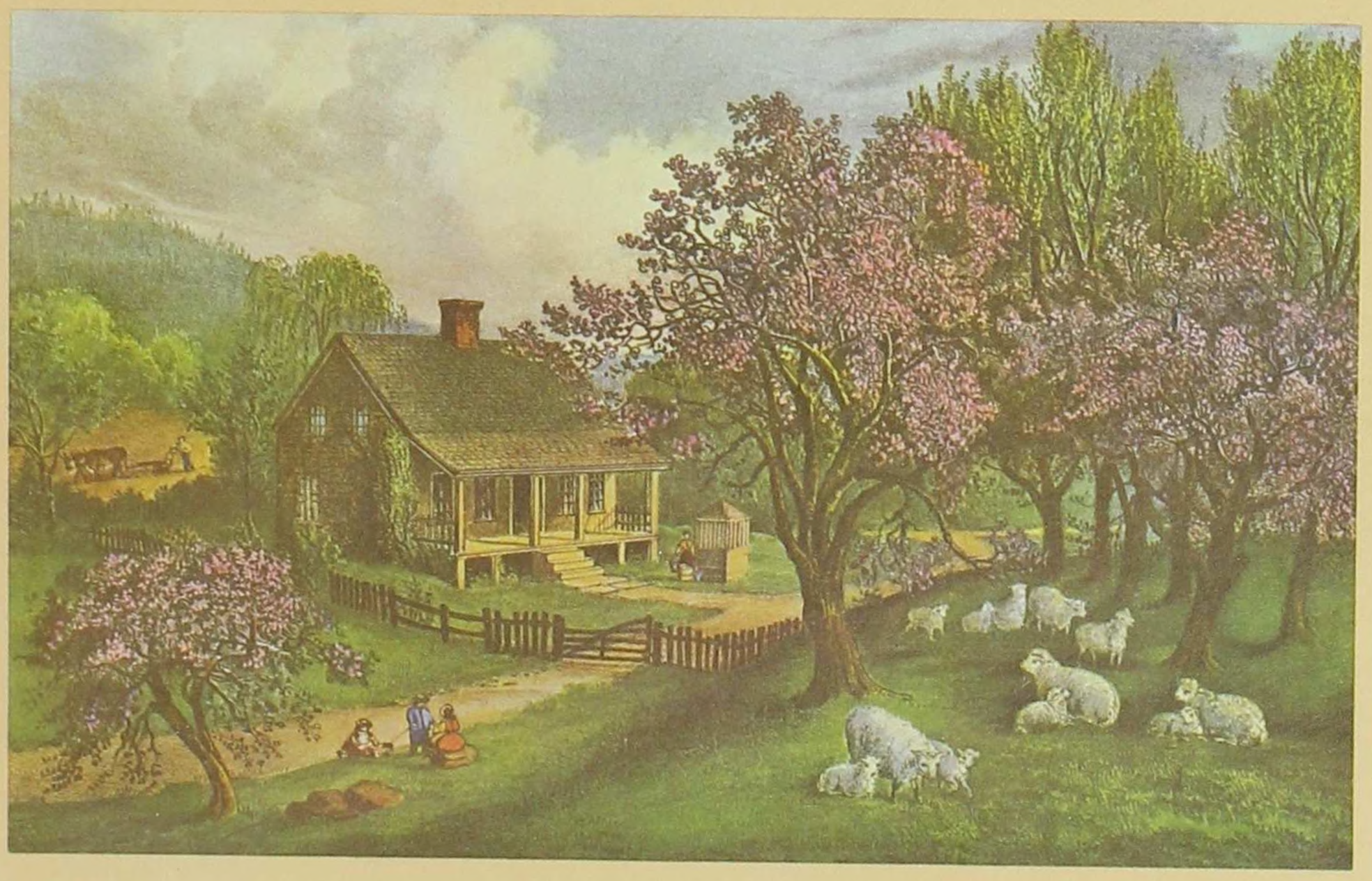
The Palimpsest

VOLUME 55 NUMBER 3 MAY / JUNE 1974



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L. Edward Purcell, Editor

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Cover: *Apples and a modest home are depicted in this 1869 Currier and Ives print entitled, "American Homestead–Spring." Phil Jordan discusses the fortunes of small orcharding in the story on p. 66.*

The Meaning of the Palimpsest

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

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

IN THE SHADE OF THE OLD APPLE TREE

by
Philip D. Jordan

There was fun under the shade of the old apple tree—country folk spread picnic cloths, old men dozed on benches, young swains courted their girls. Urchins swarmed its branches to build tree houses and to crunch into just-picked Pippins. Apples, red and ripe, became deep-crust pies and fried fritters and applesauce and jam, and were milled into the sweetest cider ever tasted. Apples were also a pain to raise.

During Iowa's earliest days, there were no apple trees. No Johnny Appleseed, with bare feet, tattered trousers, and fry pan as a hat, ever wandered west of the Mississippi sowing seeds as Johnny had in the Ohio country decades earlier. More men from Buckeyeland knew this eccentric seeder as Johnny Appleseed than knew his real name John Chapman, but this did not matter. He spread orchards across their land, and that was enough and more. Thanks to him, apples in Ohio and much of the Old Northwest not only brightened the diet of many homes but also became a staple crop. When Peter Melendy moved in 1856 from Cincinnati, Ohio to Cedar Falls, Iowa, he left behind an orchard of four hundred trees. He believed, as did many another, that apples were a more profitable crop than any of the other fruits in Ohio. They were the fruit of fruits—the most delicious and the most useful.

Certainly, no traveler visiting Iowa during the 1830s could write as did an Ohio sojourner in 1819 that "In almost every orchard is seen a cider press, and under every tree large apples, so thick that at every step you must tread upon them, while the boughs above are breaking down with their overladen fruit. It is no crime here for either man nor beast to rob orchards." So apparent in Iowa was the scarcity of apples and so great was the urge for this versatile fruit that Charles Mason, later Iowa's first chief justice, wrote in November 1836 to his brother while enroute to Burlington, "I wish you would send me some apple seeds, as many as you conveniently can. I am told they may be gathered in great numbers about cider mills." Mason emphasized that many seeds be sent, for "I can do a good business with them." The seeds Mason received were among the first imported into Iowa. But from them did not spring the first orchard.

Probably, although no one can be quite certain, Louis Honore' Tesson, a French-Canadian trader who traveled the Upper Mississippi, received permission in 1799 from the lieutenant governor of the province of Upper Louisiana to settle at the head of the Des Moines Rapids, somewhere between Keokuk and Montrose. Tesson, under the grant's terms, was to missionize the Indians, to teach them ways

to cultivate the earth, and to plant trees and sow seeds. From his residence in St. Louis, where his father was a tailor, Tesson laid in supplies, including a hundred seedling apple trees and packed them on mule back to his wilderness hut. After about four years, the Tesson settlement collapsed, and it is a matter of conjecture whether his trees had yet blossomed and borne fruit. A visitor, coming upon the abandoned Tesson place in 1832, however, reported that fifteen trees were bearing apples of an inferior quality. When the original Fort Des Moines was constructed in 1834, the orchard still produced apples. Gradually the trees died, and the site itself was inundated in 1913 by the waters of the Keokuk dam.

Mason's orchard, however, did prosper, although Eastern raisers scoffed at the idea Iowa would ever be anything but a corn-raising region. It never, in the wide world, could possibly become a state where fruits could flourish plentifully and profitably. This refrain, repeated endlessly, always was the same: "Iowa is no fruit state." Dudley W. Adams, secretary of the Iowa State Horticultural Society, "feared—nay, was convinced—that this great garden State of ours was unadapted to fruit-growing." He warned potential fruitmen that they must reckon with an untried climate and with unknown, new, and different soils. "Fruits," Adams continued, "wholly unadapted to these new conditions were our inheritance." He bluntly stated that the greatest obstacle to successful apple culture is "the pitiable discouragement and everlasting home-sick whining of the faint-hearted."

No one can deny that pioneer apple growers failed and were disappointed. No one can say that the state for years did not depend, at least in large part, upon shipped-in apples, arriving at river ports by steamboats. The bulk of these, of course, were dried. But steamers also unloaded, up and down the Upper Mississippi, thousands of young apple trees. The Cedar Grove Botanic Garden and Nursery, near Salem, Iowa, in 1840 stocked thirty-six thousand trees of forty varieties. Other nurserymen, including Reuben and Gustavus B. Brackett, of Keokuk, Dr. James Weed, of Muscatine, and Kauffman & Borland, at Iowa City, thrived as apple-

tree merchants. Farmers loaded bundles of saplings into wagons to carry them to newly-purchased land and there set them gently into good earth near recently completed log cabins. Then followed a time of patience, for it took six years or more for a tree to bear fruit. Aproned women, during summer heat, carried buckets of water. During winter's cold, straw protected treasured saplings from freezing blasts.

Young trees, planted when Burlington was a territorial capital, were carrying fruit in 1845, and so were others in the vicinity. Benjamin Tucker planted trees on what became the Burlington property of Charles E. Perkins, president of the Chicago, Burlington, and Quincy Railroad. Perkins, in honor of Tucker's orchard, named his residence "The Apple Trees." By 1849, Avery's Nursery, six miles southwest of town, published notices throughout the area that it had twenty thousand fruit trees for sale. The majority were apple trees. Neally & Brothers Bird's Nest Nursery of Burlington promised it would deliver trees without charge to the levee if buyers wished to carry them home by boat. Northern Spy apples, grown by James W. Grimes on his Burlington property, were exhibited at a fruit growers' convention in 1853 in Chicago. Grimes, in addition to his political interests, was an enthusiastic horticulturalist. He was so anxious to aid in developing fruit growing in Iowa that he and J. F. Tallant, a local druggist, edited and printed in 1854 *The Iowa Farmer and Horticulturalist*, a journal of practical guidance. This magazine stimulated in part the organization in July 1855 of the North Western Pomological Convention, which first met in Burlington in September. Only a few years earlier, in 1849, the Southern Iowa Horticultural Society had held its initial convention.

Meanwhile, apple-tree planting was moving steadily away from the southeast counties and those bordering the river into interior counties to the west and north. Newcomers, worried by the expense of opening a farm or orchard and feeling the impact of the Panic of 1857, were obligated to be both economical and prudent. Many a discussion was held around the lamp-lighted kitchen table about how to gain the most benefit from meagre cash at hand. Each purchase was debated and justified. For those who yearned for trees and looked forward to the time when the frost was on the pumpkin and their fodder in the shock and when they then might relax in the warmth of a wood-burning stove and crack hickory nuts and reach

Note on Sources

This story of the gnarled, old apple tree, the small cider mills, and mention of a popular song with its haunting line, "And the love in your eyes I can see," is written with the assistance of the usual resource materials. These include the diaries and letters of the Mason, Grimes, and Charles Elliott Perkins family letters and diaries; runs of the reports and transactions of the Iowa Horticultural Society and the *Iowa Agricultural Reports*. *The Iowa Farmer and Horticulturalist* and *Wallace's Farmer* were helpful beyond measure. *The Palimpsest* for April 1923 carried an article on Tesson's apple orchard; issues for April and August 1943 discussed Suel Foster and David W. Lotspeich. Much information was gleaned from newspapers for the period covered, namely the 1850s to past the turn of the century. Among these were the *Iowa Sun and Davenport and Rock Island News*, *Dubuque Daily Express and Herald*, *Muscatine Democratic Enquirer*, *Guthrie Sentinel*, *Burlington Hawk-Eye*, *Sioux City Eagle*, and *Sigourney Weekly Democrat*. Files of these on microfilm are owned by the author. Mr. Stanley Grant, Burlington, with long experience in the supermarket and fruit trade, was exceedingly helpful. Roy H. Youngren, formerly of the Lagomarcino-Grupe Company, aided materially, for he, for years, purchased apples for the Iowa trade.

"Farmer's Home—Autumn" by Currier and Ives (1864).

into a bowl of apples, decisions were difficult. Some bought trees with cash. It was possible to begin an orchard another way. Some nurserymen announced that "Land, horses, cows, or corn would be taken in exchange for apple trees." Farmers, recognized as good credit risks, were permitted to place orders in December and pay in whole or in part the following spring.

There was still another question to be answered: if trees, by one means or another, were bought, what kinds should be selected? What varieties would flourish best on Iowa land and in Iowa's climate? Both laymen and professionals debated these points—sometimes with too much heat and too little light. By the eve of the Civil War, the Iowa State Agricultural Society published a recommended list in three categories—acid apples, sweet apples, and apples best for marketing.

Among the acid apples were the Red June, Early Joe, Jonathan, Willow Twig, and Roman Stem. Some of these varieties have long since disappeared. In the sweet apples class, the Sweet June stood first, followed, in order, by the Jersey Sweet, Ramsdel's Sweeting, and Winter Sweet Paradise. The Jenneting, Wine Sap, Westfield, and Seek-n-Further, the Society said, were the best types for general market sale. Generally nurserymen through-

out the state stocked all these varieties and endorsed them. These types of trees, from four to seven years old, retailed at four cents each, although prices varied slightly from community to community.

Judge Mason's seeds and saplings, some of which his brother sent him in 1836, matured so beautifully that the Judge's daughter, Mary Josephine, exclaimed over them in 1863. "The apples," she wrote, "are very good now. We are going to have a great many." The Mason farm and residence lay to the southwest of Burlington and, in addition to growing apples, raised blackberries, strawberries, and gooseberries. Home-grown apples, during the Civil War, were packed carefully and sent to troops not only in training at, for example, Davenport and Keokuk and Burlington but also to wounded soldiers convalescing in military hospitals. Surgeons frequently penned letters to local soldiers' relief societies expressing appreciation for apple jellies and even apple wine.

By the time, after four years of dreadful conflict, peace finally came, Iowa apple culture was firmly established. Agricultural implement dealers in 1869 were selling patent apple pickers, fruit ladders, and pruning saws and hooks. David Leonard left Burlington that year to attend the American Pomological Society's convention in Philadelphia. He carried with him fifty varieties of apples grown successfully throughout Iowa. Representing the Iowa State Horticultural Society—he was its treasurer—Leonard informed delegates that practically every Iowa county, with the exception of Clarke, Decatur, and Woodbury, was more than satisfied with orchard production. Two years later, Union County reported that "The early settlers paid but little attention to raising fruit, believing that fruit could not be made profitable; but it is now difficult to find many farms without young orchards."

So enthusiastic, indeed, were horticulturalists that E. H. Calkins, addressing pomologists, let his prose soar: "While California may justly boast of her fine grapes, Delaware of her peaches, Florida of her fine grapes, and our whole 'Sunny South' of her many delicious semi-tropical fruits; Iowa wears the proud laurels of producing the best of apples." His rhetoric appeared justified, for the American Pomological Society, meeting in Richmond, Virginia, had just awarded Iowa first prize on an exhibit of 118 varieties from the state's central counties. Other entries, said the judges' chairman, "were overshadowed by the great superiority" of the Hawkeye exhibit, "in fairness, correctness of nomenclature and the selection of sorts."

Calkins, had he known John Greenleaf Whittier's "The Minister's Daughter," might have replied to the judge's praise with these lines:

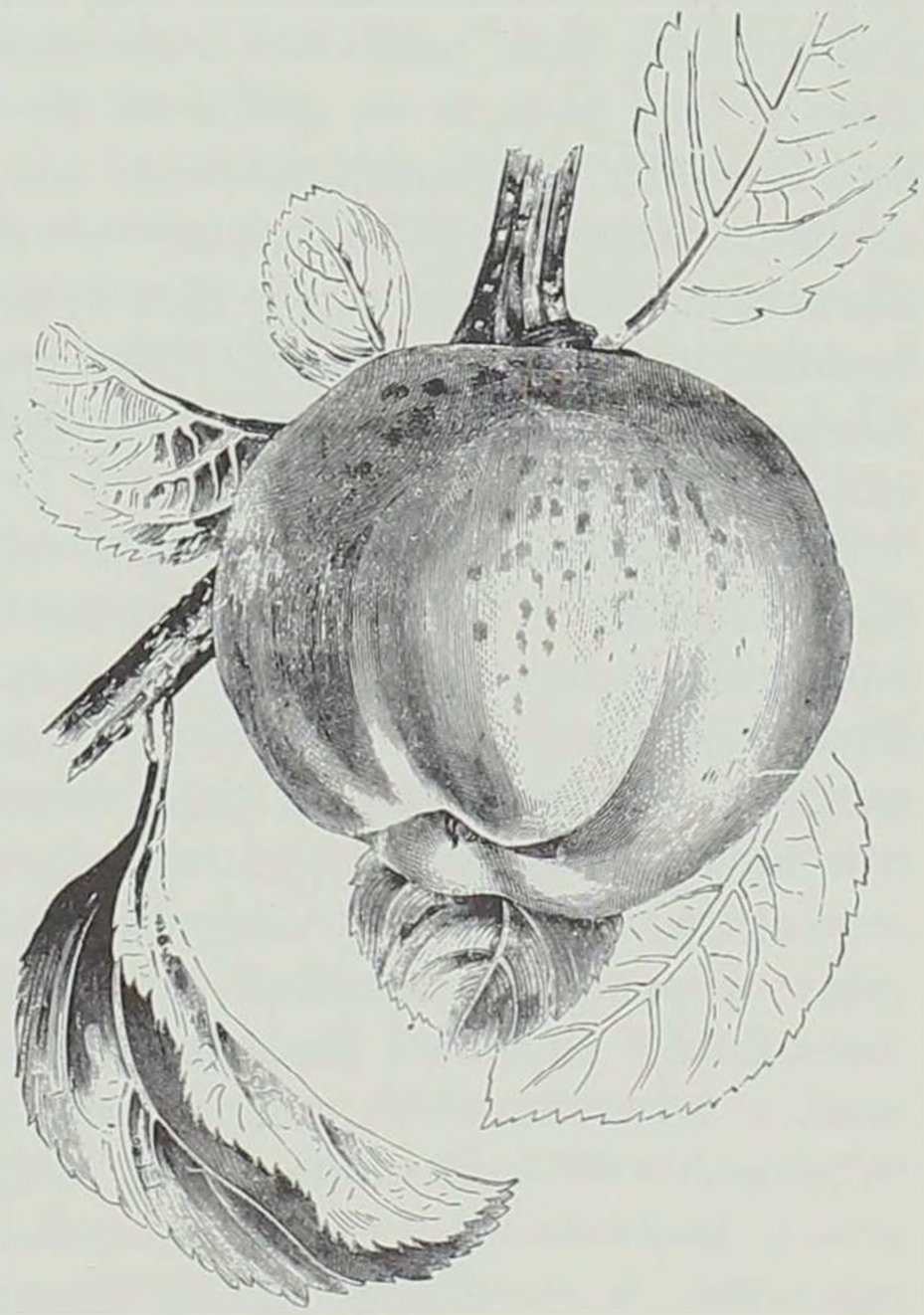
Behold in the bloom of apples
And the violets in the sward
A hint of the old, lost beauty
Of the Garden of the Lord!

Yet neither prizes nor poetry, appropriate as they were, closed the saga of apple growing in Iowa. Although production increased during the 1880s, apples were scarce and high priced in some sections of the state, so that housewives, on a meagre budget, continued to use the dried fruit. A bushel of apples cost as much as $1.25 in 1853, while dried apples sold for from eight to ten cents a pound. Shortly after the war, in 1866, apples,

graded as to quality, ranged from eighty cents to a dollar a bushel. Yet in August of that year, although early apples were abundant, they were going as low as thirty cents a bushel. In 1870, the range was between thirty and fifty cents a peck. Dried apples were selling at thirteen cents a pound. Inclement weather in southern Iowa in 1880 destroyed fully one-half of the winter apple crop, and prices went up accordingly. To salvage what they could, farmers lined wagons with straw, placed apples on top, and covered them with additional straw. Blighted fruit, in this manner, was carted to cider mills, where raisers found they netted from twenty-eight to thirty cents a bushel. George W. Shaw, of Garden Grove, fed a thousand bushels to his hogs. During the 1890s retail prices per bushel fluctuated, according to grade and demand, from a low of seventy or eighty cents to a high of $1.25. There were times when inferior fruit rotted on the trees.

Wizened, blighted fruit was only one among others of growers' problems. Apples are perishable, unable to sustain long-distance transportation. It was more economical, during the 1880s, to move apples in bulk than packed in barrels. Two bushels filled a barrel, and a barrel cost forty cents. Freight charges plus barrels left no adequate margin of profit for keepers of small orchards. "We will have to wait patiently," sighed a grower, "until freight rates are reduced by law to about one-fifth of present rates, and until some smart Hawkeye invents a paper barrel that will not cost more than five cents and answers every purpose as well as a wooden one."

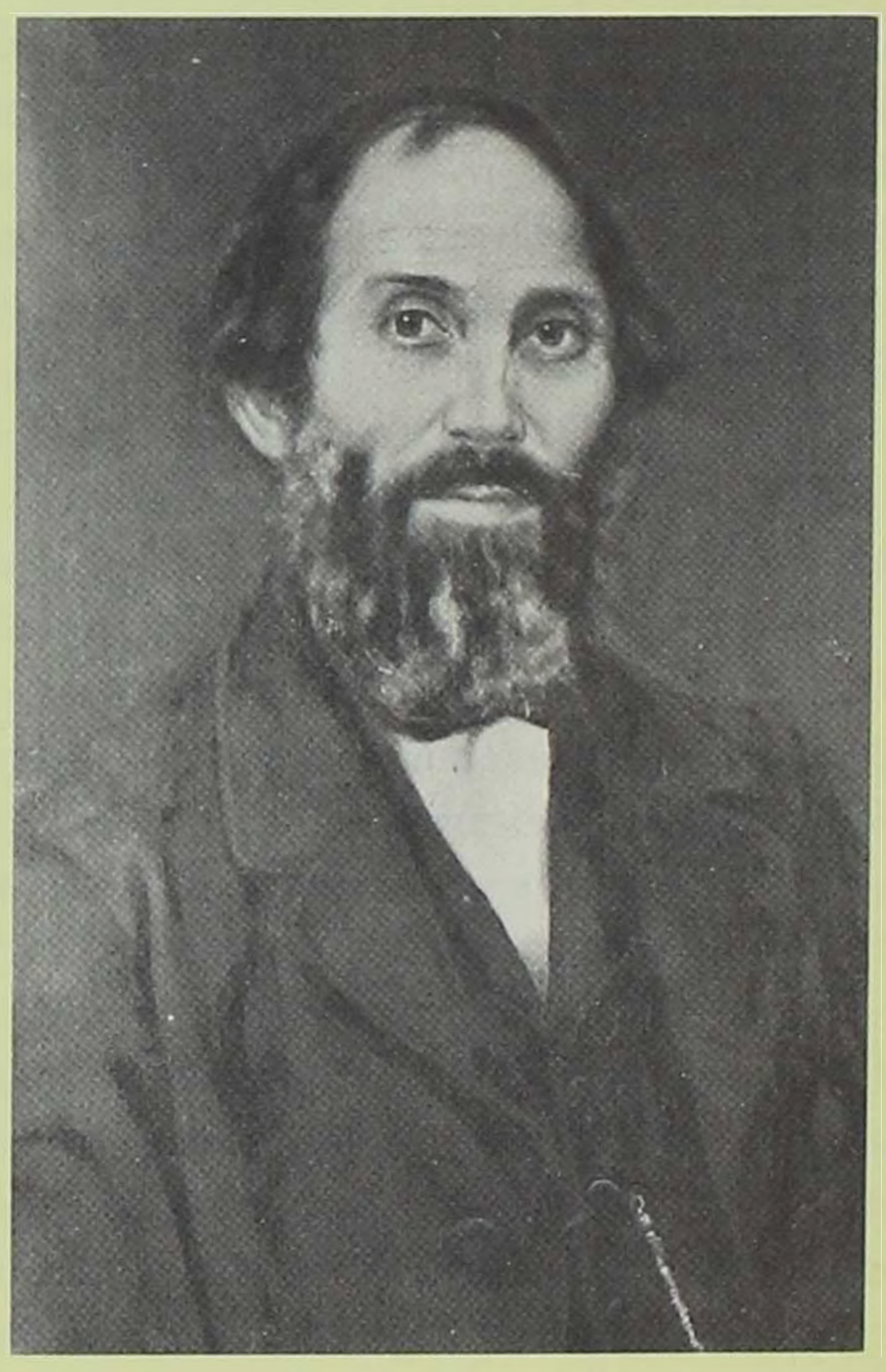
The best shipping apple, maintained J. Austin, a Waterloo raiser, was the Ben Davis. C. P. Hunt, also of Waterloo, agreed that the Ben Davis returned the most dollars on young trees, but pointed out, as did others, that these trees were short-lived and normally produced only four or five good crops before they broke down. The general opinion was that the Ben Davis was the "tenderest" of all Iowa apple trees. It was also agreed that the best cider apples were the White Winter Pearmain, Rawle's Janet, Small Romanite, and Ben Davis. "One who has never drank cider from nice, yellow Pearmains," commented George W. Shaw, Garden Grove, "has missed one of the good things of life."



The Tetofski apple, a strain imported from Russia in an attempt to find an apple which could withstand the frigid winters of Iowa (reproduced from the Second Annual Report of the Michigan Pomological Society *(1872), 458).*

The major and most vexing problem, however, was increasing competition from apples grown in Michigan and shipped into Iowa. State dealers complained they were compelled to compete with Michigan fruit which was put up in clean barrels in an "artistic manner by those used to the business." Again and again the point was pushed home that locally grown apples could not be sold in western markets as successfully as Michigan apples were because Iowa apples were inadequately packaged. Customers in "our towns and cities," it was repeatedly emphasized in farm papers and journals, "that want and will have apples of the *best quality*, such as Jonathan, Grimes' Golden, and Fulton, and to meet their needs we must raise them if they have to be grown on trees that are only half hardy and are only moderate bearers." H. W. Lathrop, one of the most knowledgeable apple men in the business, put all this succinctly: "The 'fastidious few' will not be content with what will gratify the 'hungry million!'"

Lathrop, in effect, was saying that, with the exception of individuals who made raising their primary business, too many farmers who owned a few trees and marketed small quantities paid scant attention to proper culture. Apple raising, it was agreed, was a crop that required years of practical experience. "I sometimes think," moaned a professional, "we need a horticultural missionary, and a colporteur with horticultural books to go among the farmers and give them instruction." Yet, in the face of almost certain evidence that Iowa would never make apples a profitable, major crop, as contrasted, for example, with corn and hogs, stubborn individuals continued to insist



Suel Foster

that "orcharding" would pay. George H. Van Houten, of Lenox, was such a spokesman. Not even Josiah B. Grinnell, devoted as he was to agricultural progress, would have dramatized the future of the apple industry as did Van Houten.

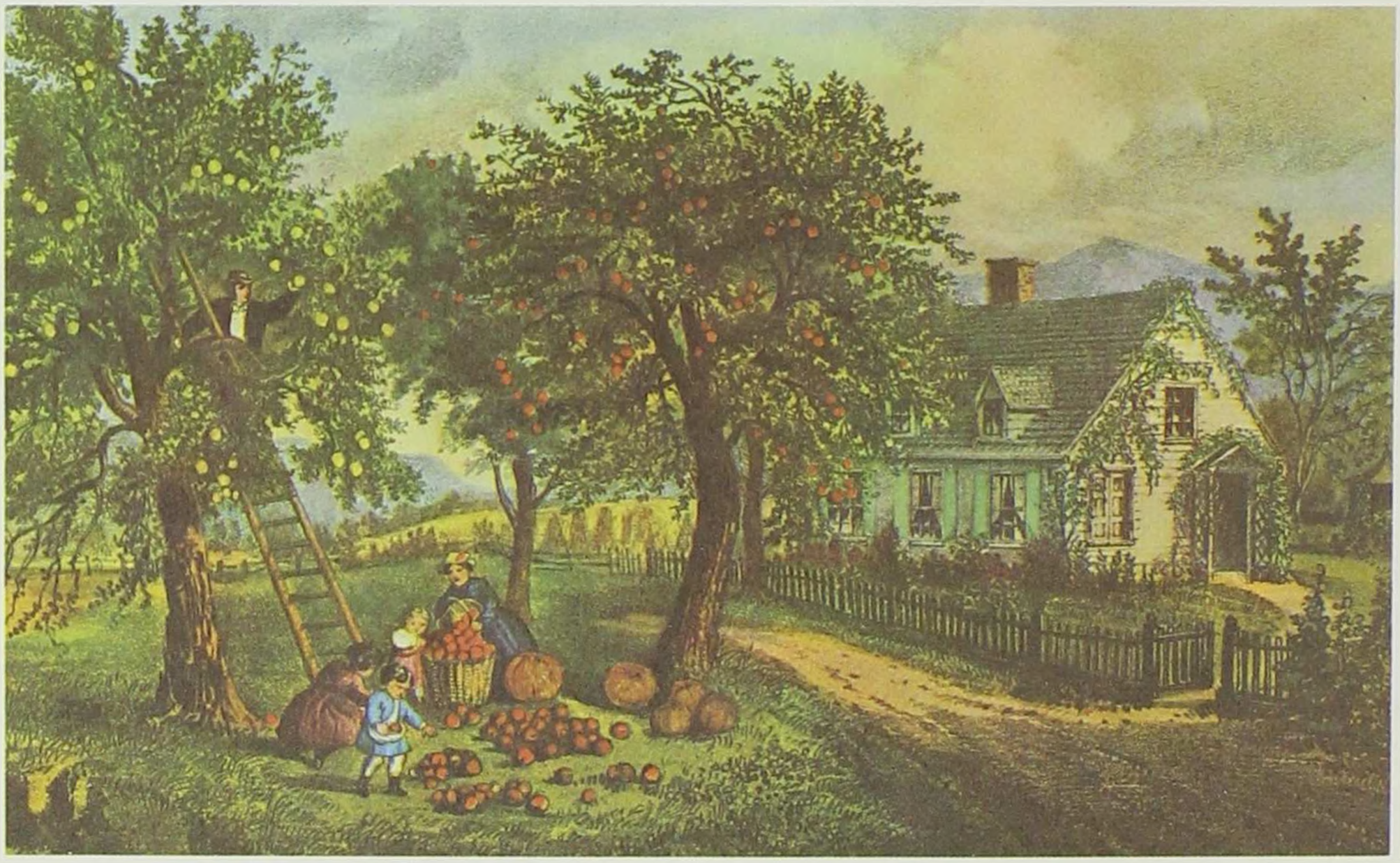
"The vast Northwest is before us," Van Houten told the Western Iowa Horticultural Society, "and as Iowa and eastern Nebraska are the present outposts of fruit-growing, we need have no fears for an over production of fruit. If the Eastern and Middle States can find a profitable market for fruit beyond the seas, as they are now doing, why can not we find a profitable market in the vast Northwest which is being rapidly settled up?" Van Houten supplied his own reply. "Besides

the extension of the present railroads, with the almost innumerable new roads which will be built in the future, will open a market in the vast and wealthy mining districts of our Western Territories, where they not only have money but the disposition to buy, and buy largely . . . . Then, friends, plant fruit trees; do not plant *sparingly* but plant *plentifully*, and if it so be that you do not live to eat the fruits thereof, others will survive you, who will bless the hand that planted the trees that bear the luscious fruit, and that remain as monuments to your memory when you are gone." After Van Houten's emotional, but uneconomic, address, L. A. Williams, Council Bluffs, perhaps made the most pertinent rejoinder. He said he preferred raising potatoes and onions.

Suel Foster, a founder of the Iowa State Horticultural Society in 1866, would have rejected Williams' response as treason. Foster's ardor and devotion, not only in his home town of Muscatine but also throughout the state, sometimes exceeded common sense. A conservationist as well as an horticulturalist, Foster was deeply interested in agricultural research. He was one of the original members of the board of trustees of the agricultural college at Ames. His articles in, for example, *The Iowa Farmer and Horticulturalist* and yearbooks of the Iowa Horticultural Society, were widely read. Unfortunately, Foster died in 1886, a time of crisis in the apple industry. His pomological colleagues then were debating the planting of "experimental" orchards and quibbling over the wisdom of apple culture as a profitable pursuit.

A major obstacle to successful harvests, admitted in part by Foster and indicated years earlier by skeptics, was that Iowa's climate was uncongenial to apple raising. This was obvious to many when Foster died. "Our late winters," confessed many growers, "have blasted all our prospects." Every orchard was in a desolate condition. Such discouraging reactions were based upon the inclement winters of 1857, 1872, 1886, and during the following decade. There were other reasons why disgruntled growers felt their crops were poor in quality and low in quantity. Traveling tree peddlers, it was charged, "humbugged" farmers by selling them trees unsuitable for the soil into which their roots went. Even nurserymen were castigated. The saplings they sold, it was claimed, were so inferior that they "were killed down to the frost line."

An Iowa delegate in 1866 to the Illinois Horticultural Society convention, spoke emotionally of losses in both the Hawkeye and Sucker states: "The destruction of their [Illinois] orchard trees, caused by 'old Boreas' breathing forth his blasting, blinding, blighting blizzards the past few hyperborean winters, is but little less than the same destruction on the West bank of the Great Father of Waters." Ben Davis apples were riddled with rot. Treating apple enemies such as apple curculio and the codling moth came to naught. Man after man recited his disastrous experiences. Perhaps R. P. Speer, Cedar Rapids, summed up as well as anyone the troublesome year of 1886. "All of the old varieties of the apple, except the Duchess, Tetofsky, Whitney, Wealthy and Alexander have proved too tender for northern Iowa; and if I were to tell the whole truth, no other variety of the apple has proved hardy enough for any part of the State,



"American Homestead Autumn" by Currier and Ives (1869). Like many of the popular colored lithographs of the period this scene shows an idealized version of country life; in this case, apple-picking.

except on the loess soils near the Missouri river." He laid down some precepts: good apples, those capable of salvage, must be shipped the shortest possible distance, for the risks of the long haul were far too hazardous.

Hundreds of family orchards, within the next decades, went unattended, and a few professional, large-scale growers permitted their trees to grow or die as they might. Others, by 1890, turned attention to cherries, plums, pears, and even strawberries. Although the winter of 1890 left no fatal wounds on trees, a summer drought killed off many. Later in the season, sunscald appeared, corrupting the thin skin of the Wealthy apple. In Des Moines County, old orchards were being replaced by new ones, but—and this is significant—small fruit was rapidly becoming a paying crop, bringing better returns than apples. Although the picking in Poweshiek County was "very light and the quality inferior because of worms," some new orchards were planted, but agents and tree peddlers noted their sales were down. Wapello County, however, was producing at the turn of the century large returns from orchards which received adequate care.

Pomologists, realizing but not always admitting that apple raising would never be a support crop, continued to whistle up the wind by urging innumerable techniques and methods to increase production. Failures, it was argued, resulted from planting in a wrong location, planting unsuitable varieties, and planting carelessly and giving improper management during the trees' first three years. Never plant on a southwest slope. Do not mulch too soon or too much. Level an orchard's grade and

sow with red clover. Trim limbs which start in the wrong direction. Trim as soon as sap starts in the spring. Stake young trees. Seal cracks with grafting wax. Protect trees against sunscald, hail, rabbits, and mice by winding hemp stalks around trunks. Professor J. L. Budd, Ames, in 1894 considered the Pointed Pippin as a "true, iron-clad and a very perfect tree." Confusion mounted when others declared there was no *perfect* tree and that planting and care and cultivation made slight difference. To these critics, the Wealthy, Grimes' Golden, and Jonathan were as good or better than Budd's Pointed Pippin. Such heresy, if heresy it was, was countered by a defender who rose up in a meeting and recited Shakespeare's:

> Our doubts are traitors,
> And make us lose the good we oft might win,
> by fearing to attempt.

Only a prophet, said an apple planter, could foretell the future of orcharding. This, perhaps, was correct, but it did not take much of a soothsayer to realize that, during the final decade of the nineteenth century, the apple in Iowa had failed its promise. Even the Southeastern Horticultural Society, representing a region where apple culture had been relatively successful, began to doubt the usefulness of itself and other groups of the same nature. Although lip service still was paid the apple, many felt in their hearts that the fruit, as a paying crop, had betrayed them. This does not mean that apples with sweet fragrance no longer bloomed and came into fruit or that all Iowa raisers repudiated their stands of trees.

David W. Lotspeich, Harrison County, was a notable exception, for his trees, unlike those of others, thrived. On a southern slope near Woodbine in 1894, he established an orchard and began selling nursery stock. He nourished so many diverse varieties that neighbors wondered at his audacity. Alternating his planting, he placed an early-bearing tree next to a late-bearing one, and a tree known to have a short life next to a long-lifed one. The well-known Jonathan, Grimes' Golden, and Ben Davis were spaced between the Gano, Winesap, Geniton, and York Imperial. Lotspeich's crops, it was said, proved profitable, but even so the quality was impaired by parasites, cold winters, red cedar rust, and Illinois canker.

To combat codling moths and disease, Lotspeich designed an ingenious, home-

> We find education a good thing in apple pickers; from middle of September to middle of October is our picking season; ten cents an hour and board is the usual price; students, clerks, schoolmarms, and teachers, make the best of pickers and sorters; the deft handling and good sense in assorting, show a cultivated conscience with good judgment.
>
> Geo. W. Shaw of Garden Grove, Iowa in *Transactions of the Iowa Horticultural Society*, 24 (1889), 175.

made spraying machine drawn by a horse and operated with a hand pump. All in all, however, he fought a losing battle. He first sold his crop locally, but after 1910, small consignments were sent to regional outlets, primarily through commission houses in Council Bluffs. A carefully selected bushel of his Grimes' Golden won an award in 1912 for the best box of Iowa-grown apples. Henry Wallace, editor of *Wallace's Farmer*, presented a golden disc as the prize. Yet, even though Lotspeich was knowledgeable and his fruit superior, he never shipped on a grand scale and seldom, if ever, realized a handsome enough profit to make the venture really worthwhile. Corn growers and hog breeders did much better.

Indeed, at just about the time Lotspeich received his medal from Wallace, hard-headed men had reached the conclusion that many had suspected, but failed to confess even to themselves: Iowa never would raise apples on a sufficiently large scale to make the crop a fundamental of the basic economy. The big profits were in dairying, livestock, and diversified farming. It was the freight loads of cattle, sheep, horses, hogs, corn, wheat, oats, rye, barley, potatoes, and grass and flax that railroads were carrying out of Iowa which brought profits into Iowa.

This, however, does not imply or infer that no apples continued to grow in Iowa, that the crop returned no profits to local growers and vendors, and that the apple no longer was a lucious, favorite fruit for eating and cooking. It does mean, for example, that not a single major article on apples appeared in the agricultural yearbook for 1900. It does mean that the old pomological societies were petering

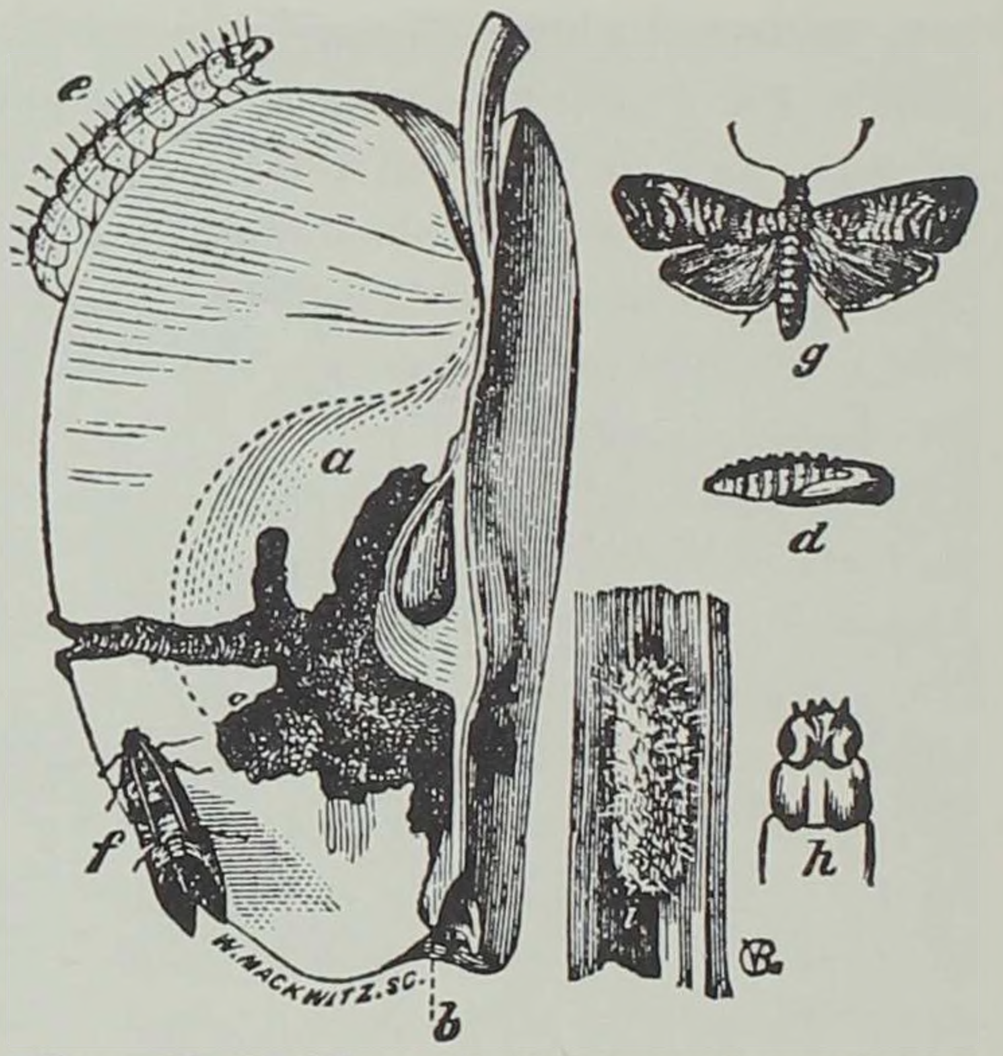


Fig. 14, Codling Moth, *a*, section of apple infested; *b*, point of entrance; *e*, the full grown worm; *h*, head and first segment magnified; *i*, the cocoon; *f*, the moth; *g*, same with wings expanded

The apple-grower's deadly enemy, the codling moth. This sketch and description is from the Transactions of the Iowa Horticultural Society, *13 (1878) 386. Information on pests and disease were common in the pages of the Society's publication.*

out. It means that the small farmer, keeping a few trees for his personal use and disposing of a few bushels locally, turned to more profitable crops. It reflects also a change in national life—the transition from a rural, agricultural culture to an urban, industrial format. There is something else also. Nurserymen, operating on a large scale as big businesses, prospered. They, after picking time, placed thousands of bushels into cold storage to sell, when prices were right, to wholesale distributors, grocery chains, and supermarkets. Both the Bryant Nursery, near Burlington, and the Weir Nursery, near Biggsville, Illinois, to name only two examples, followed this practice. A Lagomarcino & Co., dealers in foreign and domestic fruits, was

established in Burlington during the 1870s. For years, it purchased quantities of Iowa-raised apples. After the turn of the century, Lagomarcino bought a huge orchard in the state of Washington. From there, through its Burlington office, it sent apples, sometimes in refrigerator cars, throughout the nation. The company's old, heavily-built freight wagon, brightly painted in shades of yellow and orange, long since had been discarded. Their apples now flew across the country by fast express.

Yet, despite modernity, old, gnarled apple trees still cluster close to scores of farm homes to break into pink bloom in the spring and to groan with the weight of their red or yellow fruit in hot summer or crisp autumn. Apple pies go into electric ovens, not wood stoves. Children, running to catch school buses, snatch an apple or two. An apple still fills the toe of many a Christmas stocking. Even bobbing for apples is not entirely forgotten. Now and again, a family-operated cider mill still spills sweet liquid, unfortified with vitamins and lacking preservatives, into awaiting cups.

The apple may no longer be a basic crop, but it grows and is used and sold, and, perhaps more than anything else, it continues, in the minds of many, to stand as a symbol of "long hours of summer play" and "summer's songs and autumn's sigh." Perhaps this nostalgia, even if over sentimentalized, was responsible for the tremendous, popular success in 1905 of Egbert van Alstyne's, otherwise known as Harry Williams, "In the Shade of the Old Apple Tree," a song frequently played by town bands in squares and parks during Saturday night concerts of the long ago. In a way, the song was a dirge, for within fifteen years, World War I and the lack of pickers together with increasing apple crops in Illinois, Kansas, and the Far West had caused the majority of local raisers to forsake their orchards. From about 1920 on, Iowa no longer could boast of being an apple-raising state. □

Despite the difficulties of apple-growing in Iowa, the Hawkeye state has contributed to the world one of the most popular apple varieties: the Delicious. The original Delicious, called the Hawkeye by its first grower, Jesse Hiatt, sprang up in an orchard in Madison County. The first Delicious tree (left) died in 1940, but has sprouted again and bears new life.

COLORFUL GREETINGS

by

L. Edward Purcell

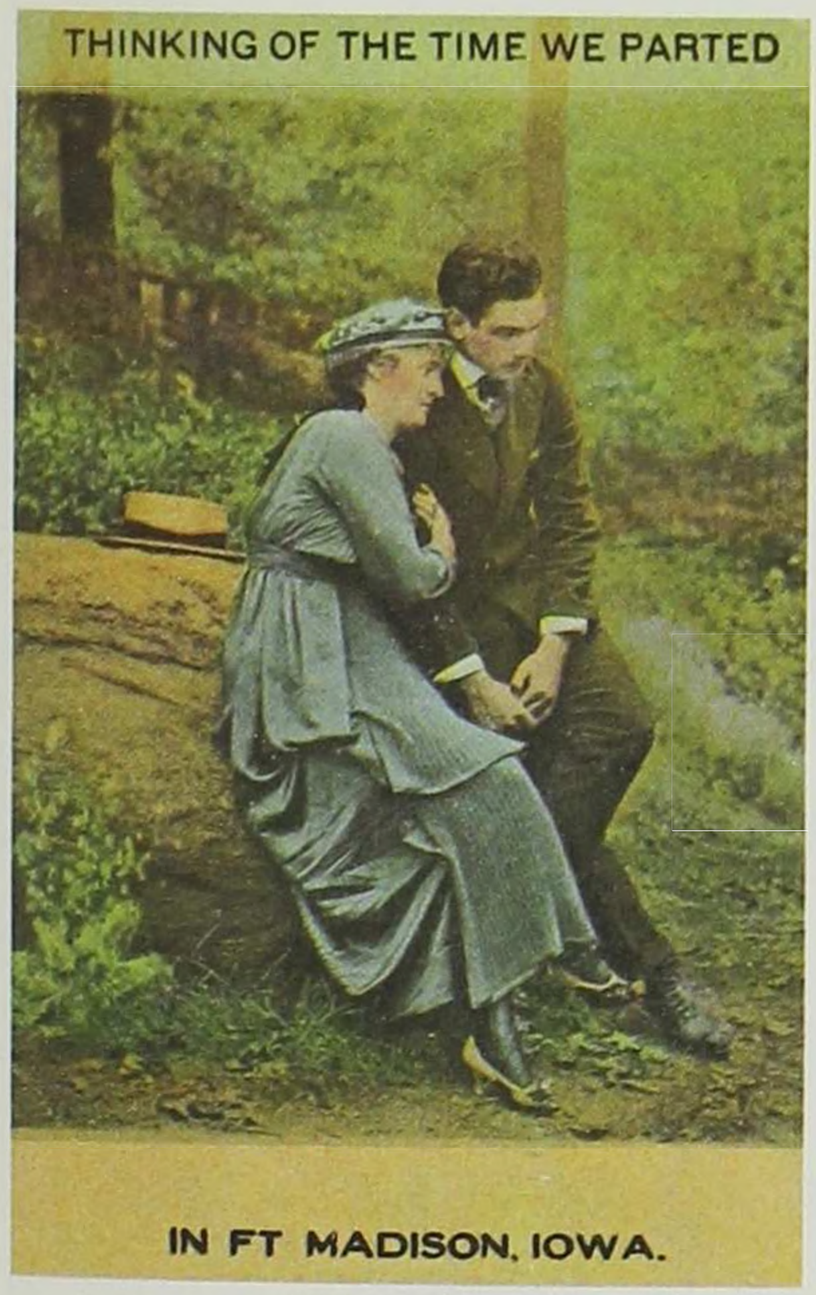
Want to tell your sweetheart you miss her? Inform your friends about the latest Chautauqua? Iowans at the turn of the century often mailed such messages on picture post cards.

Post cards were a handy and colorful way to send greetings, and between 1898 and the early 1920s, picture postals were a fad. Happily, a number of vintage cards have found their way into the collection of the Society. They show the range of emotion and sentiment of those who purchased and sent them. Local boosterism, love, motherhood, humor, and more than a little titillation are displayed in the cards.

The first picture cards were probably produced in Europe. Shortly after 1840, the new art of photography was combined with the form of printing known as stone lithography to produce picture cards. It was not until 1861, however, that an American, John P. Carlton of Philadelphia, copyrighted a postal card. Postals received official sanction in Europe in the late 1860s, and the U.S. Congress passed a law in 1872 officially allowing post cards in the mail. A boom in the use of cards began after 1898 when the rate on them was reduced.

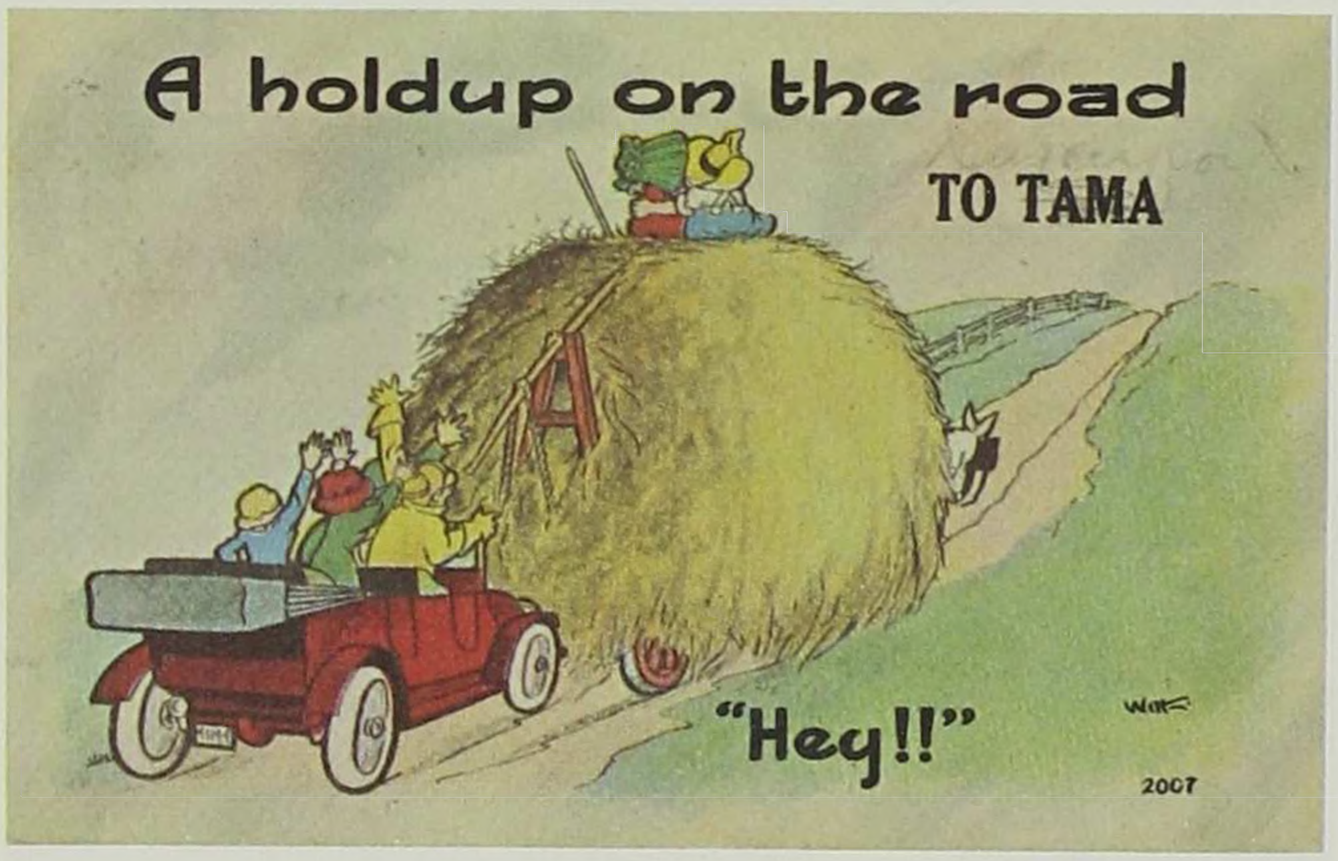
Many of the cards mailed in the United States—probably the best quality ones—were printed in Germany or England. The Europeans were able to produce the cards cheaper and with higher printing quality than most American firms. Some American printers, such as Louis Prang of Boston, could rival the Europeans in the fancy holiday greeting cards, but the everyday card, at least those in color, usually came from across the Atlantic. The advent of World War I ended the large-scale importation of cards.

Perhaps the most interesting, although not the finest in quality, were the localized cards. Often printed in England, these cards were produced in mass, and then overprinted with the name of an Iowa town. Following are a few examples of such post cards from the collection of the State Historical Society. Also included are several examples of the turn of the century post card view of women. □



A more ambitious card, printed in Holmfirth, England by the Balmforth Company. Sent in 1917, this card does not use the stone lithograph method which was still common for post card printing. The manufacturer had adopted a more modern, cheaper method of color printing, similar to that used in The Palimpsest.

Greetings from Ft. Madison (here and above) mailed in 1913 show a standard design which was adapted to individual towns. The name was applied by silk screen.



Cards ranged widely, from the tender sentiment of the Ft. Madison card (p. 79) to this attempt at country humor. A 1914 card, it was printed in the United States, and adapted by the sender from Tama to Davenport.

A more elaborate card, again from England, this is a black and white printed picture which has been colored by hand. Since it was a mass produced card, the coloring is haphazard.

A 1914 card, tailored for residents of West Point, Iowa. Made in the United States, the printing is a combination of wood or stone tinting and the modern process. The printed message may have been a clever phrase of the day, but has lost most of its impact over the years.

Three cards from the Balmforth Company of England; printed by color process and enhanced by hand tinting (courtesy of Loren N. Horton).

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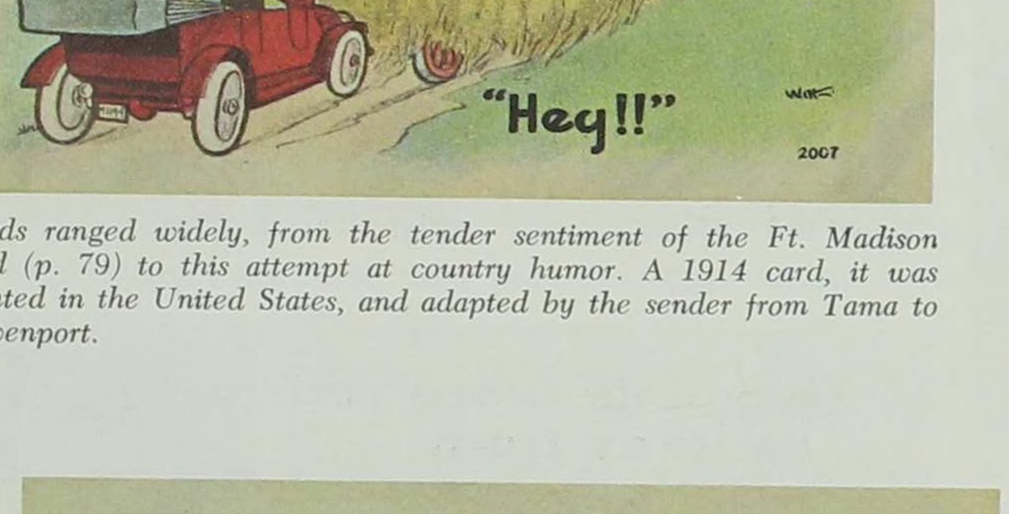

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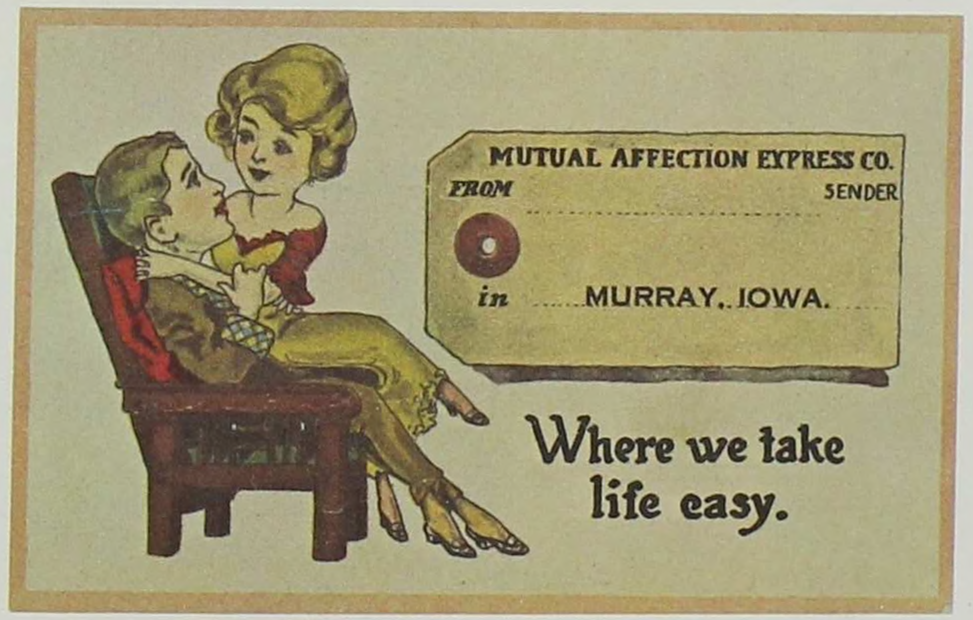


Three cards from the Balmforth Company of England; printed by color process and enhanced by hand tinting (courtesy of Loren N. Horton).

In an abrupt departure from the themes of motherhood or wistful beauty, this German card was mailed from "Mable" to a masculine friend in 1913.

A very delicate portrait, hand-tinted in Chicago in 1911.

One of several intriguing post card studies of women, this 1911 card was printed in this country by stone litho.

A hand-colored American card from 1917.

A monochrome version of the Gibson girl (although not by Charles Dana Gibson in this case) adorned this 1910 card.

A beautifully printed card from Germany, undated and apparently never mailed. This is a good example of the quality of German lithography before World War I and contrasts sharply with the cheaper, mass produced cards.

A very delicate hand-tinted photography card from Germany; dated 1907.

CLAYTON'S SILICA MINE

by
Harold L. Bischoff

The Clayton Silica Sand Mine, a small but significant mining operation, is nestled among the high, picturesque bluffs of northeast Iowa. This section of the state, often referred to as "the little Switzerland of Iowa," impresses visitors with its physical beauty, but few people know of the wealth that lies under the rolling hills and high bluffs. The Clayton Silica Mine is located on the banks of the Mississippi River, approximately two miles below the town of Clayton. Since 1878, there have been three separate silica sand mine operations in the area. The first, an open pit quarry started by William Buhlman in 1878, changed hands several times before closing in the 1930s. The second, under the management of Richard Kolch, made brick and tile from the silica sand at Clayton from 1919 to 1929. The present mine operation was started by John Langworthy in 1916, and was purchased by the present operators, the Martin-Marietta Corporation, in 1959.

The town of Clayton itself was founded in 1849 by Frank Smith and Gilbert Douglas and was important initially as a landing and shipping joint for flour manufactured at the nearby Elkader Mills. Located in Clayton County, the community was named after John M. Clayton, an eastern congressman. The town grew rapidly and by the early 1870s was an important milling center in the area. By the mid-1870s, however, wheat yields began to decline because the area had been cropped extensively since early settlement. Local farmers were also plagued with wheat rust brought in from the southern states.

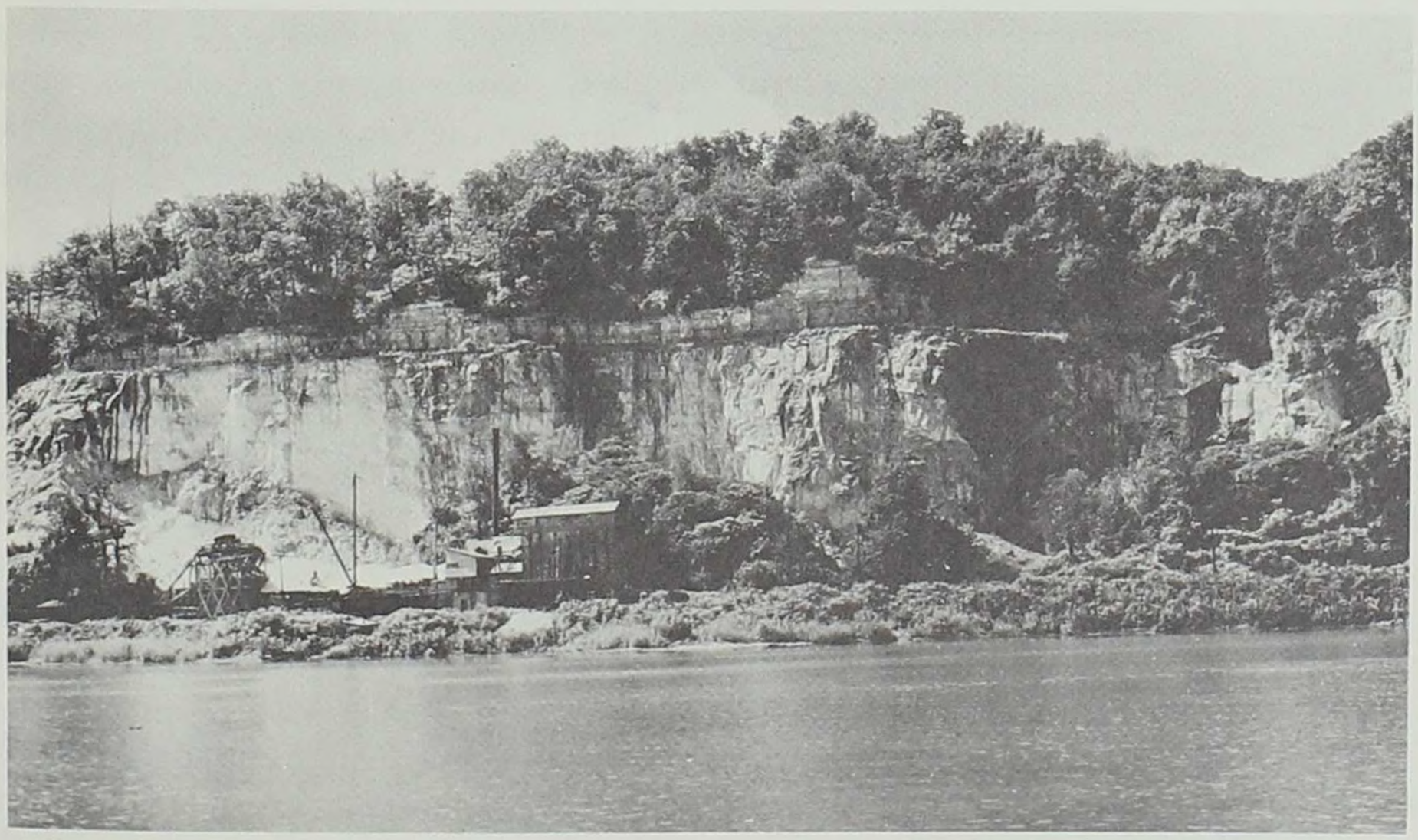
With the decline of wheat in the Clayton area, the production of silica sand deposits became increasingly important. First mined commercially in 1878, Clayton sand is part of the St. Peter Sandstone formation. The sand from this formation is extremely pure. Quartz is the only mineral in the sand and the grains are smaller than salt crystals. The formation received its name from exposures on the St. Peter River (now the Minnesota River) in Minnesota. The St. Peter runs throughout the Midwest, in Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, Missouri, Ohio, Oklahoma, and Wisconsin. Geologically it is Middle Ordivician and is roughly 463 to 470 million years old.

The formation is probably best described as a giant sheet of sand which varies in thickness and in depth. Charles Schuhert, a former professor of paleontology at Yale University, estimated that its thickness in Iowa varies between 15 and 223 feet. The formation usually changes thickness quite gradually; how-

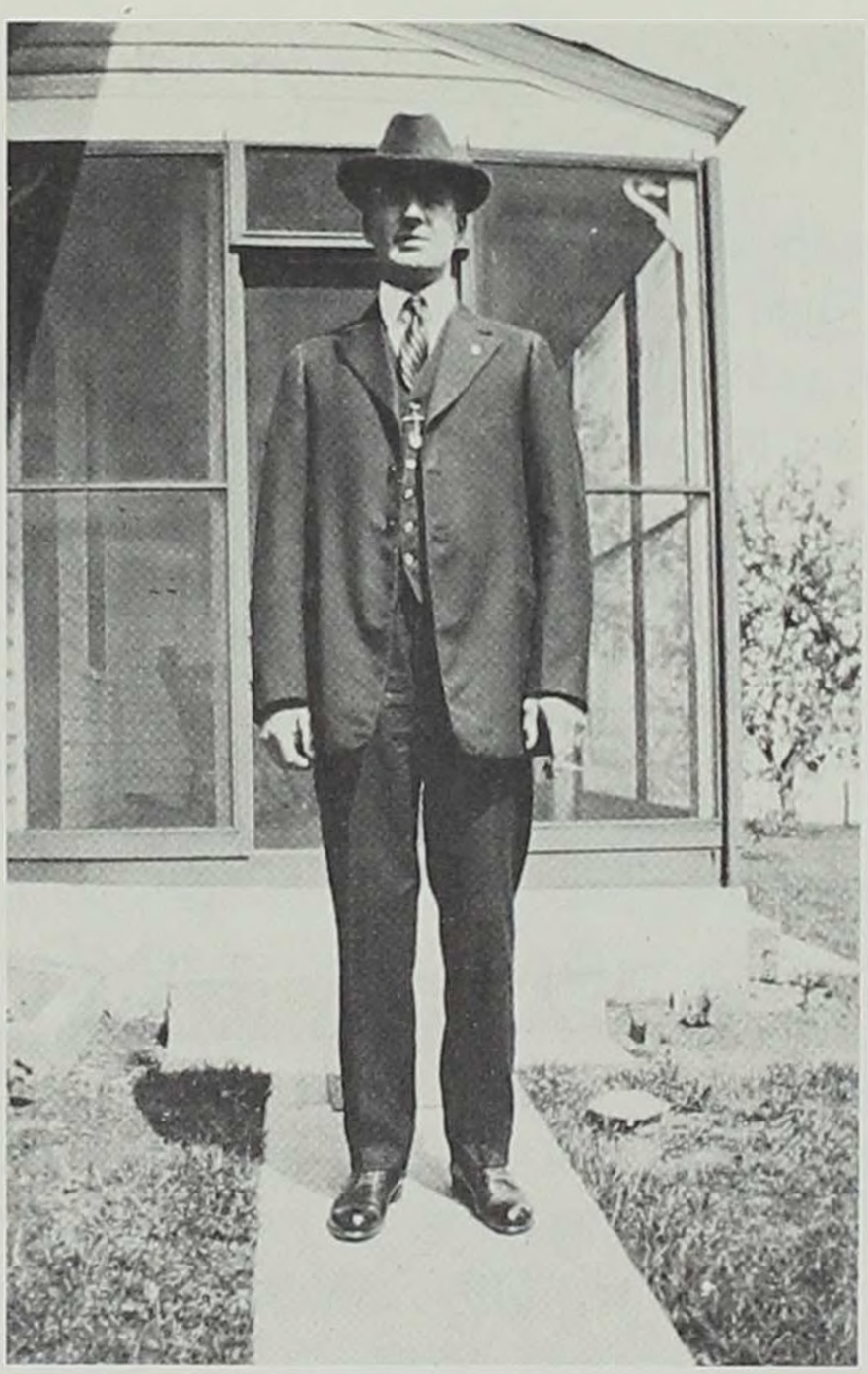
ever, it sometimes increases rapidly. The St. Peter reaches its highest elevation in Allamakee County at nearly 1200 feet above sea level and from this point slopes gradually downward across the state. It is exposed in the northeastern part of Iowa but then is buried more deeply in other parts of the state except for the northwestern corner, where it was removed by pre-Cretaceous erosion.

The first person to remove sand commercially from the formation around Clayton was William Buhlman who moved to the town in 1865. He first worked for several grain firms, but after the wheat failures in the 1870s, the firms went bankrupt, and he was forced to seek other employment. In 1878, he supplied white sand to the Rock Island Glass Company for making glass; two years later he disposed of the business to his brother Julius Buhlman.

During these first years the sand was hauled to the train depot in gunny sacks. Under Julius Buhlman's management the pit was developed in several ways. Employing three to six men, Buhlman built a large "V-shaped" trough which started at the top of the bluff and stretched to a holding bin at the bottom. The sand was blasted and broken up by picks at the top of the hill and washed down the trough by water from a spring. The hopper at the foot of the bluff was construct-



The Langworthy mine operation in 1940.



Charlie Blake

ed so that the sand would flow into railroad cars on the siding. In one corner of the bin there was a six-inch opening that extended up the side of the hopper. As the water and sand flowed into the bin from the trough, one inch blocks were placed across this opening. Because the sand was heavier it settled to the bottom, pushing up the water until the sand deposits built up to the top of the obstruction when another block was put in the opening. This was repeated until the hopper was full. The sand was sent to glass factories in Milwaukee and to iron foundries for use as coring sand. About 1897, Buhlman moved his family to Nebraska City, Nebraska, and later to Widson, Illinois. At these locations he also worked in sand mines. Around 1900, he moved back to Clayton and resumed his silica mine operation.

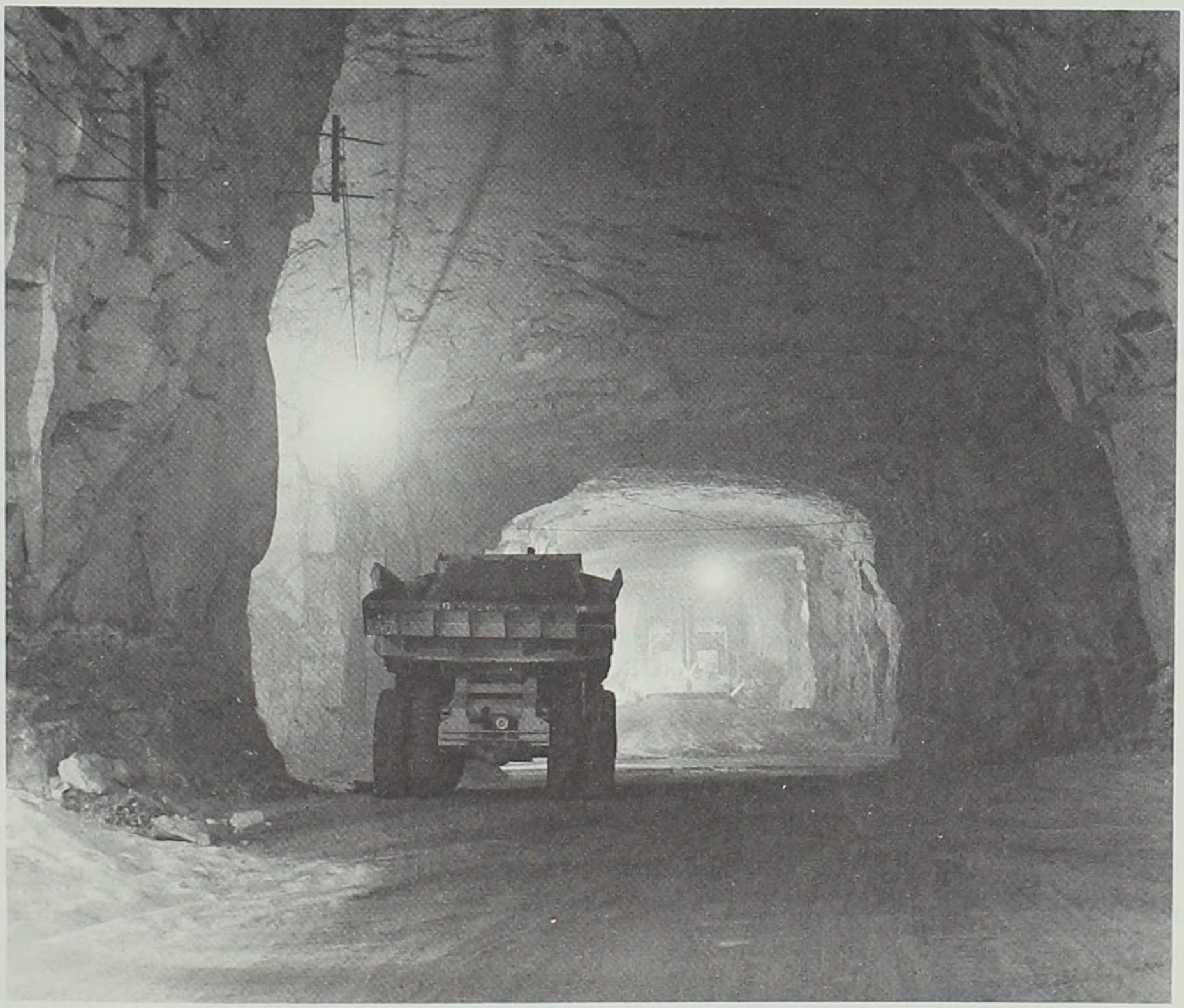
In 1905, Buhlman sold his three and one half acre site for $3000 to Victor Drumb. During Drumb's tenure as operator the sand was mainly used for glass and was quarried by a pick and a stream of water from a hose. In 1909, Drumb leased the mine to the Clayton White Sand Company whose main offices were located in Milwaukee, Wisconsin. Sometime between 1905 and 1909, Charlie Blake was hired as mine manager. He continued to use the same mining process except that he installed a crusher in the pit to break up the sand. The average production of the Blake operation was one railroad car a day. The mine employed two to five men, depending on the number of orders received.

The Buhlman and Blake operations were open-pit, not underground mines. The over-lying soil and rock were stripped off from the sandstone, and holes were then drilled into the sand for dynamite. When detonated, the charges broke up the sand which was then put into a crusher. After crushing, sand was carried down the hill in the V-troughs to the hopper and the railroad tracks.

The work in the pit was wearisome and required considerable strength. The men were paid approximately 50¢ per hour. Pit operations began in the spring and continued until the first hard freeze in the fall. The Blake operation lasted until about 1929. At the time the pit closed, sand sold for less than 80¢ per ton. The Depression and the completion of the more efficient Langworthy operation forced the Blake pit to shut down. The old Blake pit

can still be seen south of Clayton in Devil's Hollow in nearly the same condition as it was in the 1920s.

The second operation to remove silica from the bluffs was a brick factory started in 1920. Richard Kolch initiated the Clayton Brick & Tile Company for the Korite Corporation of Delaware. At the time it was opened, plant officials imported several steam processing machines from Germany as well as a German technician, Bernard Elsner, to operate them. The factory's main business was making brick which they sold in three colors: white, buff, and red. In addition to brick they manufactured red and buff floor tile in ten inch by ten inch squares and uniflow sewer tile. There were several sizes of uniflow tile made by the company, but the main feature was its odd construction. It was wider at the top so flowing water could carry out any solids which might settle in the tile. The brick made by the German machinery was of good quality, but the process was time-consuming. Moreover, when the machinery broke down, parts had to be taken to a Dubuque foundry to have a duplicate made.



A truck rumbles through the cavernous rooms of the present-day mine (Neal Brown photo).

Eventually, the factory was sold to Kendall Birch of Dubuque. The plant owed a great deal of money to the Consolidated National Bank of Dubuque and Birch's father was one of the bank directors.

The brick factory was located a short distance down river from the Blake mine. Sand for the brick was taken from a bluff just behind the plant. The sand was blasted, broken by pick, and then put in a buck suspended from a ninety-foot mast. The bucket deposited the sand in wagons on a conveyor which carried the sand down the hill into the plant at the bottom of the bluff. When the plant and its equipment were salvaged, it took two flat cars to move the large mast.

When workmen first started removing sand from the bluff, they found five rooms carved out of the sandstone. There were small portholes in all the rooms as well as small passageways that connected one room to the next. When they initiated the operation, four of the rooms were destroyed, but the last remains on top of the bluff. It is unclear who made the rooms or why. Before they were destroyed some of the area residents tried to save the "castle" or "white fort" as the rooms were called, but without success.

Although the brick made by the plant was back-up brick and not intended for outside facing, several local people did use it to construct buildings. Some of these buildings still stand including the Clayton Town Hall and churches in West Union and Guttenburg.

One of the most interesting buildings constructed of Clayton brick was a small house located a short distance from the plant. It was one of the first buildings constructed after the factory started, and culls (rejected bricks) were used for most of it. The entire structure was made of products from the plant. Red tiles were used on the roof and floor tile was used in the basement. The house is still standing and in good condition. Intended as a home for the plant supervisor, it was at one time also used as a kitchen and dining hall for the workers.

Bernard Elsner was the first occupant of the house when he came from Germany to supervise the brick-making operation soon after the close of World War I. At that time, there was strong prejudice against Germans, and rumors circulated constantly that he was a former German soldier or a deserter from the German Army. If this were not enough, Elsner had a very bad temper. One day while he was in Greenly 's store in Clayton, Frank Gibs, a local hunter and fisherman, came in from duck hunting and set his gun down. Elsner picked up the gun to examine it, and Gibs told him to put it down. One word led to another, and soon Elsner provoked a fight. At this point they went outside to settle the dispute, and in the ensuing scuffle, Elsner's jaw was broken. Despite his differences with the local townspeople, Elsner continued to work at the plant until it closed, moving then to Red Wing Minnesota to work in another brick factory.

In 1925, the Topet Taylor Engineering Company of Pittsburgh, Pennsylvania gained control of the brick factory, and the name was changed to the Iowa Burnt Slate Factory. Ten thousand shares in the plant were sold at $10 per share. Some of the larger investors were J. A. Ries, M. J. Poull, L. M. Bink, F. J. Laarveld, and C. W. Colfelt. Colfelt came from the East

to manage the plant as well.

Upon his arrival, Colfelt thought the deposit of sand too small and the cost of mining too expensive. In order to save money he decided to make brick from coal tailings or slage instead of sand. The slage was shipped in open hopper cars from Peru, Illinois and was called "Red Dog." He ordered nearly fifteen car loads of slage. Upon arrival, workers were unable to unload the material in the two or three days allocated by the railroad company. The company eventually paid demurrage on the cars only to see the cargo repossessed by the railroad. But this was only the beginning of Colfelt's problems. Since none of the men working at the brick factory had any experience with coal tailings, they were unable to make a brick that would hold together.

Other adversities also struck the mine. In early February 1926, Colfelt, perhaps disillusioned by the failure of his brick making scheme, left Clayton with most of the company's funds. An indictment was drawn against him for cheating by false pretenses on February 18, 1926. He was arrested on March 4 in Dubuque and returned to Clayton County for trial. Found guilty, he was sentenced to hard labor in the county jail for one year. Since it was his first offense and he had made full restitution of the funds, he was given a suspended sentence and placed on parole to George Yohe. Yohe, a Clayton banker, was deeply concerned about keeping the mine open because many of the investors in the brick factory as well as its employees were patrons of the Clayton Bank.

In January 1927, Colfelt allegedly wrote a bad check and again left town. This time, however, he did not return. Soon afterward, the factory closed for inventory and never reopened. Sometime before 1930, the machines and buildings were salvaged. Soon afterward, the Clayton Savings Bank also closed. Today, only a few walls remain of the plant in which several area residents saw their life's savings destroyed.

The present-day mine started in 1916 and has been, unlike the brick factory, a successful operation ever since. A chiropractor from Dubuque, John Langworthy, started the Langworthy Silica Company. For years he had known of the silica sand deposits in the hills south of Clayton and had hoped to develop a glass industry in northeastern Iowa to use the resource. "Doc" Langworthy, as he was called, also

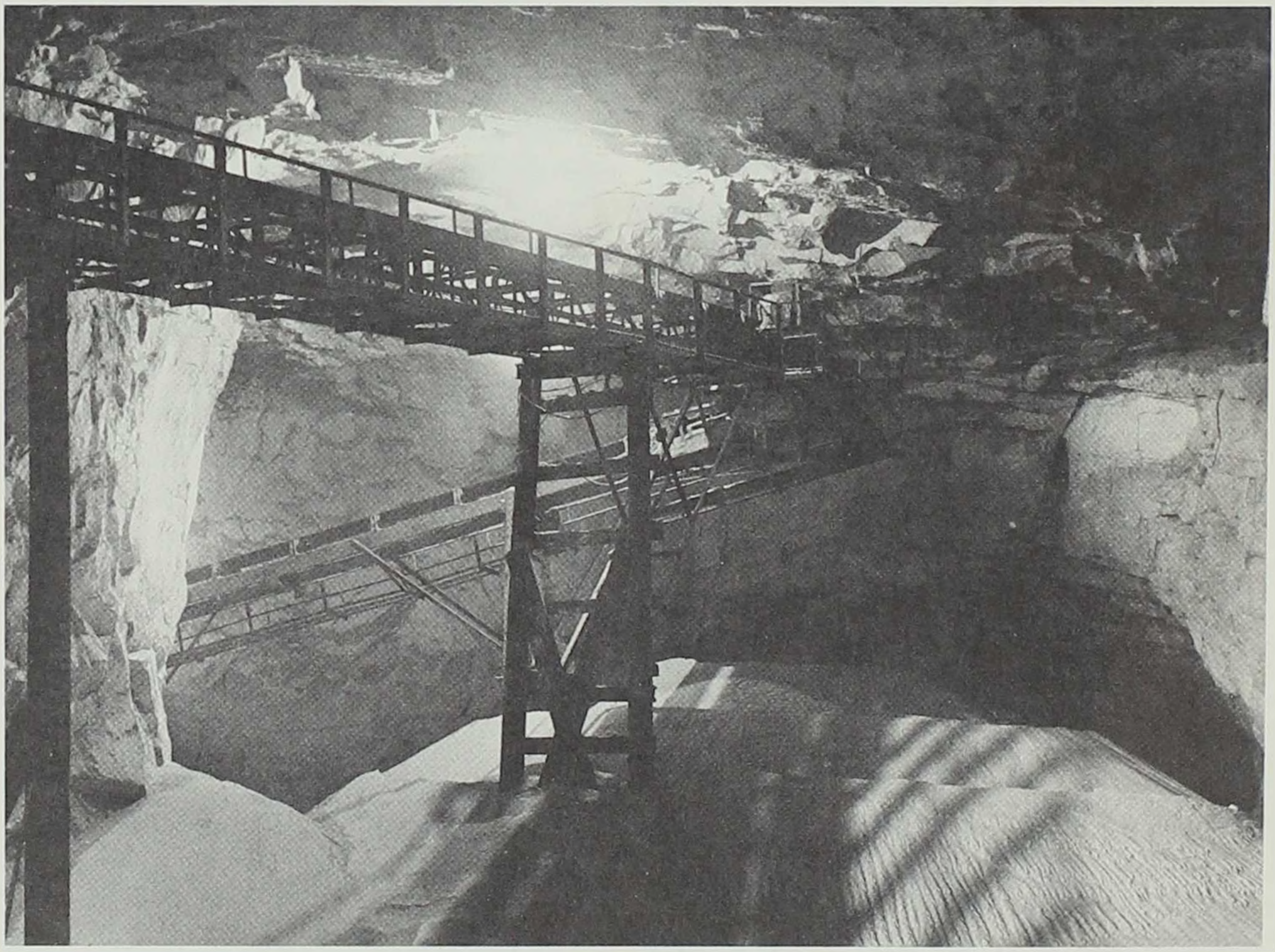
Note on Sources

The number of written sources on the Clayton operation are few and their content shallow. The early history of the mine is derived from *History of Clayton County, Iowa* (Chicago: Inter-State Publishing Company, 1882) and the *Iowa Geological Survey,* 1 (Des Moines, Iowa: George Miller, 1892). Two valuable articles dealing with the operation of the mine in the 1920s and 1930s appeared in *Cement, Mill, & Quarry,* 32, 8 (April 20, 1928) and *Sauerman News,* 14, 1 (February 1936).

Several sources were helpful in describing the geological character of the St. Peter formation, including Iowa State geologists Donald Briggs and Karl Siefert. Records from the Clayton County Abstract Company in Elkader as well as the Clayton County Clerk of Court Office were helpful in determining the sequences of the mine owners.

Arnold Roggman and Frank Baxter, both of Garnavillo, provided the information on the early history of Clayton as did Louis Liers of Clayton. Past and present employees of the various operations who supplied information were John Griffin (manager of the present mine), Kenny Wilker (foreman of the present mine), Harvey Lange (son of Otto Lange, manager of the Langworthy mine), and Leo Frommelt (employee at the brick factory).

Mrs. H. J. Hansel, Mrs. Blanche Pederson, and Mrs. Donald Blake were helpful in depicting life in the early mines and Clyde Bothmer, former railroad agent at Clayton, in describing the scope of the operations.



A conveyor which carries the silica out of the mine (Neal Brown photo).

hoped to build a house in Clayton after opening the mine. A heart attack in 1919 ended his dreams. Other large investors in the operation included Ed Beaman, Judge Chalmers, and Otto Lange, all of Dubuque. Altogether, twelve to fifteen people shared in the new mine.

After Langworthy's death, the Board of Directors elected Otto Lange of Dubuque as president and gave him the responsibilities formerly held by Langworthy. In this capacity Lange was to serve in virtually all facets of the operation from salesman to business manager. Otto Lange was at the time busy with his Lange Insurance Agency, so he turned many of the mine duties over to his son, Harvey Lange, who had just graduated from Harvard University.

The Langworthy Silica Company was much larger than the Blake operation and employed eight to twenty men depending on the seasonal demand. The company could ship up to ten railroad cars of wet sand a day but averaged between five and six. Production was reduced in

winter because the wet sand would freeze during shipping. During one of the depression years, only forty-one railroad cars of sand were removed from the pit as compared to nearly 1200 cars shipped out in other years.

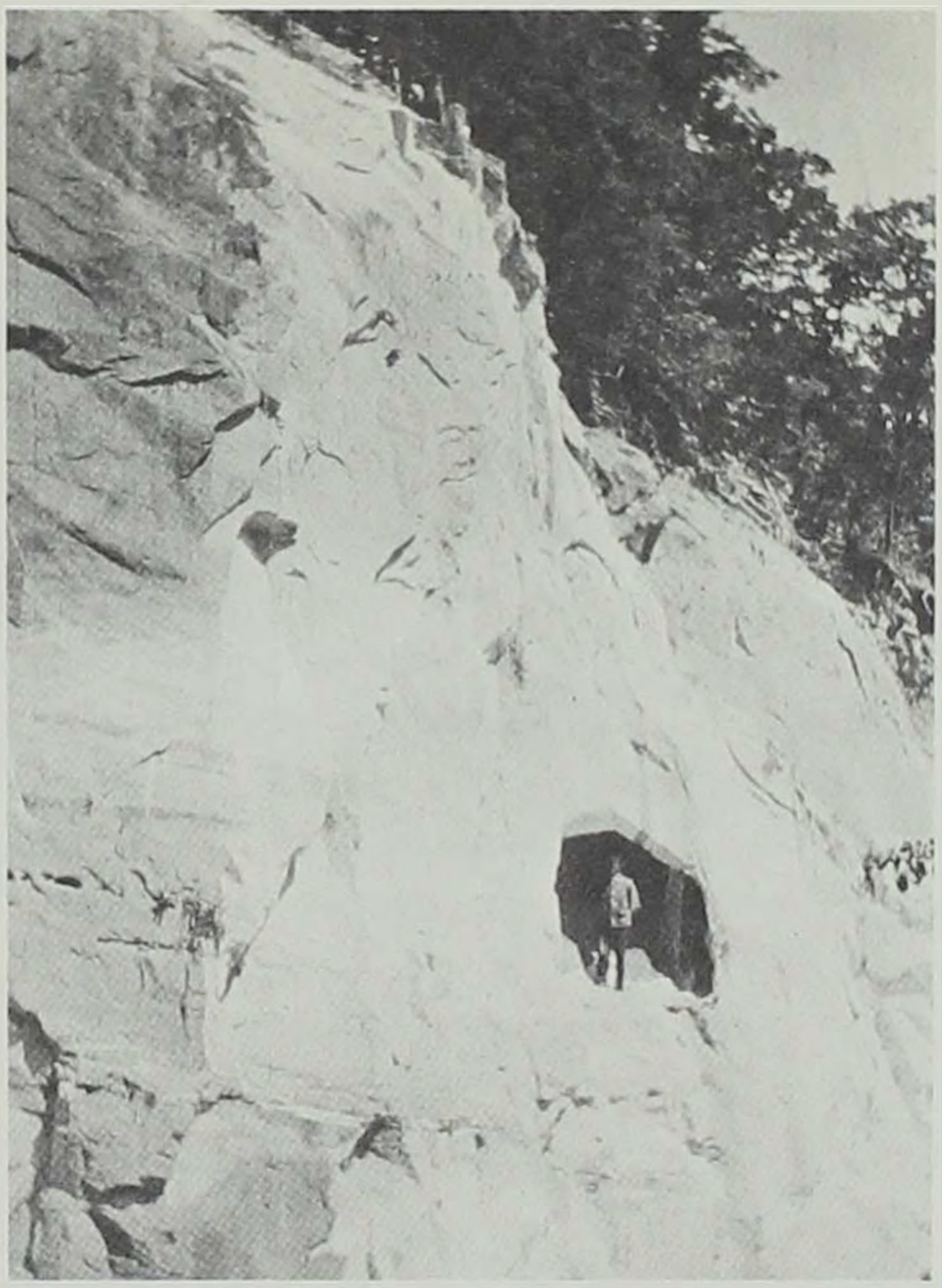
The Langworthy Silica Company sold only wet sand until the late 1930s. Then, at the urging of John Deere officials, they began to sell dry sand. The tractor company wanted to avoid the need to stockpile sand for the winter months. At that time, a small dryer was added to the mine operation, and in 1940, a larger dryer was purchased to meet the heavy demand. In the early 1940s, wet sand was selling for 80¢ per ton. The going rate for dry sand was $1.75 per ton.

Much of the sand taken from the Langworthy mine was used as coring or molding sand in foundries. The sand was mixed with a core oil which held the sand in the desired shape. This was then placed in the oven and cooked to make it hard. The molten iron or steel was poured into the mold or around the sand and left to harden. After the iron had hardened, a hammer blow was usually sufficent to break the mold. The hardened steel in its desired form was then machined to remove the roughness caused by the sand.

Some of the businesses that used the Langworthy Silica Company sand for coring purposes were John Deere Waterloo Tractor Works and Oliver (now White) in Charles City. Another use of the silica sand was for plaster in houses since the fine crystals produced a very smooth finish. The Des Moines Fuel and Supply Company used the silica for this purpose. Other uses were marble cutting and polishing.

In 1940, after experiencing over twenty years of successful operations, the pit was shut down for a short time. Financial difficulties befell the company when officials could not pay their debts and faced foreclosure by several banks. A blow came in 1941 when the mine's twelve pit employees asked for a wage increase. Since wage and price controls were then in effect, Harvey Lange went before an appeals board. He requested a price and wage increase because wages were nearly seventy percent of the cost of operation. The board allowed only fifty percent of the requested increases. Still dissatisfied, the men quit and moved across the river to work at a gravel pit just opened by the Burlington Railroad. Since the gravel pit was a new operation, no wage controls limited the wage level.

Following the wage dispute, the Langworthy mine was inactive for several years. In the meantime, the John Deere Tractor Works purchased river silica from Concrete Materials (also of Waterloo) for use in the foundry as coring sand. At the urging of John Deere officials the Concrete Materials Company leased the Clayton pit and, in 1945, started the process of dismantling and salvaging the old equipment. The company decided to discontinue strip mining and initiate the room and pillar method of underground mining. Instead of removing the rocky



Charlie Blake, framed by the mine pit.

limestone overlay (which had become an extremely expensive process), Concrete Materials began to dig into the bluff to mine the sand. In 1959, Concrete Materials was purchased by Martin-Marietta Corporation.

In the twenty-three years that the mining process has been underground, the cave has grown to the size of fifty acres. The two main roads into the hill are now three-eighths of a mile long. The network of streets extends one-fourth of a mile both up and down the river. The room and pillar method used in the sand mine is similar to that used in coal mines. The rooms are forty feet square and fifty feet apart; every fifty feet the rooms are joined by cross rooms. For every forty square feet of sand removed there is a fifty foot square pillar left intact. Some rooms are fifty feet high and others are slightly higher. A fifteen foot layer of sandstone is maintained overhead to support the limestone layers above, so no other means of internal support is necessary.

After the sand is blasted loose, it is carried away by trucks to one of the larger rooms. Then it is taken to a jaw-crusher —a series of three roller crushers. After the sand is crushed, a conveyor belt carries it out of the cave. Outside, the sand is screened and crushed alternately until it can fit through a twenty-eight mesh screen (slightly more coarse than a regular window screen). After screening, the sand is put through a twenty horsepower fan. As the fan carries the sand through a series of sieves, the sand falls into one of three hoppers.

Throughout the history of the mining operations, Clayton sand has been shipped all over the world. Eighty-five percent of the sand shipped out is used as foundry or industrial sand. The two main purchasers are John Deere Waterloo Tractor Works and John Deere Dubuque Tractor Works. Silica sand is also used in sandblasting buildings, bridges, and railroad cars. Ten percent of the mine's shipments go out in bags and the remainder is shipped in bulk. The most common grade shipped from Clayton is #63 which is one of the medium size grades. One type of sand found in the mine was so fine that it required a new classification, the "C" special which stands for "Clayton Special."

About 130,000 tons of silica sand are removed yearly from the mine. At this rate and working outward in all directions, the mining could continue for fifty years before reaching the town of Clay-

ton. Silica sand is extracted in other parts of the Middle West as well. The two largest operations are located at Festus, Missouri, and Ottawa, Illinois. The Ottawa operation uses the open pit method and is the largest producing silica sand plant in the United States. The largest producing silica mine is at Festus, Missouri, with the Clayton mine following closely in size.

During the early 1960s, Clayton mine officials faced a new situation, unrelated to mining. At that time, people throughout the United States were intensely concerned about the possibility of a nuclear bomb attack. The federal government responded by designating certain areas as civil defense shelters. The Clayton Mine was selected as a shelter site and ten railroad cars and ten semi-trailers of food stuffs were placed in the mine to be used in the event of an attack. The cave has a capacity of 44,000 persons whereas the entire population of Clayton County is only 18,000. The story is commonly told that since there is only one road to the mine, people were to drive to the cave, park their car, and enter the shelter. The next person would push the first car into the river and park in its place. The civil defense director for Clayton County, John Miller, admits that he does not know how that many people would ever get to the mine.

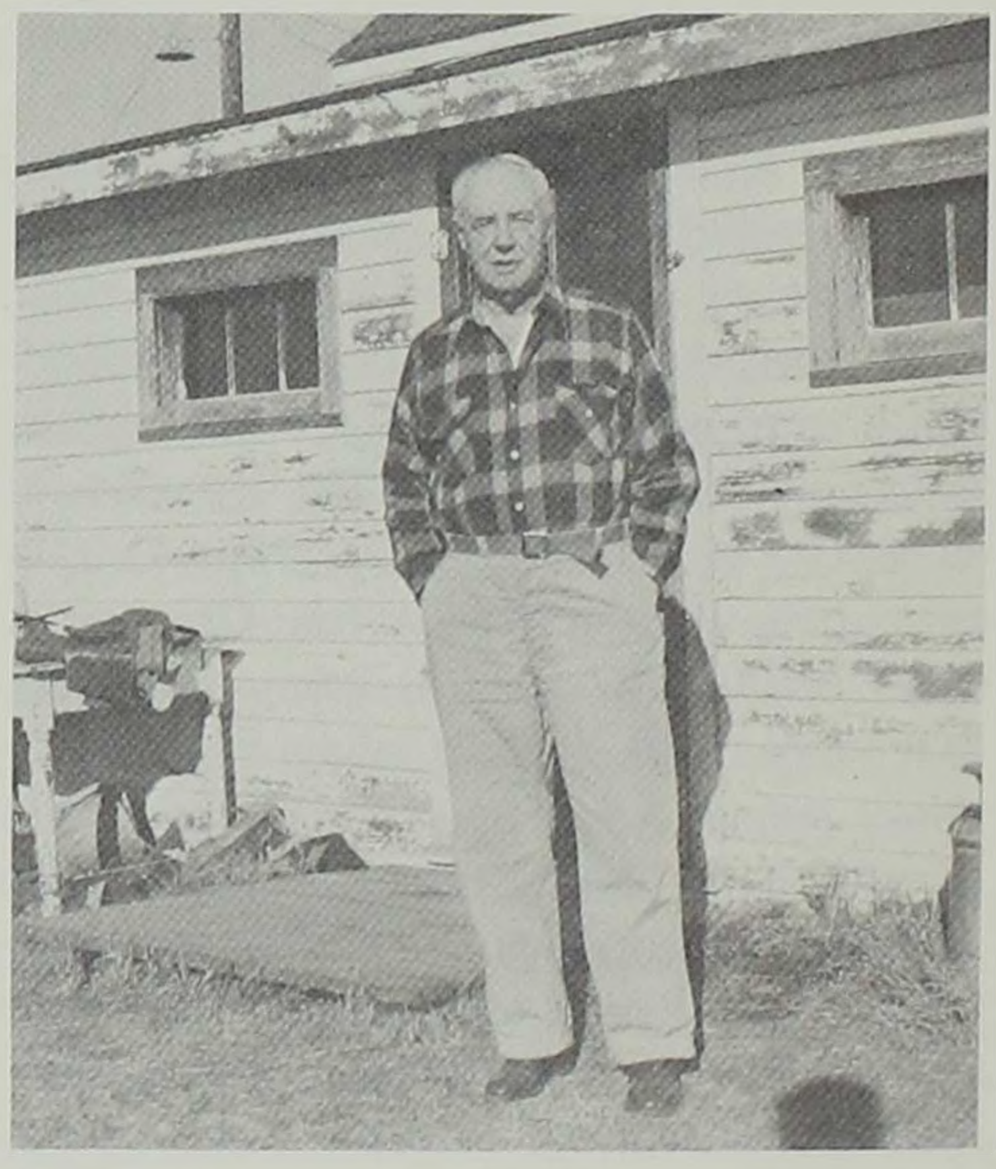
In the many years of mining at the present site there have only been two mine fatalities. Both unfortunate incidents occurred in 1936 when the pit was operated by the Langworthy Silica Company. George P. Yohe, the former Clayton banker, was killed when a cable pulling a dragline snagged and then freed itself, causing the line to whip back and forth. The cable struck Yohe across the chest and threw him against the limestone layers atop the sandstone. The second fatality occurred only two weeks later when George Tooner was dragging his shovel along the top of the 125-foot cliff; he tripped on his shovel and fell off the cliff.

The present mine safety regulations are quite stringent. The mine is inspected four times a year by the United States Bureau of Mines, and visitors are not permitted into the mine. Workers are given metal tags when they enter the mine and all tags must be accounted for at the end of the day. Only diesel trucks are allowed in the mine, and they must be equipped with special mechanisms to keep carbon monoxide emissions at a

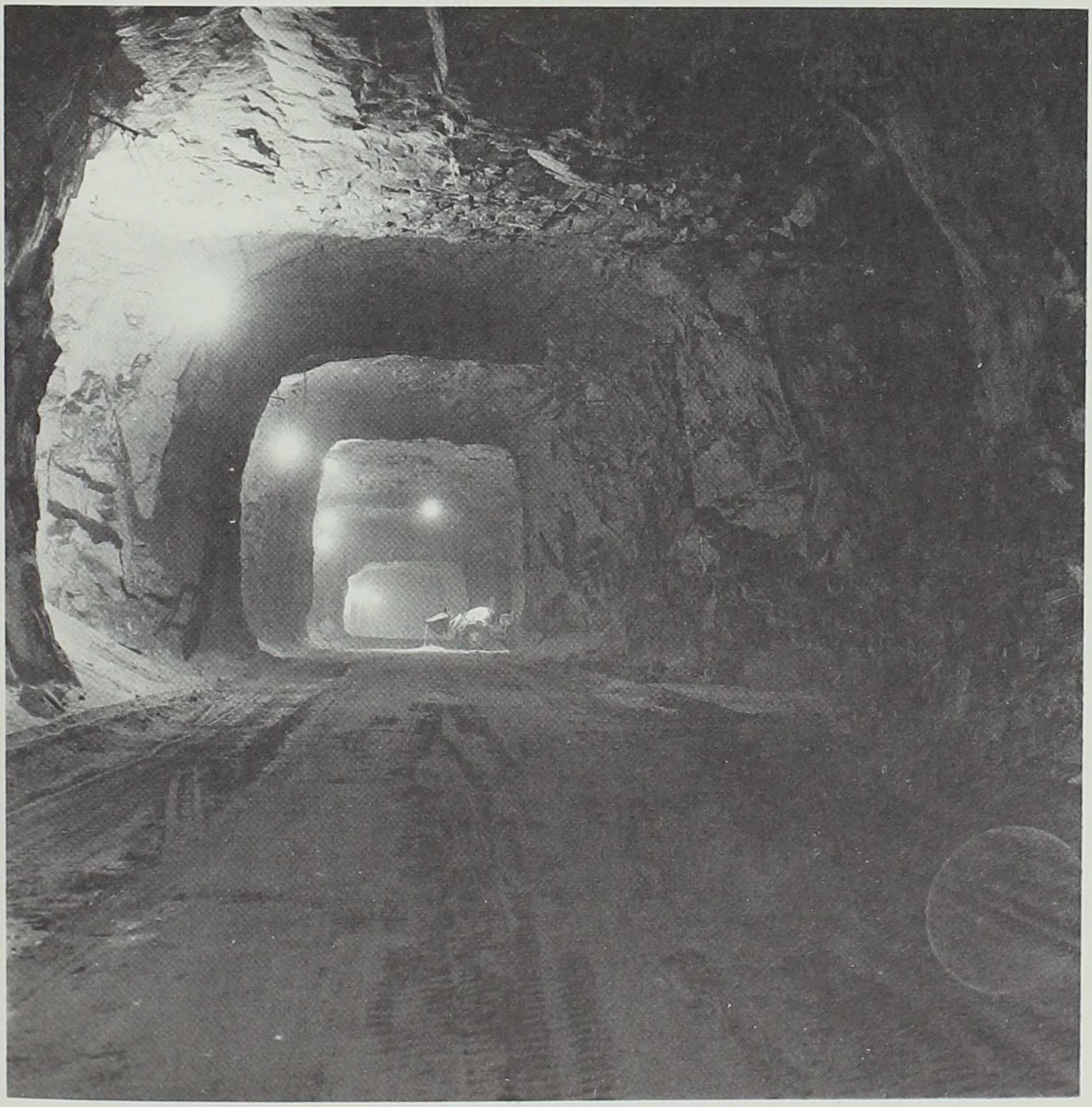
The entrance to the rooms which were discovered in the face of the bluff.

minimum. Silicosis, a disease similar to coal miner's Black Lung, is an occupational hazard for the people who work continuously with silica. The accumulation of dust in the lungs impairs the miners' ability to breathe. As a precaution, employees must undergo physical examinations twice a year. Water is also sprayed on the sand in the crushing and screening process to keep dust at a minimum. Six large fans aid in circulating the air in the mine, but in sections where dust accumulates respirators are worn. The air turnover is so efficient that when it is foggy outside, the mine becomes foggy as well. In the old pit operations these precautions were not taken, and many miners developed the disease. Charlie Blake, in fact, died from silicosis.

Today, the people at Martin-Marietta refer to the Clayton operation as their million dollar mine. Company officials estimate that the sand deposits are unlimited, and the potential for future demand of the product is excellent. The Clayton silica sand deposit is only one of hundreds of mineral beds that lie beneath the surface of the Hawkeye State. Although traditionally known as an agricultural state, Iowa's underground resources have played an important role in the state's economic development. The major mining activity has been coal mining, but limestone and gypsum are also mined in sizeable quantities. In fact, Iowa mine officials state that every county has some form of mining activity. The overall effect has been to provide diversity and prosperity to Iowa's economic life. Amid the diversified activities, the Clayton operation is the longest continuing mining industry in the state. □



Harvey Lange



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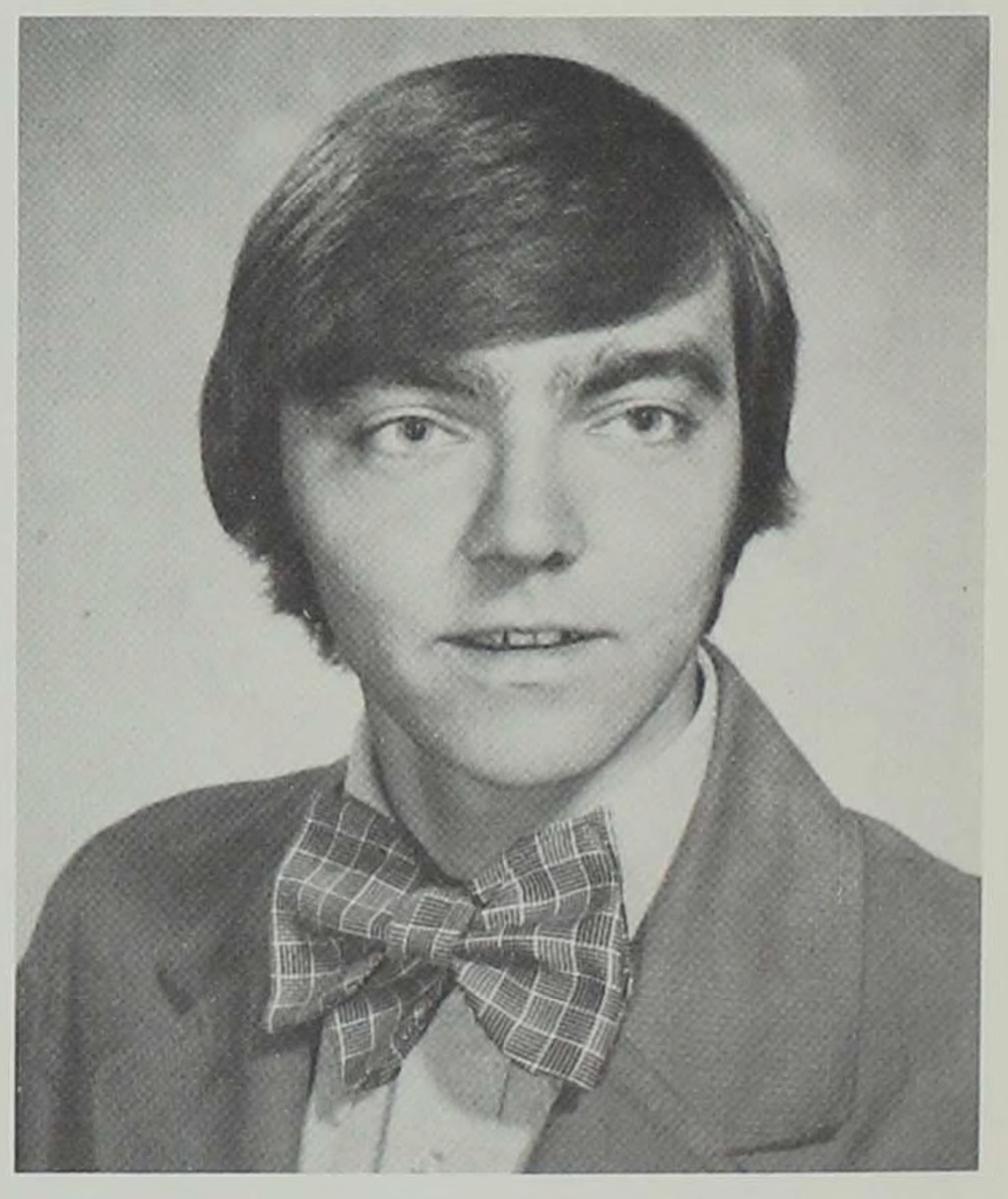

The State Historical Society encourages submission of articles on the history of Iowa and the surrounding region which may be of interest to the general reading public. The originality and significance of an article, as well as the quality of an author's research and writing, will determine acceptance for publication. A brief biographical sketch should be submitted. All manuscripts must be double-spaced on at least medium weight paper. Ordinarily, the text of an article should not exceed twenty-five to thirty pages. As far as possible, citations should be worked into the body of the text. In this and other matters of form THE MLA STYLE SHEET is the standard guide. Black and white and colored illustrations are an integral part of THE PALIMPSEST. Any photographic illustrations should accompany the manuscript, preferably five-by-seven or eight-by-ten glossy prints, unmarked on either side. Inquiries and correspondence should be sent to: Editor, State Historical Society of Iowa, Centennial Building, Iowa City, Iowa 52240.

CARPENTER BIOGRAPHY FREE TO MEMBERS

Cyrus Clay Carpenter and Iowa Politics, 1854-1898 by Mildred Throne (former editor of The Iowa Journal of History) will be distributed free to members of the State Historical Society of Iowa in 1974. Anyone who is a member on September 15, 1974 will receive the Carpenter biography free. Anyone who joins the Society between September 15, 1974 and March 15, 1975 for a two-year membership (cost: $10) will also receive the book free. Non-members may purchase the book at $8.00 per copy. Members of the Society may buy additional copies for $6.40 (a twenty per cent discount).

This book will be a handsome volume and would make a fine gift for anyone interested in Iowa history.

"The State Historical Society shall be maintained . . . , for carrying out the work of collecting and preserving materials relating to the history of Iowa and illustrative of the progress and development of the state; for maintaining a library and collections, and conducting historical studies and researches; for issuing publications, and for providing public lectures of historical character, and otherwise disseminating a knowledge of the history of Iowa among the people of the state." *Code of Iowa,* § 304.1.