REPORT

OF THE

STATE BOARD OF AGRICULTURE.

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DAILY TIMES PRINTING HOUSE AND BOOK MANUFACTORY
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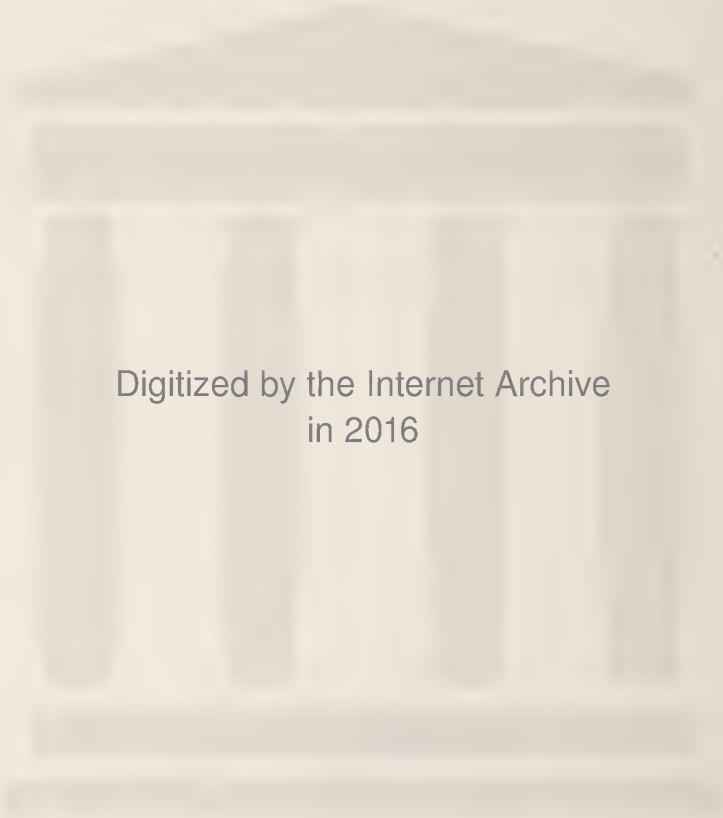

REPORT

OF THE

STATE BOARD OF AGRICULTURE.

To His Excellency, John L. Routt, Governor of Colorado:

SIR:—I have the honor to submit the second annual report of THE STATE BOARD OF AGRICULTURE.

At the meeting of the State Board of Agriculture, held at Fort Collins, on the 27th day of February, 1878, it was ordered that a college building shall be erected on the college farm, and a committee of five members of the board, Messrs. WATROUS, BEAN, LA GRANGE, STRATTON AND RYAN, were appointed, with instructions to advertise for plans and specifications for a suitable College Building, 40 x 60 feet with basement and two stories; the plans to be submitted to the committee on the 27th day of March, 1878.

The committee met at Fort Collins as per notice, and made a careful examination of the various plans that were submitted to them, and finally decided to adopt the plan furnished by GEORGE KING, of Boulder City, Colorado.

A contract was drawn up and signed by the committee and Mr. King, in which Mr. King guaranteed that the building, as per his plan, could be built for SEVEN THOUSAND DOLLARS.

In case no bid was accepted for seven thousand dollars or less, Mr. King was to receive no compensation for his services. But if a bid for seven thousand dollars or less

was accepted by the Board, then Mr. King was to receive eight per cent. of the contract price for his services in drafting the plan and specifications in detail; and five per cent. if he superintended the construction of the building.

The committee advertised for bids for furnishing the material and constructing the building as per plans and specifications furnished by Mr. King, said bids to be opened by the Board, and the contract to be awarded on the 29th day of May, 1878, at 2 o'clock P. M.

The board met at Fort Collins on the 29th day of May, and at the appointed hour the Secretary opened and read the twelve bids, which had been received. The two lowest bids were made by W. G. BENTLY, of Greeley, for $6,740.00, and H. C. BAKER, of Boulder City, for $7,000.00.

Mr. Bently, failing to procure satisfactory bondsmen, the contract was awarded to Mr. H. C. Baker, for $7,000.00, on the 14th day of June, with E. A. Austin, J. G. Jones, and Wm. Stimpson, of Boulder City, as parties of the second part to the contract.

Ground was broken for the foundation of the building about the 20th of June, since which time it has steadily progressed to final completion, some fifteen days in advance of contract time.

Pursuant to a time honored custom, the CORNER STONE of the superstructure was laid with MASONIC HONORS on the 29th day of July, 1878. A full and complete description of the ceremonies, cut from the DAILY DENVER TRIBUNE is herewith submitted:

A FETE-DAY OF THE AGRICULTURISTS.

Yesterday was a proud day for the town of Fort Collins and the county of Larimer, and a day fraught with importance to the entire State, if the enterprise which was formally set on foot brings forth its legitimate fruit. The interest of the friends of education centered in the laying of the corner stone of the proposed AGRICULTURAL COLLEGE,

which, as is generally known, is to be built, and in a great degree supported, by the commonwealth, and is another link in the wonderful system of schools for the education of the people that has been inaugurated with such success by the citizens of Colorado.

Yesterday was a day which has been looked forward to by the people of the northern part of the State with interest for many months, not to say years; an interest which has grown more and more intense as the time for the begining has approached. It was no wonder, then, that Collins was the center of interest for these people, and no wonder that the whole country round should turn out to lend their presence to the occasion.

Wonder or no wonder, everybody was there, and the event was given all the importance that a hearty interest in it could give. It was really refreshing to see the crowd—such a crowd as one can not see in every part of Colorado, and that reminds one of the turnouts that are met within the agricultural regions of the trans-Mississippi States. A string of farmers' wagons as long as the average politician's tongue, occupied by good natured and rotund ranchmen, and their wives and sons and daughters, all looking robust, agreeable and prosperous, and intelligent—a descriptive adjective which cannot always be applied to gatherings of the kind in the East. The entire prosperous neighborhood seemed to have turned out, bringing with them innumerable vehicles and animals. It was a Fete-Day, the and girls and boys wore their best clothes and smiled their sweetest smiles. All seemed to thoroughly understand and appreciate the magnitude of the occasion, and all seemed all the more pleased that they had come out to witness the starting of an institution which is calculated to improve themselves and their descendants mentally and morally. It was good to be there, and refreshing to see the interest that was taken in the procedure, without exception.

The only drawback was the unfavorable weather. For

once the farmers in that section had rain that they did not appreciate. The rain was well enough, but it came at the wrong time. To be sure there was not a heavy fall, but it commenced just at the time when the ceremonies were to begin, and it continued until they had been brought to a close—one of those drizzling and prolonged rains which are more annoying than the heaviest fall. Notwithstanding this drawback, however, not one who had come to witness the laying of the corner stone sought to shun the wet, or missed the sight, the prospect of which had attracted them to the spot, showing that the people about Fort Collins are people of grit as well as of intelligence.

The site of the college is about a mile south of the town of Fort Collins, and is immediately on the Colorado Central Railroad, the building fronting the line on the west side. The time set for the ceremony was half past one o'clock in the afternoon, but owing to some delay in getting the procession in marching order, it was fully two before a start was made. The procession then formed in the order agreed upon previously, and as follows:

Band.
Citizens bearing the National Flag.
Town Board of Trustees and Town Officers.
County Board of County Commissioners and County Officers.
Patrons of Husbandry in numerical order, each
Grange bearing a banner with appropriate mottoes. Members and Officers
of the State Grange.
Odd Fellows.
Masonic Fraternity.
Orator of the Day.
State Officers and Citizens.

After the citizens on foot came a long line of wagons, the entire procession being perhaps four hundred yards long. The footmen walked in pairs, and as the rain was falling all the time, and as about every other man carried an umbrella, the scene presented to an outsider was picturesque and peculiar. Hon. N. H. Meldrum acted as

Grand Marshal, and succeeded, with the aid of efficient assistants, in keeping the body in the best of order.

The place where the ceremonies were to begin was reached about half past two o'clock, and very little time was lost in commencing the work of the day. The basement of the building had already been erected, and joists put down with planks laid across them, forming an excellent platform for the accomodation of as many of the crowd as chose to avail themselves of it.

The ceremonies of laying the corner stone were appropriately left to the Grand Lodge of Freemasons of the State—an order which has done more than any other, through its symbolisms, to furnish a proper appreciation of the work of the builder. Grand Master C. J. Hart, of Pueblo, Deputy Grand Master R. W. Woodbury, of Denver, and Senior Grand Warden, Byron L. Carr, of Longmont, were present, and Hon. W. C. Stover, of Fort Collins, acted as Junior Grand Warden. The other officers of the Grand Lodge were filled by members of the Collins Lodge.

Hon. W. F. Watrous, chairman of the Agricultural Board, acted as presiding officer of the meeting, and Mr. Hart, Grand Master, directed the ceremonies. Almost every one has seen this rite performed. It is very impressive, and can but strike one as in every way appropriate. Before the stone was placed, where, let us hope it will remain for generations, a metallic box containing the following articles was placed under it:

NEW TESTAMENT.
THE CONSTITUTION OF THE UNITED STATES AND OF COLORADO.
CORBETT'S LEGISLATIVE MANUAL.
ALL ACTS OF THE LEGISLATURE PERTAINING TO THE CONSTRUCTION OF THE AGRICULTURAL COLLEGE.
GRAINS OF THE STATE.
BULLION ORES OF THE STATE.
THE TRIBUNE AND COLORADO FARMER AND OTHER NEWSPAPERS.
WOODBURY'S MASONIC MANUAL.
PROCEEDINGS OF THE MASONIC GRAND LODGE OF 1878.

When the stone had been placed, the proper Masonic

officers applied to it the square, the level and the plumb. Answering to the satisfaction of the officiating body, the stone was pronounced to be well founded, true and trusty, and was then consecrated by pouring upon it:

1. WHEAT, an emblem of plenty.
2. WINE, an emblem of joy and gladness.
3. OIL, an emblem of peace.

Grand Master Hart then advanced to the front, and turned the building over to the trustees with the following remarks:

Gentlemen, Trustees of the State Agricultural College:

In compliance with your request, and in accordance with the time-honored custom among the Fraternity of Ancient Free and Accepted Masons, the Most Worshipful Grand Lodge of Masons in Colorado has to-day been convened for the purpose of laying the corner-stone of the

STATE AGRICULTURAL COLLEGE

with the beautiful and imposing ceremonies of the Order.

Under the Superintendence of the Grand Master and the assistance of the Craft, the stone has been placed in its proper position, tested by the Square, Level and Plumb, and pronounced to be well formed, true and trusty, and the implements of architecture have been delivered to the principal architect, and to him has been entrusted the direction of the work. These ceremonies are not unmeaning rites, nor the amusing pageant of an idle hour; but they have a solemn and instructive import, and it is by such means that Masonry imparts the most wholesome instructions of precept and example. To the mind of the intelligent and reflective Mason they have a symbolic reference to the commencement of the moral and intellectual task of erecting a spiritual temple in his heart, and the symbol is beautifully sustained, when we look at all the qualities that are requisite to constitute a well tried, true and trusty corner-stone.

The squareness of its surface, emblematic of morality;

its cubical form, emblematic of firmness and stability of character; and the peculiar finish and fineness of the material, emblematic of virtue and holiness; portray, in the consecrated language of symbolism, the necessity of integrity and stability of conduct, truthfulness and uprightness of character, and purity and holiness of life.

Masons are called moral builders, and in their ritual they declare emphatically that a more noble and glorious purpose than squaring stones and hewing timbers is theirs—the fitting of immortal nature for that spiritual house not made with hands, eternal in the Heavens.

It is the scientific application and the religious consecration of the rules and principles, the technical language, and the implements of operative masonry to the worship of God as the Grand Architect of the Universe.

It is said that the construction of the Pyramids of Egypt employed the labor of one hundred thousand men for many years, but it was only to build monumental piles, beneath whose shadows kings might rest. These pyramids were only temples for the dead; Masons are building one for the living. The pyramids were only mausoleums in which the bones of the mighty dead might repose in imperial magnificence; Masons are erecting a structure in which the God of Israel shall dwell forever. The pyramids shall crumble away until not one stone shall be left upon another; but who shall count the years of immutability! the life-time of the soul, which is fitted for its place in the heavens! Who can define its outline, or fathom its depths, or measure its journey. It is a stream that grows broader and deeper as it flows onward. When earth's proudest monumental piles have crumbled away, and the sands been scattered by the desert winds, and the glory and greatness of earth shall be forgotten, then will the immortal be pluming its wings for loftier flights. It is a fountain whose sources are in the Infinite, and whose placid waters flow on forever.

A springtime that shall bloom, educating immortal minds for the present, the future, and for all ages.

This is acknowledged to be one of the essential objects of Masonic labor. The builder builds for a century; Masons for eternity. The painter paints for a generation; they for everlasting years. Although divested of its operative character, it is no less efficient in its symbolisms. It comprehends the theory of proportions in architecture and sculpture, analyzing forms of artistic expression, until it can divine by what features of similarity they work in sympathy with the mind.

It comprehends the sublime lessons of nature—our earth, its oceans, lakes and rivers, its mountains, rocks and trees, its plains, grasses and flowers; it comprehends the intimate relations of poetry and music to each other, and their sensitive affinity to the soul; it mounts to the realms of the Infinite, the illimitable system of the universe; catches the sweet songs of stars, the celestial harmony of the revolving spheres; it teaches man that in that song his own fair earth is heard with all its million-voiced choirsters, and bids him join the universal chorus.

It is devoted to the labor of diffusing light and knowledge, of striking from humanity the shackles of ignorance and superstition, and placing it upon the highest plane of civilization and intelligence. It fosters and encourages all institutions of learning, and readily affiliates with every effort tending to advance the moral, social and intellectual interests of society; hence it is, that in participating in these ceremonies, we, as Masons, are but engaged in the prosecution of legitimate Masonic labor.

And the task is a pleasant one, because by the erection of these temples of learning we are assured that the fire which has been kindled upon the altar of civilization in our young State will never be extinguished; but, supplied by the exhaustless fountains of knowledge flowing from this and kindred institutions, will continue to burn brighter and

brighter as each advancing year marks our onward progress, and casting its light adown the vista of time, lights the pathway to knowledge and greatness of the succeeding generations.

Honored Sirs! having completed our task, to you and your successors is committed the work of completing this edifice, hoping that the blessings of the God of light and truth will rest upon you in your labors, and so guide and direct your efforts in the administration of its affairs, that it will prove a blessing to this community and an honor to our State."

Immediately after Mr. Hart retired, Professsr J. C. Shattuck, State Superintendent of Public Instruction, was introduced, and spoke as follows:

Ladies and Gentlemen:

The first want of man is food, and his first resource for it the ground. Whether herbs or fruits were first resorted to must have depended upon their relative abundance in the country where man found himself; but the latter would probably be preferred, till the use of fire was discovered in the preparation of the former. The first care and labor of man would thus be bestowed on fruit trees; hence gardening may be said to be the art of earliest invention.

But man is a carniverous animal, and this propensity of his nature would soon induce him to attempt domesticating such beasts of the earth as he found most useful in affording milk, clothing or food, or in performing labor. Hence the origin of pasturage and the management of live stock. The invention of tillage would be coeval with the discovery of the use of cereal grasses, and may be considered as the last grand step in the invention of husbandry, and the most important as leading to the establishment of property in territorial surface.

Agriculture, in modern times, may be defined the cultivation and management of territorial surface on an extended

scale, by manual and animal labor for the production of objects and materials used for the food and service of man, and for various important services in arts, manufactures and civilized life.

The importance of agriculture is obvious, not only by its affording the direct supply of our greatest wants, but as the parent of manufactures and commerce. Without agriculture there can be neither civilization nor population. In the United States east of the Mississippi River we have a population of 30,000,000 to 35,000,000. At the settlement of Jamestown all this vast territory held a population of less than half a million savages. It is little more than 250 years since the white race obtained its first footing here; yet, as Mr. Greeley once said, in that time it has effected greater changes and built more enduring monuments of its occupancy than did the savage in unnumbered centuries.

While agriculture is one of the oldest of human occupations, it is a strange fact that its improved methods, and especially its improved implements, are of very modern origin. The nation that gave the world the Parthenon and the Iliad plowed its fields with a pointed stick. Rome created a literature that is still the admiration of the world; she carried the manufacture of warlike implements to a point hardly surpassed to-day, except such new forms as the use of gunpowder has required; but her implements of agriculture were scarcely superior to those of the now forgotten race whom Pizarro conquered among the mountains of Peru.

Up to the middle of the last century the grain of the world was still threshed in the manner to which Moses referred when he wrote: "Thou shalt not muzzle the ox that treadeth out the corn;" and it is only about eighty years since the farmers of England and America began using plows with both mold-board and land-side of iron. Indeed, so young is the art of agricultural implement manufacture that in the fields of wide-awake farmers to-day you will hardly find a tool that is not—at least in its present

form—the invention of the present generation. The English speaking race, in a remarkable degree, has led the van in this department of advancing civilization. In the agricultural department of the Centennial Exposition continental Europe exhibited an assortment of clumsy implements which a Yankee farmer would not use if given him, among which I searched eagerly for one tool, single or complex, that England or America had not anticipated and improved. I found only a hollow leathern tube which the farmers of Southern Russia use to relieve an animal when choking. The most prominent feature of the European display in this department was the bewildering collection of liquors. As I stood a moment—

> "Bottles to the right of me,
> Bottles to the left of me,
> Bottles in front of me"—

and then look again at the awkward tools with which these European farmers till their soil and gather their harvest, I concluded that the European market paid better for a new drink than a new plow. I do not see how any one could walk through the Agricultural Department at Philadelphia and avoid the conviction that, in all that pertains to brain-work in agriculture, the English-speaking race is far in advance of all others; albeit, they do not say that our aesthetic tastes are shockingly uncultivated. Much has been written and spoken in the late years of the dignity of labor, and England and America have done more to give dignity to labor than all other nations of the earth, because they have put more brains into agriculture.

I take the risk of shocking the notions of some people when I say that there is not a particle of dignity in manual labor alone. If such be in itself ennobling, then the peasant woman of Europe, yoked in the field beside a cow, or the galley slave, driven to exhausting toil by deadly weapons, have reached the acme of human dignity. Would it be elevating for a farmer to go into his grain-field to-day with a sickle, and, by dint of hard work and long days, cut

and bind an acre a day, when, with a pair of horses and a self-binding reaper, he can accomplish the same in an hour?

The one is muscle, pure and simple; the other is muscle under the control of an intelligent brain. When a man performs the labor of an ox, it gives no more dignity to the man than to the ox; but when an ox is forced to a man's work, then man's superiority becomes manifest. While man depends on muscle alone, all nature holds him at a disadvantage. A squirrel can outrun him; even a calf excells him in strength; the tiny humming-bird almost defies the glance of his eye; the beasts of the field devour him with impunity; the waters drown him; the soil yields him but a beggarly sustenance, and in her own rock-ribbed bosom earth hides her jewels far beneath the reach of his unaided hand. It is only when man turns from puny muscle to kingly brain that he walks forth a monarch, and bird and beast, and water and air, and the lightnings of heaven even, accept his sway. And yet, till within two hundred years, the most numerous, the most important class, the tillers of the soil, in all lands and climes, have been hinds and boors, and slaves, who have gone forth to toil with the collar of the master about their necks, and on their foreheads the mark of him who was rich because they were poor. Thanks be to God, that in America, at least, this is past—past forever.

Farmers of Colorado, this stone which you are laying to-day is something grander far than the simple corner of a modest building of brick and stone. It is another monument of the emancipation of your guild. May it be the guidon of greater triumphs than any yet achieved.

At the close of an article on "Agricultural Chemistry" in the British Encyclopædia, written about twenty-five years ago, the author says: "In many branches of this subject the observed facts are few, and the conclusions founded on them must necessarily be uncertain. Yet facts of much practical value have been elicited, and an immense stimulus has been given to careful observation and inquiry

into principles on the part of the farmer. That this is already beginning to bear its fruit is unquestionable, and it is impossible to look at the opinions and practice of modern farmers of the best class without observing how much they are influenced by science. Much, however, remains to be done, and, even in what we consider familiar matters, the chemist is often stopped for want of field experiments sufficently definite to support or refute his positions. We doubt much, however, whether this can be carried out until a regular professional education in the principles as well as the practice of agriculture is provided for the young farmer, a want which is every day becoming more felt, and the fulfilment of which cannot long be postponed."

This prophecy was soon fulfilled. At about this time England founded the Royal Agricultural College at Cirencester.

In 1862, Congress gave to the several States and Territories of this Union land-scrip to the amount of 30,000 acres for each Senator and Representative in Congress, provided that each State or Territory claiming the benefit of this act should, within five years from its passage, "provide not less than one college, which should receive for its endowment, support and maintenance the interest of all moneys derived from the sale of the aforesaid scrip or lands."

It was further required that the leading object of these colleges should be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

The main supporter of this bill was Hon. Justice S. Morrill, of Vermont.

It is frequently said that agricultural colleges have all been failures, yet it is my earnest conviction that of all laws

ever enacted, either State or National, for the advancement of practical education, no one has ever been productive of such fruitful results. The originators and framers of this law "builded better than they knew." No tabulated statement can give more than a faint idea of what has been done in a short space of time in advancing agricultural education. 'Looking back over the last ten years, we notice that those engaged in agriculture have made marvelous progress in general information, as well as in technical subjects having a direct bearing on their special calling." This is largely due to the munificent endowments of Congress. As soon as the act became a law, the question of its acceptance began to be agitated in the several States. Many strenuously opposed its acceptance—some on the ground that it would add heavy burdens, in order to furnish buildings, etc.; others because they regarded the whole scheme as chimerical and impracticable. "These discussions—which have not yet wholly ceased—have disseminated much valuable information. They have aroused the agricultural classes to a sense of their rights and duties; they have developed latent talents and excited a desire for information among farmers; they have created such a demand for agricultural literature that, in addition to numerous well conducted journals, a large portion of the religious and political press devotes more or less space to this subject. These are some of the incidental results of this wise and munificent act of this Congress; and they are none the less real and beneficial, although they cannot be tabulated or set forth in long columns of figures." Up to 1865 the Agricultural College of Lansing, Michigan, was the only one in the United States in which students could pursue a college course arranged and adapted to meet the wants of those who might desire, in after years, to engage in agriculture. Since that time some thirty have been organized—about half of them as parts of universities which are largely devoted "to teaching such branches of learning as are related to agriculture and the mechanic arts."

That these institutions, though yet in their infancy, are exerting a powerful and salutary influence upon the young men and women of our country, no thinking man will deny. In 1873, Professor Atherton, of New Jersey, speaking of the relation of the general government of these colleges, said: "These younger institutions have a larger average of students, by more than one tenth, than the long-established colleges, and are fairly occupying with them the field of higher education. In an important sense, however, they are not the rivals of the older colleges. Their graduates, to only a limited extent, entered the learned professions. They become engineers, farmers, mechanics, architects. They labor with hand and brain. They become leaders and organizers of labor, and thus fulfill the intent of Congress when it designed these institutions to furnish a liberal and practical education to the industrial classes. What is the government domain but the property of the people, and to what higher use can the people put it than to promote the higher as well as the lower education of all the people? We have in this country no aristocracy of education—not one education, as in the old country, for the masses, and another and higher one for the privileged minority. The republican principle is the best education for all—the best and highest education for the masses. That is the only principle on which republican institutions can be founded. The words of Washington fully justify this principle: "In proportion as the structure of the government gives force to public opinion, it is essential that public opinion should be enlightened." Among agricultural colleges I am of the opinion that our sister State of Kansas is entitled to pre-eminence in the determination to do the specific work which its name would indicate. It has not impoverished itself by spending its endowment in imposing buildings, but has built only what is needed in a plain and substantial manner. I commend this example most heartily to our own board of managers. There is a great case being tried in these latter years before the American people, viz: Mind vs.

brick and mortar, as an educating power. How many institutions of learning have been shipwrecked because the founders built a magnificent edifice and then were too poor to employ first-class minds.

We are educated—and I care not whether the education be classical or technical—we are educated by mind, and not by brick and mortar. I had rather a child of mine would sit down before a warm-hearted, great-minded man, with nothing but the canvas of a tent between them and the winds of heaven, than to enter a fully appointed university, if the great mind be wanting. Of such men as Thomas Arnold and Mark Hopkins, of such women as Mary Lyon and Emma Willard, it may well be said, "to know them is a liberal education." It is impossible, especially for youth, to come within the influence of such a mind without being educated, without being drawn out of self and lifted up by the strong attraction of the master spirit, and made better for time and eternity.

Gentlemen of the Board, I charge you, fling away ambition—if you have any—to erect here grand buildings; but let your ambition rather be to create here an educational influence that shall be felt on every farm; in every kitchen, in every work-shop, in every cattle camp in the State of Colorado. We will send you our boys and girls, that you may make of them more skilful men and women than are their fathers and mothers. There is no lack of problems for you to solve. Travelers tell us that the average American family throws into the slop-bucket enough to support a French family of equal size. Can you train cooks that shall stop this waste?

Not more than one farmer in ten in Colorado can raise a crop of potatoes. The graduates of Fort Collins must reverse this proportion—if they have to bring out a new potato to do it. I believe it is less than two years since American beef was first sold in Europe. A few days since I saw the statement that the average receipts of American cattle in Liverpool are two thousand head per week. How does this

affect one of Colorado's largest interests? How can we lay the densely populated regions of Europe under tribute to us for their meat? But time would fail me to speak of the problems of irrigation, of fencing, of cereals, of vegetables, of dairy products, of beef stock, of beasts of burden, of the use of implements, of fruit culture, of soils, of manner, of rotation of crops. It is my candid belief that a careful consideration of the least of these by the members of your faculty here is of more practical importance than the tracing of their ancestral line to a particular family of apes, or the determining whether the Pliocene skull of California be really "Brown, of Calaveras," or a Modoc Indian.

Statistics tell us that the farm house sends more women to the insane asylum than any other walk of life. Surely this will not be true of the generation that shall look back to this college as its *alma mater*. Your *alumni* will be wise enough to build comfortable homes rather than buy an additional quarter section; they will be able to make slight repairs upon house or wagon without consulting a carpenter, the wheelwright, or the blacksmith; their doors will be hung, their windows glazed, and their gates can be latched; their business calendar will contain no such day as to-morrow; they will know how to do the work in field and kitchen within reasonable hours, and in the cool of the evening they will sit in the shaded porch—husband, wife and children—and give an hour to mental culture and social chat, or, with united voices, intone that immortal prayer with Burns—

> "That He who stills the raven's clamorous nest,
> And decks the lilly fair in flowing pride,
> Would, in the way His wisdom sees the best,
> For them and for their little ones provide;
> But chiefly in their hearts with grace divine preside."

They will know that sleep "doeth good like a medicine," and will not invite disease and sour tempers by habitually driving everybody out of bed two hours before day. Bob Ingersoll says that a man who routs his wife and children out of bed at three or four o'clock in the morning

ought to be visited by a missionary. The eloquent Colonel is more human than I am, or else our ideas of missionaries differ: I would send such a man to the whipping-post.

But the farmer of the future is not so. He will know how to make farm-life pleasant and home happy. Oh! priceless wisdom! No sons shall be eager to shake the dust of his fields from off their feet as they haste to the city in the early days of their majority, carrying with them only memories of thankless toil. No daughters shall long for the time when they shall be freed from his tyrannical rule, and pray heaven to give them husbands who will deal more tenderly with them than father has done with mother. No wife shall be carried from his home to the asylum, or to an untimely grave,—driven hence by slavish toil or carking care. He will be loved at home and respected abroad.

Citizens of Larimer County and of Colorado, I give you joy that the day is dawning when here in our midst we can furnish a liberal and practical education to the industrial classes.

Gentlemen of the Board, I congratulate you on the success that has thus far attended you; but I warn you that when this structure is completed, "from turret to foundation stone," the real difficulties of your task will have but just begun. May God guide you to place this institution for industrial education upon a foundation as firm as this stone which we have to-day fixed in its home, and more enduring than the rocks beneath whose shadows we stand. Let us remember that no words or ceremonies of ours to-day can consecrate this soil; but, if in the years to come, our sons and daughters are here trained to greater skill in their various callings; if, above all, the influence of this spot shall make them better and nobler men and women, then, indeed, shall this be hallowed ground.

"What's hallowed ground? 'Tis what gives birth
To sacred thoughts in souls of worth!
Peace! Independence! Truth! Go forth
Earth's compass round,
And your high priesthood shall make earth
All hallowed ground!"

The rain was falling during the time that both gentlemen spoke, but they took off their hats and "went in like little men," never pausing, and the people stood and listened until they had concluded, and then applauded vigorously.

When Professor Shattuck had retired, the Granger Glee Club came forward and treated the audience to a song, which was well rendered. A few appropriate and encouraging remarks, and a prayer of the same nature by Father Byrne, closed the exercises, with the exception of the doxology, suggested by Father Byrne, and as the last strains of the grand old

> "Praise God, from whom all blessings flow,
> Praise Him all creatures here below,
> Praise Him above, ye Heavenly host,
> Praise Father, Son and Holy Ghost,"

went out upon the moist air, the crowd dispersed, and found its way back to the town in somewhat less order than it had gone out.

The exercises did not occupy more than an hour and a quarter. It may, therefore, be seen that but little time was lost.

Besides the citizens from Fort Collins and vicinity who were present, there were many from other sections—all portions of the State being represented. The *Tribune* is able only to give a partial list. A majority of the State officers, including Governor Routt, Secretary of State Clark, Auditor Crawford, and Superintendent of Public Instruction Shattuck, lent their presence to the occasion. Among others from Denver were Hon. Thomas M. Patterson, Mr. J. S. Stanger and daughter, Colonel E. P. Jacobson, Mr. Herman Beckurts, Mr. J. P. Farmer, Captain D. I. Ezekiel, Mr. R. W. Woodbury, Mr. W. R. Thomas, Mr. M. Spangler, Mr. Avery Gallup, Mr. Ed. West, Mr. W. W. Prugh, Alderman Linton, Mr. L. K. Perrin and wife. Among those present from other points were Colonel B. L. Carr and Mr. W. E. Pabor, Longmont; Mr. W. C. B. Allen, Omaha; Dr.

J. A. Sewall, Mr. George E. King and Mr. J. E. Storey, Boulder; Messrs. Joseph Luce, L. J. Smith and G. T. Belcher, Golden; and Judge Belford and John Turk, Central. Halsey M. Rhoads was also there. Superintendent Henry, of the Colorado Central, went along to look after the interests of the party, and succeeded in landing at Collins exactly on time, and in putting off his cargo at Denver, on the return, half an hour in advance of the schedule time. At a meeting held, it was, on motion, Resolved, etc., etc.

DESCRIPTION OF THE BUILDING.

The COLLEGE is located on a beautiful elevated site west of College Avenue, less than three-fourths of a mile southwest of the business part of Fort Collins, and presents a magnificent view from every point of the compass. The basement is 62 x 43½ feet, and 9 feet high in the clear. The foundation is five feet below the surface. The walls are built of the best mountain stone, dressed to a uniform thickness, and finished with raised points, presenting a piece of workmanship unequalled in the State; impressing every one with its beauty, strength and solidity. The basement has four rooms, that are well lighted, and can, in the future, if occasion requires, be used for students. There are three entrances, which are reached by flights of stone steps. The superstructure is constructed of brick, the front being laid with selected brick of uniform color, and is pronounced as fine work as can be found in the State. The first story is fifteen feet high in the clear, and contains four room, besides the main hall and cloak-rooms. There are two entrances, the front having two heavy doors, reached by a flight of steps and platform. The rear door is single, and is reached in the same manner as the front door. The second story is thirteen feet high, and is reached by a substantial winding stairway. This story has two rooms, 14 x 14 feet, with a hall and recitation room, connected by sliding doors, so that both rooms can be thrown into one, making a magnificent hall the entire length of the building.

Every room in the building is thoroughly lighted and ventilated, and from the elevated site of the building, each room has a fine view of the surrounding scenery. The college is so arranged that it can be heated either by furnace or stoves; is forty-four feet high, and is surmounted by a tower twenty one feet high, making the extreme height from the ground sixty-five feet. The inside finish is perfect in the minutest particular, while the whole building, from the foundation to the top of the tower, is constructed in a substantial and workmanlike manner, reflecting great credit on H. C. BAKER, the contractor, and is an enduring monument to the educational interests of the State.

HORTICULTURE.

At the December meeting of the Board, it was ordered:

"That the President of the Board be instructed to purchase hardy fruit and ornamental trees, transplant them on the enclosed land, and properly care for the same; said purchase to be confined within the limits of fifty dollars." At the February meeting, it was further ordered:

"That the President expend not to exceed two hundred dollars of the local fund in starting a nursery of fruit, shade and ornamental trees on the College farm; and for transplanting and caring for, in a proper manner, the trees so planted, the President shall have the use of the house and land inclosed, for the year 1878, free of rent."

Pursuant to the above instructions, the President made his order for the stock, and, on its arrival, transplanted it into orchard and nursery rows on a a plot of ground north of and in close proximity to the College building.

The kind of trees planted, the method of cultivation and irrigation, and growth of trees, as described by the President, is herewith attached.

PRESIDENT WATROUS' REPORT.

Hon. H. Stratton, Secretary of the State Board of Agriculture:

DEAR SIR: In compliance with your request, I have

the honor to submit a brief report of the condition and future prospects of the nursery started on the College farm, in accordance with instructions from the Board. I regret that I cannot give a more detailed account of the experiment at this time, owing to a press of private business.

Some time in February, 1878, I ordered the trees and nursery stock from Bloomington, Ill., most of which arrived in good order, and were transplanted during the last days of March and the first days of April. The month of April was unusually cold, dry and windy, which, coupled with the fact that no water could be obtained from Canal No. 2 to irrigate the ground, will account, in a large degree, for the per centage of loss of the root grafts.

One hundred and sixty apple, plum and cherry trees of the following varieties were planted, in orchard rows, fourteen feet apart each way.

APPLES.

Dutchess of Oldenburg, Walbridge, Pennakin, Early Pound Royal, Talman Sweet, Ben Davis, Transcendent, and Hysop Crabs.

CHERRIES.

Early Richmond.

PLUM.

Lombard, Wild Goose, and Minor.

The trees planted in orchard rows were all yearling trees, ninety per cent. of which are alive, and have made a vigorous growth of well-matured wood; and, from present appearances, will go through the winter all right.

I planted in nursery rows 4,000 root grafts of similar varieties as above. Above fifty per cent. of the root grafts are alive, and have made a good growth, ranging from six inches to two feet in length. There was a greater per cent. of loss among the cherry than the apple root grafts.

FOREST TREES

About 6,000 seedlings of the following varieties were planted in nursery rows: SOFT MAPLE, WHITE ASH, WHITE

Elm, Box Elder, Honey Locust, and Barberry and Buckthorn, for hedge-plants. Only about five per cent. of these died; the other ninety-five per cent. have made an extremely vigorous growth.

From my knowledge of the Honey Locust in other and older States, and their hardiness and vigor as manifested during the past season in Colorado, I would strongly recommend it for hedges and wind-breaks. It is a hardy, thrifty grower, and makes a valuable timber.

The land on which the nursery is planted has been plowed and sowed to wheat for the two previous years, and is a clay loam with an admixture of sandy loam.

The land was plowed eight inches deep in March, and well harrowed and rolled, and was in fine condition The ground was cultivated, and irrigated three times previous to the middle of August. About the twentieth of November the ground was back-furrowed against each row o trees; since which time I have mulched each fruit tree with old hay, throwing a few shovels of dirt in the mulch to keep in place.

If this experiment proves as successful as it now bids fair to, it will, in my judgment, be worth more to the State of Colorado than the entire cost of the experiment, combined with the cost of the College building. In fact, let it be once demonstrated that fruit-growing in Colorado is a success, its advantage to the State could hardly be reckoned in dollars and cents.

Sincerely believing that Colorado will at no very distant day rank, as a fruit growing State, second to none."

I remain,

Yours respectfully,

F. W. Watrous.

About the 15th of January, 1878, I accepted an invitation, extended to me by Hon. M. N. Everett, of Wheat Ridge, Jefferson county, to visit his place, and view his

orchard, that I might satisfy myself that fruit—especially apples—could be successfully grown in Colorado. I was very hospitably entertained by Mr. Everett, and through his kindness had the pleasure of visiting the orchards and vineyards in his immediate vicinity. My observations and impressions at that time were written out in full, and published by the Rocky Mountain News, of Denver, a copy of which please find attached.

FRUIT IN COLORADO.

A trip among the fruit growers of Wheat Ridge and Clear Creek, to demonstrate by actual observation and comparison, whether fruit trees could be grown in Colorado.

I was induced to make this tour of inspection by the favorable reports I had received of the flourishing condition of M. N. Everett's orchard, which is located about four miles west of Denver, on Wheat Ridge. The land is a deep, rich alluvial, with a clay subsoil, and slopes towards the northeast, with a perfect natural drainage. The orchard was set out in the spring of 1872, and has been cropped with garden vegetables and small fruits every year, the ground receiving thorough cultivation, with the exception of a portion of two rows of trees, where there was a strawberry bed. The difference in the growth of the trees was very marked, showing that where thorough cultivation had been practised the trees were twenty-five per cent. the best.

The orchard contains about 260 trees, set 16 feet apart, and is enclosed with a good fence, and no stock have been allowed to run in it. Owing to the fact that many of the labels were lost, while the trees were in transit, Mr. Everett could not give me the full list of the varieties, but said that they were mostly winter kinds, such as the Ben Davis, Willow-twig, Wine Sap, Fameuse, etc. The Ben Davis was the best grower and earliest and most productive bearer, the Willow-twig the poorest. The Fameuse is a thrifty grower, but does not come in bearing as early as the Ben Davis. There have been two methods of training or pruning adopted

in Colorado, viz: "heading in," or low training, which causes the limbs to branch just at or a little above the surface, and "trimming up," or high training, which gives a well balanced top on straight trunk three to five feet high. Both methods have strong advocates, and each party claim their mode as being the only successful one.

Any unprejudiced observer going over the ground that I have, will be forced by the weight of the evidence constantly presented before him to say, that the "trimming up" or high training has in *every* instance showed the best results. The trees are more beautiful, have made a larger growth, with better matured wood, and have a much larger per cent. of fruit buds.

The difference in these points are very distinctly marked in Mr. Everett's orchard as well as in every other one that I visited. Mr. E. has also 1,500 seedling peach trees, and 3,000 chestnut trees in nursery rows. These trees winter killed, or dried out during the winter of 1874–5, but started again from the roots, and are now ten feet high, measuring from ½ to 1½ inches in diameter, and are very thrifty. The peach trees at this writing, Jan. 18th, 1878, show perfect sound wood clear to the tips of their branches, while the largest are covered with fruit buds. A few peaches were raised two years ago. Mr. Everett irrigates his trees thoroughly during the growing season, and as late in the fall as he can get water to irrigate with; watering his trees last fall as late as the 20th of December, and claims that unless the ground freezes up full of water, the trees will dry out or winter kill. The thrifty condition of his orchard certainly goes far to prove the correctness of his theory and practice. The orchard produced over four barrels of apples, of the Ben Davis variety, the past season, sixty-two trees bearing apples I tested some of these apples, and compared them with some of the same variety brought from the States, and I do not hesitate to say, that the Colorado grown apples are 100 per cent. the best, as to beauty, texture and flavor. A few trees in this orchard have been in-

jured by "blight" or "sun-scald," and where so injured, the trees invariably leaned towards the northeast, and were scalded on the southwest side, the blight appearing on the trunk or on the limbs where they join the trunk. Another very noticeable fact was, that nearly every tree that had been "headed in" by cutting off the top end of the main stalk when transplanted, showed evidences of decay, in many instances down to the point where the main branches put out.

In the spring of 1875 Mr. Everett set out thirty trees of early fall varieties, which he has trained for standard trees, with trunks from two and a half to three and a half feet high. These trees have fine balanced tops, and in every case the wood is well ripened, while the bark on the trunks is smooth, and the trees are thrifty. About the same number of similar kinds were set out at the same time, but were headed in by cutting off the top of the main stalk. Of this lot but few trees are living, and those that have survived show evidence of decay, and will eventually die.

Mr. Everett is a man of keen observation, and seldom advances a theory without having facts to support it. His reasons for not trimming the main stalk are, that it dwarfs the tree, and introduces an element of decay which endangers the life of the tree.

His reasons for training high are, that it prevents the limbs from whipping off the blossoms and apples. The motion of the taller tree during wind storms is more swaying and uniform, and imparts strength and hardness to the wood. The low-headed, bushy trees, having no trunk, the limbs move more in a circle, each from its own base, many times to such an extent as to twist the large limbs from the tree. Mr. Everett says any one standing in his orchard during a heavy wind storm can demonstrate these facts to a certainty. Another very important reason for high training is that it admits of much more thorough cultivation. The trees in Mr. Everett's orchard are sixteen feet apart each

way. The trees already show evidence of being too close. Twenty-four feet apart each way would be close enough.

The orchard blossomed very full last spring, but a heavy frost on the 29th of April, 1877, killed a large proportion of the blossoms.

Having viewed Mr. Everett's orchard, he took me in his sled and we visited David Brothers', Harpin Davis', J. W. Cook's and Wilson Perrin's orchards.

David Brother's farm joins Mr. Everett's on the west, and has a similar soil and location. Mr. Brother's orchard was set out on a northern slope, in the spring of 1875, and contains about seventy-five trees. This orchard is all trained for standard trees, with trunks three to three and a half feet high. The trees are in splendid condition, and a few of the largest will fruit the coming season.

Harpin Davis' orchard is located on the high upland, south of Ralston creek, on land that has fair natural drainage, but has no decided slope. The orchard is protected on the west by a wind-break of two rows each of ash, red elm and box elder. A portion of these have been trimmed and well cared for, the balance have been left to grow naturally. All have made a fine growth, though the ones trimmed are much the best. Several hundred peach trees, all grafted fruit, were set out six years ago, but have died down to the ground every year, except the two last.

A systematic pruning, with thorough cultivation the coming spring, will, in my opinion, save at least two hundred of these trees.

Dwarf pears have proved a total failure, while the standard pears have made a good growth, and though showing neglect, still give good evidence of hardiness and thrift, and are full of fruit buds.

About 200 cherry trees are looking fairly, but need better care in the future. The cherry trees are hardy, have made a good growth, and are loaded with fruit buds to the top of the limb.

The apple orchard has between four and five hundred trees, mostly trained low, and set so as to break joints, about sixteen feet apart in the rows.

Mr. Davis gave his orchard the best of care for the first three years, but when the grasshoppers came in 1874 and completely stripped the orchard, he became somewhat discouraged, and thought the trees were all killed, consequently neglected to irrigate the trees in the fall. The following fall, winter and spring was exceedingly dry, with but little snow, consequently the trees died out, and died for the want of moisture and no other cause. I make this statement because the facts will substantiate it in every case. Mr. Davis intends giving his trees better care in the future, and I believe he will be amply repaid for so doing. The "blight" or "sun scald," did much damage to the trees during the dry winter, but has done little or no damage for the past two years. Mr. Davis has a fine lot of small fruits all through his orchard, all of which have done well. I think, however, it is a questionable policy, to plant small fruits in the orchard, for they sap the ground and prevent thorough cultivation. Plums have not proved successful. Mr. Davis has about 1,200 grape vines, including quite a number of varieties. The vines have done well, and can be safely set down as a success. The vines are pruned lightly, and left to run on the ground.

Mr. Davis preferred the Hartford Prolific for all purposes, though there were several other kinds equally good. On the east side of Mr. Davis' farm is a fine row of honey locust trees, and if set close and headed in would make a good hedge. The Osage orange has made a fair growth, but is apt to winter-kill. Perhaps late watering might prevent it.

John Clark's farm joins Harpin Davis' on the west, and has about twenty-five apple trees on it, most of which look well, but show a want of proper care.

Passing Mr. Clark's farm a mile or two, we come to

J. W. Cook's farm, but were unfortunate in not finding Mr. Cook at home. It is generally understood Mr. Cook is a good second-hand talker, and able at all times to give good reasons for his faith in the future success of Colorado as a fruit-growing State. Mr. Cook's orchard and vineyard are located on the southern slope of quite a ridge, and is one of the best locations I ever saw for a vineyard, but would prefer a northern slope for an orchard. The soil is rich, vegetable loam, with a slight admixture of sand. There are 2,500 vines, set eight feet apart, and left to run on the ground without trellis of any kind.

Mr. Cook prunes lightly, letting the vines take nearly their natural course, cultivates well, but does not irrigate his vines, and claims that they do not need it. His vines, owing to their favorable location, may not need irrigating, but other locations certainly would. There is a ditch running around the brow of the hill above Mr. Cook's vines, and I am inclined to think that the water percolates through the soil sufficiently to afford all the moisture required. I saw Mr. Cook a few moments on my return, but not long enough to post myself on many points of interest.

The crop of grapes the last year was enormous, over 20,000 pounds, which sold readily for 15 cents per pound. In answer to the question, "which was the best grape," Mr. Cook replied, "that the Concord was the grape for the million." There are several other kinds that are splendid grapes to raise, among which Mr. Cook mentioned the "Cheslin-de-Fontainbleu," a very large grape which sold readily in the market.

The Concord grape in many instances hung on the vines until the middle of November, after the first snow, and were then in prime condition.

Mr. Cook claims that the Colorado-grown grape is superior in flavor to the California grape and equally prolific.

Mr. Cook said he had trellised one-half of a vine, and

pruned according to the modern theory, and in every case so treated the trellised half failed to produce grapes, while the untrellised half produced a heavy crop. His theory is, that the heavy winds blow the sharp cutting dust of our soil through the vines when in blossom, and almost universally kill the grape blossom which is very tender and easily injured.

Where the vines run on the ground in almost a natural state, the blossoms are protected by the dense growth of vine and foliage, not only from the dust, but the frost also.

I consider Mr. Cook's success in grapes wonderful, and he is certainly excusable in being so enthusiastic in the matter. The cherry trees, hundred in number, all looked thrifty, but need some pruning. The same difference in favor of high training was equally well marked among the cherry trees, as with apple trees.

The plum has done better with Mr. Cook than in any other orchard I visited—still they have not proved successful as a general thing. Mr. Cook set out quite an extensive apple orchard, and adopts the low head system of pruning. The grasshoppers injured his trees badly three years ago, but I am forced to adopt the conclusion that the trees died the same fall and winter for the want of moisture, instead of any damage done by the grasshoppers. There are 300 trees alive, and under proper treatment as to pruning and cultivation, would be successful. Here we find that those trees that have the highest trunks are invariably the best and most thrifty in appearance, and have a large number of fruit buds. Mr. Cook entered his protest against setting strawberry beds in the orchard, as the grasshoppers congregate on the beds in vast numbers, and made a roosting place in the trees, completely stripping them of leaves and injured the bark. We were also unfortunate in not finding Wilson Perrin at home. Mr. Perrin's farm is on Wheat Ridge, and from the thriving appearance of all the trees and small fruits, the farm is well adapted to fruit growing,

The apple trees are thrifty and show every indication of hardiness, and have plenty of fruit buds. There are about three hundred trees in both orchards, one having been set two or three years the longest. The orchard set first has become too wet from irrigation, consequently Mr. Perrin has dug a large drain ditch, which has remedied the evil. Mr. Perrin has adopted both plans of training, but those trained high with good trunks are the best trees. I should judge that Mr. Perrin dealt considerably in nursery stock, and from appearances should think that he had re-set his nursery rows with root grafts or yearling trees. Here, as at the other points, cherries show that they can be successfully cultivated.

Mr. Perrin has the finest raspberries, blackberries and other small fruits I ever saw, and he has been very successful in this line.

Elm, maple and ash trees have made a splendid growth, and one grove now stands from fifteen to twenty-five feet high, and the trees measure from two to four inches in diameter. Every thing on Mr. Perrin's place shows the care of a master hand. Mr. Perrin has shaded the trunks of his apple trees on the southwest side, by setting on end a narrow board, and has in his old orchard, mounded up around the trunks with earth, which will undoubtedly keep the trees back in the spring and lessen the liability of damage by frost.

During the trip we passed a few farms where orchards have been set out on the creek bottoms, but invariably, after a few years' growth, the trees have all died, and the experimenters are confident that Colorado is not a fruit-growing State. My impression is that the reasons of failure are, first, allowing the stock to run in the orchards; second, that those trees that have lived, in spite of the stock, after growing two or three years, until the roots penetrated the water line, or level of the creek, have died as soon as the roots came in contact with the coarse sand, boulders and cold water, which underly the soil along the creek bottoms.

From the forgoing observations I have drawn the following conclusions, viz: That to succeed in fruit growing in Colorado requires the same good common sense and painstaking care that it does to succeed in raising any other crop.

For apples, select a northern slope, with good natural drainage and rich soil, plow the ground and cultivate in some hoed crop for two years, and then set out yearling trees, twenty-four feet apart each way. Cultivate with hoed crops for three or four years, then seed down with alfalfa or clover, and when the orchard comes into bearing, pasture it with hogs.

Train each tree to have a well balanced head on a trunk from three to five feet high. In setting the tree, lean the main stock towards the southwest, and trim the top so as to shade that side as much as possible.

"Sun scald," or "blight," always appears on the southwest side of the tree, and those trees that leaned toward the northeast, exposing the southwest side to the sun's rays, were badly affected with blight in nearly every case; hence the necessity of shading or protecting the trees. Irrigate well during the entire season, and be sure that the ground freezes up full of water. Mound up around the trees to keep them from blossoming, if possible, until after the 10th of May, and put a good substantial fence around the orchard; this is imperative.

I found that the sun scald had affected the low-headed trees five per cent. more than the taller ones.

I am inclined to coincide with Mr. Cook, and think a a south or east slope will prove the best for grapes, and that the vines need little pruning and no trellising. Grape vines must have thorough under drainage, either naturally or artificially. Cherries will do well nearly in all localities, except on bottom lands. Plums do not seem to prove successful. Forest trees grow finely.

Every orchard should be surrounded by a wind-break.

Cottonwood cuttings, set out the same time with the orchard, one foot apart in the rows, four rows deep, will grow sufficiently to protect the orchard. The wind-break should be set at least two rods from any of the apple trees, otherwise the roots will sap the soil too much, and prevent a good growth of the outside rows of apple trees. Every farmer in Colorado should give, in some degree, his attention to fruit growing, which can be done at very small expense. Yearling standard apple trees can be purchased in Kansas for $10 per thousand. This will furnish enough for ten farmers in any one neighborhood to experiment with. Grape vines can be purchased of J. W. Cook for $10 per hundred. For the benefit of any one who contemplates trying to raise apple trees, I will give the varieties which have succeeded best in Nebraska, which will be equally successful, I think, in Colorado,

SUMMER APPLES.

"BUFFINGTON'S EARLY," a reliable grower. "CAROLINA RED JUNE," a vigorous grower. "COOPER'S EARLY WHITE," a good grower in warm, sandy soil, and is much praised. "DUCHESS OF OLDENBURGH," a vigorous tree. "EARLY JOE," hardy, and thrives in a rich soil. "RED ASTRACHAN," a hardy, strong grower.

AUTUMN APPLES.

"FAMEUSE," well adapted to all northern sections. "MAIDEN'S BLUSH," a rapid grower. "RAMBO," a good grower.

WINTER APPLES.

"BEN DAVIS," a good grower and constant bearer; and is the kind that bore apples in Mr. Everett's orchard the past year. "DOMINE," "MILAN," "PERRY," "RUSSET," "ROMAN BEAUTY," "WAGONER," "WHITE WINTER PEARMAIN," "WINE SAP" and "GENITAN," are all reliable kinds. I have endeavored in the foregoing to give correct statements of my observations, and I am firmly convinced that

Colorado will eventually prove to be a good fruit-growing State.

Yours, truly,

H. STRATTON,

Sec'y of State Board of Agriculture.

During the Fair of the Industrial Association, at Denver, for 1878, I had the pleasure of viewing the fine display of Colorado-grown fruits, as displayed by Messrs. Everett, Cook, Helm, and many other successful fruit-growers in Colorado. The color, texture and flavor of the apples, as shown at the Fair by Mr. Everett and others, exceeded anything I ever witnessed in the old fruit-growing States.

Believing, as I do, in the ultimate success of fruit-growing in our State, and feeling a deep interest in horticulture, which, when more fully developed, will add another and very attractive feature to the many which Colorado already possesses, I wrote the following letter to M. N. Everett and S. W. Cook, and append thereto their answers.

FORT COLLINS, COL., October 29th, 1878.

Hon. M. N. Everett and J. W. Cook, Jefferson County, Col.

GENTLEMEN: I had the pleasure of visiting your orchard and vineyard in January last, and, from its appearance at that time, was able to give a very favorable report of its condition and future prospects. Will you have the kindness to give me the results of the past season as to growth, fruitfulness and general appearance; also, your method of cultivation and irrigation? Believing, as I do, that fruit growing will, in the near future, prove a complete success, I think it very important that every success shall be reported as full as possible, that the farmers may be encouraged to plant orchards and vineyards.

I shall embody my letter of January, 1878, to the "Rocky Mountain News" in my annual report, and hope I

shall have the pleasure of submitting your answer to this letter.

Yours, respectfully,

H. STRATTON.

Herewith please find Hon. M. N. Everett's letter, and a communication of J. W. Cook to the "Larimer County Express;" also, a very able letter cut from the "Colorado Farmer," but first published by the "Longmont Press."

WHEAT RIDGE, COL., November 4th, 1878.

Hon. H. Stratton:

DEAR SIR: Yours of the 29th of October is at hand, and would say in reply that the results are gratifying in the extreme. I had one hundred and sixty trees in full bearing this year, over one hundred of them were above the average of orchards of their age and size. Fifty of those were literally loaded with fruit, and were the astonishment of all the visitors, of whom there were many from all parts of the State, who agreed in saying they never saw the like on trees of their age and size. I picked, commencing on the 10th of October, and finished on the 12th, seventy-three barrels of splendid apples; the largest tree yielding over three barrels. From one tree, three and a half inches in diameter, I gathered one barrel and three wooden buckets full; both trees being of the Ben Davis variety. I have always cultivated the orchard in some kind of hoed crop until the present year. This year I plowed and harrowed the ground, but planted no crop. Have always irrigated the whole orchard thoroughly every ten or fifteen days, or at least whenever necessary for the crops. I had planted and have always irrigated the orchard as late in the fall as possible, watering last year as late as the 20th day of December, which is a month later than I ever irrigated it before, and to that irrigation I attribute the grand results of this summer, for the month of April was considered an unusually hard month on fruit of all kinds, it being cold, dry and windy during the entire month. The ground being full of

moisture from the late irrigating, held the bloom in check until the more favorable weather of May set in, which undoubtedly was a very favorable circumstance.

The trees, although so full of fruit, made a very large growth of wood, the limbs growing from eighteen inches to two and-a-half feet. Mr. T. P. Johnston, of Green county, Ohio, who is a large fruit grower, having thirty acres in apples alone, says he never saw anything to equal it for color of fruit and large, healthy growth of timber, and roundness of both trees and fruit, in trees so young. The orchard is six years old, having been planted in the spring of 1872.

I also raised several bushels of peaches, all seedlings, irrigated the same as the apples. My chestnut trees, in nursery rows, the same age as the peach trees, have made a wonderful growth, many of the largest bearing chestnuts this year.

I have visited J. W. Cook's vineyard twice this fall during the picking season, and was both astonished and delighted with the results of his labors in the vineyard. I gathered and ate of all the different varieties he raises, and am free to say they were the best grapes I ever ate. Brother Cook takes genuine delight in showing visitors through his orchard and vineyard, and telling them how he has succeeded, and is proud of his success, as I think he has a right to be.

I am satisfied, and I have faith to believe that Colorado will, within the next ten or fifteen years, be as celebrated for its fine fruits as it is now as a grain-growing country.

I have the honor to remain,

Your obedient servant,

M. N. EVERETT.

HINTS ON FRUIT CULTURE.

Owing to the attention that is now being drawn to the growing of fruit in this section of the country, in obedi-

ence to your request I will give a few brief hints upon this all-important subject, gleaned in my eight years' experience in this business in Colorado. This State is undoubtedly a choice fruit country, or can be made so by proper attention and care.

APPLES.

This is the king of fruits, and many varieties can be grown here quite successfully. Still, it must be borne in mind that some few kinds will not grow here at all; others fail to give satisfaction; but most hardy kinds do extremely well. The best location for an orchard is on upland with a gentle slope to the east or south. Apple trees, however, will not grow on land subject to seepage. The trees should be set close together, and should be made to branch out near the ground, so as to protect the trunk from the burning rays of the sun.

CHERRIES.

There are two families of cherries—the Morrello and Mazzard. All sour cherries belong to the former family and universally do well here. About every house there should be at least a few trees of this delicious fruit.

PLUMS.

All varieties do well in Colorado, but owing to their early blooming, are more apt to be injured by the frost than fruits which bloom later.

PEACHES

are still an experiment in Colorado, but the chances now seem in favor of the success of this luscious fruit, which can be raised successfully in but limited localities. I shall plant from five hundred to one thousand trees the coming spring.

SMALL FRUITS.

Nearly all varieties can be grown in this State, and many do well. There is no excuse for every family not having an abundance of the more hardy kinds. Grapes, black raspberries, strawberries, gooseberries and currants,

all grow well without protection in winter. Blackberries are liable to freeze down unless covered with earth.

In setting out an orchard a wind-break should be set on the west and north sides to protect the trees from the sharp, drying winds of winter and spring. Undoubtedly, the best tree for this purpose as well as for fencing, is the honey locust. In four or five years the honey locust will make not only a most effectual wind-break but a fence that neither man nor beast will go through. It is a rapid grower and the wood makes excellent fence poles and firewood.

J. W. COOK.

ARVADA, Nov. 28, 1878.

COLORADO FRUIT CULTURE.

For the benefit of those interested in the subject, I herewith briefly condense my convictions after a Colorado experience of ten years in the effort to grow fruit.

Before planting fruit trees, select your ground and plant around it a skirt of forest trees, at least three rods wide. Plant them also over the ground at a regular distance of thirty feet from tree to tree each way. Put apple trees not more than ten feet apart, and peach not more than seven. Let pears alone. Fruit orchards in Colorado must be planted, as George Webster says, "like a jungle." Mutual protection against both winds and frost in spring is the result. Plant nothing but the hardiest kind of apples, such as have proven valuable in the northern part of Iowa, Wisconsin and Minnesota. Peach trees should be raised from the seed. Those raised from fruit grown in Colorado will be best. Ours will never be a peach producing State till our peach trees are thus produced. This season I had many bushels of peaches—trees raised from Ohio seed. But it was an exceptional season. I utilized the results by planting a large lot of seeds from selected fruit. In this way we can get the peach acclimated and get a quality of fruit equal to that of Utah.

Never allow a knife or pruning shears among your fruit trees or grape vines. Nature is a queer customer in Colorado, and will have her way. If you cut and slash at your vines and trees, she will kill them for your trouble. If a peach tree wants to send up a dozen or twenty sprouts from the root, just attend to your own business, and, at the proper time, the strongest will kill off the weak, and you will have a peach tree with several stems not so handsome as a single shaft, as we have been used to at the old home, but still a productive one. Then, if you wish, order a few of the choice, hardy, early varieties, plant them in your shelter belt, and bud into your established trees.

The Concord and Delaware are my favorites among grapes, but any of the hardy varieties will do well here. Plant on dry ground, eight feet apart each way. Never prune; give moderate tillage; irrigate when needed; in the spring tie up the canes in a "wad" to a short stake, to keep the fruit off the ground, and you will have an ample crop every year. In Colorado there is nothing so good for grape vines as a liberal amount of first-class neglect. This may seem like a paradox, but it is not. For years I gave the best care, with no reward. In disgust, I left them to the mercy of the frosts, weeds and frisky 'hoppers, and, to my amazement, they began to bear fruit, and have so continued. I propose to continue the same treatment.

Strawberries, for horse tillage, should be planted in rows three and one-half feet apart, the plants one foot apart in the rows. The runners can be confined to a strip about one foot wide. These cannot have too good care. Weeds and grass must be kept out. This fruit needs more water than any other, especially during the fruiting season. The ground should be rich in the start, and after the bed is well started, a liberal coating of manure every winter will be a great benefit. The Wilson, Jucunda, Downer, Colorado, Cheney and Charles Downing are my favorites thus far, in the order named.

Nearly all varieties of currants and gooseberries do

well here, planted and treated as we used to see them in our boyhood.

The Miami and Golden Cap raspberry have proven hardy and prolific with me, but they are protected by a timber belt. They should be planted at least six feet apart in the rows, and the rows ten feet apart, to afford room for tillage. This fruit does not thrive on neglect. Never take out the old canes until spring.

It is only occasionally that blackberries go through the winter safely My experience has been with the Kittating and Dorchester. I allow them to grow in a hedge as thick as possible, about six feet wide, for convenience in picking. This is the only way, unless you wish to go to the trouble of planting so you can lay the canes down in the fall, and cover with earth. With this trouble a crop is always certain.

Let it be remembered that all kinds of fruit, both great and small, must not be allowed to suffer for water. Of course, the judgment must tell when, how much, etc.; but trees will not endure drouth any more than wheat. In the fall, unless in extreme cases, I have found it necessary to irrigate nearly as often as in the summer. Never allow your fruit to commence the winter with dry feet. Wet earth affords life. Dry earth is death, for, instead of giving life, it absorbs it from the roots.

This article is necessarily brief, and may be unsatisfactory to some of your readers. If so, I would be pleased to answer in detail any question which may be asked through the "Press."

In conclusion, I wish to state that my observation has convinced me that an orchard or a vineyard does not make a good pasture for cattle. It may be jolly for the cattle, but it is rather rough on the trees.—*Longmont Press.*

SUGAR MADE FROM MAIZE AND SORGHUM.

A new discovery has been made and perfected during

the past two years by F. L. Stewart, of Murrysville, Westmoreland County, Penn., by which the juices of maize and sorghum can be easily and readily crystallized, making a large per cent. of sugar, which ranks in quality next to the sugar made from Southern cane.

Mr. Stewart claims that the United States can, by utilizing this discovery, manufacture every pound of sugar consumed by the people, opening up a new industry, and saving to the country annually one hundred millions of dollars. Mr. Stewart has embodied his views and discovery in a book published by the "Republic" Company, Washington, D. C., which should be in the hands of every farmer. This discovery is very opportune for the farmers of Colorado, coming, as it does, just when most of them have sold a very inferior wheat crop for less than cost of production. All realize that a change in our method of farming must be had, and a more diversified mode of cultivation must be introduced. Constant and uninterrupted croping of our farms with wheat will not only ruin the land, but the farmer as well.

LIBRARY.

February 6th, 1878, I addressed a circular letter to every Agricultural College, State Board of Agriculture, State Horticultural Society and State Dairyman's Association in the United States, requesting a copy of their reports for our library. Every college, society and association so requested forwarded to my address one or more copies of their reports. Some sent only one copy; others sent a complete file of their reports, the whole numbering over one hundred and fifty volumes, about one half being bound in cloth, the balance in paper covers.

These reports, coming from every State in the Union, are invaluable as books of reference, and I embrace this opportunity to tender the sincere thanks of the State Board of Agriculture to the donors thereof, and trust that in the near future we shall be able to reciprocate the favor.

It was evidently the intention of the Legislature, in

creating "The State Board of Agriculture," ultimately to provide for gathering and tabulating the statistics of the State, with a view to publishing and distributing them over the country; in other words, "placing them where they would do the most good."

We need look no further than our sister State of Kansas to learn that a few thousands of dollars so expended has more than doubled her population and wealth in the last five years.

That this matter, which is of vital importance to our State, may be properly presented to the Legislature, I have drawn up a bill which meets the approbation of the Board, and respectfully ask Your Excellency to present the same to both Houses, and recommend its reference to a proper committee, and accompany it with such recommendations as you may deem best.

Please find the bill accompanying this report marked A.

FINANCIAL STATEMENT FOR THE YEARS 1877 AND 1878, EMBRACING THE ENTIRE EXPENDITURES OF THE STATE BOARD OF AGRICULTURE.

1877.	LOCAL FUND, DR.	$	
April 5.	Amount received from former Board of Trustees, one note since paid	417 24	
July 10	Received for hay cut on farm	6 00	
	Received for right of way for C. C. R. R.	100 00	
	Received for interest on note and water rent	126 84	
	Total amount of local fund received		$ 650 08

	LOCAL FUND, CR.	$	
	Paid during the two years for contingent expenses, including desk, books and stationary for the Secretary, expenses of the members while attending meetings of the Board, laterals for conveying water on to farm, etc.	312 04	
	Paid for nursery stock and forest trees	281 40	
	Cash on hand to balance account	56 64	
	Total of local fund expended, with balance		$ 650 08

ACCOUNT WITH THE STATE TREASURER.

	Number of certificates of indebtednesss issued, 41, amounting to	$6,606 36	
	CONTRA.		
	Paid Secretary's salary, six quarters	150 00	
	Paid Secretary as per section 12 of the law	100 00	
	Paid for advertising	3 00	
	Paid tax on ditch	24 00	
	Paid for head-gate	10 75	
	Paid contractor on college	6,147 11	
	Paid expenses of members while in attendance on meetings of the Board	171 50	
	Total		$6,606 36

NOTE.—One certificate for $3,450 was issued on the tax levy of 1878, and is due the 13th day of August 1879.

1878.	November 24. Total amount of cash received to date		$7,256 44
	Total amount paid out	$7,199 80	
	(Local fund.) Cash on hand	56 64	
			$7,256 44

The Board at its quarterly meeting, held November 27, 1878, instructed the Secretary to call your attention to the following points, and request your Excellency to take such action in the premises as will accomplish the desired result.

THE NINETY THOUSAND ACRE LAND GRANT.

The State of Colorado is entitled to 90,000 acres of land as an endowment fund to the Agricultural College.

The law of Congress, passed July 2, 1862, authorizing the grant for such purposes has ceased to be operative by virtue of limitation, consequently, in my opinion, other legislation by Congress is necessary to secure to Colorado the benefit of such grant of land.

Hon. J. B. Chaffee succeeded in getting the requsite bill passed by the Senate during its last session, but I believe it failed to pass the House.

I respectfully request that you give this matter your earliest attention, and urge upon our members of Congress the importance of securing the passage of the law before the adjournment of the coming Legislature; also recommend that the Legislature take prompt and decisive action in reference to securing and accepting the grant of land.

WANTS OF THE COLLEGE.

In erecting the College building, it has exhausted the entire appropriation of the tax levies of 1877 and 1878, and in order to establish and maintain a school which will fulfill the law, it will be necessary for the Legislature to make a special appropriation and increase our tax levy. To this end I respectfully suggest, that you recommend the Legislature to make an appropriation of $3,000, and raise our tax levy from one-tenth to one-fifth of a mill.

With the funds so raised, the Board feel confident that they can establish and maintain a school successfully; thus supplying a long felt want of the industrial classes. Unless some favorable action is taken by the Legislature at its

coming session, the College will undoubtedly remain unoccupied for one year or more.

The State Board of Agriculture feel a just pride in having expended in a judicious and economical manner the money placed at their disposal; and will undoubtedly continue the same line of policy in the future.

Asking your favorable considerations of the above suggestions, I have the honor to remain,

Your obedient servant,

H. Stratton,

Secretary of the State Board of Agriculture