

ROCKY MOUNTAIN HUSBANDMAN

\$4.00
PER ANNUM.

A Journal Devoted to Agriculture, Live-stock, Home Reading, and General News.

10 Cts.
PER SINGLE COPY.

VOL. 1.

DIAMOND CITY, M. T., DECEMBER 16, 1875.

NO. 4.

PUBLISHED WEEKLY BY

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EDITOR AND PROPRIETOR.

The ROCKY MOUNTAIN HUSBANDMAN is designed to be, as the name indicates, a husbandman in every sense of the term, embracing in its columns every department of Agriculture, Stock-raising, Horticulture, Social and Domestic Economy.

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AGRICULTURAL.

IN A NEW country such as this, where the population is sparse and very much scattered, and by reason of this, see but little of each other, people are apt to weary of their lot, they are apt to become discontented and beget a thirst for some other clime or some other business. Particularly is this true of a large portion of our farmers. The majority of them have been here since an early day and were successful miners, and when misfortune comes in the shape of a failure of crops, they are liable to long for old times, and wish that fate would lead their wandering steps to a new and better field of action. Companionship is essential to man's happiness, and few who are isolated will be content save in the rapid accumulation of wealth. They never pause to think of the condition of the farming population of another country; never stop to count the blessings they enjoy, but if their position in life is not what it once was, become disappointed, and if they do not break up farming and rush around over the country, are always grumbling about depression in business, and blame their calling that such is the case. Such farmers raise their children to hate a farmers' life; are continually telling them that they want to make something better of them; that they desire them to choose a profession and lead the life of gentlemen. This is all very nice in theory, and the child drinks in the hope of a career of ease and pleasure. Little do they know of the realities of such a life; of the great number of failures in proportion to the number that enter such fields. It would be far better for the child if instead of filling their heads with these foolish aspirations, they would teach them what is actually true, that their's is the most independent occupation known among men; that it affords ample scope for a life-time of study and improvement. To lead the life of a farmer does not necessarily mean to grow up in ignorance; in fact, there is no profession where intelligence can be brought to better account than in the cultivation and preservation of the soil. The old ways of our fathers are fast being left behind; new and better modes are being adopted, and we predict that a few years hence the farmers, instead of being derided and sneered at as the most ignorant class in the land, will be acknowledged as the most intelligent.

The importance of agricultural education is being agitated, and meets with favor on all sides; the vast power of the farmer is beginning to be realized: instead of the dupe, led captive at the will of an intelligent master, they are raising themselves to the lead, and their former masters fear and tremble. The great army that have subsisted at their expense are fast being made to realize their utter uselessness to society.

Then, if our farmers would have their children be independent and occupy a position in the front ranks of men, let them educate them and learn them to love their occupation. It is not long to be considered a drudgery; even at present, in summing the matter up, we find their lot is no worse than that of other callings.

There are few walks in life where men not born to wealth would bear as cheerful a summing up as the following view of the farmers' situation, given by J. M. Smith, before a Farmers' State Convention recently: "In all that goes to make up the ordinary comforts of every day life, we are the most wealthy people upon the earth. This may seem a strange statement to some present, and I do not mean to say that we have more gold and silver than any other people; but, gentlemen, did it ever occur to you that the west and northwest is the only territory of any size in the world where the masses of the people can afford to have wheat bread, butter and meat as the main articles of their daily food? And yet such is the fact. No nation, either ancient or modern, has ever before been able to provide the above named articles in sufficient quantity and at prices to place them within the reach of the laboring classes as articles of daily food. Our stock of all kinds is incomparably in advance of that of any previous century. In short, the last quarter of a century has almost completely revolutionized the science of agriculture.

We have just entered upon the last quarter of the nineteenth century, and if I retain my life and health until its close, I shall expect to see vast improvements made, not only in the cultivation of wheat but in the fertility of the soil and in the quantity and quality of nearly all of our crops. I shall see the noble specimens of different breeds of stock, now held by comparatively few, scattered far and wide throughout all our State. I shall see the great mass of our farmers much better educated than most of us are to-day. I shall see homes made more comfortable and pleasant than they are to-day. Farmers' sons will not be so anxious to desert the farm for a clerkship or law office, as heretofore. The books, the papers, the music and the comforts of a farmer's home will be much more pleasant to them than the home of strangers. Fewer of them, after having borne their parents to their silent homes, will return to the old homestead and sadly say: "This old place is all run down and worn out, and will not support us in comfort, and we must leave it for other business and other homes." But they will rather say, "Father has made this a pleasant home and he kept the farm improving for years, and has so taught us that we can still go on with improvements and make it still more pleasant, as well as more profitable, than he was able to do; and so we will stay and make the old homestead our abiding place and our home.

There will be fewer pale-faced, care-worn wives and mothers on the farm, toiling from early morning till late bed-time, until their daughters, warned by their mother's ceaseless toil and labor, declare that they shall never marry a farmer. I shall see the profession of the farmer elevated far above what it has ever been in the past or is now, not only financially, but socially, morally and intellectually. The aged man, as he retires from the battle of life, may look back upon the years, not with sadness or regret, but thinking that he has done something for the elevation and comfort of his race. The young man may look forward to the profession full well assured that he is in the possession of a business which, if intelligently and industriously pursued, will lead him, not only to a competence in his old age, but to the front rank of influence, as well as of distinction, among his fellow men.

FROZEN POTATOES.—Experiments in Germany on frozen potatoes proves that the freezing in no wise alters the chemical composition of the tubers. The change is simply physical, and, even if frozen hard, they are still fit for distillation, or they may be pressed to get rid of the water, and then ground into a very good meal adapted for feeding cattle.

MANY residents of Union Hill, N. J., since the abolition of the Bible from the public schools, have withdrawn their children.

AERATION OF THE SOIL.

The old-fashioned but still prevalent idea that "humus" or vegetable matter was needed in the soil to furnish food for plants is now exploded. After a century of journeying around a circle, we seem to have come back to the old idea of Jethro Tull, but with much clearer and more definite knowledge than this old writer possessed. He believed and taught that by sufficient culture the soil could be made to bear crops continually without manure; that "tillage is manure" in fact. After much working in the dark, much experimenting, much theorizing, and much scientific investigation, we find that we can produce crops indefinitely by means of mineral manures alone, and without so much as returning one straw or one ounce of vegetable matter to the soil. Thousands of tons of chemical fertilizers are now used yearly in which there is nothing but mineral matter, and profitable crops are raised year after year by the aid of superphosphate of lime, nitrate of soda, and guano alone. Then we have found—to explain the seeming anomaly—that plants can only appropriate mineral food; that vegetable or animal manures are useless until they have been reduced by decomposition to their ultimate mineral elements. And herein lies a lesson that is of present and most useful application.

Decomposition of organic matter can only go on in the presence and by the direct agency of the oxygen of the atmosphere. Until organic matter is decomposed it is not a fertilizer. If we apply never so much raw manure or vegetable matter to the soil, and bury it out of reach of the air, we may sow in vain, for we shall fail to reap the expected crop. It is by cultivation of the soil only that we can admit the air, which is necessary to reduce the manure we apply to such a state of final decomposition as shall fit it for the growth and subsistence of plants.

These facts explain much that we have discovered by simply running our heads against it. The benefit of applying manure and keeping it near the surface is one of the things we have learned. Others are that the more mellow and open we keep the soil, the more we aerate it and permit it to breathe, the more productive it is made; that the more we leave the soil exposed to the winter's frost, the more mellow and open and fertile it becomes; that the more we expose manure to the atmosphere by repeated turnings, the more available it becomes for plant food; that when we plow under clover and other green crops in the fall, and leave them to remain in a frozen condition during the winter, they are not half so effective as when we plow them under in the spring, when the air, helped by the sun's warmth, quickly reduces them to decomposition; that when we drain the soil and free it from stagnant water and permit the air to enter in, we double the capability of the soil to produce crops. All these and much more we have learned by experience, and when the chemist discovers in his laboratory that plants feed only on mineral food, we have at once the solution of the problem we have blundered into ourselves. It is comfortable to know that we have been on the right track, and that we have not to change our plans for something new.

We have now a good opportunity to apply this knowledge to practice. The stubbles which now lie untouched, beaten and hard upon the surface, should be plowed at once, and exposed to the sun and air as much as possible before the winter sets in. Whatever vegetable matter in the shape of muck, ditch mud, road scrapings, weeds, or stable manure we can gather, should be heaped and composted together, that it may not freeze up in the winter, and that it may be rotted and fit for use in the spring. Dressings of mineral manures that may be intended for fall sown crops should not be applied until spring, as, needing no time for decomposition, and being very soluble, they cannot be made available now, but can be, to the full extent, when growth is active in the

spring. The thoughtful farmer can find a very general application of the facts here intended to be elucidated in his practice at this season, and in the interval which will occur before his work is stopped by frost and snow he will lose no opportunity of assisting the operations of nature by his own intelligent labor.—*New York Times.*

FARMER'S WANT AND NEED.—We doubt not the farmers want much, and need much more. They want their burdens lightened, both as to direct and indirect taxes. They need better reward for their labor and for their products. They want no monopolies fostered by the State and National Governments. They need no increase of officers or salaries. They want fewer offices and lower salaries in many of the fat offices. They need less and want better legislation. They need men in office whose aim is not money making, but serve for the good of the people. They want men who will not seek office so constantly, but who will wait till asked to take office by those to be served. They need more systematic, industrious, energetic labor, and want no more idle heads and hands in any department of business. They need less extravagance in government and among individuals, and want more good common-sense economy, and the people educated to the industries and necessities of the times. They need a government to do the greatest good for the greatest number of her people, and they want the people to feel proud of that government.—*Rural Sun.*

ANOTHER STEAM PLOW.—A Mr. Benson, of the Monumental Iron Works, Baltimore, has invented a steam plow and is on his way with it to a farm that he owns in Buena Vista County, Iowa. Mr. Benson does not use ordinary plows, but has substituted a revolving horizontal shaft, armed with a series of sharp blades, that dig up the ground and thoroughly pulverize it. To complete the work a rake with steel teeth moves close behind this powerful cutter, and immediately above it is another horizontal shaft, armed with steel spikes or springs, that pass between the teeth of the rake at every revolution. This is the whole of the plowing apparatus. The rest of the machine does nothing except furnish the motive power. It consists of a neat little engine, mounted on traction wheels, and the necessary gearing for moving the wheels and keeping the two shafts already mentioned in motion. The plow is ten feet wide, and will pulverize a strip of ground of equal width as it moves forward. It can be run at the rate of two miles an hour, but a farmer would probably prefer the rate upon which Mr. Benson has based his calculations, namely, one mile per hour. At this rate it will plow from ten to fifteen acres per day. The ground will need no harrowing or stirring after the machine has passed over it.

A FERTILE SOIL.—Even now, the soil of Palestine, after the waste and exhaustion of four thousand years, is of surprising fertility. Dr. Robinson, in his tour, found the hill country of Galilee yielding crops which indicate a productiveness equal to all that Josephus has said of it. The industrial settlement lately and successfully begun near the pools of Solomon, south of Bethlehem, report that they raise two crops in a year. Their grapes almost rival the clusters of Eschol, a single vine having one hundred bunches of grapes, each three feet long, and each grape three and a half inches in circumference. They have Indian corn eleven feet high, water melons twenty, thirty, forty pounds weight, and bean-pods thirteen inches long, and six on a stem. Their quince trees yield four hundred quinces each, which are larger than the largest apples of New England, and a single citron tree yields five hundred and ten pounds of fruit.

A few years ago the site of the town of Greeley, Col., was an uninhabited waste. Now, within the limits of a single school district of that town, there is taxable property valued at over half a million dollars.