

SCIENTIFIC CULTURE

Dry Farmer Does Not Raise Crops Without Water.

Great Difficulty with Which Agriculturist in Semi-Arid Regions Has to Contend Is Lack of Moisture When Needed.

While the term dry farming has taken root so firmly that it seems improbable that any other name will ever be applied to farming the lands of the semi-arid region without irrigation, yet it is a term to which Mr. H. D. Campbell—"the father of dry farming"—strenuously objects. "It means nothing," says he, "it stands for nothing but farming in a dry country and trusting to Providence for results." From this it must not be inferred that Mr. Campbell puts little trust in Providence. But he does believe that faith without work is a poor crop producer. Not only does he believe in work, but that work must be intelligent. It must be performed at the right time, in the right way, with a full understanding of the reasons for every step. Hence he prefers to call it "scientific soil culture."

The dry farmer (so called) does not "farm without water," as some have expressed it. If he is a follower of the Campbell system he uses as much water as any farmer in humid regions or even in irrigation districts. He differs from the hazy farmer, from the irrigation farmer and from the farmer in regions in which the rainfall is abundant, simply in the particular that he has learned how to make use of water. He has learned a lesson that all other farmers ought to learn. If an irrigation farmer would learn it, he would save the half or three-fourths of his expense for water and the reservoirs now constructed would suffice for two or three times as much land as at present. If the farmer in humid regions would learn it his crops would be insured against drought (which sometimes comes, even in the most favorable places) and in normal seasons his harvest would be much greater. The principles of scientific soil culture are universal. Throughout the semi-arid region they must be applied or failure is inevitable. In other regions they may be neglected and a certain measure of success yet be attained; but if they were applied everywhere the rewards of the farmer would be far greater.

The great difficulty with which the farmer in the semi-arid region has to contend is the lack of moisture at the time his crops need it. The rainfall—even though it be but ten or twelve inches—is sufficient if it would come at the right time. Sometimes it does, and then the farmer who follows the traditional methods of humid regions rejoices in good crops. More often it does not, with the consequence of crops ranging anywhere from fairly good to total failures, depending upon just how untimely the rains fall.

Under such conditions farming is a hazardous speculation and the usual fate of speculators is ruin. It is the claim of the exponents of scientific soil culture that the element of risk can be almost entirely removed; that no matter at what time the rains come, their moisture can be stored in the soil, where it will be available for plant growth whenever needed, so that prolonged drought need never cause disaster.

POULTRY NOTES.

Gather eggs every day and when a new nest is found keep those separate from the freshly gathered ones. Have your buyer test them and pay what they are worth. This will not lower the value of good eggs.

Keep out small and double yolked eggs to use at home. The very small eggs bring a lower price in the market and the objection to the double yolked ones is that they break easily in shipping.

"Two hundred and forty egg" hens are scarce and probably always will be. They produce but few that come up to their standard. Sometimes the fault is on the part of the male.

Hatch ducks by incubator or use a chicken hen.

Keep a supply of copperas water where the fowls can obtain it.

Keep down the weeds and grass, where the small chicks must go.

It is better to begin the poultry business in the fall than in the spring. Beginners should remember this.

Give the poultry houses a heavy coat of whitewash. This is one of the best treatments for lice and mites.

Orange boxes make excellent nests. They are cheap and can be burned up if you are so neglectful as to allow them to become lousy.

One rooster is sufficient for ten or twelve hens or pullets.

Vegetables of some kind should be fed the poultry the year round; cabbage, potatoes, beets, turnips, etc.

Ash is the mineral portion of most feeding stuffs, and is used largely in making bones, eggshells, etc.

The man who said the best poultry men on the farms are women, knew what he was talking about.

Demands of Dry Farming.

Dry farming demands the establishment of a natural reservoir in the soil by the conservation of the limited rainfall or other form of moisture through methods by which waste and evaporation are prevented. In some localities enough water can be conserved to crop annually—in others two years rainfall should be reserved for the crop.

FARMING WITH LITTLE RAIN

Fundamental Ideas Are the Storage of Limited Rainfall in the Soil to Raise Crops.

(By Prof. J. D. Tinsley, Soil Physicist and Field Expert, New Mexico Experiment Station.)

Dry farming is a term which has been introduced in recent years to designate an agricultural method differing from the production of crops by an abundance of rainfall and by irrigation. This farming with a limited rainfall, while having become widely known only within the last few years, is not a new thing in New Mexico, for in certain sections the Indians and Mexicans have practiced it for a long time, especially with corn and beans. The Indians usually select the sandy land at the mouths of arroyos and thus take advantage of the natural mulching of the sand and the irrigation from the flood waters of the arroyos. The Mexican name of it is temporal farming, to distinguish it from farming by irrigation. Dry farming conditions range from the conditions found in humid climates to those where the rainfall is so small that only an occasional crop can be obtained. The fundamental ideas of dry farming are the storage of the limited rainfall in the soil and the growing of those varieties of crops which can mature with a minimum amount of water. It does not at all imply the growing of crops without water. There are two principal cropping methods depending on the amount of rain; that of growing a crop every year and that of only planting once in two years, saving the moisture from the first to assist the crop during the second season.

DRY FARMING IS HARD WORK

There Is No Mystic Spell to Produce Plant Life in Semi-Arid Districts—Labor Needed.

In high altitudes, with 12 to 14 inches precipitation utilized under alternate or biennial systems, every crop possible of production under irrigation is profitably grown without irrigation.

With precipitation of 15 to 24 inches, many farmers in high altitudes are cropping annually.

Then again, many farmers under all of the above named conditions are failing continually.

Bankers fail when they refuse to bank along legitimate lines.

Merchants fail when they attempt to conduct their business without due regard for the requirements of their trade.

Farmers fail in every part of the world and under the most favorable conditions unless they endeavor to educate themselves into the methods necessary for their particular soil, climate and markets.

Dry farming demands unceasing labor. There is no mystic spell to produce plant life in a semi-arid district. The price of success is work—work—and the expenditure of energy enough to meet the immediate requirements of each section of land and each crop.

An "easy-going" farmer should not attempt dry farming, neither should a man who is financially unable to purchase the necessary machinery and to support himself while transforming his farm from the time-hardened prairie to a productive field.

VARIED USES OF THE EGG

Hen Produces One of the Most Delicious Morsels to the Human Palate.

The uses of the egg are varied. As a food it is unexcelled. The invalid and the strong use the egg without question as to its high nutritive qualities, and it has never yet been successfully substituted or adulterated.

Eggs vary greatly in flavor and quality. Undesirable flavors may be detected in the egg after feeding the hens heavily on foods of strong or high flavor. If fed in sufficient quantity, beef scrap will give an odor to the egg. It is important that no beef scraps should be fed except of good quality. Onions will give an undesirable flavor in the egg, and if a sufficient quantity be eaten by the hen the eggs will be unfit for use.

It has been shown that certain foods affect the color of the egg; feeding alfalfa liberally will give yolks of high color.

The size of the egg is influenced by factors under the control of the poultryman. Eggs from fowls having free range where worms, insects and green food were obtained weighed more than eggs from similar hens kept in small yards.

Eggs for the fancy market should weigh not less than 22 ounces per dozen, with quality and color unobjectionable. The color of the shell is immaterial, though in some markets the white shell egg and in others the brown shell egg brings the higher price. There is no difference, however, in quality between the brown shell and the white shell egg.

Call It Failure.

Enemies of western progress openly claim that dry farming is—and all ways must be—a failure. Many who have given the matter no serious thought believe—from hearsay—that the dry farmers must fail. Many dry farmers have failed—but dry farming never.

Limited Rainfall.

Dry farming—so-called—is farm operation under limited rainfall in districts where irrigation water cannot be obtained or where the supply of irrigation water is inadequate to meet the requirements of the acreage.

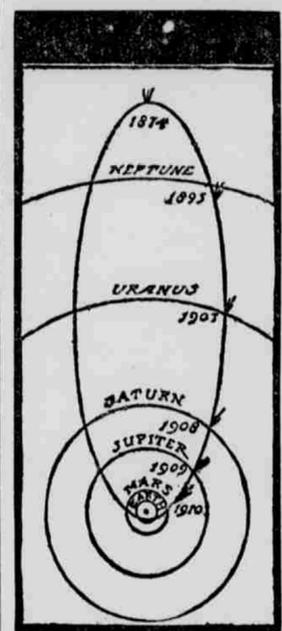
SCIENCE AND INVENTION

HALLEY'S COMET IN SIGHT

How Astronomers Have Predicted Coming of Astral Derelict Accurately—Some Strange Facts.

Halley's comet again is approaching the earth after an absence of 75 years. While swinging around in space it visited a region that is perhaps 50,000,000 miles more distant than the outermost planet of the solar system. Although it is not scheduled to arrive at its perihelion—the point least distant from the sun—until July 19, 1912, or possibly the latter part of 1911, depending on the amount of planetary disturbance, it probably will be visible to the naked eye in a short time.

After an exposure of an hour recently in Heidelberg, Germany, a photographic plate showed the comet as a nebula of the sixteenth magnitude. Another photograph has just been secured of the comet at the Yerkes observatory, near Williams Bay, Wis.



Course of Comet.

Solar bodies above the seventh magnitude cannot be seen without the aid of a telescope.

Extraordinary attention is being paid to the return of this celebrated comet. It is of particular interest to scientists because it was the first known to travel in a closed orbit. Its brilliancy, sensational size, records of its returns—the consternation once spread through the world by the belief that it would destroy the earth—make it the most famous comet in history.

In 1682, in the reign of Charles II. of England, a comet of extraordinary size appeared, which was observed by Newton, Halley and other astronomers of the time. Halley followed its course among the stars and, comparing his observations with the records of previous comets, came to the conclusion that the comets of 1456, 1531 and 1607 were only different appearances of the same object. He staked his reputation on a prediction that the comet would return in about 75 years. True to this prediction, it did appear in 1758, when Edmund Halley had been sleeping in his grave for 16 years. The reason the name of Pallas, a Saxon peasant, has been preserved to posterity is that his eye was the first to catch sight of the returning comet. It was on Christmas night, 1758, he saw the comet and cheated the professional astronomers of the honor.

The first recorded appearance of Halley's comet was B. C. 130, when it was believed to herald the birth of Mithridates. In 1066 it was seen equal to the full moon in size. In its appearance in 1456 its tail reached from the horizon to the zenith.

The following facts connected with the appearance of the comet in 1835 are taken from Herschel's "Outlines of Astronomy":

It developed no tail until October 2 and on that day the nucleus was observed to become suddenly brighter and to throw out a jet of light from its interior part.

Its tail attained the greatest length of 20 degrees October 15, and had entirely disappeared before its perihelion passage of November 16.

At the anterior luminous jet, meanwhile, singular and capricious changes succeeded one another with such rapidity that on no two successive nights were the appearances alike. At one time it was single, at another time fan-shaped or swallow-tailed, while at other times two, three or even more jets were darted from the comet in different directions.

In receding from the sun it passed through a series of changes scarcely less remarkable and finally disappeared May 5, 1836.

SCIENCE NOTES.

Lake Superior, the largest body of fresh water in the world, is about equal to Ireland in area.

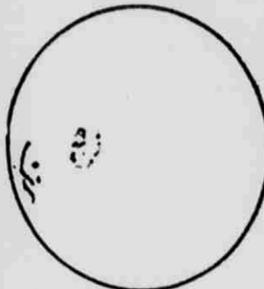
The eyes of the chameleon move independently of one another.

A loaf of bread will keep much longer if placed in a covered crock than in a tin box.

SUN SPOTS HIT TELEGRAPH

Baltimore Man Locates Cause of Recent Electrical Disturbance—Tells of Discovery.

In an interview published in the Baltimore American Mr. Justice Stahn declared that he believed the recent disturbance in telegraphic communication was more than likely due to sun spots. As a result he searched



Group of Sun Spots.

the sun surface and discovered the spots, as he expected. In speaking of the matter he said:

"On hearing of the appearance of the aurora and other phenomena of an electrical and magnetic nature I immediately suspected a large sun spot about to appear. I was not surprised when I discovered a magnificent group of spots measuring 60,000 by 50,000 miles, and showing unmistakable signs of solar storms, their cyclonic nature being clearly shown by two of the spots in the group. A more extended observation will show that these cyclonic spots revolve about a common center of disturbance on the sun and make their electrical and magnetic nature known on the earth by wireless messages from the sun in increased auroral displays and disturbance of magnetic instruments. The sun disturbs the ether of the solar system and causes during the duration of such a large sun spot, a disturbance of the more or less evenly balanced magnetic conditions of the earth. Besides the large group of spots, smaller spots are also visible by the aid of the telescope, together with considerable faculae. The darkest portion of a sun spot is termed the nucleus; the next darker, the umbra, and the highest portion, the penumbra. It is known that the sun revolves upon its axis in about 24 days, representing at the equator a velocity of 219 miles per minute, and this spinning through the ether causes tremendous disturbances in the solar region, especially during sun spot outbreaks. We can imagine what a great dynamic machine this must be when we see what a powerful electric current is generated in all our dynamos used in electric lighting and driv-



View of Sun Spot.

ing electro motors running machinery and cars. The electric field all through the solar system is disturbed. We cannot but be surprised at the few electrical storms we have experienced in Baltimore this past summer.

TESTING THE THERMOMETER

Various Processes Through Which They Are Put by Weather Bureau to Standardize Them.

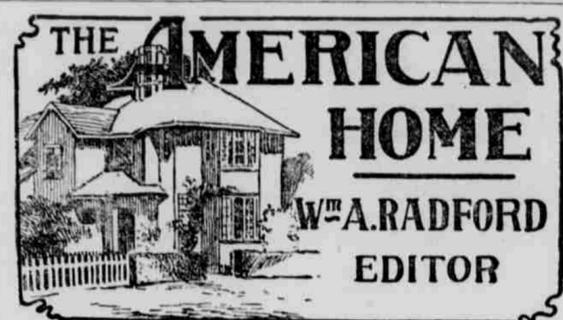
Each day at the weather bureau in Washington the thermometers received from various manufacturers throughout the country are put through the test of standardizing them.

The various processes through which the bulbs pass before they are labeled "accurate" are easy, inasmuch as there is practically little scientific work attached to the test, says Harper's Weekly. When a thermometer is first handed to the man in the testing room it is dipped into a vat filled with a compound far below the freezing point. It is thrust in at the point where it happens to be at the time, and worked up and down until the degree of the compound is reached. Having then recorded the lowest temperature the process of testing for the highest is begun. This is just as simple as testing for the low temperature.

The bulb is dipped into a vat of water, first at 60 degrees. Then it is worked gradually until 130 degrees is reached. If the mercury in the bulb will indicate 130 degrees, further testing is unnecessary, because that is a tolerably warm temperature, and one seldom, if ever, reached by natural heat.

A thermometer the bulb of which contains mercury will not register below 28 degrees below zero; that is to say, mercury will freeze at that point. Of course, in this country little use is found for a thermometer showing more than 28 degrees below zero, but in the far north they are of course necessary. Such instruments, however, contain spirits in the bulbs instead of mercury; but even this fluid becomes sluggish when 40 or 50 below zero is recorded, and it will seldom show 60 below.

A mill will be established in Sweden for spinning yarn from paper.



Mr. William A. Radford will answer questions and give advice FREE OF COST on all subjects pertaining to the subject of building for the readers of this paper. On account of his wide experience as Editor, Author and Manufacturer, he is, without doubt, the highest authority on all these subjects. Address all inquiries to William A. Radford, No. 294 Fifth Ave., Chicago, Ill., and only enclose two-cent stamp for reply.

For the small family of simple tastes, nothing could be more appropriate for a residence than a bungalow built according to the design here shown.

This is a bungalow designed in the true western and southern spirit, but so modified as to make it a substantial and comfortable residence for the severest climates.

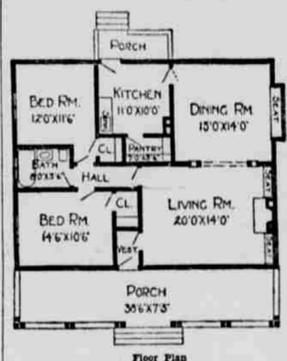
The exterior is sided with boards, 3/4 inches wide, left with a rough finish and stained a soft olive green. This style of siding is very effective in

the high labor cost of applying them, brings the total cost of the job up equal to that of finished clapboarding. The extra thickness of this rough siding is in its favor also where warmth and durability are of importance.

The gable ends of this bungalow are finished with cement plaster of the natural gray color and applied with a pebble-dash finish. Four inch strips, 3/4 inches thick, are used to divide the plaster coat into panels, giving an English "half timber" effect. These strips should be securely nailed to the sheathing boards, through the cement plaster, before the same has hardened.

As will be seen from the floor plan the interior arrangement of this cozy little bungalow leaves little to be desired. There are five good rooms besides vestibule, pantry, bathroom, two closets and the hall.

The living room is 20x14 feet and is



Floor Plan

bungalow work and is probably the cheapest of any of the styles of siding. Shingles are just about as cheap, as far as the material is concerned; but

very well lighted. It has a practical fireplace that is meant for business, in the middle of one end. There are seats built in on each side of the fireplace and under the high windows.

The dining room is a very attractive apartment, separated from the living room by an artistic columned opening. A square bay window with casement sash is a feature of the room.

The kitchen is arranged to save steps. It is not too large, being 11x10 feet, and is light and airy.

The sleeping end of this design is arranged to give a surprising amount of privacy for a bungalow. Two good-sized chambers are provided, each with a clothes closet. The bathroom, opening off the hall, is located between the two bedrooms.

The estimated cost of this bungalow, using hardwood floors and yellow pine trim, has been placed at \$2,100.

MUCH GOOD IN HERO WORSHIP

Admiration of Other's Good Points Bound to Lead to Desire for Emulation.

Hero worship is inborn in man. It began with the beginning of the human race, and will end only with its finish. As Carlyle once put it: "It is the joy of man's heart to admire where he can; nothing so lifts him from all his mean imprisonments, were it only for moments, as true admiration." Nor is it only the great and good who admire what is really admirable. Even the vicious respect in others the fine qualities which they themselves lack. In fact, hypocrisy itself is but the tribute which vice pays to virtue. Deprived of the genuine article, the hypocrite takes unto himself the counterfeit; assuming or aping the noble traits which command the respect of thinking men.

Since the world has ever had, and ever will have, its heroes or ideals, clearly it is of prime importance that it have none but the very best placed before it. Truly worthy heroes and ideals are among the world's most prolific sources of great deeds. It goes without saying that the example of generals like Napoleon and our own Washington served, as well as any other cause, to spur on their men to feats of valor when the army's courage was on the point of falling. And, not to enter into too many details, the same holds true in every other walk or department of life. It is the pace set by the leaders, the exemplars—in a word, by the heroes—that urges on their admirers to attempt the performance of worthy, if not of positive great, deeds. They may not be able—in most cases, they will not be able—to attain to the ideal; to rival the achievements of their idols. But at all events, it is well to aim high. Like the prudent marksman, we must make a little allowance for the law of gravity, and the consequent drop in distance. If the hero-worshiper cannot equal the brilliant acts of his hero, at least he can follow him at a respectable distance, and even so much is a great gain both for himself personally and for society at large.

How He Does It.

Hodge—There's a man who doesn't let the grass grow under his feet.

Dodge—He looks slow enough.

Hodge—He is, but he works in a quarry.

GOOD JOKE ON PORTLY MAN

Weeks of Abstinence from the Pleasures of the Table Proved Unnecessary.

Gaston Reeves, weighing in the neighborhood of three hundred pounds, and the most famous feeder in New York, awoke one day with a stitch in his side. The stitch hurt and Reeves went to a doctor about it.

The doctor examined, diagnosed, consulted and finally said there must be an operation, for, although there was nothing so very bad the matter, the trouble might develop and it was better to have the cause removed.

"But," said the doctor, "before I can operate you must get rid of a lot of that flesh."

"How?" asked Reeves.

"Train it off," said the doctor. "You must do it if you do not want to shorten your life. There is no telling when you will have to be cut."

Reeves went to Muldoon's, where the fare is plain and the work is hard. He beat down his longing for fancy food, stuck sturdily to his task of getting rid of flesh, worked harder than he ever did in his life, didn't have a bit of fun, and was constantly tormented with thoughts of the good things to eat he was missing.

Finally, he had taken off 69 pounds. He went to the doctor. "Now," he said, "I have taken off 69 pounds of flesh after torments of the damned, but I am hard as nails, so go ahead with the operation, so I can begin to live again."

Whereupon the doctor made another examination, told Mr. Reeves he had been mistaken and that an operation wasn't necessary after all.—Saturday Evening Post.

Mary and Her Beau.

It is somewhat startling to learn that Mary's beau expects Mary to help support him when the twain are wedded, and instead of becoming sole master of the establishment, the provider of its needs, however humble, weo wife must turn to and work at the same employment which is giving her board and clothes at the present time.

"Yes, Mary," says Mary's beau, "you earn \$10 a week typing for the Chicken Feed Company, and I am now getting eight dollars for clerking in Old Grimes' store. We ought to be able to live on \$18 a week. So let's have the wedding Thanksgiving day."

"Ye-es," sighs Mary.—Boston Herald.