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Success With Alfalfa

at One - Tenth
the Usual Cost

By J. N. SHIRLEY

INDIANAPOLIS, INDIANA

1920

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By J. N. SHIRLEY
116 South Emerson Ave.
Indianapolis, Ind.

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Fig. 32—Goddess Alfalfa, Enlightening the World.

"Deep in the ground beyond the depths of the roots of ordinary crops, alfalfa seeks out and makes available untold wealth of soil fertility. As a host to bacterial life, it is the means of extracting from the atmosphere an inexhaustible supply of nitrogen to enrich the soil for its successors in crop rotation. From its bountiful harvests it has made possible the development of the great live stock industries of the country. In fact, the actual results from this truly wonderful plant are nothing less than a fairy tale come true."—
Philo K. Blinn.

Introducing the Author

Mr. Shirley thought, after he decided to become an author, that somebody ought to introduce him to the public and he asked me to do it.

I have known him several years. The first time I saw him, he had some alfalfa in his fist. Alfalfa was then new to me. I have never seen him since when he did not have alfalfa along with him. I do not know that he eats it, for I have never seen him at meals, nor do I know whether he takes it to bed with him, for I have never seen him in bed.

He talks to everybody he meets about alfalfa, but seeing how impossible it is to meet everybody, in order to talk to them about alfalfa, he could not keep from writing a book, so that everybody he does *not* talk to may learn what he knows about alfalfa, if desired. What he does not know about alfalfa will probably not be found in books. What he *does* know about alfalfa he did not find in books. As he tells you, he has been growing alfalfa and watching it and studying it for over twenty years, and that is how he learned his lesson so well.

If he says that alfalfa will grow in a stone quarry, you will find it true. All that he says about alfalfa he knows by experience. If he has what you call theories, they are built on practices and you do not have to practice on his theories, or try them to see if they will work out. He has done that for you. All you have to do is to follow his book. If you do it the way he does it and the way he tells you to do it, you will get the same results he gets. He does not pretend to be anything but a common farmer. He has simply been a close-observing farmer, especially when it comes to alfalfa. He has watched how nature handles alfalfa and tells you that after twenty years of this, he knows now what he really knew, and what every other farmer ought to have known twenty years ago.

As you can easily see, he is not trying to make any money off his book. If he were, he would charge \$5.00 for it instead of \$1.00. If it does good, as he hopes it will, it will be his little monument, he says; a little legacy, also, he has left to the world he has found so interesting, especially the part of it that grows alfalfa. The little book is worth its weight in gold to any farmer who is growing, or would like to grow alfalfa.

H. S. O'BRIEN.

Indianapolis News,
Indianapolis, Indiana,
April 19, 1919.

P. S.—I learn since writing the above, that Mr. Shirley pleads guilty to eating alfalfa between meals and he says: "Girls eat alfalfa to make them pretty, but, of course, some don't need it."

A LETTER TO THE SECRETARY OF MISSOURI STATE
BOARD OF AGRICULTURE

Indianapolis, Ind., May 20, 1918.

Mr. Jewell Mayes,
Secretary Missouri State Board of Agriculture,
Jefferson City, Mo.

Dear Sir:—

I have just read "The Calf Path" in the Missouri, 1917, Year Book, that you sent me several months ago. I have always regarded this as a truthful picture of habit:

"They followed still his crooked way
And lost one hundred years a day."

To prove to you that vastly more than "one hundred years a day" are lost by the farmers of the United States in sowing alfalfa, according to the "regulation - cultivation - all-summer-sow-it-just-before-a-drought-comes-plan, I enclose a few alfalfa plants from last February (1918) seeding on "honey-combed" corn stubble ground with no cultivation, except what Jack Frost did, free of charge last winter. These plants are taken from poor, hard, white clay that had been hauled in from the street.

Will also send a stem of April 5, 1915, seeding on sun-cracked corn and oats stubble ground. No cultivation.

116 S. Emerson Ave.

Yours truly,

J. N. SHIRLEY.

(Reply)

MISSOURI STATE BOARD OF AGRICULTURE

Office of the Secretary,
3rd Floor of New State Capitol

Jefferson City, Mo.

Mr. J. N. Shirley,
116 S. Emerson Ave.,
Indianapolis, Indiana.

Dear Friend:—

Your letter of May 20th I read with thrilling interest. The "Calf Path" does truly express the habits and the tendencies of good old human nature. You have beyond the shadow of a doubt solved one of nature's problems with reference to the planting and development of alfalfa. The fact that people do disagree with you does not change the truth of it one bit. The plants you send are unanswerable witnesses to the truth of your experiences.

I am sending to you under separate cover, not being sure that they reached you the other time, our last four bulletins.

I am also sending you to make doubly sure, an alfalfa bulletin issued some time ago, which is not strictly up to date at this hour—but has some splendid stuff in it.

Yours for Big Victory Crops,

JEWELL MAYES,
Secretary.

May 22, 1918.
JM:CS

P.S.—I am going to put you upon the regular mailing list that you may receive our bulletins from time to time and the Year Book when it does come out.

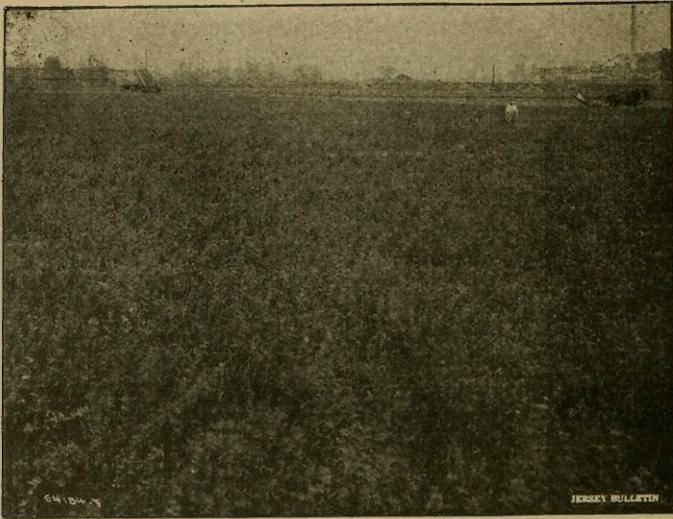


Fig. 2—Harvesting 5 Year-Old Alfalfa in West Indianapolis, Summer of 1918



Fig. 12—Alfalfa Products on "Alfalfa White Face Farm". Lebanon, Ind. J. N. Shirley, Owner
"Study Alfalfa and Live Stock, for they are wonderfully and profitably made."

SUCCESS WITH ALFALFA

AT ONE-TENTH THE USUAL COST

By J. N. SHIRLEY, *Alfalfaist*

Indianapolis, Indiana

Caesar says: "All Gaul is divided into three parts." This book is not "all gall," yet it is divided into three parts—"The Circus," the "Side Show" and the "Hash Department." Not long ago I heard a lecturer say that during the war he, at one of Uncle Sam's cantonments, saw a large tank of hash and he said to the over-six-foot colored cook: "How do you make hash?" The reply was: "Mistah, we don't make hash, it just accumulates." Part of this book has "just accumulated," so we call it the "Hash Department." All the three departments are intended to be short enough for both the busy man and the professional idler to read them; but the careful reading of only one section will give a comprehensive idea of the whole book, and will form the framework of the whole structure, which it is hoped will be thought out to completion by the reader, for, "As a man thinketh, so is he." Thinking and doing make the man; and the man must think he can succeed with alfalfa, and he will.

You may wonder why the writer has gone to so much expense to procure half tone illustrations in this book, but there are so many "Doubting Thomases," and so many men "from Missouri"—and other states—that "have to be shown," I mean to show them actual photographs and if these pictures and testimonials don't convince them, they are invited to come to Indianapolis and see the real alfalfa from ten days to seven years old; but I am not sure that this will have much effect, because many farmers see my alfalfa fields every few days, and yet do not raise alfalfa. They say it don't make a paying crop in Indiana, because it is not thick enough. I tell them I don't care how thin it is, if it brings \$100 an acre per year, in the rough, and that is what it does, even at \$20.00 a ton for hay; while I sometimes get \$30.00 to \$33.00 per ton for alfalfa, and it makes five or six tons per acre at the four cuttings a year. I often get two tons or more at one cutting, and one time I cut a piece of March seeded alfalfa five times in one season. In 1918, I finished cutting alfalfa on November 12th, and if our present warm, showery weather continues through

April, I think this same alfalfa will be ready to cut for hay by May 5th or sooner. I have cut alfalfa for hay on the 14th of May, and I have cut alfalfa for hay just sixty days from May seeding. Later; July 5, 1919, the "warm weather" didn't last; but the second crop is now knee high on this (November 12, 1918, cut) piece, and will be cut in a few days.

On February 22, 1917, I sowed alfalfa on "honey-combed" corn stubble and potato ground, in Monroe County, Indiana, and on July 2, 1917, I found some of these alfalfa plants 19½ inches high and blooming out. New sprouts, or new lungs, at base of plants were about one inch long, and the alfalfa was just exactly right to cut for hay. I thought I had a chance to be patriotic in those war times, by sowing alfalfa on Washington's birthday, and cutting it for hay on the Fourth of July, but I was doomed to disappointment, as will be explained hereafter in this book. I want the reader to think as he reads these lines, so I won't tell him just now, why I was disappointed, but will do so, later.

Right here, I will ask the reader to look at Figure No. 1, and ask himself how many plants like this can grow on one square foot of ground. There are many things I might tell you right here, but it is better for you to think them out for yourselves.

ALFALFA ROTATION

Farmers are mistaken when they think alfalfa can not be killed out, and used in a "rotation." By pasturing alfalfa when the ground is frozen, the crowns are killed by trampling of live stock; and the "turning" is easily done by deep plowing, as thus the *sharp plow share* strikes a *smaller* part of the alfalfa root and strikes it in *hard ground*, also. I would suggest that 5 or 10 acres of alfalfa be sown each year, for five or six years, breaking strip No. 1 as soon as blue grass encroaches. Raise 100 bushels of corn per acre, for two or three years, then sow No. 1 to wheat and break No. 2 for corn, etc. I am sure more corn and more wheat can be raised on fewer acres, if planted on alfalfa sod, in this manner, leaving out the wheat (which would be too rank on alfalfa sod), until two (or three) crops of corn are raised, to use up the surplus nitrogen that the alfalfa gathers.

Try this plan and see how it works. It is new to me, in part, but I believe it will work. By this plan one does not have to "sow wheat so often to follow rotation;" and it is generally understood that "wheat doesn't pay except to seed to clover;" and wheat often kills the clover or alfalfa by robbing it of needed moisture and plant food. I know this by actual experience. Two years ago, from March seeding (as before stated), I had a good stand of alfalfa in ten acres of wheat, and in twenty-eight acres of rye. We had a four-weeks' drouth about harvest time; and that fall I had no alfalfa except where the corn shocks had been in the wheat field, and in the rye, I had no alfalfa, except in one "corn row," where the drill failed to sow any rye, while in that "row" the alfalfa was *knee-high and bloomed out*. It is claimed that raising a bushel of wheat costs \$2.01. If this is true, would it not be better for a while to sow \$30.00 clover seed, or \$25.00 alfalfa seed, in *corn stubble, or wheat stubble*, "honey-combed" ground, in February or March, and not have the wheat or rye for so-called "nurse crops?" I feel sure that this rotation "alfalfa, corn and wheat" can be kept up almost indefinitely by sowing alfalfa on disked (or undisked) wheat stubble in winter. The disking, though, should be done soon after harvest, if it is done at all.

“IF” YOU PLOW, PLOW EARLY

With due respect to the fellow who is “shocked” by the “slip-shod method of seeding alfalfa” and who refuses to use a solid seed bed, except one of his own making, I would suggest that he do his plowing, dragging, harrowing, rolling, etc., early, say just after harvest so the rains will help settle the seed bed; but this is an idle suggestion, as *you* want to make the solid seed bed *yourself* or you would never plow up oats stubble, wheat stubble, tomato ground, bean ground, etc., to make a seed bed for alfalfa. If you *must* plow and cultivate the ground, why not do it early and after you have cultivated it as long as you like then let it alone until Jack Frost has put on the finishing touches, when, if I were doing it, I would sow the seed thinly on honey-combed ground and let Jack cover the seeds for me. But really, I don’t see the need of all this hard work when oats stubble ground, at least, is already smooth and solid and nearer free from weeds before you plow it than it will be as soon as you bring up to the surface fresh weed seeds water-soaked and ready to grow before your dry-alfalfa seed can germinate.

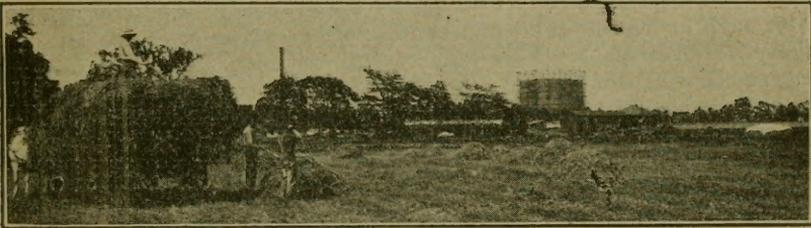


Fig. 19—Cutting Second Crop Alfalfa Same Year of Seeding, 1912.

Surely, if you will study the photographs in this book, you will be convinced that winter seeding of alfalfa is a success; and why not, when clover is almost universally sown on “honey-combed” ground in February or March? You ought to be convinced, also, that the “no crop of alfalfa the first year” theory is exploded when you look at Figures 19, 4, 17, 31, 30 and 2 in this book. There is some excuse for turning under a corn stubble field to level it, if the corn was cultivated by the deep cultivation method, with wide shovels that ridged the corn, but why have these ridges and deep root pruning? Ridges dry out worse than level ground does; and root pruning certainly doesn’t pay. Ridges are relics of old time plowing when this method of ridging was used to drain the land, or at least, it was used to get the corn up out of the water; and I admit it is hard to break away from old customs, however obsolete; but it *can be done* and should be done if shallow, level cultivation is better for the crops grown and needed in preparation of the seed bed for alfalfa that can be so easily and cheaply sown in corn stubbles in winter, thus getting the benefit of all the early rains and gentle sunshine to push the alfalfa so it will withstand the droughts of summer and the rigors of winter. Look at Figure 32, “Goddess, Alfalfa, Enlightening the World.” The “torch” is a youthful alfalfa plant of only five years of age, while the “sword” is composed of infant alfalfa plants of last March seeding, only 5½ months old; seeding done in March, 1919, and photo taken September 13, 1919. This “infant alfalfa” was cut first for hay on June 18, 1919, knee high, and again on July 23, 1919, only six inches high, on account of the alfalfa “yellows.” Prompt cutting cured “yellows,” and alfalfa made two more crops the first year.

Look at the third crop and see for yourself whether it is worth while or not. Compare this picture (the "sword") with Figure 31, which represents February sown alfalfa, second crop, grown by a new alfalfa man at Unionville, Monroe County, Indiana, and then decide whether alfalfa really fails to produce a crop the first year or not. Remember that Figure 31 is reproduced from a photo taken August 17, 1919, and Mr. C. N. Stidd, the grower, says if any one wants to write him about his first alfalfa crop, he will answer their questions (but don't forget the stamps, please).

ALFALFA CONVERTS

Here I will give you a few thoughts of some of my self-styled "converts," as expressed in their own words. If necessary, you can write briefly to any of these men, *but always enclose a few extra stamps*, for a reply, as they are busy men, and hard thinkers. I saw one of my "converts" yesterday, at Bloomington, Indiana, who said he had no fault to find with my way of seeding alfalfa, but he had been greatly annoyed by so many letters of inquiry with no stamps enclosed, etc. I personally sowed some fifteen acres of alfalfa for this man in March, 1917, immediately after sowing some for Dr. F. E. Manker, of Indianapolis, whose letter I will use soon. With the help of a strong young man who took Mr. S. and myself out to the edge of Bloomington in a taxi, I pulled up a few alfalfa plants that had tillered out wonderfully, and I brought some home with me, today (April 15, 1919). Mr. "S." has a good stand of alfalfa; but, like about 97% of all other men, he thinks his alfalfa is not thick enough. He will find out as his alfalfa tillers out more, and the bunches thus get larger, he will have a still thinner stand, or fewer bunches of alfalfa to the square yard, than he has now; but what of it? He will have more stems from the fewer, but larger plants. He is different from the rest of the 97%, in the fact that he has not plowed up his "too thick" alfalfa, because some of it has turned yellow, like so many do; or, rather, he has not plowed up his seemingly *too thin* alfalfa, because I sowed it for him, and I did not use the proverbial 20 pounds of seed per acre, putting 100 seeds to the square foot, and his alfalfa did not turn yellow at all.

A FEW LETTERS FROM SOME OF MY "CONVERTS"

Dr. Frank E. Manker, 712 Odd Fellow Building,
Indianapolis, Ind., March 24, 1919.

Mr. J. N. Shirley,
Indianapolis, Ind.,

Dear Sir:—

The field that you sowed in alfalfa for me in March, 1917, came up in fine shape. Last year we cut four crops from it and it was excellent.

When sowed the field had been in corn the year before and it was not even disked or ploughed at all. The ground was honey-combed from the frost when sowed and I could not have gotten a nicer stand. At first, the weeds seemed to take it and I thought they would do so, but after cutting the first crop, weeds and all, close to the ground just as new sprouts were starting, the second crop was clean and entirely free from weeds.

Mr. Shirley's mode of sowing is entirely satisfactory to me.

Yours,

(Signed) F. E. MANKER.

Dr. Manker had tried (by the old plan' for several years to raise alfalfa on this farm (at Mooresville, Ind.,) but failed. So he, like the Bloomington "convert," insisted that I, personally, sow the seed for him and afterward name my own price. Both these "converts" are well satisfied.

UNITED STATES ENCAUSTIC TILE WORKS.

Mr. J. N. Shirley,
116 S. Emerson Ave.,
Indianapolis, Indiana.

Indianapolis, Ind., February 8, 1919.

My Dear Sir:—

It gives me much pleasure to acknowledge my debt to you for putting me in the way of getting a set of alfalfa by sowing on honey-combed wheat ground. Like most farmers who had had no experience, I imagined alfalfa such a tender thing, the thought of treating it as clover appalled me. I had witnessed so many attempts through long, expensive soil preparation, only to see it fail, that I adopted your method with misgiving; however, casting all fears aside, with your advice, I got a good stand on thirty acres, which produced three fine crops a year for five years; but, at first, I had to give an "ultimatum" to my tenant to keep him from "plowing up the weedy alfalfa."

May I therefore thank you for your crusade in behalf of the best and most profitable crop that can be raised on a farm; and at the same time encourage you to continue your efforts to take fear from the heart, and advise the sowing of alfalfa anywhere and everywhere, at most any time, to the up-building of soil and profits for the farmer.

Cordially yours,
W. F. LANDERS.

This man must have used good judgment in selecting a showery year to sow alfalfa (or clover) "in wheat." I don't recommend either, but he followed my instructions in telling his man to "let the weeds alone until the harvest," instead of "clipping them high," as sometimes recommended by agricultural writers.

Mr. Landers is one of the few farmers who benefit by even seeing my alfalfa fields. Most of them say your alfalfa is too thin. They said this when I used to sow twenty pounds of seed per acre, and they still stick to it, like the man who was accused of calling another a liar, and denied it. "Yes, you did," said the accused. "Well, if I said it, I still stick to it," he replied. It seems to me that "corn belt" farmers ought to get on to this "one plant to the square foot habit" of alfalfa, but they don't. How would their corn yield if they planted it on hills two and one-half feet apart each way? It might "do" if they only put one grain of corn in each hill. Now look at Figures 1 and 13 and *think* a little.

MY FIRST ALFALFA

I have raised alfalfa for over twenty years in Indiana, and, of course, I had the same failure with my first one and a half acres that nine-tenths of the farmers have; yet I did not fail at all. I will tell you how it was. I sowed too much seed; using twenty pounds per acre, putting one hundred seeds to the square foot. I cut seven crops the first two years, and then I thought my alfalfa was practically all dead (the next spring), with only one or two plants per square foot. I ought to have known that this was thick enough, but I didn't know much about alfalfa then. The alfalfa had tillered, or "stooled out," and had killed off the weaker plants; but was still thick

enough, had I only thought so. I imagined it ought to be about as thick as a man's mustache, and I didn't think what the man would do if every hair on his upper lip should tiller out and produce one hundred to three hundred "stems," like alfalfa does if it has the chance. I told my wife I guessed the Boone County farmers were right—that "alfalfa could not be raised in Indiana," but I would try it again, so I double-disked my "dead" alfalfa patch both ways, lap harrowed it, sowed "twenty pounds" of seed per acre again and harrowed it in. The seeds germinated finely, but the old, thin plants that I had tried to kill were only cultivated and they stooled out still more, and I lost my seed; as the young plants were shaded by the old ones and smothered to death. In about thirty-five days, however, I harvested the heaviest alfalfa crop I ever saw—about three tons per acre—yet a neighbor said: "Alfalfa is a failure in Indiana." I asked why. He replied: "It is too thin," and I said, "I don't care how thin it is, if it makes three tons per acre at one cutting. I don't care if there are only three plants to the acre if it *yields* that way. But *using a disc instead of a breaking plow is all that prevented a real failure in my case with alfalfa.* I learned to cultivate alfalfa by this experience, but I prefer a spring tooth harrow instead of a disk. I learned another thing also—that alfalfa would grow on white clay ground often better than on the rich black soil which I thought, at first, was the only soil that would produce alfalfa. I tested it by sprinkling some seeds on white clay knolls and it did splendidly there. I should have learned, also, to sow less seed per acre, but from force of habit I kept on using the twenty pounds per acre, wondering all the time why I could not sow alfalfa in February or March, like they do clover on uncultivated ground. I once asked a Purdue man about this and he said: "Many farmers have tried winter seeding and failed." (I wonder if they never fail in the summer time.) I kept on "wondering" about winter seeding for fifteen years. (I am surprised at myself for this.)

Seven years ago I sowed about twelve pounds of alfalfa per acre on corn stubble "honey-combed" ground, in March, and father said he would give me \$50.00 per ton for all the hay I raised; but in July following, he said he had to "go back or go broke." I left the corn stubbles, weeds and all stand until the alfalfa had started new buds, at the base of the plants, for a new growth; then I mowed it, close to the ground, killing the weeds; then the new sprouts or new alfalfa "lungs" burst into foliage at once, and kept the other weed seeds from germinating. The corn "stubs" made good bedding and aired out the alfalfa. I still have alfalfa sown that way, in March, 1913, and will show a photo or two of this seeding. (See Figures 3, 32 and 2). In my first sown alfalfa I sowed little red clover and spring barley as a so-called "nurse crop," but I cut it all for hay, not for grain. (I now think it was a "robber" crop.)

INOCULATION.

Of course, I inoculate the ground (using soil) if it is not already inoculated (as it is, sometimes, by sweet clover), and it generally pays to lime most of the land, too, for it nearly all needs lime. This can be easily tested by putting a little blue litmus paper in a ball of mud. If the paper turns red, lime is needed; the redder it turns the more lime needed. A better test is to use a little raw ground limestone on the alfalfa plants, noting the result. Once I put a few loads of raw ground limestone on the poorest spots of a twenty-acre field of alfalfa and it was not long until these poorest spots were the best, and they remained so. I use almost any ground that has been cultivated the year before, say, corn stubble, oats stubble, potato or tomato

ground, bean ground, etc., and I sow seed on "honey-combed" or frost-pitted ground in January, February or March; not on snow or hard-frozen soil. I have also sown on "sun-cracked," or "wind checked" ground, in April or early May, and had splendid success, despite the fact that it did not rain for eight or ten days after seeding one ten-acre piece on the 5th of April, 1915; and the alfalfa did not come up until the weeds had a splendid start, but I wasn't uneasy, as I knew I could kill the weeds by close-cutting at the right time to have the new alfalfa growth keep them killed and I did cut a magnificent crop of weeds (and some alfalfa, too) the first time. I had a picture taken of this cutting, and the photographer said: "Do you call this an alfalfa field?" I said, "Yes." "Well," said he, "I call it a weed patch." I told him to come back in thirty days and take another picture of clean alfalfa; but he says the mowing machine was not going, and on that account he didn't take the picture, but he did take one of the third crop the second year in this same field. The hired man disobeyed orders and he cut part of this seeding before new sprouts or new lungs started *and he killed the alfalfa*. I cut the tall weeds spoken of above myself two weeks later, when new alfalfa sprouts were about one inch long, and this part of this alfalfa is still all right, but at first the other part was the better stand. (See Figures 4 and 5.)

Also at Twenty-first and Montcalm Streets, Indianapolis, can be seen some alfalfa that I sowed in April, 1914, on "sun-cracked" corn stubble ground, without any cultivation, and I cut the fourth crop of alfalfa on this piece on November 12, 1918, and I fed it to the brood sows last winter. I always get four crops a year, and once I cut five alfalfa crops in one season, from March, 1913, seeding, which is still on the job. Part of this piece, last year (third crop) sold for \$15 an acre, standing in the field, and made money for the buyer, too. I never leave a crop for "protection." Alfalfa doesn't need it, and field mice use the protection to their own advantage. I mention these facts so one may not feel discouraged if weeds do spring up in alfalfa; and if you think cold weather will hurt alfalfa, you can sow it in April or early May, on "sun-cracked" ground, but weeds always get a better start than if the seeding is done on "honey-combed" ground. This is evident, as they are already well under way before the alfalfa is sown. Alfalfa will grow as fast as any weed if sown in winter; then, it has at least an equal chance with the weeds.

"A DISAPPOINTMENT."

In the fore part of this little book I referred to my "disappointment" with alfalfa seeded on Washington's Birthday in 1917. The tenant failed to cut this crop on the 3rd of July as I directed him to do; he cut it three weeks later. When I asked him about it he said: "I set the mower knife high so I would not hurt the alfalfa." But he did hurt it by making the weeds thicker and by topping the second growth of alfalfa. Besides, the old stems had tried to mature seeds by that time, and this always exhausts the plants, especially so the first year; and this alfalfa was not as good the next April as it was in July before.

In March, 1919, we sowed about forty acres of alfalfa on this farm, had a good stand, and a crop of alfalfa (and weeds) was cut at budding time. The second crop started up nicely, I am told, then it turned yellow and "something went wrong with it." It was only cut the one time, and lack of cutting to cure the "yellows," no doubt, was the "something that went wrong with it."

My own March, 1919, seeded alfalfa in Marion county turned yellow after I had cut a knee-high crop on June 18; but I cut this yellow, only six-inch-high alfalfa on July 23, and it at once changed to a dark green color, and I cut a third crop, knee-high, on September 23, and this alfalfa grew almost knee-high again before hard freezes came. Once I had eighteen acres of two-year-old alfalfa that turned yellow before cutting the second crop. I cut and raked most of this twelve-inch high, yellow and red alfalfa, and I inoculated it at once, using soil from my first sown field of alfalfa, which had inoculated itself by that time, I supposed. This cutting, or inoculating, or both, had a wonderful effect on this sickly looking alfalfa, changing it to a dark green color, and it made two more nice crops that year. I knew nothing about the "alfalfa yellows" at that time, and I did not believe much in inoculation, either, but something had to be done to save the alfalfa and to relieve the case of "blues" that I had; and I think I "hit the nail on the head" by *both cutting and inoculating*; but I had hard work to keep throwing that soil up into the air as people passed, stopping only long enough to ask what we were doing, then dropping their heads and driving on, no doubt thinking very little of our experiment; but a few days changed all this and converted me, at least, to the inoculation theory, and I have shipped six tons of inoculated soil for my own use and many tons to others, from Vermont to



Fig. 4—Cutting First Crop, Alfalfa (and Weeds) 1915. Seeded on Sun Cracked Soil, 1915.

Texas. It is claimed that "cultures" will inoculate alfalfa if used according to directions, but I failed to get good results from them; possibly it was my fault—I know inoculated soil is all right and it takes but little of it, as the bacteria soon spreads like a prairie fire, if 200 to 300 pounds of soil per acre are tossed up into the air to be blown over an alfalfa field. I apply soil after plants are started and can shade the ground a little and take hold of the bacteria at once. I have never harrowed inoculated soil in, nor sown it at time of seeding alfalfa. Some claim sunshine kills the bacteria, but I have seen this disputed, and I inoculated the eighteen acres spoken of on a hot, sunny day, but I had plenty of soil to use, from my own alfalfa field.

From the above facts, I think it is clear that it pays to inoculate, lime and cut alfalfa at the right time. Always cut at budding time, unless "yellows" strike alfalfa, then cut at once, whether budded or not. Cultivation pays also, especially in dry seasons.

KIND OF SEED.

I prefer Kansas or Nebraska non-irrigated alfalfa seed, yet I tried one acre of "German alfalfa" once, but did not like it (even before the war). The tap root of the common (U. S.) alfalfa penetrates to great depths and brings back to the surface *leached and lost fertility*. It drains land, also.

CURING ALFALFA.

After alfalfa wilts a little in the swath, I rake it and sometimes bunch in small forkfuls, but I seldom shock it any more. Shocks don't turn water unless the hay is too green; and in case of rain the forkfuls can be moved and loosened up easier than the shocks can be spread out to dry. Of late years I have been using a side delivery rake, throwing two windrows together, and then I straddle them with a hay loader. This saves bunching or shocking, saves time and bleaching, and I like it better than nineteen "Hunyaks" and three "Niggers," counting myself as one of the "Niggers," and I have tried both. The little team you see (in Figure 2) handles the loader easily until I have to stop to adjust the load; then the horses "get their wind" while I work, and so on. I use a man (on the ground) to straighten the windrows and to round the corners, clean up the hay that may fall off the wagon, and then he pitches the hay to me while I stack it, "shingle fashion." I mean this: After I have placed a mound of alfalfa in the middle of the foundation for the stack, or narrow rick, I begin at the outside of this mound (which is almost full size of rick) and place a layer of hay around it, lapping the upper part of the layer onto the outer edge of middle mound. I then put on another layer a little higher up, letting part of the thinner edge overlap the outside layer, and so on. I let the out ends of layers hang downward as much as possible to run the water out, instead of running the rain into the stack. I don't tramp the outside at all, but keep the middle well tramped down, and always higher than the outside. This gives a good "settle" and alfalfa stacked this way will keep for years, as it forms a kind of "glue" on the outside that sheds the water almost like oil cloth. I like to widen or extend the rick a little to a height of six or eight feet before "drawing in" any, and the ends of rick should remain almost vertical to the last. I prefer ricking alfalfa in narrow ricks, instead of putting it into barns or sheds, unless the hay is to be fed to stock. Alfalfa is easier gotten out of stacks or ricks, to be marketed, than out of barns or sheds, and the depreciation of building costs more than the damage done to well stacked alfalfa; besides, the outside inch or two can be easily pounded off the rick by using the back of a fork, and it is good bedding for stock (if they don't eat it, which they will do, unless they get better hay). I think it pays better to use damaged alfalfa for bedding than it does to use wheat straw for that purpose. It makes better manure, and raising alfalfa is better for the ground than raising wheat. I use a sharp, thin axe in lieu of a hay knife to cut the ricks in two; for me it is easier and faster. The axe should be drawn slightly to you as you strike. Cut from each outside to center of rick as the hay slants "down and out." I stand on a ladder when starting to cut a rick.

RECAPITULATION

Of late, I sow thinly, using not more than four or five pounds of best alfalfa seed per acre, on "honey-combed" ground, in winter, or on "sun-cracked" ground in April or May (never later than May). I let alfalfa *religiously* alone until new "lungs" or new sprouts at base of plants are about one inch long; then I cut it at once close to the ground and rake as soon as

wilted a little. Don't let alfalfa bake or bleach in the sun. This is injurious to the hay. Too much should not be cut at once; yet the cutting should be done quickly and at the right time. This is in the interest of the next crop, as well as for the present one.

Stack it "shingle fashion," and by this time you are about ready to repeat the process, if you have fifty acres or more to cut. (I have had over one hundred acres to cut four times a year, and I had to "get a move on me.") As soon as possible, it pays to get a side delivery rake and a drum (or "straw-carrier") loader, and not be bothered with shirking, high-priced help that demands pay for "time" instead of for "work done." Cultivate alfalfa, if you can, after each cutting except the last, beginning at one year old; use a spring tooth harrow or a narrow shovel corn cultivator, as these tools slip around the alfalfa roots and don't cut the crowns off, like the discs sometimes do. I have the best alfalfa cultivator I have ever used or seen. It is a "Massey-Harris." (I use mine to break corn ground also, unless it is sod ground.) (See Figure 10, Figure 30.)

Put cotton in your ears when cultivating alfalfa and pay no attention to your neighbor who says: "You are ruining your alfalfa." If you cultivate it thoroughly you will conserve the moisture and prevent blue grass coming into your alfalfa; and you will make old Mother Earth rich enough to produce one hundred bushels of corn per acre where you used to get only about fourteen bushels per acre when you turned under a timothy sod." I am convinced it pays better to raise 100 bushels of corn occasionally, on alfalfa sod, than thirty or forty bushels (or less) each year on poorer ground.

VALUE OF ALFALFA

The North Dakota Experimental Station says: "Two tons alfalfa hay equal 110 bushels oats."

Uncle Sam says: "Alfalfa hay is worth, in feeding value, \$10.76 a ton more than timothy hay." Horses and cattle will quit eating corn to eat alfalfa hay. Why not use a "little horse sense" and raise alfalfa? Disregard the statement of the man that never fed alfalfa who says: "It is hard on the horse's kidneys." Uncle Sam says: "Experimental data do not substantiate this claim." Don't believe that alfalfa is "washy" or that it produces "heaves" in horses. Alfalfa is just right; not "washy," nor constipating, and it has no white fuzz on its stems to produce heaves. Alfalfa produces three tons of hay to timothy's one ton, and it makes the ground richer, instead of poorer, as timothy does. Try it and see how this plan works. Study alfalfa and you will learn to love it. Cover up some alfalfa stems and see them turn to roots, like raspberry briars will do. You can thus fill vacant spots in your alfalfa where reseeding will fail because of shading of old plants.

TILLERS OUT

Look at Figure 1 again and see how wonderfully alfalfa will "tiller out" if it has room to do so. Study what is said in this book about clover "humbugging" the farmer by its "lying down habits" to cover up the naked rings around the plants, while alfalfa stands upright and shows those bare spots, just like corn does. Remember about "spilling wheat when you are filling up the grain drill?" Doesn't the wheat come up "nice and thick" in these spots? Doesn't it soon turn yellow and die? Why doesn't it live and

mature grain like you expect alfalfa to do when you sow it as thick as the hairs on your upper lip? Sow alfalfa as thin as you would sow turnips. Cut only when new sprouts start, unless alfalfa *turns yellow*. If it turns yellow cut immediately and cultivate if possible. Cultivate, yellow or no yellow, if you have time to do so. It pays big to cultivate alfalfa after it is one year old, at least.

SOME EXCUSES BUT NOT REASONS

Some farmers say they don't have land enough to raise alfalfa. This is a very thin excuse, and the very reason they ought to raise it and make three acres out of one. Alfalfa often will bring \$100 per acre, in the rough. What other crop will do it, with as little work? When I tell them this they point out some fellow that has failed with this crop. One man said his neighbor "had a border around his alfalfa field that had nothing on it." I think he should have said: "Nothing but grasshoppers." One city man who owns a farm said: "I would give almost anything for a fine field of alfalfa." I asked him why he did not sow it some still frosty morning and he said that several of his neighbors had tried alfalfa and failed. "Nelse K.," he said, "tried it several times and he never had a stand worth a fiddle." One alfalfa failure, I am sorry to say, is more potent than a dozen successes. When I ask these fellows why they don't pattern after some one who succeeds with alfalfa, they say: "There is something different in your field from ours." "Yes," I tell them, "a different man, that's all." If I should set my mowing machine high and cut the weeds off at random, like they do, or if I plowed my alfalfa up because it was weedy or turned yellow (from too thick seeding), I would not raise alfalfa either. Some say "Alfalfa froze out in the winter of 1915-'16." So did red clover, *but they still raise it*.

Don't Criticise the Creator

There is another thing that I don't do, that many farmers do. I don't try to change the nature of the alfalfa plant. I don't insinuate that the Almighty didn't know what he was doing when he made alfalfa to stand upright instead of sprawling out on the ground like clover does, but the farmer (as Barnum used to say) likes to be "humbugged." He thinks clover, is thick because it looks so, but it isn't. I would as soon have alfalfa stand upright and open up, like umbrellas, or be like inverted cones, and fill the air spaces above, letting the naked rings of surface around the base of plants, be naked, and get two tons of hay per acre, or more (sometimes) at one cutting, and continue these cuttings all summer and fall; I say I would as soon do this as to see the spaces covered on the ground around the sprawling clover plants that make but one crop of hay, and a short seed crop for one year, and then die; while alfalfa will go right on, making four crops a year for almost a lifetime. Coburn says: "Alfalfa has been known to live for over two hundred years," (but I have not tried it that long).

Thick or Thin Stands

Clover grows no thicker than alfalfa, but it looks thicker, and it seems to make but little difference to the farmer, so long as it looks "good and thick." He sows three or four times too much clover seed, too, as well as alfalfa seed, and he gets the worst kind of weeds, because superfluous alfalfa plants or too many clover plants are nothing but the worst of weeds, and

are harder to get rid of than cockle burrs, dock, jimson, rag weeds, horse weeds, morning glories, artichokes, wild lettuce, smart weeds, or almost anything else, except Canada thistles and buck horn. You can kill all of these but the last two with the mowing machine, without injuring your alfalfa, but you can not kill the "too numerous" alfalfa or clover plants and leave what you want. These superfluous plants put up a stiff fight, as they "think" they have as good a right to live as the others; they require the same kind of plant food, and are affected by the same conditions that the others are, while to kill the common weeds, all you have to do is to mow them close to the ground, just as the new alfalfa sprouts, or "new lungs" are ready to burst into foliage, to keep the weeds killed. Most farmers get around this trouble by simply plowing (not cultivating) up their weedy, or yellow alfalfa, saying, "My land is not adapted to alfalfa." The clover plant also kills off its useless, encroaching neighbor, but it does it "under cover." It humbugs the farmer by sprawling out upon the ground, so that part of its branches are left after mowing, to still humbug him, while the alfalfa plant that has tillered out, making two hundred to four hundred stems, and has, of course, killed several weaker and useless plants around it, is condemned by the farmer because it stands upright, allowing him to cut all its branches, thus furnishing more hay than the clover does. This farmer reminds me of the horse buyer when I told him I had a good horse to sell, who said: "I don't want to buy a good horse. I want to buy one that looks good."



Fig. 5—Cutting Third Crop, Second Year, 1916. (See Fig. 4.)

No "Nurse Crops," So-Called, for Alfalfa

There are no nurse crops; they are robber crops. Once I sent an article to a leading live stock journal under the heading "*Weeds as a Nurse Crop for Alfalfa.*" In that article I stated I would rather have weeds than barley, rye, oats or wheat, for a nurse crop for alfalfa, because I didn't hesitate to cut weeds at any time to suit the welfare of the alfalfa plant, but if I had a grain crop, I might wait too long in order to secure the grain, and I might cut it at the wrong time. I told of waiting once, on a piece of April, 1915, "sun-cracked" seeding until the weeds were four and a half feet high in order

to find the new lungs, or new sprouts, one inch long, on the alfalfa, before cutting. In fact, the weeds were from four and a half to six feet high, but I said four and a half, as I wanted to be believed. Soon after this article appeared in print I received a letter from the editor containing another letter from a lawyer. The editor asked if I could do anything for this man, and he added: "I was away from the office when your article was printed." I replied, "That is a pity, but when the cat is away the mice will play." This lawyer's letter eulogized the journal for doing so much good in the world, but said: "It is a shame to publish such articles as one J. N. Shirley of Marion County, Indiana, had in your paper a short time ago." He went on to say, "The idea of cutting weeds, four and a half feet high, when one might be cutting spring barley for hay." He said, "I don't believe Shirley's statements. His letter is windy, from beginning to end. I think I know something about farming. I own four hundred and fifty acres of good land; am only forty-five years old, and never heired a dollar in my life." I replied, "I will make affidavit to any statement made in the article, and I give you, herewith, the names and postoffice address of some of the men that helped me put up the hay." I also said, "I will not call this man 'windy,' as he does me, for I see from his letterhead he is an attorney at law, at Vincennes, Ind., not far from Terre Haute." The other day I received a letter from a dairyman and farmer, near Chicago, who paid me a visit two years ago, and looked over my alfalfa fields until he said he "was tired of seeing alfalfa." He asked many questions, and I met him again at the International Live Stock Show, in 1917, and he asked me what about his sowing some weedy corn stubble ground to alfalfa. I told him to sow it in February or March, on "honey-combed" ground. He asked would it not be better to plow the weeds under? I said no. The weed seeds will be there anyway, and the crop of weeds turned under would prevent a "solid seed bed" from being secured. Well, he has recently written me for prices on a car of alfalfa. In reply to my letter he thanked me for sending him a paper containing a marked alfalfa article and he said: "You certainly make me 'sit up and take notice,' but I can't help thinking your land is better adapted to alfalfa than ours." This is a rather thin excuse, I think, for a dairy man not raising alfalfa, for alfalfa will grow to some extent, at least, on any land that has air over it and water under it, and this includes his farm, I know, for I have been there.

Alfalfa on Worn-Out Clay Land

About fourteen years ago I sowed alfalfa on an old worn-out clay farm that I bought and I was told that this particular fifteen-acre field had been in corn five years in succession. I lived on this farm four years and when I sold it I had thirty acres of alfalfa there. I had in the meantime persuaded a big dairyman, whose farm adjoined mine, on three sides, to sow a small piece of alfalfa on his rich land, but he soon decided "the weeds had taken it, and he plowed it up." Several winters later I was visiting at this man's son's, who had succeeded him in the dairy business, on part of this large farm, and I said: "Mr. Jessup, do you know what I would do with this four acres of tomato ground if I had it?" "Put it in alfalfa, of course," he replied. And he said: "I am going to sow that little field to alfalfa this winter, just because you say so." The next fall I saw one of his boys in the city and asked him about the alfalfa and he replied: "We plowed it up. It was all weeds!" His father said to me later: "It would have been

alright if we had had sense enough to let it alone," for, said he, "there is a fringe of alfalfa around that field yet where we didn't plow it up." This man was then paying \$60 a ton for what he called "June Pasture," or "Sucrene," and he hauls it fourteen or fifteen miles, when he can raise better feed on his own farm for \$10 a ton, if he only thought so, and would let the weeds alone till the harvest."

Alfalfa and Blue Grass

I have frequently turned under the finest blue grass sod, sowed it to alfalfa and had the best pasture on earth, and the most of it, for soon after the alfalfa gets a good start, the blue grass comes up, and you have both, on the same ground, at the same time. The alfalfa is fine during summer drouths, when blue grass is dead, but the mowing, at budding time, must be done, pasture or no pasture, of course; as the new shoots must have all the root nourishment by being relieved of the old growth that produces seed, to still further exhaust the plant, not cut off, close to the ground, at the right time. Some say, "Don't pasture alfalfa at all," and I would not do it if I did not mow it every time the new growth starts, whether I take it up for hay or not. I have pastured alfalfa until snow comes (as late as December 9th), but I turned off at night, putting the stock back after frost had gone off the next morning so the crowns of plants would not be injured by trampling, while frosted or frozen. On the 10th of May, 1904, I sowed eight acres of alfalfa on inverted blue grass sod, where I had planted corn, intending to harrow the corn a few times and plow it once or twice and sow alfalfa just before the last shallow plowing. I did not want to cultivate much and thus injure the blue grass, for I wanted blue grass and alfalfa, mixed, for pasture, instead of all blue grass in this fine sixteen-acre blue grass pasture. I did not expect much from the corn. On May 10th I found that this corn had been ruined by the cut worms. I, at once, sowed the alfalfa seed and harrowed it in. On the 14th of July the alfalfa was knee high and blooming out on this eight acres of all clay land (except a black soil spot, of about one-fourth acre, on which the fox tail was bad, and the alfalfa was only two inches high). The scattering corn stalks (about one-fifth of a stand) were immense, of dark green foliage, and looked like they would yield well, in spite of the lack of cultivation. On this account I hesitated to mow the alfalfa for hay. I had noticed that stock would quit eating corn to eat alfalfa, and I supposed they would not molest the standing corn, so I turned eight calves and fifty shoats into this eight acres. I was right, but the alfalfa kept ahead of the fifty hogs and eight calves and tried to produce seed, which I thought would exhaust the plants. I went to a neighbor's and got a hundred and seventy-five sheep and turned them in, taking the eight calves off, but I put ten old sows into the field in their stead. Well, in two weeks the alfalfa was only one-half knee high, and the corn about the same! I turned all stock off and cut the alfalfa and corn stubs, close to the ground, leaving the cuttings on the ground. In one week the alfalfa had started up again, and I put the eight calves and sixty hogs back into the field, but the alfalfa got ahead of them again, so I turned in eighteen big Hereford cows and one Jersey cow, taking the eight calves off, as I did not let them run with their dams. The nineteen cows and sixty hogs did fine on this alfalfa, without any grain, until Tuesday before Thanksgiving, when I turned off for the winter, and the next April I never saw a nicer "field of green" than this eight acres was. Of course, the stock, the hogs especially, would have relished just a little corn with this alfalfa, the same as we like meat or butter

with our bread, and they ran across the other half of this sixteen acres of close grazed blue grass, but they "paid most of their respects" to the alfalfa after July 14th, I assure you, and all told, there were 262 head of stock on that eight acre of alfalfa "*the first year.*" That same winter I sold this farm and the new owner killed the alfalfa by pasturing it, winter and summer. He said "Corn is King" and he plowed up thirty acres of alfalfa meadow and planted corn. (Part of this thirty acres of alfalfa may be seen in shocks south of the Hereford cows (Figure 12). He says he raised about ninety bushels of corn per acre on that field three years in succession. He soon got rid of all the fifty-eight acres of alfalfa on that farm, and I suppose, should he sow alfalfa now on that place he would "plow it up, because it got weedy, or turned yellow," from too thick seeding, and would say, "My land is not adapted to alfalfa," but he raises corn, corn, corn, oats and corn! Of course the land is not rich now like it was then.



Fig. 11--Eight Hereford Calves Mentioned in This Book and raised on "Alfalfa White Face Farm", Lebanon, Ind.

DON'T BE DISCOURAGED ABOUT WEEDS IN ALFALFA.

Five years ago a cousin of mine sowed two acres of alfalfa and abandoned it. By paying for the seed used (which was furnished by the owner of land) I got possession of the two acres of "cockle-burs." By cutting at the right time and removing about a carload of burs, I had the hottest fire I ever saw and soon had a clean crop of alfalfa and I continued to mow it four times a year until my five-year lease expired on forty acres adjoining it, where I had had alfalfa for two years, before I induced him to raise "his burs."

GRIMM ALFALFA.

As before stated I prefer the common tap root alfalfa that goes down deep after leached and lost fertility and brings it back to the surface, thus enriching the soil, but some think the "Grimm" alfalfa will withstand freezing and thawing better than the tap root variety. I have never had the common kind to winter kill but once, and that was only in patches, in the extreme winter of 1915 and 1916, when intense cold suddenly followed very wet weather and the mud froze so quickly around the crowns of alfalfa that deeper

freezing jerked the roots in two, twenty inches under ground, before they had time to stretch, or the soil could be heaved up around the alfalfa plants, as is usually done in the winter. I had some Grimm alfalfa in the same field, or, at least, I suppose it was Grimm (from the "Octopus" like roots that the plants had), but these supposed Grimm plants which were mixed through these patches, were winter killed, just the same. I imagine that the Grimm alfalfa, being a surface feeder, will exhaust the soil sooner than the tap root variety. I know several farmers who had this same experience in 1915-16, and they now refuse to raise alfalfa on that account; yet, they see this matter illustrated every day, when the store keeper snaps his wrapping twine by a quick jerk, while a steady pull would cut his finger and only stretch the string. They should remember that this sudden change from mud to a hard frozen grip around the crown of the alfalfa plant enabled Jack Frost (who raises a building) to LIFT UP ON THIS FROZEN ball, until he snapped the roots in two, twenty inches under ground, in a hurry, rather than wait to stretch them, or pull them from a depth of ten to twelve feet. These same farmers have had several failures before and since, with little red clover, but still they raise it just the same (or sow it at least) and say, "My alfalfa froze out in winter of 1915 and '16, and I'm afraid to try it again." They sow clover in wheat or oats and let the drouth kill it at harvest if the "nurse crop" doesn't kill it sooner.



Fig. 34. ROOT OF ALFALFA PLANT. This is an alfalfa root from Allcgan County, Michigan. It measured over 17 feet long, and the end where it was broken off was as large around as one's little finger. Think of the humus added to the soil by the decay of a root like this.

Alfalfa also makes at least 72 inches of top growth per year.

Some don't sow alfalfa because it is harder to sell in the city market than timothy is. There is a certain, sure remedy for this, and that is to raise *no timothy*. If no timothy were put on the market, most of these fellows will buy alfalfa; and they will quit saying as they do now: "Why I never fed any alfalfa, and I know nothing about it." I tell them they have never died, either, but that is no reason why they never will die. Why should the farmer raise timothy to sell to such fellows, incurring great loss of fertility, simply because a city horse owner "knows nothing about alfalfa," and doesn't want to learn? Uncle Sam says: "Instances are on record where horses have done heavy work year in and year out, fed on alfalfa alone, without any grain whatever." And he also says, "Alfalfa hay, in feeding value, is worth \$10.76 a ton more than timothy." I have read somewhere, "If everything but alfalfa was wiped off the face of the earth, the human race could exist," and some one has said, "The Almighty may be able to make a better plant than alfalfa, but he never has." "Cookies" are made of alfalfa and eighty-seven kinds of candies are made of it, while men smoke it and chew it, and "girls

eat alfalfa to make them pretty (but some don't need it, you know)." I believe in feeding a little corn to balance the alfalfa, and I believe in raising that corn on *alfalfa sod*. Try it for 100 bushels per acre.

Let us raise alfalfa and live stock to feed the old hungry earth, so we can feed the hungry millions that we hope in the future will do as they would like to be done by, individually and nationally. This will "do away with war, forever." We will certainly then need alfalfa to support the teeming millions, and for this our acres must be made more fertile, for they are not likely to increase in number, as population increases, and is not held in check by old Mars, or the Kaiser. Let us fertilize the earth with alfalfa that inhales the nitrogen of the air and pumps up fertility from down towards China. Coburn says: "In a certain porous soil in Arizona (I believe it is) alfalfa roots were found 129 feet deep. They were mining that deep under an alfalfa field (he says) and the roots of alfalfa were sticking down through the roof of the mine." The word "alfalfa" means, in Arabic, "the best fodder," and the Arabs have the finest horses in the world. Don't think alfalfa is a slow growing weakling. I have cut alfalfa for hay in just sixty days from May seeding and I always cut it three times the first year. I have sown alfalfa in January, before zero weather, and it grew waist high the first season. Fig. 32. The large plant is of this seeding.

Note:—August 9, 1919—I have now cut my last March seeded alfalfa twice, June 18 and July 23, respectively. I have also cultivated it both ways severely with my Massey cultivator and this did not plow it out. It was knee high at the first cutting, but only six inches high at the second cutting, on account of severe drouth and a disease called "yellows."

As to alfalfa being a "delicate plant," I think not. It is small at first, of course, but I never knew anything that was full grown at birth, did you? Give alfalfa room, inoculation, lime and a little time, and don't cut its head off, and its lungs out, and it will take care of itself, yourself, your land, your live stock and the mortgage on your farm.

Thin Alfalfa Makes the Most Hay

A few years ago a neighbor wanted to rent ten acres of my alfalfa to put in corn, as he said: "The alfalfa is too thin to amount to anything." I told him that the thinnest alfalfa always makes the most hay. "Well," said he, "that piece ought to make a lot of hay, then," and it did, and it still makes fine crops of hay.

In 1917 a man said to me: "You have just about a fourth of a stand on that 16-acre alfalfa field," but the same year he paid me \$12.50 an acre for one crop, standing in that same field. It made about two tons per acre of fine hay at this (the third) cutting. After this it seemed strange to me that this same man would reseed with oats and alfalfa about thirty acres of alfalfa that I had sown five years before, on his farm, which I had leased for that long a time, and the lease had expired. This man used a three-horse cultivator in this already too thick alfalfa, followed it up with a two-horse grain drill, seeding oats, and this was followed closely by a two-horse alfalfa seeder, putting some 8 or 10 pounds of alfalfa seed per acre in this field, that had often made for me two tons or more of alfalfa hay per acre, at one cutting! I told him the old plants would kill out his new seeding, but he said he "wanted a *stand*." You can imagine the results—lost seed and lost work, of course; as all the young alfalfa plants were shaded and killed by the old. When I bunch (or shock) alfalfa, I try to keep the top, or

bleached, side out, to retain the green color of hay under it. I lift the forkfuls, placing one layer on top of another, without turning it over.

Hoping this little book will brighten up the life of some discouraged, poor farmer, by greening up his bare, impoverished fields, and changing him from a grain seller to a livestock raiser, and trusting that some rich farmer who has no faith in this "Jack Frost" or "sun-cracked" method, will at least "try a patch this way," and follow directions, I await the consequences, and will say good bye for the "circus," offering to answer each alfalfa question for one dime, and return postage; but will suggest that you try thinking the matter out for yourself and keep the dime. Sow more acres of alfalfa with less seed and with 95 per cent. less work. "Let the weeds alone until the harvest," mow closely and be successful with alfalfa. Sow a field every year or two. Plow some for corn in four or five years, if bluegrass creeps in, and raise 100 bushels of corn per acre.

N. B.—Never cut a healthy alfalfa crop until "new lungs" are started; then cut close and end your weed troubles; but should alfalfa *turn yellow from any cause* cut it at once, lungs or no lungs. I never have alfalfa bloat, but I never turn "*hungry*" stock onto alfalfa. I turn on at night when they have full stomachs and they don't eat too much alfalfa. Should I take stock off alfalfa, for any cause, I fill them up again with blue grass, dry hay or something before turning on again, and I never have had a case of bloat on alfalfa; but I have had to "stick" cattle bloated on red clover to save their lives. Through with the circus? Then come into the "Side Show." It's fine.

ADDENDUM OR "SIDE SHOW," ETC.

It was intended to make this treatise brief and to the point so it would be read, but I often get letters like this:

"Mr. J. N. Shirley,
Dear Sir:—

I see in the farm papers that you say you sow alfalfa in corn stubbles, oats stubbles, potato or tomato ground, etc., in winter. Will you please tell me how you prepare the ground? Do you plow or disc it?"

Such letters show that I am not understood sometimes, and I fear farmers sometimes read without digesting what they read. "As a man thinketh, so is he," and I hope the farmers will *read* and *think out* the details that are "too numerous" to put into print. The writer can only give the "skeleton" for the thoughtful reader to develop or "feed out." Right here I wish to have you look at No. 6, showing alfalfa seeding on Washington's birthday. This ought to make it plain, when I state that "I let the 'corn stubs' stand until I mow them with the first crop of hay." To meet many such queries as this I have concluded to add some old articles of mine that have been "accumulating" for some time; and if you find repetitions don't be alarmed, for, I assure you, they are unintentional (or otherwise). Will also, for variety, give a few comments, both friendly and otherwise, so bear with me, or not read them at all, but first take a little rest and a look at a young Hereford cowboy (Figure 23), on "Alfalfa White Face Farm," Boone County, Indiana, where I raised my first fifty-eight acres of alfalfa! The "Cowboy," our son, is Master Maurice Barnes Shirley on his fine Shetland pony, which he soon outgrew, as you will see later on in Figure 16. You might be interested also by taking a peep at some buildings and live stock on "Crystal Spring Alfalfa Farm," in Monroe County, Indiana, in which this boy has an interest and where they claim "alfalfa won't grow." See Figures 22 and 24.



Fig. 23—Hereford "Cowboy," on Alfalfa White Face Farm, owned by J. N. Shirley, in 1904.

ALFALFA AS EASILY RAISED AS DANDELIONS

Did you ever know a dandelion crop to fail? I never did. It did not fail this spring, even when we had very little snow last winter to protect the tiny dandelion seeds that nature sows just like she does morning glories, wild lettuce, thistles, rag weeds, bluegrass, buck horn, jimson, cockle burrs, Spanish needles, mustard, and a great deal of other "so forth," all of which never fail to produce satisfactory crops to the farmer who is "afraid" to trust Dame Nature to sow alfalfa for him, yet he does entrust her with \$30-a-bushel cloverseed, while alfalfa that costs now only about half that much is held back from February seeding until two or three months' work is done trying to undo what nature has done all winter in making a seed bed for alfalfa.

If tiny seeds like the above, and even tobacco seeds and Alsike clover seeds and timothy seeds will grow a la Jack Frost, why not alfalfa too? If any advocate of the regulation or the "according to Hoyle" method will tell me *why*, I will be grateful to him indeed. I have alfalfa (at this writing, May 21, 1919) six to eight inches high that was sown in March last, and the plants have roots anchored that deep in solid ground, and these roots don't run "afoul" of air holes, or piles of corn stalks, or other rubbish "turned under" by plowing the ground. I know man is prone to plow, whether there is any sense in it or not. What is the need of all this "turning under" and then the resulting harrowing, dragging and rolling to pulverize and pack the soil again to make it solid like it was before it was plowed? They say "turn under" the weeds, rubbish, etc., to rot. Won't they rot on top of the ground? Are they not useful as a mulch and manure on top of the ground? Why not let them leach down to the roots instead of leaching down from the roots? I often use a disc or a "Massey-Harris" to break ground for corn. Mr. E. P. McCaslin, of Irvington, Indianapolis, has a plow especially made to break sod ground, only about one and a half inches deep for corn, and he cultivates all his crops only about one-half inch deep, and raises *good crops*, too. I know this, for I have seen them, and I have seen fine corn grown by this man without any cultivation at all. He simply had some old carpet pegged down to the ground around the roots of cornstalks that had well developed ears of corn on them. I talked with one of this man's neighbors not long ago, on a street car, and I asked him what he thought of Mr. McCaslin's methods. His reply was: "He didn't beat me very much last year." If he only equalled him in yield he certainly beat him, for he did much less hard labor than this neighbor did to produce equal results. I will admit that this man got more good exercise than Mr. McCaslin did, and exercise is worth something, of course; and it is in good demand in the regulation-cultivation-all-summer-sow-it-just-

before-a-drought-comes plan, in preparing a seed bed for alfalfa. If you write Mr. McCaslin don't forget to enclose a few "extra stamps" to pay for reply, and he will help you.

I know, also, that my alfalfa, at this writing, has a splendid chance to withstand summer's drought and winter's blasts better than what you are going to sow in July or August, after doing ten or twelve weeks hard work that I don't do (I being so situated that I can do without the exercise). "It makes me tired" to hear men say every day that their "land is not adapted to alfalfa." They talk as if their land had no water under it nor air above it. I think they surely are mistaken, and air and water and "solid" earth are all that are needed to raise some alfalfa at least. All three of these requirements are at hand in the winter time, and fewer weeds are grown, too, in the winter than in the summer.

But what is the use to write all this? It has little or no effect. Man wants to

"Plow deep while sluggards sleep
And have corn to sell and corn to keep."

But he don't have it by a long shot by this method. He sometimes has it *in spite of* this method. Did you ever examine the roots of a two-inch high potato plant? If you did it carefully you found thread-like roots (on this two-inch plant) at least four inches long and only about one-half inch under the surface of the ground. Why plow or hoe deep and cut the roots off "to loosen up the ground to let the roots through?" Can the roots "go through" when you keep them cut off each week? They don't grow through the loose ground, anyway. They must cling to and penetrate the *solid* ground, much like the climbing vine clings to the solid wall. Mr. McCaslin's "scraping" of the soil kills the weeds, conserves the moisture, doesn't disturb the plant roots, produces equally as good, and often better results than his neighbors' deep methods, and the only loss that I see that he suffers is the lack of exercise that the deep cultivator gets. No plant or tree will grow until the earth is well settled on its roots. Why disturb these roots or cut them off?



Fig. 29.—Mr. McCaslin and his attachment for Wheel Hoe-Shallow Cultivator.



Fig. 30.—Cultivating March, 1919, Seeded Alfalfa in July, 1919.

THIN ALFALFA.

I have stated before in this book that Uncle Sam says: "Counts in old alfalfa fields show stands of from one to six plants to the square foot, with equal yields from all." He also says: "Twenty pounds of alfalfa seed per



Fig. 3—Cutting fourth crop alfalfa on Nov. 6, 1917.
Seeding done in March, 1913.



Fig. 9—Last three of ten Alfalfa Ricks, season of 1918.



Fig. 17—Cutting first crop, Alfalfa and weeds
(mostly weeds), summer of 1918.
Seeding done in February 1918



Fig. 18—Cutting second crop Alfalfa, same as
Fig. 17, free from weeds, summer of
1918.

acre puts one hundred seeds to the square foot," and he recommends that twenty pounds of alfalfa be sown per acre, but he doesn't tell why. I "differ with Uncle Sam." I sow about four pounds of alfalfa seed per acre. I differ with Mr. "Hoyle," too. I don't do special cultivation for alfalfa and lose one year's use of land. I do my work the year before, in some other crop, and then let Jack Frost finish the seed bed and cover the seeds. I cut three crops the first year, but, of course, I lose the "exercise" of preparing the seed bed for alfalfa that the "other fellow" gets and is welcome to.

Recently I received a letter from Mr. Ward O. Ostrander, of Purdue University, which I will reproduce here. I am glad to get this letter and I have promised Mr. Ostrander all the "alfalfa sod" he needs. In his reply he says he means to see me soon and he "intends to use me." All right. (I like "to be useful as well as ornamental.") Many years ago I furnished Professor Wiancko an alfalfa plant to exhibit at Indiana State Fair, but he hesitated to use it as he said "Farmers would not sow alfalfa because they could not plow up such alfalfa roots." Professor Van Dorman told him to use the plant, for farmers wanted to know whether it was a *bad* thing or a *good* thing to have. I dug that plant out of blue grass sod and left blue grass in the crown of it. It was the largest plant exhibited at this fair.

MR. OSTRANDER'S LETTER

Purdue University, Lafayette, Ind., May 16, 1919.

Mr. J. N. Shirley,
116 South Emerson Ave.,
Indianapolis, Ind.

Dear Mr. Shirley:—

We would like to be able to obtain some alfalfa sod for our exhibit this fall at the State Fair. Professor Wiancko recommended my writing to you regarding it as he said you knew more about alfalfa in that section than anybody else. I have had it on my mind to try to get to see you for the last three months some time when I have been in Indianapolis, but so far have not been able to do so. I shall appreciate your opinion regarding the above.

Hoping to see you before a great while, I am

Very truly yours,

WARD O. OSTRANDER,
Associate in Soils and Crops Extension.

Replying to this letter I said: "I thank Professor Wiancko for the 'compliment,' but I fear it doesn't amount to much, as about all 'people seem to know' about alfalfa in this section is that *it is too thin*, no matter if it makes five or six tons of \$30 hay a year, per acre, '*it is too thin.*'" What's the difference, how thin it is if it yields that way?

A FEW THINGS OF VITAL IMPORTANCE

"Solid Seed Bed"

It is an universally conceded point that a solid seed bed is essential for alfalfa. I claim we have it in corn stubble, oats stubble, potato or tomato ground, bean ground, etc. In fact, we have it in any ground that was cultivated shallowly the preceding year and then worked on diligently by Jack Frost through the winter. He even continues the preparation of this seed

bed after the seed is sown, and we often hear this remark: "Nature prepares her seed bed by alternate freezing and thawing." Some think corn ground should be leveled before sowing alfalfa. This can be done by cultivating after the alfalfa is one year old, when level shallow cultivation was not practiced in the previous crops, or by disking in the fall.

In this book I am *showing* several crops sown on this natural seed bed, in different locations, and at different times, from January to April. In the latter month the seeding was done on sun-cracked or wind-"checked" ground, of course, but with splendid results, both with weeds and alfalfa. (See Figures 2, 3, 4, 5 and 6.)

Plowing makes "air pockets" in the seed bed and it is almost impossible to destroy all these "pockets," and the tap root of alfalfa strikes an air pocket with the same effect as a nail strikes an auger hole.



Fig. 1—A "Youthful" Alfalfa plant of some twelve or fifteen years.

Is it any wonder that alfalfa plants have to fight for room to exist, if a youngster like this produces stems enough to whisker a Bolsheviki? Doesn't it seem that a lot of alfalfa seed is wasted in putting 100 seeds to the square foot by using 20 pounds of seeds to the acre? Isn't it better to have fewer and more vigorous plants at less cost than to have this alfalfa suicide?

Thick Alfalfa

It is claimed that we should have thick alfalfa. I agree to this, but it must be thick at the top of the plants from tillering rather than *at the ground* from thick seeding. For several years I have claimed one good plant to the square foot of surface is about right, and will make more hay than forty plants to the square foot will make. Please look at Figure No. 1 showing a "youthful" alfalfa plant, of some fifteen or twenty years, perhaps, and still "tillering" despite the fact that it contained about four hundred stems from the one seed. What would it be at "middle age," say ninety-five or one hundred years? (Coburn says: "Alfalfa has been known to live over two hundred years from one seeding," but I never knew it to live that long; yet I do not doubt it.) Compare Figure No. 1 with No. 14 and see how the "youth" has grown from a two months old "baby" plant.

Some say "sow alfalfa thick to have fine stemmed hay." Can't we get fine stems by this "tillering" process? Uncle Sam, as before stated in the Circus, says: "Counts in old alfalfa fields show stands of from one to six plants to

the square foot, with equal yields from all." If one plant to six plants, per square foot, yields as much as more plants, or if not more than six plants will grow on a square foot, what is the use to sow twenty pounds of seed per acre, putting (according to this same Uncle Sam) one hundred seeds to the square foot? Alfalfa should be very little thicker than drilled corn, and if it should have the cultivation that corn demands, I suppose alfalfa would require more room than corn does. Last year I sowed less than four pounds of alfalfa seed per acre in February and March, and got a splendid stand of healthy, vigorous plants, and they remain vigorous, where I sowed with corn stubbles only for a "nurse crop." Next to corn stubbles or tomato vines, I prefer "weeds as a nurse crop for alfalfa," and I would rather sow alfalfa thin and let it *tiller* out than sow it thick and have it "peter out." Thick seeding is a waste of seed in any crop, and especially so with alfalfa or clover. There must be breathing places for everything. Even in cities, parks are needed for this breathing, and the farmer needs air in his alfalfa field as well as in his house—not all "hot air," either.



Fig. 6—Seeding Alfalfa on Washington's Birthday, with a
"Two-Fan Seeder"

Early Seeding

"The early bird gets the worm," and the early sown alfalfa gets the rain and gentle sunshine to give it a good send-off before the hot droughts of summer, and winter sown alfalfa is "scarified" by frost and thawing, and it has a good root growth to withstand the rigors of the first winter, while your August or September seeded alfalfa is often spewed out of the ground by the same Jack Frost that would be cultivating one year old alfalfa plants that he would have been the "foster father" of had the farmer simply broadcasted the seeds on his "honey-combed" work the winter before. Now look at Figure No. 6, "Seeding Alfalfa on Washington's Birthday," and compare expenses and results with the costly work of a two-horse alfalfa drill used on a more costly prepared seedbed. Which method appeals to you for speed, ease of operation and utilization of early rainfall and gentle sunshine?

Inoculation is easy. Just throw inoculated dirt up in the air, somewhat like a mad bull does, and let it blow over the field. I wait till alfalfa is six or eight inches high and shades the ground some before I scatter the soil that I get from an old alfalfa field.

High Clipping—Never do it unless you kill weeds in your cornfield or garden that same way. High clipping only makes the weeds branch out more and cuts the lungs off your slender alfalfa plants.

Close Cutting of Alfalfa and Weeds—This is always in order when the new “lungs” or new sprouts at base (for the next crop), are about one inch long and ready to burst into foliage, to give breath of life to your alfalfa, and to occupy the ground before other weed seeds can germinate to take the place of the weeds you killed by the close cutting under the branches and buds of weeds, instead of “clipping high” and making the weeds thicker. The “high clipping” beheads the young alfalfa stems, causing them to die down to the ground among the thickened weeds, and unless the new “lungs” or new sprouts are in evidence, you have the sad spectacle of alfalfa with its “lungs cut out” and further smothered by the thickened, bunchy weeds! No wonder high-clipped alfalfa dies! Try it as I have done (to my sorrow), if you don’t believe this. Suppose you had a weedy bed of slender cabbage plants. Would you clip the tops of your cabbage plants to kill the weeds and to make your plants stocky?

Opposition to Alfalfa

It seems strange that so many are indifferent or are really hostile to alfalfa and to nature’s methods of seeding it. But such is always the case with any good thing. The old lady stood around, you know, and said they would never start the first steam car. When finally it did start, she said: “They’ll never stop it; they’ll never stop it!” Twenty years ago I wrote to Purdue University, giving my experience with alfalfa and Professor Latta answered: “The soil around LaFayette doesn’t seem to be adapted to alfalfa, etc.,” but in a few years he said: “Alfalfa has been known to go through hardpan.” A few years ago I showed Professor Latta some winter seeded alfalfa plants at the Indiana State Fair, and he said: “Wonderful,” but that was all he said.

Years ago, when I used to sow alfalfa “according to Hoyle,” I used to be, occasionally, called upon to attend Farmers’ Institutes, and at one of these, at Frankfort, Indiana, I made a statement in my embarrassing beginning, that I still stick to. I had taken a wisp of alfalfa with me, and on the table beside this were a few ears of corn. Picking up some hay and an ear of corn, I said: “Here we have the *greatest feed combination known*,” and I still believe it—alfalfa and a little corn. Uncle Sam says: “Alfalfa hay is worth \$10.75 a ton more than timothy hay,” and it is equal, he says, to shelled corn. You know Purdue says: “Alfalfa is equal to wheat bran, pound per pound.” The North Dakota experiment station says: “Two tons of alfalfa hay equal 110 bushels oats.” See Figures Nos. 7 and 8 for what Kansas and Illinois agricultural experiment stations think of corn and alfalfa; or, better, try it and see what one or two ears of corn and alfalfa will do for a hog or a horse.

We know alfalfa improves the soil and produces \$100 worth of crops per acre in one year, and it doesn’t have to be sown but once in a lifetime or two, if properly cared for. We know that should rain, hail, frost, hot winds, etc., destroy a crop of almost any other thing, that that thing is “done for,” for that year, at least, but alfalfa comes up, with another crop, in about thirty

days; yet farmers don't raise alfalfa except in small patches and "far between." I used to say: "In about 150 years farmers will be raising alfalfa and city horse owners will be feeding it, all right; but I am about to believe I am "too previous" in this, for history says: "When Xerxes invaded Greece, 490 years before Christ, they had alfalfa hay for their horses," and still it is not generally raised, despite the fact that we know the meaning of the word "alfalfa" in Arabic, is "best fodder," and the Arabs are known to have the best horses in the world. It seems possible that Christ may come again before alfalfa is universally used in the United States, unless fewer than 100 seeds to the square foot are sown in the meantime.

The Seed Bed—Deep Plowing

"It is natural for man to indulge in the illusions of plowing. We are apt to shut our eyes against a painful "Jack Frost" and listen to the songs of that plowing until she transforms us into fogies. Is this the part of wise men engaged in the great and arduous struggle from 'soil poverty? Forbid it—"Almighty Horse Sense." "I am willing to know the truth about alfalfa, the whole truth, and to provide for it; and to let Jack Frost do the work for me when he wants to do it." Why destroy nature's best early seed bed to make a worse one later? I have been called an "alfalfa crank," "alfalfa king," "alfalfa enthusiast," "rag-weed king," "alfalfa heretic," but yesterday I was called "the father of alfalfa." "Oh, no," I replied, "alfalfa was known over 400 years before Christ, and I am not old enough to be the father of alfalfa." I have been attacked by agricultural experiment stations and by county agents, but I don't care. I tell them "no kite can fly without an opposing wind," and, if after I am dead, it dawns upon the United States that I was of benefit as an "alfalfaist," I would rather have this to maintain my memory than have a duplicate of the Soldiers' and Sailors' Monument of our Hoosier state. I only ask that you try this method, even if you do sneer at it at first.



Fig. 15—Mr. and Mrs. J. N. Shirley, Indianapolis (Photo, 1918).

Fig. 16—Maurice B. Shirley, of Gary Schools, Gary, Ind. (1918).

But this "Side Show" is getting to be almost the "principal thing," and too much hash is accumulating, so I guess I will introduce Mrs. Shirley (with whom I am pretty well acquainted), Figure 15, and I can testify to her good cooking, although she says I often say nothing about it, yet I tell her,

"Actions speak louder than words," and she knows her cookies disappear when I am around. I must tell a good joke or two on her and our son, Maurice B. (and here he is, too), Figure 16. They made fun of me for a few years for "not eating breakfast," but finally they got at it themselves and I have often known my wife to do her washing before breakfast on Monday mornings. She does better now; she lets the laundry do it before she eats her breakfast. Mrs. Shirley is a good cheese maker, too, as well as a good cook. Once she said she had nine customers waiting for their turn to get her cottage cheese, and I told her she would have to "cheese it" or enlarge the capacity of her cheese factory. For several years she has had an easy way of churning a pound of butter from three pints of cream in five or six minutes. Also, my wife ("she") puts up our pork so it will keep a year, and it seems to taste better all the time. Sometimes she wraps it up in paper and sews it up in canvas sacks, but oftener "she" slices it and fries it, putting it in small buckets or stone jars, covering it with hot lard, etc. The day after Christmas, 1918, I got up early (or my wife "she" got me up early) in the morning. I took the street car to the Union station (five miles away), took the 6:40 steam train to the station near our Monroe County farm, 49 miles away, walked about three miles, and employed a neighbor to help me kill and dress two 200-pound "alfalfa" Duroc hogs. Wrapping them in gunny sacks, we took them to the station, and billed them out by express on the same train I came home on. I arrived at Union station at 8:45 p. m. the same day. The porkers came to our house in good shape the next morning and my wife, "she" had me slice hog 'till I got tired. Part (the hams) she smoked, sliced and put down, even without frying, and I have been wondering why farmers can not "pack pork" this way and sell it to their city friends and make money, rather than have the millionaire packers do this work for them. It seems to me this might be practiced, to some extent at least, and save "holding hogs over" at the stockyards or shipping them back and unloading them, with all the attendant loss that occurred last winter, which will not soon be forgotten. Uncle Sam is willing "to deliver the goods" over land or through the air. Why not let him do it?

This may be a little off the subject, but I am talking about alfalfa hogs (see Figure No. 21), and I refer you to cut No. 7 showing an alfalfa, hay and corn-fed hog, weighing 250 pounds, and a hog from the same litter, fed on corn *alone*, that weighed but sixty pounds.—Courtesy of Jewell Mayes, Secretary, Missouri State Board of Agriculture, Jefferson City, Mo.

If you want any "expert" information on cottage cheese, butter making or good home pork packing, "cookies," etc., send a few stamps to my wife, "she," and I think you will hear from her, but "she" doesn't know I am even writing this book, and I may "get into it." Will say that our son, Maurice B., used to be a student at Purdue and I supplied him with a little alfalfa seed to sow on "honey-combed" ground along the street "somewhere near the University buildings," but I never heard how it "came out." Later, I also asked Professor Wiancko (an old friend of mine), how *his* winter seeding of alfalfa did, and he said "it didn't come up good," or something to that effect. Too bad, but I don't understand it. Maurice B. is Director of Animal Husbandry of Emerson School, Gary, Indiana, and has charge of several hundred boys and girls, and many "other animals." Two years ago he sowed a couple of acres of alfalfa on the sandy campus of that school, and despite the ball playing, etc., I saw some good plants there in December, 1917. He has quite a flock of sheep, some Shetland ponies, etc., besides poultry and wild animals in his "zoo," and he *needs* alfalfa, as I suppose nearly every bird, quadruped or "creeping thing" in this \$1,900 collection (a pet for every boy and girl) will relish alfalfa.

Blue Grass—Last winter I plowed up some six-year-old alfalfa (on account of blue grass) and I sent Maurice B. some alfalfa plants, suggesting that he plant them in rows and have the boys and girls cultivate them for hay. (Buried alfalfa stems turn to roots and will certainly make thick stands at two feet apart each way.) The plants can be dropped in furrows and may be covered with a drag or hoe. Drop them on the sides and they will grow if covered.

I must tell another little joke or two on "my wife, she." A few years ago I broke our garden with a disc. I went to the house, got a few ears of sweet

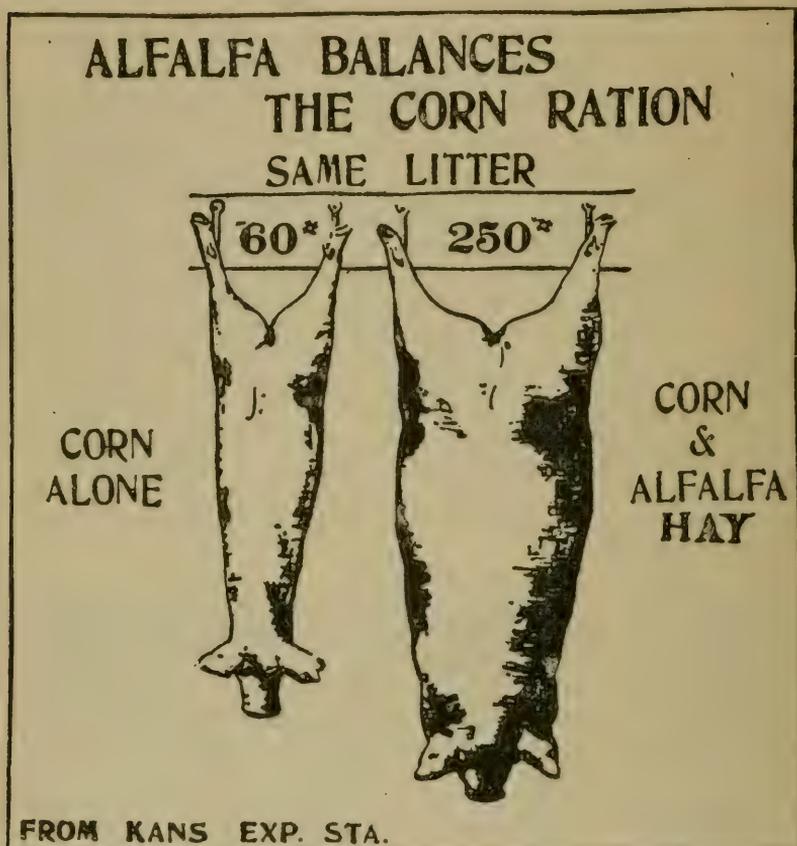


Fig. 7— Courtesy, Jewell Mayes, Secy. Mo. State Board of Agriculture, Jefferson City, Mo. Two pigs of same litter, put into separate dry lots at weaning time. One fed corn alone; one, corn and alfalfa hay.

corn, telling Mrs. S. that I meant to sow the corn and disc it in. "She" took the corn out of my hands, saying, "No, sir; you don't *sow* any corn in my garden." I went back and "monkeyed" around a little with the team, then I returned, got the corn, sowed it thinly and disced it in. My wife knew nothing about it till the corn was up nicely and then "she" said nothing about it. I cultivated it shallowly with a hoe. I could hoe one stalk easier than three or four in a hill, and we never had nicer sweet corn in our lives. My wife ("she") used to say I could talk of nothing but alfalfa or prohibition. She used also

to say, "T. B. Terry is your God." "She" used to talk about "corn and wheat." Of late she has gotten to be about as good an alfalfa "man" as I am, and she wants us to raise live stock instead of selling grain and fertility off the farm, and I think my wife ("she") is all right, and I always take her advice—if it suits me. Sometimes I would do better to take it anyhow.

"HASH DEPARTMENT"; "ODDS AND ENDS"

Slow to Learn Alfalfa.

It took me fifteen years to learn (and to practice) what I had known nearly all my life. That is, I knew, in reason, that alfalfa would grow by sowing it in early spring on unprepared ground, just like clover grows, but "Purdue" said break the ground early for alfalfa and cultivate each week, rolling, dragging, etc., to get the ground solid (again) and sow in July or August, and I thought for fifteen years it must be done that way, despite the fact I had demonstrated the contrary in my very first seeding of alfalfa about twenty-three years ago.

I sowed my first one and one-half acres of alfalfa on the richest black land on my one hundred acres of all cultivated Boone County, Indiana farm. This spot was "Elm Swamp," well drained land, and I sowed the alfalfa broadcast early in April, where wheat had winter killed, and covered the seed with a one-horse wheat drill. Just to see if alfalfa would grow upon poor land, I sprinkled some seed upon the poor white clay knolls (without covering or cultivating in any way), and it grew nicely. I do not remember whether the ground was "sun-cracked," even at the time of sowing, but the alfalfa did splendidly and I learned two things from this: That alfalfa will grow on poor land, and that it will grow without breaking the ground; but from "force of habit," I kept on sowing "according to Hoyle," until March 17, 1912, as stated elsewhere in this book. I used to send articles to a noted live stock journal, but the editor said that my way of seeding had been threshed out by the agricultural experiment stations. I tried it again, but was told: "Our readers have had your methods explained frequently, etc." Once, before this, I was called down for advocating alfalfa and blue grass on the same ground at the same time, etc. By reading Joe Wing's articles, over twenty-five years ago, in *The Gazette*, I became interested in alfalfa, and am still interested in it.

Excuse me for being personal. It is said we "should not tell tales out of school," but I am telling them *in* school, and I think I shall go on with the telling, as it is time something was said to set people to thinking. Purdue says in a recent *Clover Bulletin* that 25% to 35% of the original fertility has leached and washed away from our cultivated lands," and something ought to be done to replenish these depleted soils. Can this be done any easier or more profitably than by raising alfalfa and live stock? Purdue and the editor of the *Indiana Farmers' Guide* say: "Sow rape and oats for early hog pasture." Why break ground early and prepare it for oats and rape when much earlier and better pasture can be obtained by sowing alfalfa seed in corn stubble, oats stubble, potato or tomato ground in January, February or March, when the ground is "honey-combed" or (neglecting to do it then) the seed may be sown on sun-cracked ground in April or early May without any cultivation at all? Some say it is risky to sow it this way. How do they know; did they ever try it? Did you ever know a crop of dandelion, sweet clover, wild lettuce, or any other weed to fail, when sown that way? At this writing, April 23, 1919, it looks like we would have a full crop of dandelion this year, and I don't know

of any one who sowed it "according to Hoyle," but I saw a man a few springs ago buying some dandelion seed in an Indianapolis seed store. I suppose he had no faith in the "Jack Frost" method of seeding and "wanted to be sure of a stand."

Of course "rape and oats are intended for the fellow that doesn't have alfalfa." it is claimed, but why need there be such a fellow? To sow an acre with oats and rape seed costs more than the price of four pounds of alfalfa seed. Why not sow alfalfa and have permanent and better pasture?

I have in my possession an old letter from my friend, Mr. Biliter of the Farmers' Guide, telling of his return from a western trip several years ago, "*filled with alfalfa enthusiasm.*" He says he went to Purdue urging that alfalfa be pushed in Indiana, and was told that he would be doing an injury to the farmers of Indiana to urge them to raise alfalfa, and I believe this was about right, according to the costly "all summer cultivation methods" that were then and are still advocated by most, if not all, agricultural experiment stations of the United States, of which I have ever had any knowledge. The nearest and only exception to this statement may be found in the fore part of this book, where Mr. Jewell Mayes, Secretary Missouri State Board of Agriculture, Jefferson City, Missouri, says: "No matter if people do disagree with you, you have, beyond the shadow of a doubt, discovered one of nature's problems in the planting of alfalfa. The plants you send are undeniable proofs of this fact." Mr. Biliter continues in this letter to tell of his determination to "urge" the matter of alfalfa culture in his own paper, and he did so. I have read much of his writings and I agree with him when he claims to be one of the pioneers of alfalfa culture in Indiana, but were I not a Baptist, I would almost think that Mr. Biliter has lately fallen from Alfalfa Grace, and taken up with rape and oats.

Mr. Biliter has been promising me for years that he would visit my alfalfa fields, but he has never done so, to my knowledge. Recently a foot note at the end of an old-style alfalfa article in the Guide, said: "We know Mr. Shirley will not agree with this, but most farmers seem to use this method of raising alfalfa." The note seemed to favor the "regulation-cultivation-all-summer-sow-it-just-before-a-drought-comes-plan," and did not even suggest that the "Jack Frost" plan be tried out. (Editors and farmers must think my methods are too ridiculous to try out, or they are loath to lose the "exercise" obtained by the old method.)

Several years ago the Indiana Farmer published one of my articles, and a footnote by the editor said: "We suggest that our readers try Mr. Shirley's winter seeding on a small scale." I replied: "Sow the whole number of acres, using only one-third of the twenty pounds of seed per acre, and keep the other two-thirds to sow later if winter seeding fails." He did not publish this article.

In 1915 the second Marion County, Indiana, auto-alfalfa excursion visited my alfalfa fields. I was showing some March, 1915, seeding at the north end of a sixteen-acre field, and one of the men said: "What is this?" I replied, "Weeds." "What will you do with them?" he asked. I said: "The Bible says: 'Let them alone until the harvest,'" and he said, "Do you try to farm according to the Bible?" I replied: "Yes." Today this weedy strip is the best in the field and it has been fine all the time since the first cutting in 1915, and it was cut three times the first year. You will no doubt remember that the summer of 1915 was a very wet one, and Purdue was on the program in this auto excursion to visit my fields one day and study the "Shirley Alfalfa Method." I showed part of my later sown and thinner-seeded alfalfa, and

three or four men finally succeeded in pulling up a rather isolated alfalfa plant that had tillered out fine, and had a wonderful amount of "bacteria nodules" on its roots, and a photo was taken of it. I remarked: "Thin seedling gives plants like this." We started on to forty acres more of my alfalfa, about two miles away, but were switched off by another man who showed "his" alfalfa, twenty-eight acres of which I had sown in partnership with this "other man," who claimed that I had only leased it for one year, etc., (which was not true, of course, but he was always too busy or too "something" to write the article of agreement). He didn't tell that Shirley sowed twenty-eight acres of this alfalfa, and Shirley didn't tell it either, except privately, while waiting in an auto for Mr. "S." to show his young alfalfa, recently seeded in rye and oats, etc."

Well, we finally went on down to the "forty acres" and the professors took a ladder and climbed upon a 20-foot by 40-foot half finished rick of alfalfa, in the rain. They inspected it and said they thought it "would make *good manure*, etc." I sold this rick, later, for \$150 (about one-third of what it ought to bring), but the buyer finally said it was so black that it would give her cows the foot and mouth disease. She (for it was a woman "dairyman," with a dairy of sixty or seventy cows) said it was this black hay that gave my stock the foot and mouth disease. I told her certainly she must be mistaken, for the stock was killed by the United States government the fall before I had harvested the hay she bought. She only took and paid for a few tons of this black hay, despite the fact the cows ate it greedily, and most of this large rick *did* actually "make *good manure*." I had made the sad mistake of making the rick too wide, and as it was put up wet, it got so intensely hot that much of it inside burned into charcoal, while the outside was excellent hay and relished by horses and cattle, though it was black as tar.

The auto alfalfa party reported in the Farmers' Guide that "Shirley didn't make any new converts, but said 'S' was the man." I didn't blame them much, as far as the stacking of wet hay was concerned, but I was surprised at their approval of Mr. "S's" "oats and rye seeding alfalfa." I thought that Purdue ought to know that this would not do, but I have not replied in any way until now. I was too busy in alfalfa at the time and I thought I would await results anyway.

Mr. "S." has plowed up most of his alfalfa and reseeded it a time or two. He plowed up all of his alfalfa where he had the "oats and rye" and he pastured the twenty-eight acres that I had sown "for him?" He pastured it all winter and killed it, of course, and planted corn, followed it with wheat, rye, etc. This is the man spoken of before in this book, who, at the close of my five-year lease on his farm, sowed oats and alfalfa seed in some thirty acres of very heavy alfalfa, saying, when I told him he was wasting his time, work and seed, that he "wanted a stand," and he is the same man who said I had just about a one-fourth stand of alfalfa on a sixteen-acre field; yet he paid me \$12.50 an acre for one cutting of this field, in 1917; he doing the harvesting, and the alfalfa is over a foot high in this field today, April 23, 1919, after being cut on the 12th of November, 1918, except about six acres that, on account of blue grass, is plowed and partly prepared for corn, but this part is looking quite green from the turned-under alfalfa, growing just the same. Later, May 16, 1919, from a train window, this week, I notice that Mr. "S." has "turned under" the above mentioned "very heavy" alfalfa, but he still has a good prospect for "alfalfa hay" if he doesn't cultivate it in corn.

Black Alfalfa Hay

I must tell you why I stacked alfalfa in the rain in 1915. I did it because it rained nearly all the time, and I had to get the hay off so I could cut another crop, and I believed the hay would make "good feed," even if it was black, and I am still of that opinion, had I not made my ricks so wide that they got so extremely hot inside as to burn into "charcoal." There was no mold; the intense heat "killed the mold germ." The year before (or in 1914) I had a medium sized alfalfa rick about one-half done when a very hard rain came. I put a large canvas over the rick, but in this canvas was a hole, some twenty inches square. This hole I carefully covered with sheet iron which was blown off after we went home, and the hay was so wet I supposed it was ruined. I used this as a "foundation," however, and that hayrick smoked for several weeks, and the hay was as black as tar, but not moldy. I sold the rick to the Indianapolis Water Company for \$20 a ton, telling them there were about nine tons of hay in the rick. We delivered twelve tons and still we had a load left. I sent this load to a dairyman, who at once telephoned, asking if I had any more of that *dark* hay. I replied "No," and he said: "My cows are crazy for it." So I thought I could have some more of this black hay, that summer of 1915, but I made the ricks too large, or too wide, and had "charcoal," which, no doubt, would have been all right for my hogs, had I not been "called upon" by the foot and mouth disease and had thirty-eight head of stock slaughtered, including eight fine brood sows and an excellent cow. I told Purdue that I would much rather handle lighter, dry hay, but under the conditions, it was stack wet hay or let it lie on the ground to be raked up in the next crop (which would have been better this very wet year of 1915).

Feeds Alfalfa and No Grain

That year, 1915, I fed no grain at all to my work horses and Professor Fisher said they were "in good working condition." That was what I wanted but I think less hay fed and two or three ears of corn would be better and about as cheap, when hay is \$30 a ton. Right here I wish to say, I am confident it is poor policy to feed all the alfalfa a horse will eat. He likes it so well he will eat too much of it. Limit his hay just as you do his grain. No good horseman would give his horse all the corn he will eat; yet the manger is stuffed full of alfalfa hay, which is said to be equal to wheat bran, pound for pound, in feeding value, and one acre of alfalfa hay in digestible nutrients, according to an Illinois bulletin, far exceeds an acre of shelled corn, and is more than three times the feeding value of an acre of timothy. (See Figure No. 8.) A horse (or man) should not be gorged on anything and certainly not on anything as nutritious as alfalfa hay.

Corn is a contrast to alfalfa and no doubt the best grain to feed with it. Oats and bran are much like alfalfa and do not balance the ration. For a good sandwich we don't like a slice of bread between two other slices of bread, but we prefer a slice of meat, if you please. For a good plant to secure this meat, see Figure 7. Alfalfa balances the corn and alfalfa makes poor land produce the corn.

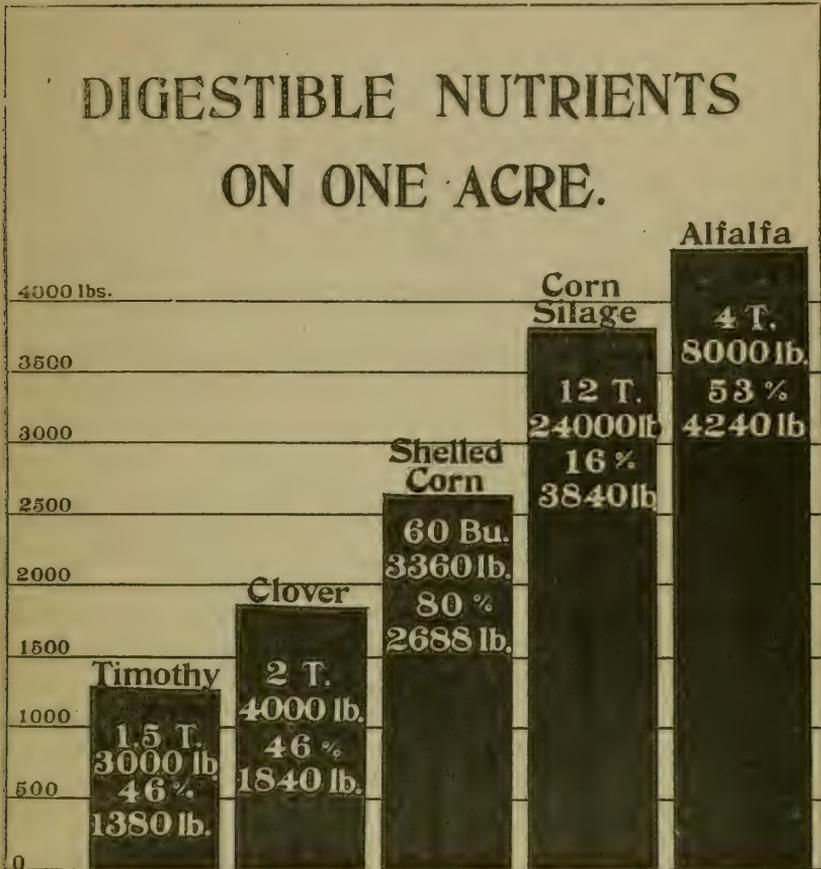


Fig. 8—Digestible Nutrients on One Acre.

—Courtesy Jewell Mayes, Secretary, Missouri State Board of Agriculture.

That "Black Hay Again"

I sent a sample of that black hay to Purdue and asked for an analysis. The reply was: "If stock relish the hay it is palatable to them, and therefore good feed, and no analysis is needed." I then took a bunch of it to Dr. H. E. Barnard, of the Pure Food Department at the Indiana State House. I introduced myself and he asked if I were "J. N. Shirley of Marion County." I said, "Yes," and he replied, "I know all about you." "Well," I said, "I never saw you before." He replied: "I read all that stuff you write." I told him I had lots of opposition. He said: "That doesn't make any difference. I, myself, have that all the time." Well, Dr. Barnard began eating my "black hay" and said: "I think it's good feed," but don't you think I had trouble to sell that "black hay," no matter how well the stock ate it? Had I owned the stock myself I would certainly have fed it to them. That is the best thing to do with alfalfa hay, and I would feed it all if I were not located in the city, where it is impossible to keep so much stock, but we have a few brood sows on the Monroe County farm, and on the 14th of April I took a snapshot at forty-five

pigs that are running on alfalfa, and whose dams had alfalfa hay to eat last winter. There is one "youngster" in the bunch that doesn't belong to me, but I wish she did. (See Figure No. 24.)

Don't understand that I advocate stacking heavy, wet alfalfa. It is cheaper to have "pea green" hay, if you have ideal weather, but I had such splendid black hay in 1914 that I meant to "turn the hose" on a rick the next year, if necessary, to try it again, but it *wasn't necessary*. Handling heavy, wet alfalfa, I imagine, is about like filling a silo with green corn. I never tried the latter, however, but alfalfa is good enough for me, and, in fact, my "black hay" was really fine silage, I believe, and I needed no silo for it, either. Silage is good feed, but expensive when compared with alfalfa, to say nothing of the different effect it has on the soil. I tried shredding corn, too, twice and swore off both times. Once I bought a silo that had some silage in it that I fed with splendid results, but I sold the silo after hauling it to my farm. I did not erect it at all. Alfalfa is good enough for me, for the land and for the stock and Jack Frost is good enough to raise it for me, so I "let good enough and cheap enough alone."

The United States Department of Agriculture in a recent valuable Farmers' Bulletin says: "While putting up the first cutting of alfalfa the corn cultivator often must stand idle in the field." What of it? Alfalfa is worth more than corn. Why not reduce the corn acreage a little or use a weeder to prevent weeds by going over a 20-acre field of corn in one day with one horse? I would rather raise 100 bushels of corn per acre, occasionally, on alfalfa sod, than 14 bushels each year, on timothy sod (especially if I had alfalfa in the meantime), constantly making my land richer instead of poorer. It seems strange that farmers dote so much on their "rotation," why not raise more live stock and let the live stock harvest the crops instead of paying high priced, inefficient labor to do it? I read recently about a man that used a scythe, and had a certain peg to hang it on each year. His son grew up "in his footsteps" and the two still used the scythe. A neighbor urged them to get a horse mowing machine, and the old farmer said "Yes, that would be all right, but the gol darn thing would ruin our routine." Let the routine go if you can raise live stock almost exclusively on alfalfa, and you can, for alfalfa is an almost balanced ration. Sell alfalfa or live stock and buy the little corn in part needed of the other fellow that hates to let his cultivator rust a little. Yours need not ever rust much if oiled and left idle in the shed, "instead of in the field." But I don't want to find fault with everybody, and no doubt many are wondering why I am not rich myself from raising so much alfalfa. One reason is that I have spent so much time *writing* and urging the farmers, not only of Indiana, but of the whole United States, to raise alfalfa; another reason is that I have hired so many men that only wanted (and got) pay for their time, while the work they did I had to undo, or do over again myself, and I have made many mistakes as well as hay stacks. Sometimes I am asked what I pay for help, and I say "whatever you are worth." Recently I heard of a man that said he would "be derved if he would work for that," and this is the case quite frequently, they get more than they earn. For ten years I have lived in the city and had to sell hay instead of feeding it, which pays better.

Mr. Drake, of the United States Department of Agriculture, Washington, D. C., paid me a short visit two or three years ago, and he saw some of my alfalfa of March seeding, but I don't know what he thinks of it. He has not, to my knowledge, at least, put himself on record like a Monroe County, Indiana, agricultural agent did, as you will soon see from the following reproduced correspondence, part of which was not published until now:

HOW TO GROW ALFALFA

(Written for the World-Courier by J. N. Shirley, of Unionville)

The cost of seeding alfalfa is estimated at \$35 per acre, but for four years I have been seeding it, successfully, for less than one-tenth of \$35 per acre! I sow less than one-third of the usual 20 to 25 pounds of seed per acre, and once I sowed less than 6 pounds per acre, getting a good stand.

I don't prepare the seed bed by "plowing early and cultivating every week or ten days for a month or two," as recommended, under the false idea of killing all weeds, conserving moisture, etc. I sow on "honey-combed" corn stubble, oats stubble, potato or tomato ground with no cultivation, except what Jack Frost does, free of charge. I have sown it in January (before zero weather), but I prefer February or March to get best "honey-combed" condition of ground.

Uncle Sam says that there are about 220,000 seeds in a pound of ordinary alfalfa, and he recommends 20 pounds of best seed per acre, putting about 100 seeds to the square foot, and he says, "Counts in old alfalfa fields show a stand of from one to six plants to the square foot with equal yields of hay from all. I find that I have healthy, thrifty plants from the start if I sow in winter because I get the benefit of all the early rains to push the alfalfa roots down into the solid ground to enable the plants to withstand the intense heat and drought of summer and the rigors of the first winter—two good points that are lost by summer seeding, to say nothing of saving the cost of preparing and harrowing the ground after seeding. I do not have so much trouble with the weeds, either, as the late light freezes kill most of the early weeds, but do not hurt the alfalfa. The "deep plowing" that is recommended I am sure is all wrong and useless, and it entails a lot of harrowing, rolling, dragging, etc., to make the ground solid again like it was before plowing.

All this work was done in the (level) cultivation of last year's crops, and Jack Frost is now putting the seed bed in the finest possible condition without any trampling of teams or tractors. He does it before good growing weather, too, not after the gentle growing showers of April are past, as the farmer must do in the "regulation-cultivation-all-summer-sow-it-just-before-a-drouth-comes-plan." (What a big word! But the work is bigger than the word.)

I like to get alfalfa started early, not only to save cost of preparing the seed bed, but to get the use of all the early rains, as they fall, and I like the gentle sunshine of spring rather than the hot, dry days of midsummer to start alfalfa, when the other fellow so badly needs his "conserved" moisture that he hasn't got; but he does have plenty of weeds, despite the fact he tried to sprout and kill them all summer or until the drouth kept his alfalfa from germinating, but had little effect on the weed seeds that his last harrowing brought (water-soaked) to the light and warmth of sun.

I do not believe that "nature's seed bed" is nearly as weedy as that made by man in the summer time, because many weed seeds in the upper inch of surface were germinated last fall and, of course, are killed by winter, while weed seeds lower down were not killed and are sure to grow when brought up by the plow, cultivator or harrow, etc., no matter how often the cultivation is done. There are always enough weed seeds (moisture soaked and ready to grow as soon as brought to the surface) to make a good weed crop. Weeds like the poor, we have with us always. Why not start the alfalfa early and let the weeds alone until the "harvest" and then kill them by cutting close to

the ground, as soon as new buds or "new lungs" have nicely started at the base of the alfalfa plants? This will end the weeds as the alfalfa buds are ready to burst into new foliage, for lungs for the alfalfa plants, and to make hay for the farmer who "strikes while the iron is hot"—not before and not after it is burned up. Cut only when new buds appear. I never "clip weeds high" in alfalfa. It does not kill a weed to cut it above the buds on the branches at the weed stem. This cutting or "topping" of weeds does just the opposite to what is claimed for it. It makes the weeds thicker and the alfalfa thinner by cutting the alfalfa plant's head off and its lungs out, by making the weeds branch out at the same time. No wonder the farmer becomes discouraged and plows his alfalfa up, especially if he has sown 20 pounds of seed per acre, putting "one hundred seeds to the square foot" where only "one to six plants" can grow! Sow less seed, giving room to "tiller out," and never cut alfalfa until "new lungs" are started, and then cut at once close to the ground to kill the weeds, not high, to make them thicker.

SHIRLEY IS "TACKLED" BY MONROE COUNTY AGRICULTURAL AGENT

Growing of Alfalfa

Editor, World-Courier:

In your paper of Wednesday, April 11, there appeared an article headed as follows: "How to Grow Alfalfa Here" (written for the World-Courier by J. N. Shirley, of Unionville), which may be so misleading to the farmers of this county that I feel that a statement from me is necessary.

It might seem that Mr. Shirley was living at Unionville and had really grown some alfalfa there by the simple method which he advances.

He has never grown a ton of alfalfa near Unionville, this county.

He does own a farm near Unionville, this county, and sowed some alfalfa seed on it last fall which did not grow. That which he sowed last winter by the "Jack Frost" method is just coming through the ground in what looks more like a weed patch than an alfalfa field.

Any conscientious man that knows his business should hesitate in saying he can do anything so absolutely absurd until he has at least done it once.

His theory sounds good and is entirely possible and perhaps advisable in some counties and upon some soils, but to attempt to follow any such method in Monroe County at the present time would be as silly as trying to grow corn by planting in February.

You perhaps noted in his article that no mention was made of using lime or the need of inoculation. If he did use it he should have said so; if he didn't he would have been wiser to have waited another year before saying anything.

If you want to grow alfalfa in this county, as we hope you do, and as we are also sure you can, and you will take our advice, you will ask your neighbor who has some alfalfa in his barn how he did it and not attempt to follow some wild scheme of an experimenter who has just sown some seed.

Q. O. RAINBOLT,
County Agent.

Mr. Cravens, Editor,
Bloomington Evening World-Courier,
Bloomington, Ind.

Indianapolis, April, 1917.

Dear Sir:—

In the April 13, 1917, issue of your paper I notice I get quite a shock from one Rainbolt, County Agricultural Agent, of Monroe County, Indiana. I am only glad it was not a lightning bolt (it seemed more like a "thunder bolt from a clear sky"), perhaps it was only an "April shower that will make May flowers." At least, I am glad to be able to "wake up the natives" in the south part of Indiana again.

For several years I have been trying to get these farmers to quit plowing themselves and their lands to death and to sow alfalfa and blue grass, and keep their farms at home, instead of sending them down the Mississippi river to the Gulf of Mexico (the best part of them, at least), after every rain.

Let high priced live stock harvest the "crops" instead of high priced, inefficient farm labor.

Mr. Rainbolt says my article that you published on April 11, 1917, "may be so misleading that he deems it his duty to sound a warning against the schemes of an experimenter," etc. Well, I guess I am an experimenter; I have experimented with alfalfa for twenty-one years, and hope to experiment with it the rest of my life. But the strange thing about it is that Mr. Rainbolt seems to think that I have no results to show from my experiments, except thirty or forty acres of alfalfa that I began sowing on Washington's birthday (1917), near Unionville, Indiana. He admits this winter-sown alfalfa is coming up. Doesn't he think that this alfalfa that is now started will be ahead of any that he is "going to sow" in July or August? I am getting the benefit of April showers (and "Rainbolts?") now, and, as far as the "weed patch" that he mentions is concerned, I will just "let the weeds alone until the harvest," or until new "alfalfa lungs" have started; then I kill the weeds, by cutting alfalfa, weeds, and all, close to the ground. This gives the alfalfa a new impulse and the second crop springs up, as if by magic, and your weed trouble is over, unless too much seed per acre has been sown. Too many alfalfa plants, to the square foot, are the worst kind of weeds. One or two good, mature plants, to the square foot, are plenty, and will make more (and better) hay than forty sickly, scrawny plants to the square foot will make. I sow only six or eight pounds of seed to the acre, and I sow it in February or March. Or, if not possible to sow on "honey-combed" ground, I sow on sun-cracked or wind "checked" ground, with no other cultivation except that given to previous year's crops, and augmented by Jack Frost, in winter.

As I have said (for several years), I know this is contrary to "Hoyle," but I get good results, and I enclose herewith a sample of March, 1915, seeding of alfalfa, which the editor will please measure and report. I followed the "orthodox," or Purdue method (I am sorry to say) for about sixteen years, using twenty pounds of seed per acre, on ground that I broke early and cultivated two or three months, in the vain attempt "to kill all the weeds," and "get the ground solid" again, like it was before plowing, but I failed to improve on nature's seed bed, and I lost all the spring rains and gentle sunshine before sowing the seed; and sometimes a drought would set in, at seeding time, and the seeds would not germinate for a month or more, but the weeds did, as plenty of fresh weed seeds were brought to the surface by each cultivation (including the last one), and I find weeds "like the poor you have with you always." So I am not alarmed if my alfalfa fields do look like "weed patches."

Mr. Rainbolt warns his patrons to "ask their neighbor who has some alfalfa

in his barn, how he did it, and not attempt to follow some wild scheme of an experimenter, who has just sown some seed." How many "neighbors" in Monroe County have now, or ever did have, alfalfa in their barns? Not many, I assure you.

Sows Alfalfa in Monroe County

On March 24, 1917, the writer sowed fifteen or sixteen acres of alfalfa, for the Simmons Realty Company, of Bloomington, Indiana, and he was told the "same old story," that "*alfalfa won't grow in Monroe County.*" I am used to this kind of talk. Have heard it for twenty-five years, but I know better. Mr. H. T. Simmons and his brother, C. L. Simmons, believe it will grow in Monroe and Brown Counties, and they bought four bushels of alfalfa seed and about five tons of inoculated alfalfa soil of me, in order to get "some alfalfa hay in their barns," and into their live stock, and money in their pockets, too.

O, yes, Mr. Rainbolt, I use inoculated soil, but our Unionville farm doesn't seem to need *lime* very badly, if there is anything in the "blue litmus paper" test, that I had our tenant, Mr. F. S. Myers, make. I also tested Mr. Simmons' land, north-west of Bloomington, and the test failed to show lime needed. No wonder, when lime stone in abundance is being quarried alongside of this land, and, of course, it underlies all this part of the county.

Isn't Mr. Rainbolt a little inconsistent when he says, "Any conscientious man that knows his business should hesitate in saying he can do anything so absolutely absurd, until he has at least done it once?" For the enlightenment of Mr. Rainbolt I will say that I have done this thing for the past five years, without a single failure. Will further say that I have written my experience with alfalfa for the last twenty years, and it has been published in about twenty of the leading papers "throughout the world," (U. S.) and some parts of Canada;" such papers as the Breeder's Gazette, Farmer's Guide, Indiana Farmer, Prairie Farmer, Inland Farmer, Iowa Homestead, Practical Farmer, National Stockman and Farmer, Hoard's Dairyman, Up-to-Date Farmer, National Enquirer, Indianapolis News, Indianapolis Star, Indiana Daily Times, Jersey Bulletin, and several others that a "County Agent" should read occasionally, at least; but Mr. Rainbolt seems to have been entirely "immune" from all such stuff. He further says: "His theory sounds good, and is entirely possible, and perhaps advisable in some counties and upon some soils, but to attempt to follow any such method in Monroe County, at the present time, would be as silly as trying to grow corn in February." If Mr. Rainbolt will visit our city (Indianapolis, not Unionville), I will show him one hundred acres of alfalfa, within two miles of the State House, and a goodly portion of it was sown, a la Jack Frost, while part of it was sown in April, on sun cracked ground, and is now fine, despite the fact that it looked more like a "weed patch" at first than an alfalfa field.

A few years ago, while listening to a little speech made (in a little June sown alfalfa field) by a Purdue Professor, I heard this: "Some sow alfalfa in winter, but that is not the best time." I asked why. He replied: "Many have tried it and failed." That "didn't tell me anything," because many try summer seeding and fail. I was tackled once by a Kentucky Experiment Station man, and I asked why he insisted upon his readers sowing red clover on "honey combed" ground, and yet he asked them to sow their alfalfa by the "regulation-cultivation-all-summer-sow-it-just-before-a-drouth-comes plan." He replied: "Alfalfa is not a clover."

I claim that nature makes the best of seed beds for alfalfa, oats and clover, and I celebrate Washington's Birthday by using the work of Jack Frost—the greatest of agriculturists, most County Agents to the contrary, notwithstanding.

J. N. SHIRLEY.

P. S.—Later, October 17, 1919. Please look at Fig. 31, from "Monroe County." Don't you think Mr. Rainbolt has lost his case?



Fig. 31—February, 1919, Seeded Alfalfa, at Unionville, Monroe County, Indiana. Photo taken August 17, 1919.

The plants shown in Figure 31 were pulled up, not dug up. Probably two feet of growth broken off. Mr. Stidd asked me how to sow this alfalfa, and followed directions; but he wanted to plow the ground, or at least to rake the weeds and tomato vines off, but I said "No."

Editorial Rooms

Barton W. Currie, *Editor*

THE COUNTRY GENTLEMAN
THE CURTIS PUBLISHING COMPANY

Philadelphia, May 23, 1919.

Mr. J. N. Shirley,
116 S. Emerson Ave.,
Indianapolis, Ind.,
Dear Sir:

The young alfalfa plants from seed sown in March are certainly remarkable. I wish I could get such results on my own farm in Pennsylvania but I have tried and so far have not succeeded.

Your method of seeding alfalfa has many desirable points, but we have not been able to find many people who are able to get the results that you do. What is the reason? Is your soil more fertile, a natural limestone or are you just plain lucky?

Very truly yours,

J. CLYDE MARQUIS,
Associate.

Remember this is the "Hash Department," hence the variety.

Mr. J. Clyde Marquis,
Associate Editor, The Country Gentleman,
Philadelphia, Pa.

Indianapolis, May 27, 1919.

Dear Sir:

Your letter of May 23rd is interesting and quite suggestive, too.

You say: "I wish I could get such results on my own farm in Pennsylvania, but I have tried and so far have not succeeded," etc. Did you try my "Jack Frost" or "sun-cracked" method? Did you let the alfalfa—and the weeds—alone until a new alfalfa growth (or new "lungs") had started before you did any cutting? If so, I don't understand why you failed.

If you are like ninety-seven per cent of farmers, you set the mower knife high, and clipped your alfalfa "to thicken it and to kill the weeds;" but it can't be done that way. You thus do the opposite thing—you thicken the weeds and kill the alfalfa stems down to the ground for about thirty days, (or until a new crop of sprouts or "lungs" start) and by that time, the weeds have complete possession of the ground—and alfalfa—and the "blues" have possession of you. Are you not guilty?

I am sending you another stem of alfalfa, seeded in January, four years ago, just a few days before we had zero weather. This stem is over three and one-half feet in length, now. Once I found an alfalfa stem seventy-three inches long, but it had escaped the mower knife until August 10th.

You say my method of seeding alfalfa has many desirable points, but you have not been able to find many people who are able to get the results I do, etc. No doubt they followed the method that I suspect you have followed, as described in the fore part of this letter, or failed to cut yellow alfalfa.

I am publishing a book entitled: "Success Instead of Failure With Alfalfa at One-Tenth the Usual Cost." Don't you want one?

J. N. SHIRLEY, Alfalfaist.

Almost any soil that has air over it, and water under it, will raise alfalfa. If you don't believe this, look out of the car window at Helmsburg, Brown County, Indiana, and see a "streak of alfalfa," opposite the station sown by the writer from a moving train, on "honey-combed" ground, in February, 1918. If your faith weakens, "consider the lilies of the valley, (or the morning glories and dandelions) how they grow," and sow alfalfa likewise. If you *must* prepare your ground, do it this fall, and sow alfalfa in February or March, with a two-way seeder, using only four or five pounds of seed per acre and "let it go at that," and succeed.

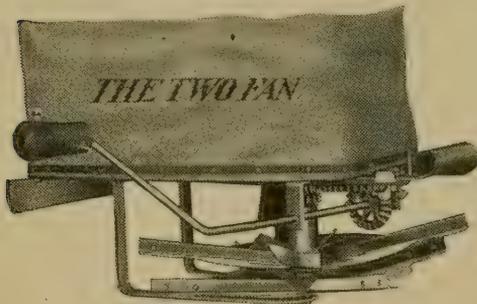


Fig. 27—Two-Fan Seeder. (For sale by J. N. Shirley.)

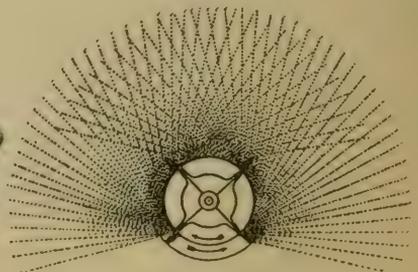


Fig. 28—How the Two-Fan Seeder works.

Doubtless some farmers will fail to raise alfalfa by this, or any other method; but they themselves are usually to blame. They do not attend to the little details at the right time, or they do things that should not be done. In fact often the farmer is the worst enemy of alfalfa. He destroys the "best seed bed on earth," early in the best growing season, to make a worse one to be used in July or August, the driest and hottest months of the year. He sows too much seed; and as soon as his alfalfa begins to thin itself, he plows it up and plants corn. He often cuts his alfalfa at the wrong stage of growth, or he don't cut it at all, when it is yellow and needs cutting the worst. Sometimes he don't inoculate or cultivate alfalfa. He "clips alfalfa," when really he thickens the weeds and kills his alfalfa by cutting its lungs out and helping the weeds to smother it to death. He should be *interested* and he should "study alfalfa and live stock for they are profitably and wonderfully made." Alfalfa, it is claimed will pay 5% interest on land valued at \$2,200 an acre. Isn't it worth studying?

N. B.—I would suggest in the final words of this little book, that farmers cultivate their crops "level and shallow"; for this is better than ridging and root-pruning; and the corn stubbles, etc., will be in fine condition to sow alfalfa on Washington's Birthday, for hay on the Fourth of next July. If you have ridged your corn, disc and drag this fall and sow alfalfa "a la Jack Frost."

Some believe in deep cultivation! I want to ask these fellows one question: Should your child reach out for bread, would you chop its finger off with a hatchet? The plant roots are reaching out, near the surface, too, (where the ground is warm and rich), for plant food; and, each week, you cut the roots off by deep plowing, as you say, "to loosen up the ground so the roots can get through it"; and you take these roots off the shanks of your plow, at each end of the field, once a week!! Think a little and you certainly will quit this. My mother-in-law used to be a great strawberry raiser, and I noticed she merely scraped the ground with a hoe, and did not loosen it, at all. Once, I used a Z. Breed Weeder alone, in cultivating a field of corn; I did not use a plow in it, at all. Of course, I went over the ground two or three times a week, but this took less time than to go over it once a week with the plow (as one can cultivate twenty acres a day with a one-horse weeder). I measured one acre of this field, at gathering time, and it husked out 91 bushels of corn. This tool should be called a "weed preventer, really, and is intended to be used "before the weeds are born." I would rather prevent the itch than to cure it, and I would rather use the weeder as a preventive than to plow or pull out the weeds; and, remember, the weeder is a shallow, level cultivator. It is a moisture saver, a root preserver, and it scratches "to beat the band," unless it is a band of old hens, in the garden. The "Old Scratch" himself, is in the old hens and they are sure *alfalfa preventers*, if they have a chance at your alfalfa while it is little. When Joe Wing was a boy, he sent some alfalfa seed back home from the west. A year or two later, he visited his old home and the first thing he said, after "greetings," was, "how is my alfalfa?" His father told him it did "no good." He started out toward the barn, and noticed a few delicate alfalfa plants. He put a headless barrel over a few of these, and in a short time the plants had grown out at the top of the barrel, which had protected them from the chickens! It was a sad blow the world received by the untimely death (several years ago) of Joseph E. Wing, of Ohio, one of the greatest advocates of alfalfa and better farming.

J. N. SHIRLEY.

"FOURTEEN POINTS" IN FAVOR OF WINTER-SOWN ALFALFA

- 1—A better and more solid seed bed can be obtained by a whole season's cultivation of previous year's crop, augmented by the work of Jack Frost, all winter. Mr. Jack Frost works on the seed bed after the seed is sown.
- 2—No costly work required for winter seeding, as this cost is all taxed up to previous year's crops, except the work done by Jack Frost free of charge.
- 3—No first year's crop is lost, as is the case when ground is cultivated all summer and alfalfa sown in July or August. I always cut three light crops from winter-sown alfalfa the *first year*. I did so this dry year; but the second crop, cut July 23rd, was only six inches high and yellow; while the first crop, cut on June 18th, was knee high, as was also the third crop, cut on September 23rd. The seeding was done in March, 1919, on "honey-combed" ground.
- 4—No scarifying of seed necessary, as the freezings and thawings attend to this.
- 5—No loss of early rains; we *use* these, as they *come*, and we "conserve moisture" with the shade of plant growth, both of alfalfa and of weeds. (See Fig. 17.)
- 6—Gentle sunshine and best growing weather are both utilized by winter seeding. Spring and early summer are undoubtedly the best growing seasons of all the year; while July and August are noted for their excessive heat and drouth. Isn't this true? Why sow alfalfa, then, in July or August? Is it because weeds don't grow so fast then? Neither does alfalfa grow so fast in hot, dry weather.
- 7—The winter seed bed has no freshly brought up to the surface moisture-soaked weed seeds, ready to grow before the dry alfalfa seeds can germinate. Jack Frost killed the fall weeds; why bring up another batch of weed seeds before sowing alfalfa?
- 8—Not so much danger of winter-killing when alfalfa has roots as long as a man's arm from this early seeding. I have a photo taken October 25, 1919, showing a March, 1919, seeded alfalfa plant with roots 33 inches long.
- 9—Not so much damage from early weeds, as the late freezes often kill all these before the "cold storage" alfalfa seeds germinate.
- 10—No danger of sun or wind killing if the alfalfa seeds are covered about an inch deep by alternate freezing and thawing, thus giving depth of soil; and, no danger from hard freezes, as the "one inch" layer of cold earth keeps the seeds from sprouting, until this soil warms up (or down, rather) to the seeds, and by that time, hard freezing is past.
- 11—Winter seeding is done at the most leisure time. It should be done before breakfast on still, clear mornings, while the ground is "honey-combed."
- 12—Winter seeded alfalfa makes more hay the second year because it made a better root growth and tillered more the first year than did July or August sown alfalfa.
- 13—Winter sown alfalfa can be cultivated the first summer to combat a drouth, if it comes, as it did in the summer of 1919. I cultivated my last March seeded alfalfa severely both ways in July, using a three-horse sulky reinforced steel shank, thirteen narrow shoveled cultivator; and the roots withstood this cultivation splendidly; while cultivation would be folly in July or August seeded alfalfa, no matter how bad it needs an earth mulch.
- 14—A thin seeding of spring barley or oats may be used with this early seeded alfalfa and sown by the same "Jack Frost" method; but these crops should be cut for hay always, and at the "budding time" of alfalfa. Never let a "nurse crop" mature grain with alfalfa. This takes valuable plant food and moisture. I used to say "oats or barley may be sown thinly with alfalfa, but alfalfa should never be sown with *oats* or *barley*." The alfalfa should be the principal thing, *always*, and treated as such.

J. N. SHIRLEY.



Fig. 22—Buildings on Crystal Spring Alfalfa Farm, Monroe Co., Indiana.



Fig. 24



Fig. 21

Figs. 21 and 24—Some Monroe County, Indiana, Farm Products. Photo taken by J. N. Shirley, April, 1918, and April, 1919, respectively.



Fig. 20—Sowing water-soaked alfalfa seed from a boat in flood of 1913. For later views of this field, see Figs. 2 and 32.

Figs. 34 to 41, inclusive, and their explanations are by courtesy of International Harvester Company, Agricultural Extension Department, Chicago.

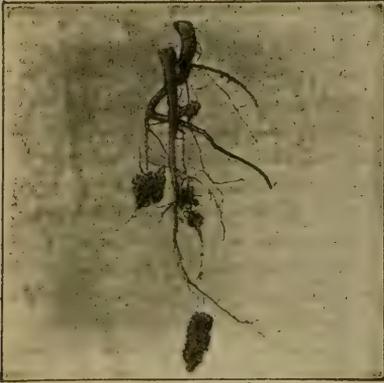


Fig. 35.

Fig. 35. ALFALFA ROOT SHOWING NODULES. If you examine an alfalfa root you will find tiny nodules on the rootlets. These are the home of the nitrogen-gathering bacteria.

Nitrogen is an important plant food, one of the elements necessary to plant life. A great deal of money is spent for fertilizers in order to get nitrogen. Yet, it is so abundant in the air that Hopkins says the supply over each acre of the earth's surface, if available, would meet the needs of a 100-bushel crop of corn every year for 500,000 years.

But the nitrogen in the air is not available for plant food. In other words, it is not in a form that the plants can use. It must be changed just as our own food must be changed before we can use it. The nitrogen-gathering bacteria gather nitrogen from the air in the soil, and change it so that the plant can use it, and make it a part of its leaves, its stems, and especially its roots. Then, when the nodules and roots decay, nitrogen is added to the soil and is ready as food for other plants.

This is the way that alfalfa enriches the soil. About 45 per cent of the nitrogen in the alfalfa plant is in the root.

Fig. 36. KING CORN AND QUEEN ALFALFA. This is a cartoonist's conception of the importance of alfalfa. An extension worker is performing the wedding ceremony of King Corn and Queen Alfalfa, while the choir sings, "Oh, What Will the Harvest Be?"

Someone has said, "King Corn and Queen Alfalfa have only one son, Permanent Prosperity."



Fig. 36.



Fig. 37. GROWING ALFALFA MEANS BETTER HOMES. Homes like this are found on farms where corn and alfalfa are grown.

The greatest profits in raising alfalfa comes in feeding it on the farm. Alfalfa and corn lead directly to live stock farming.

Live stock farming cannot be left to hired hands. It means the owner must live on the farm. This means better homes, better roads, better schools and better opportunities for the children.

Fig. 38. DO YOU RAISE ALFALFA? ?

The boy holding the alfalfa proudly says, "My dad grows alfalfa."
The other replies, "I wish mine did." Which boy's father are you?



Fig. 38.

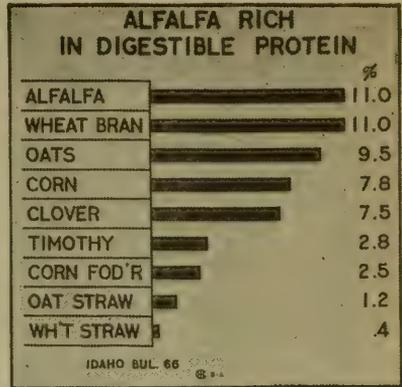


Fig. 40.

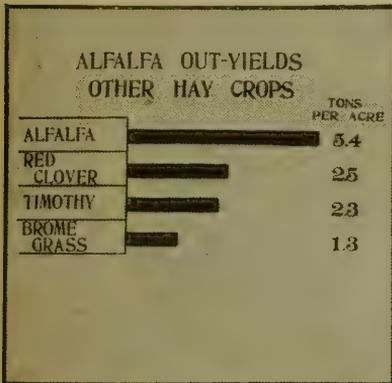


Fig. 39.

ALFALFA ON EVERY FARM

WHY

- 1-IT IS A PROFITABLE CROP
- 2-IT INCREASES FARM VALUES
- 3-IT EXCELS EVERY OTHER CROP IN YIELD PER ACRE IN FEEDING VALUE AS A DROUGHT RESISTER AS A SOIL ENRICHER
- 4-ITS FREQUENT CUTTING DESTROYS WEEDS
- 5-IT BALANCES THE CORN RATION
- 6-IT LEADS TO LIVE STOCK FARMING

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Fig. 41.

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LAWN GRASS SEED**

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Fig. 14—Two-Months-Old Alfalfa Plants Seeded in February 1918.
Photo taken in April, 1918. ("Honey-combed" corn stubble ground.)



Fig. 13—Three and five-year-old alfalfa plants; no cultivation of seed bed.
(Corn and oats stubble ground.)

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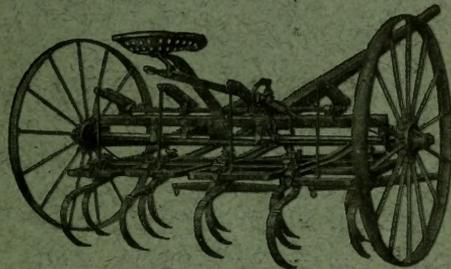
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when he wrote our Indianapolis Branch relative to one in use at the Purdue Farms. Here is his letter in full:—

Gentlemen:—

The No. 7 Massey-Harris Cultivator recently shipped us has given very satisfactory results on the Purdue East Farm. It has been used mainly to tear up the ground ahead of the corn planter and keep the ground stirred where it was desired to kill the grass. We have not yet used it to clean alfalfa, but expect to do so soon. One very desirable feature of this Cultivator is the manner in which it stays in the ground without any bouncing. I believe in this machine you have an implement that will prove mighty popular as soon as the farmers know about it, and a profitable tool for any farmer to have.

I am pleased to recommend it to anyone interested in improved farm equipment.

Respectfully,

(Signed) WM. AITKENHEAD,

Division of Farm Mechanics

With such an endorsement can there be any mistaking of its merits? *It is making profits for many a farmer and will make them for you. Let us show you how.*

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