FIRST ADDITION TO TURTLE RIVER
(Continued.)
Year or Years for Which the Taxes are Delinquent, 1914.

Name of Owner and Description	lot	blk.	Total Tax and Penalty $ Cts.
[illegible] & Johnson	4	2	.92
O. Johnosn and Agnes F. Trask, w37½ ft of	4	4	3.81
A. O. Johnson and Agnes F. Trask, ...	5	4	.07
A. O. Johnson and Agnes F. Trask, ...	6	4	.07
Frank Roher, and Edgar D. Williams	1	5	.66
S. Solone and W. E. Williams	3	6	.53

VILLAGE OF WERNER.
Year or Years for which the Taxes are Delinquent, 1914.

Name of Owner and Description	lot	blk.	Total Tax and Penalty $ Cts.
A. J. Becker, 1 to	5	13	.12

VILLAGE OF WILLIAMS.
Year or Years for which the Taxes are Delinquent, 1914.

Name of Owner and Description	lot	blk.	Total Tax and Penalty $ Cts.
Delphin Brushey and John J. Clark	9	1	7.46
Delphin Brushey and John J. Clark	10	1	2.99
J. Mahloney et al.....	12	1	5.98

VILLAGE OF WILTON.
Township 147, Range 34.
Year or Years for which the Taxes are Delinquent, 1914.

Name of Owner and Description, Subdivision of Section	Sec.	Total Tax and Penalty $ Cts.
S. O. Melby, ne¼ of sw¼ less R of way and Townsite and deeded tract	33	7.34
D. Ketchum and Nels H. Volland, se¼ of nw¼ less Soo R. of way	34	7.59
N. H. Volland, ne¼ of sw¼	34	13.26
N. H. Volland, nw¼ of sw¼ less G. N. R. of way.....	34	7.49
N. H. Volland, sw¼ of sw¼ less G. N. R. of way.....	34	7.49
J. J. Opsahl and Nels H. Volland, se¼ of sw¼ less G. N. R. of way	34	7.59

VILLAGE OF WILTON.
Year or Years for which the Taxes are Delinquent, 1914.

Name of Owner and Description	lot	blk.	Total Tax and Penalty $ Cts.
T. O. Melby, ...	12	2	13.25
T. O. Melby, ...	13	2	.72
C. F. Rogers, ...	10	6	3.57
C. F. Rogers	11	6	.51
L. D. Hatcher, Tracie Kellor, ...	12	6	.51
L. D. Hatcher, ...	13	6	4.08
C. F. Rogers and Jas W. Watkins, ...	14	6	.62
Mrs. A. L. Rogers, ...	2	11	2.54

MELBY'S ADDITION TO WILTON.
Year or Years for which the Taxes are Delinquent, 1914.

Name of Owner and Description	lot	blk.	Total Tax and Penalty $ Cts.
Rose Chilson, ...	3	1	3.57

STATE OF MINNESOTA,
ss.
COUNTY OF BELTRAMI.

J. L. George, being by me first duly sworn, deposes and says that he is the county auditor of the county of Beltrami; that he has examined the foregoing list, and knows the contents thereof; and that the same is a correct list of taxes delinquent for the year(or years therein appearing) upon real estate in said county.

J. L. GEORGE,

Subscribed and sworn to before me 1st day of February, 1916

F. W. RHODA,
Clerk of the District Court,
Beltrami County, Minnesota.

(SEAL)

BUTTER FAT TESTS.

Seven Day Trials Too Short a Period to Prove Cow's Worth.

The average percentage of butter fat resulting from a seven day test may not give a true indication as to the actual production covering a long period of time. "The man who is in the market for a herd sire from a 4 per cent family desires to get a sire that will increase the butter fat test of his herd—not for seven days only, but for the year. It does not always follow that the cow that gives an average test of 4 per cent for seven days will test 4 per cent for the year." This statement was made recently by Professor O. E. Reed of the Kansas Agricultural college after he had been making some studies of seven day tests in the college herd.

The average test of one cow under observation was 4.18 for a seven day period. The average test for the same cow for a year was but 3.42. Another cow gave an average test of 4.4 for seven days, but her year's average test was 3.19. These yearly tests were official records. Another cow that has recently completed a seven day test gave milk showing an average of 4.21 per cent butter fat during this period. During her two previous lactation periods, however, her average test was but 3.55 per cent.

It is evident that too much emphasis should not be placed on seven day butter fat tests. Those covering the longer periods of rime are far more dependable in connection with improving the production of the herd.

Feeding Milk Producers.

The one important principle to be kept in mind in feeding any milk producing animal is that the heavy milkers produce economically if fed liberally on grain, while the light milkers or the boarders will in the end be more profitable if fed largely on roughage. There are plenty of cows in the dairies of the corn belt that will produce more economically on ensilage and clover hay than they would if forced with high priced grain, while, on the other hand, there are cows in every herd that should receive anywhere from eight to fifteen pounds of grain a day along with their roughage. It is simply a question of giving the heavy producer a chance to do her best and, on the other hand, to give the loafer the least possible opportunity to rob her owner, doing this, as before stated, by carrying her along largely on roughage alone.—Iowa Homestead.

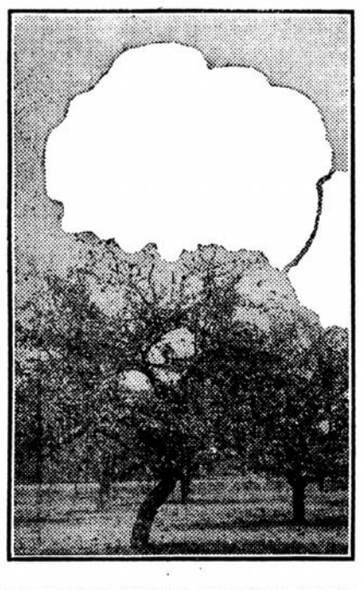
Making the Little Farm Pay

By C. C. BOWSFIELD

Waste and neglect in the average apple orchard are plain evidence of bad farming. An orchard of a single acre if properly managed will give a revenue of $200 or $300 yearly, and besides this it is important to the owner's family. Fruit trees should receive intelligent care.

Orchards are not sprayed and pruned in a systematic way, because this kind of work can be put off, and there is always something else demanding attention. Good farming gives every feature on the place due attention, whether the product is for market or merely for home use. If this be done the fruit in small orchards will be sounder and more uniform than it usually is, the family will get increased benefit from it and revenue will be gained at the rate of at least $200 an acre.

When orchards are neglected the fruit deteriorates in quality, and much of it is allowed to rot on the ground. Even the farmer's family gets only a meager supply. An apple orchard ought to be an object of pride, and if the owner feels that he is too busy to attend to it he should turn it over to



FRUIT TREES SHOULD RECEIVE INTELLIGENT CARE.

his wife or to the young people in the family. Most likely they will get some good experience and quite a little profit thereby.

All farmers and their families should study up on canning methods so that surplus fruit can be saved in the most profitable way. This is equally important with spraying and pruning. Canned apples are in general demand. Cider and cider vinegar are also readily sold at good prices. It is wrong to let good fruit go to waste when it is so greatly needed by the human family.

It is possible to pick up windfalls and make cider of them or sell them to the canning houses. It is still better to can them at home, but in many instances they are allowed to go to waste, although in all cities and villages and often in the open country there are many worthy families, some of them destitute, who would be greatly encouraged and helped by a few bushels or barrels.

* * * * * * *

The cause of poor hatches of poultry is a much discussed question. A poor hatch is more apt to be due to the condition of the eggs previous to hatching than to incubation, although improper handling of either factor will produce the same results. When eggs fail to hatch an investigation should be made to see if the breeding stock is kept under conditions which tend to produce strong, fertile germs in the eggs. A daily temperature record should be kept of each machine. The operator can thus compare the temperature at which the machines have been kept. This may prove valuable in future work, especially if the brooder records can be checked back against those of the incubator.

* * * * * * *

The climate of the central northern states is well suited to the quince, and almost any of the soils that are rich enough to grow good crops of corn, potatoes or garden stuff would be in right condition. It may be heavy clay or of a sandy nature, for this tree will flourish in either kind. Plenty of rich and well rotted stable manure will help the soil. The trees may be planted in the spring or fall, the latter being preferred, because the trees get well settled in the ground and start early to grow the next spring. The proper distance apart to set the trees is about twenty feet. They should begin to bear in about five years from the time of planting, but may do so a little earlier if well treated. The Orange and Meech are two of the best early kinds, and Champion and Van Deman are good late ones.

Raising Sheep.

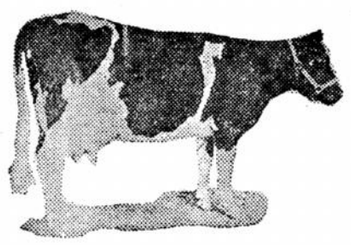
The farmer who has learned how to handle sheep in a manner that will promote good health and vigor among the animals and how to keep sheep killing dogs off his premises or away from his flocks is on the highway of successful and profitable sheep raising; otherwise he may find it a hit and miss business.

SHELTER FOR COWS.

Logic of Keeping Dairy Animals In a Comfortable Condition.

The dairy cow is a finely adjusted, complicated organism that is subject in a considerable degree to external influences, says the Orange Judd Farmer. The greatest amount of butter fat is produced when the cow is in comfortable quarters and the body tissues are normal. These facts are present usually during the opening of the summer, when the grass is in good condition. At that time the temperature is just about right, and there is an absence of flies and vermin, which tend to irritate the cow. In conjunction with this the grass is most palatable, all of which contribute toward contentment in the dairy cow, and as a reward she produces a very large flow of milk.

During the winter conditions are usually the reverse, and abnormal con-



Primarily the Holstein cow is a dairy cow—a milk producer—and while in milk cannot be readily fattened because she converts her surplus feed into milk. But when dry her great digestive and assimilative powers enable her to put on flesh rapidly and so make excellent beef. The cow pictured is pure bred Holstein-Friesian.

ditions are brought about. Then an artificial temperature is required to maintain the bodily heat and keep the cow comfortable. When the cow is turned out to shiver in the cold considerable combustion is required in the body to maintain the animal's temperature. This food which is consumed is therefore not available for the production of milk.

If a cow is in warm quarters she will have this food supply available, and consequently she will produce a greater amount of butter fat. It is also possible to feed more economically in the barn, and there is less turmoil to annoy the animals when they are comfortably housed and in stalls than when they are turned out at night. The dairy cow can eat hay at leisure and will not be required to expend energy in self preservation, which energy should be devoted to the production of milk.

MATING THE BREEDERS.

Length of Time Needed For Production of Fertile Eggs.

With the coming of the early breeding season for the production of pullets and cockerels to be exhibited at the late summer and early fall shows, the following experiments regarding the period of time required to produce fertile eggs after the male has been put into the breeding pen, and also the period of time that must elapse before the effects of the mating have entirely passed off, will be of interest to many poultry keepers. Some of the tests were repeated several times with different breeds in order that the results might have a fairly broad application, says the Country Gentleman.

Observation concerning the period of time required for the eggs to be fertilized after the male was placed in the pen were carried on with one pen of White Leghorn and three pens of Rhode Island Red females. Two different tests were made with the pen of Leghorns and only one with the three pens of Reds.

In both tests with the Leghorns all eggs were sterile on the first and second days. On the third day of the first test 50 per cent of the eggs were fertile, though in the test only 36 per cent were fertile at this period. On the fourth day seven out of thirteen eggs were fertile in the first test and ten out of thirteen for the same day in the second test.

In all three pens of the Rhode Island Reds no fertile eggs were produced during the first three days. On the fourth day 44 per cent were fertile in pen 1, 2 per cent in pen 2 and 16 per cent in pen 3. In pen 1 all eggs produced on the seventh day were fertile, in pen 2 all the eggs laid on the eighth day were fertile, while in pen 3 four out of five eggs laid on the eighth day were fertile.

In determining the period of time that must elapse before the poultryman can be certain that the effects of a previous mating have passed off White Leghorn and White Plymouth Rock females were employed.

In the first test with the White Leghorns more than 50 per cent of the eggs laid on the eleventh day after the male had been removed were found to be fertile. On the tenth day of the test with the Plymouth Rocks more than 50 per cent of the eggs were fertile. The last fertile eggs in the Leghorn pen was found on the twentieth day, while no fertile eggs were produced in the pen of Plymouth Rocks after the sixteenth day.

These tests show, first, that as a general rule the poultryman can figure to save eggs for hatching on the third or fourth day after the male is put into the pen; second, that eggs may be saved for incubating purposes for at least ten days after the male has been removed, and, third, that at least three weeks elapse before the breeder can be reasonably sure that the effects of a previous mating have been eliminated.

THE LACK OF PAINT.

Causes Greater Annual Loss to Farmers In Kansas Than Fire.

"Lack of paint causes a greater annual loss through deterioration than the aggregate Kansas fire loss for twelve months," asserts H. H. King, associate professor of chemistry in the Kansas State Agricultural college. "People generally paint because of the ornamental effect, little realizing that they are preventing a heavy loss through deterioration by so doing."

An experiment is being carried on by Professor King with a view to finding a paint that is best suited to the Kansas climatic conditions and to the average pocketbook. It is one of the most comprehensive experiments of the kind carried on west of the big eastern paint factories. Formulas for 192 different kinds of paint were made—a different combination of pigments and oil in each one.

The oils used in the mixing of the paints were: Linseed, which is the old standby, but more expensive than some others; sunflower, which should appeal to Kansas farmers at least; menhaden fish oil, soy bean oil, corn oil and cottonseed oil. If the experiment points favorably toward the use of either sunflower or cottonseed oil it will mean an added "made in America" product.

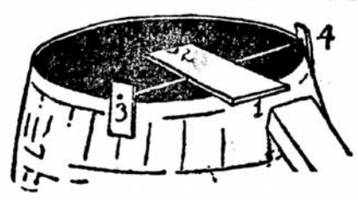
The thinners employed were pure spirits of turpentine. Driers of different kinds were also used to hasten the drying of the paint.

The paint was applied on panels made of specially seasoned hand picked white pine drop siding. Care was taken to get the panels of as near the same grain as possible, so that all would have the same absorbing power.

A Rat and Mouse Trap.

Fill a barrel one-third full of water. Take a thin piece of board six or seven inches broad and long enough to reach halfway across the top of a barrel (1). A small wooden cleat is nailed upright on each side of the barrel (4). A spindle of metal is driven through the plank (3), and the ends or axes of this spindle turn in journals at the top of the cleats.

Fasten a bit of cheese securely on the end of the plank that reaches out to the center of the barrel (2). The end



of the plank which rests upon the rim of the barrel must be just a little heavier than the baited end. This can be regulated easily by driving a nail or two in the end of the plank if it is not heavy enough to settle back in position after being tipped up.

Now lean a plank against the barrel, the top end resting even with or just under the end of board (1). This will enable the rodents to get up to the trap easily. They start out on the plank after the cheese. It tips down, and in a twinkling of an eye the animal plunges head first into the water and is drowned.

There is no escape; they go to their doom. The plank swings back and is ready for another victim. It is always set, always baited.—Successful Farming.

Root Storage Pit.

Where there are no cellars or storage rooms available the old fashioned pit makes a good place in which to store roots and some kinds of vegeta-

bles for the winter. Put in a well drained place, dig a couple of trenches, crossing each other in the center of the pit, cover these with boards, leaving an open space in the center. Put in a ventilator, cover the bottom of the pit with straw and pile up the vegetables. Then place the straw over the roots, then dirt, then more straw if in a cold region, more dirt, and your pit will keep the most severe weather from injuring the vegetables.—Farm Progress.

POTASH IN PLANTS.

Marsh grass, marsh sedge, seaweed and pine straw are among the materials in which potash in small agricultural quantities has been found. The chemist of the South Carolina experiment station reports after analyses of these plants:

Four samples of marsh grass contained respectively 0.84 per cent, 2.39 per cent, 1.16 per cent and 1.99 per cent potash.

A sample of dead marsh sedge contained 0.03 per cent potash.

Two samples of marsh sedge ashes contained respectively 0.18 per cent and 1.38 per cent potash.

A sample of seaweed contained 5.85 per cent potash.

A sample of long leaf pine straw contained 0.41 per cent potash.

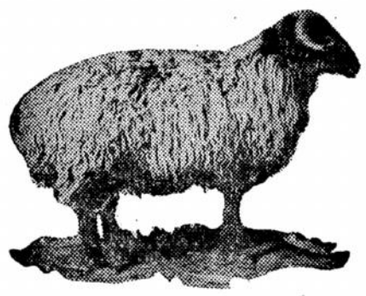
Marsh grass also contains a considerable quantity of nitrogen and a small quantity of phosphorus.

All such materials should be gathered green because the potash rapidly leaches out of the dead material. This fact proves its value when applied to land, for it is water soluble potash.

FEEDING LAMBS FOR THE SPRING MARKET

Two years ago on Jan. 10 the firm of J. B. Guthery & Son, Ohio, placed 1,250 lambs weighing fifty-six pounds each in their barns, writes a correspondent of the National Stockman. After shearing they were shipped as finished during the month of April. Market weights averaged ninety-seven pounds, and the fleece average was six pounds. Incidentally it may be stated that but one lamb was lost during the feed.

Such lambs are started on hay, but shelled corn and silage are begun in short rations. These lambs never get



The Karakul sheep comes from the vicinity of Bokhara, Asia, and is the sheep that produces the fur known as Persian lamb. The mature Karakul is a large sheep, pretty leggy as a rule, horned, with a black face and with a black hairy fleece that fades out to a brownish tinge. As Karakuls develop much quicker than our sheep, it has been found that half bloods attain the same weight at three months that ordinary sheep do at six months, making possible much earlier marketing. The sheep shown is a Karakul.

a full feed till after shearing, when they are supposed to consume three bushels of shelled corn and 200 pounds of silage to the 100 lambs daily. As lambs vary greatly in the avidity with which they take to the grain ration at first, ten minutes only is allowed them in which to eat, and at the end of that time the corn remaining is removed to prevent overeating by eager lambs. Shelled corn is fed in the morning. After this clover or alfalfa hay is provided in the racks till evening, when the silage is fed with a sprinkle of shelled corn. The alfalfa and clover are not fed to each lot indifferently, but the kind of hay remains the same for a given lot of lambs from day to day. No corn is cut on the Guthery farms, so no corn stover is ever fed to lambs.

BAD ODORS IN MILK.

Certain Feeds When Injudiciously Fed Will Produce Bad Results.

It is possible to increase the milk flow of a cow by good feeding and care before it is firmly established, says Hoard's Dairyman. No system of feeding has yet been brought forth that will increase the quality of milk—that is, in the percentage of fat. It would seem from practical experience that it is possible to ascertain systems of feeding to at least temporarily increase the percentage of fat in milk, but to sustain it throughout the period of lactation we know of no particular kind of feeds to advocate for this purpose.

Where increased flows of milk are desirable, it is very important that the feeder watch his cows closely at the time of freshening and gradually increase their feed so long as they will respond to the increase. When the animal has reached her limit of production it is well then to drop back a little in the amount of meal fed, as it is not feasible under average conditions to feed all the grain a cow will eat in order that her maximum flow of milk may be sustained.

Most any good farm grown products produce a good flavored milk. There are a few feeds that affect the flavor—that is, what we term an off flavor. The feeding of a large amount of rutabagas or turnips just before milking will invariably give the milk an objectionable odor. Permitting cows to graze on rape pasture will also cause them to produce a strong flavored milk. Even clover pasture will have its effect and so will grass.

Butter Fat Record Broken.

The Holstein cow, Ormsby Jane Segis Aaggie 150934, has broken the record for fat production in the senior four year class of the seven day division by producing in seven consecutive days 703.6 pounds milk containing 34,306 pounds fat. She freshened at the age of four years eleven months nineteen days. Her sire is Ormsby Jane Paul 49641 and her dam is Segis Aaggie Netherland 82613. She was bred by Ernest M. Johnson of New York and is now owned by Oliver Cabana, Jr., of New York.

Feed Freshening Cows.

The cow cannot turn all the nourishment she will get from her food into the milk pail and still have enough to build up her offspring rightly. We need good calves as much as we do good cows.

Ensilage For Lambs.

Lambs that are being fattened need some kind of succulent food, and for this purpose corn ensilage is a good substitute for roots. The expense of growing and the additional labor required in caring for them make the growing of root crops unprofitable for many of the flock owners, especially when ensilage can be produced more easily and for less cost per ton.

Farm and Garden

A VERSATILE AGRICULTURIST.

Professor Alfred Vivian Newly Elected Dean of Ohio State University.

Traveler, lecturer, philosopher and poet, Professor Alfred Vivian, newly elected dean of the Ohio State University College of Agriculture, is one of the most versatile men in agricultural work. An authority on agricultural chemistry, he has written numerous scientific articles and a textbook that is used in the leading colleges of the United States. A traveler into the far corners of the earth, where he went to study the agricultural methods of the different countries, his travel writings and his lectures are always in demand.

Four deanships of agricultural colleges were offered Professor Vivian during the past year, but he refused

PROFESSOR ALFRED VIVIAN.

all offers to leave the school where he has served since 1902. His appointment as dean was made Nov. 6. That he is a poet, as well as a scholar, a scientist and a popular professor, is not as generally known. The following is his best known poem:

THE WISE FARMER.

There was a man in our town
And he was wondrous wise;
He knew that if he wanted crops
He'd have to fertilize.
It's nitrogen that makes things green,
Said this man of active brain,
And potash makes the good, strong straw,
And phosphate plumps the grain.
But it's clearly wrong to waste plant food
On a wet and soggy field;
I'll surely have to put in drains
If I'd increase the yield.

And after I have drained the land
I must plow it deep all over,
And even then I'll not succeed
Unless it will grow clover.
Now, acid soils will not produce
A clover sod that's prime,
So if I have a sour soil
I'll have to put on lime.
And after doing all these things,
To make success more sure,
I'll try my best to keep
From wasting the manure.
So I'll drain and lime and cultivate
With all that that implies,
And when I've done that thoroughly
I'll manure and fertilize.

Jersey Wakefield has been the leader among early cabbages for more than fifty years, writes R. L. Watts in the Country Gentleman. All the early gardeners praised it, and most of our gardeners today claim it is superior to all other early varieties. It is very early, medium in size, pointed and solid. The heads are valuable for salad purposes.

Charleston Wakefield attains marketable size from a few days to a week later than Jersey Wakefield. It is larger in size and requires slightly more space in the row. If the market does not demand extreme earliness, the Charleston type will be found more profitable than the Jersey Wakefield, especially if the crop is sold by the crate or barrel.

Copenhagen Market is a comparatively new variety that is attracting much attention among commercial growers. It comes a few days later than Jersey Wakefield, but it possesses merits that, in the minds of some gardeners, more than overbalance this disadvantage. The heads average at least a third larger than Jersey Wakefield. The spread of the outside leaves is less, so that closer planting may be practiced. The heads are roundish instead of pointed and they are very solid when properly matured. They also carry better in transportation than the Wakefield types.

A strong point in favor of Copenhagen Market is its uniformity in time of heading, which permits the ground to be cleared of the cabbage early in the season and another crop started. A very successful trucker in western Pennsylvania, who grows about 20,000 early cabbages annually, now plants no other variety.

Early Summer is a well known variety. It ripens with Charleston Wakefield or perhaps a few days later. The heads are flat and fairly solid.

Succession, a midsummer variety, is regarded by many as the best bred cabbage in America. It usually runs remarkably uniform in type. The heads are large and solid at maturity. Seed sown the 1st of February should produce ripe cabbage in any part of the north before the 1st of August.

Whatever the variety selected, the utmost care should be exercised in buying seed, for there is marked variation in the strains of different varieties.