

The Vermont Farmer.

AN AGRICULTURAL AND FAMILY NEWSPAPER FOR THE RURALISTS OF THE GREEN MOUNTAIN STATE.

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Vermont Farmer

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Starvation by exhaustion of the soil is the most common cause of the premature decay of apple orchards. Like other disease prevention is easier than cure.

From Messrs Charles Miller & Son, Utica, N. Y., we have circular and price-list of these factory dairy apparatus and a full line of dairymen's supplies.

Mr. Robert Ewell, Langdon, N. H., has given notice that on March 25th he will sell at public auction, his entire herd of thoroughbred Shorthorn cattle, 25 in all.

We regret to learn that on account of insufficiency of appropriations the professorship of veterinary science, so ably filled by Dr. Noah Crosby, at Massachusetts agricultural college, has been temporarily suspended.

The farmers and dealers in fertilizers had another meeting at Middletown. About 200 were present from Connecticut, Massachusetts and New York. The dealers concurred with the farmers in submitting to the analyses of the experiment station.

President Clark has selected D. P. Penhallow and Wm. Wheeler, graduates of Massachusetts college, for professors the first, of chemistry and botany, and the latter of engineering, of the new agricultural college he is to establish for the Japanese government.

Dr. T. H. Hoskins, Newport, Vt., sends us the sixth annual price list of the Memphremong Seed Farm and Nursery. Parties ordering trees or seeds from this establishment can rely on their being true to name and corresponding to the description in the price list.

Mr. S. E. Chamberlin, Wilmington, sends a sample of "yellow eye" beans, from a fine crop raised by him last season, and writes, in a private letter, that they are a "bush bean"; prolific, ripen in August, remarkably free from "blast," every pod in my crop being clean and spotted though there were frequent rains while ripening; cook easy and are of pleasant taste. They lead the quotations. What more can be asked of a bean? His offer of seed for our garden is gladly accepted.

C. V. Riley, Missouri state entomologist and Prof. Le Conte of Philadelphia, have appeared before house committee on agriculture of congress to urge the appropriation for establishing a scientific commission to investigate those insects which are most destructive to crops, and devise, if possible, methods for their destruction. He would have three commissioners, to be appointed by the national academy of science, to be paid a salary of \$5000 a year each and \$10,000 for chemicals. Prof. Riley is confident that remedies can be devised.

Great care is taken in the preparation of seed and cultivation of potatoes for the prizes annually offered by B. K. Bliss & Sons. Great quantities of fertilizers are applied. In one case, on a black loam, formerly used as a hog yard, a peck of ashes to the hill was given, besides a top dressing of the same. The pound of potatoes was planted in fifty-two hills, two sets to a hill, three feet each way, the yield 970 pounds, and at the rate of 677 bushels per acre. Sometimes a single eye is divided into ten sets. In one case a pound of seed made 240 sets, nearly all of which grew well. Does not this minute division of the seed impart the constitution and vigor of the potato?

Mr. T. B. Miner of Linden, N. J., writes to the New York World that in producing new varieties of strawberries and other fruits by hybridization success is the result of chance; that the qualities of the parent plants are not and can not be communicated through the seed of the hybrid berry to the plant grown therefrom; and that the choicest varieties of seedlings are produced from the nearest sorts. Mr. Miner attacks with confidence the rules laid down by successful hybridists. It is easier to pull down than to build. Anything can stone the work. The World makes no comments on Mr. Miner's letter. Our own Mr. Pringle, of whose work Vermont is, and has reason to be proud, has demonstrated the fallacy of Mr. Miner's statements.

Remedy for Pulling Wool.

In the report of the discussions on sheep husbandry at the Pomfret meeting, I saw that two remedies were spoken of to prevent sheep from biting and pulling their wool, neither of which will fully cure. I have for ten or twelve years used corrosive sublimate, and found it a sure cure in every instance. I use for a flock of about seventy-five one-half ounce a year. If a flock of that number pick badly perhaps one ounce might be required. I dissolve one-fourth of an ounce in one pint of water; when dissolved apply from a bottle with a quill through the cork by putting a few drops to the skin in several places round where they pick. One application I have found sufficient for one season, if well done.

J. A. MILLER.
Lelton, N. H., March 4.
(Corrosive sublimate is an active poison, and should be used with care, marked poison, and stored where no accident can result from its use.)

White Schenon Oats.

Since the letter of J. R. W. was published in the FARMER we have had many inquiries who is author is, and if the White Schenon oats are really as good as represented. At our special request and to save further trouble, in making private answers, our friend, Mr. James R. Walker of Springfield (P. O. Weatherfield, Vt.) permits us to state that he wrote the article referred to. In a private note he says, "There is no humbug about the White Schenon oats, as you yourself do know. The farmers have been humbugged so much with seed oats and other things, that I withheld my name thinking that this ought to be considered another advertised humbug, and the writer anxious to sell his crop at a high price." Mr. Walker's statements can be relied on.

Feather Eating Hens.

Mr. C. H. Gilbert of Wolcott, states that his hens pull out each other's feathers and eat them, and inquires for the cause and a remedy. We have submitted his letter to our poultry correspondent at South Acworth, who replies as follows:—
[Ed.]
Mr. Gilbert is in trouble. There is nothing that will make a man believe in total depravity as quick as to find his hens pulling feathers, and try to cure them. Various reasons have been given—such as lack of animal food—thirst, etc., but hens that have plenty of water and scraps will learn the habit. Usually, hens that are kept confined and are fed high, and have nothing to scratch in, are the ones that pull feathers. Fowls with crests are more liable to get at it. The habit is easier prevented than cured. Hens need something bulky to take the place of grass. Rowen, clover hay or light corn fodder is a good substitute. If one hen begins to pull feathers, separate her at once from the flock, and if a common hen—cut her head off at once. If valuable, either burn with a small red hot iron so her bill will come together only at the point—and but little at that, or burn a little at the point so she cannot hold on to the feathers. It is best to watch the hens and see how they go to work. Some will hold the feather with the sides of the bill; others will take hold at the tip. Care must be taken to burn only the tip edge or rim of the bill. It will not hurt them. If Mr. Gilbert's hens have all learned the habit he can prevent it only by burning the bill—Next fall he should kill every one of the old hens. I had a game pullet begin to pull feathers at the poultry show (the cock is the one they begin on) and I had to put a partition in the coop. After I got home I put them together not thinking she would get at it again. When I fed the hens at night the cockerel was trimmed for fighting. I was wrothy, and in a hurry, so I took my knife and pared her bill. She has behaved well since. That is the only case I have had, but have seen plenty of others. JOHN G. MCKEN.
South Acworth, N. H.

Feeding Milk Cows.

For two months past I have practiced feeding at five in the morning. Hay first and roots and bran, after the hay is eaten. Turn out and water about eight and return to the stable after a short time out for drink and exercise; but not long unless the weather is fine. I feed all the roots and bran for the day at one feed.
The second feed of the day is at 2 p. m., hay only and all they will eat until four o'clock, at which time I water and return to a warm stable for the night. I think my fifteen cows do better by this method, than to feed three or four times as I heretofore have done. I sell milk and am able to know when the cows are doing their best. I consider one peck of roots, one quart of corn meal and three quarts of bran, together with all the June or autumn out [rowen] hay they will eat as good liberal winter feed for an average sized milk cow. My mowings are all cut twice in the season. Would be glad to cut before it is fairly headed out. Grass is not cut too early but mostly too late. Cut it early and cut the second time. The cheapest feed that I can raise is dried grass and fodder corn. Roots cost no more but they are very valuable. I shall raise more instead of less. Bran is worth all it costs for feed, and also all it costs as a fertilizer afterwards. J. H. R.
Northfield, Vt.

A Query.

In some remarks appended to an article from me in the FARMER of March 3, you say that if your observations are correct the digestive capacity and temperament of the animal exerts a greater influence over the amount of food required to sustain life, than the weight of the animal does. I grant this, but ask if the digestive power and temperament of the animals are the same, will not the amount of food required be in proportion to the weight of the animals. In writing the article the idea was to take average animals, and as yet I think the premises correct. Extremes of course can be selected that will destroy any calculations. And now, Mr. Editor, if your views do not coincide with this, please explain the matter, as my object in writing this is for information and improvement not for criticism. S. G. FORRAN.
[There is no doubt that weight (or size) of the animal has an influence on the quantity of food necessary to sustain life. But we have seen so many small animals which consumed more food than large ones, with smaller results, as to convince us that it cannot be safely laid down as a principle that the consumption of food to sustain life is in proportion to live weight. It may be that digestive capacity, temperament and all other things being equal, the quantity of food necessary would be in proportion to live weight, or nearly so. Because it takes a little more fuel to maintain the animal heat in a size hundred pounds than in eight

hundred, and a fraction more of motive power is necessary to move it. And there may be a trifle more of waste of tissues to be restored.

And yet the difference in digestive capacity of animals of the same weight is so very marked and there is so wide a variation in the secreted glands which draw from the arterial blood the needed elements, and convert them into various qualities of milk, into bone and muscle, and the various tissues of the body, that the question of size, so long as extremes are avoided, is hardly a secondary consideration in selecting a dairy cow for the purpose of obtaining a large return for food consumed. When dairymen and farmers get over the notion that in selecting cows for the dairy, it is expedient to procure cows of any particular size, color, or breed, the better it will be for them.
The good cow is a gross feeder, whatever her size or breed. If she has an appetite which will accept any food offered, so much the better for the dairyman.]

Letters from the Country. No. 1.

In the late agricultural meeting held in this place, one of the delighted listeners found his thoughts sometimes switching off the track of the discussions and taking another line, not opposite but after a short turn parallel with the others. "Does farming pay?" seemed the key note of most of the papers. Leaving the discussion of this preliminary point to those more able to decide, I hope to be pardoned for taking another point of view.
It must be confessed we must have a lease for our houses, a calling, a business and a home in order to live in comfort at all. But the question is somewhat broader and deeper. How to live honestly, and with honor and usefulness? How to get the most of innocent happiness out of our short lives, while we get ready for the higher one? This was the course where my thoughts switched off the track.
Is the farmer's business favorable to honesty? This is generally a conceded point, but how about mental improvement? We notice in our own town not less than eighteen or twenty young people are sent up to the normal school this winter in order to supplement their common school education. Many of them return to us as teachers. Some will go up higher. The farmers do so, to educate their children. In casting thought back a few years, one finds farmers (now men) in positions of usefulness and honor in several states. One a physician, one a publisher, one an artist, one a superintendent of health in a city, several were officers in the late war—all honorable men—not a black sheep to be found among the absent ones. They will not all turn out farmers. That is not to be expected, but the education they get on the old farm and in the old schoolhouse has so sharpened their wits and sobered their judgment, that when the occasion and the work comes to them, they are equal to it. There are not quite farms enough for them all, but those who remain with us are a credit to their calling. Necessity compels them to be wide awake the year round. Our poor house, to be sure, is a bad way. One old lady here boarded there because she finds "it a home." But the regulars are less than a dozen, and every year growing less. We have neither lawyer nor physician, but then few people are sick, and very few go to law. As for neighbors; why, no one but a farmer can understand what neighbors mean. To us the word has a ring to it. Now it is a hoe to get up wood for a poor widow; now a frolic called a sewing bee to help some people who are sick, and very few go to law. As for neighbors; why, no one but a farmer can understand what neighbors mean. To us the word has a ring to it. Now it is a hoe to get up wood for a poor widow; now a frolic called a sewing bee to help some people who are sick, and very few go to law.

What Gooseberries Shall We Grow.

Many continue to deprive themselves of the pleasure of having the gooseberry in their gardens owing to a widespread misunderstanding that there is in regard to it. They are all familiar with the appearance of the old foreign kinds, that, covered with mildew, seem to have encased themselves in armor to ward off attacks from the great destroyer, so called, succeeds admirably, as the fruit is usually left to hang on the bushes almost unattended owing to their very unsightly appearance. But this is no longer the case, thanks to the careful experiments of some of our American horticulturists. Within a few years several new seedlings have been placed before the public, that fully make amends for the faults of their English cousins. Among those for which I have the greatest demand, and that I find to be most desirable are the following named varieties—all of which have considerable merit, and are worthy of more general and extensive planting.
The first to be mentioned—"Downing's seedling"—was originally brought to notice by the well-known amateur and authority on fruits, Charles Downing of this state. It is a seedling of the "Houghton" to which it is very much superior in size and very much more acceptable for garden cultivation. The bushes are strong growers with stout, thicket limbs or canes, and have the habit of retaining their leaves until late in the fall, a merit that many will appreciate who wish their fruit plants to perform the double duty of being ornamental as well as useful. This plant, as if to remind us of the well-known lines—"The richest pearls are won from the roughest seas," or "The sweetest roses among the sharpest thorns are found," seems to have gathered together a superabundance of repelling thorns to protect its

liminary remarks," and a little flapping of the wings" by the American eagle; but the claims of money making and those of intellectual culture and refined and rational enjoyment seemed to be pretty evenly balanced. Not that these subjects were any of them exhausted, but worked up enough to set the people to thinking on them, if they did not before. And to keep them thinking, keep up the agitation, so that action shall result from thought, and needed improvements in all these respects be generally adopted, must be the office of those who are content to labor less obtrusively. Among this number we recognized "H. V." and shall be glad of a continuation of her efforts for the readers of the FARMER.]

For the Vermont Farmer. Top-dressing Dry Land.

EDITOR VERMONT FARMER: In the report of the meeting of the board, at Rochester, Feb. 8 and 9, we read that C. H. Hubbard "favored saving manure for top-dressing meadows that are not too dry." Now we are not sure what to infer from that remark. We are more willing to think it is because the moist land cannot be tilled so profitably, yet we are well aware that many farmers' object to top-dressing dry land because they say it "don't pay," but I am convinced that it pays as well to top-dress dry land as any other. Sheep improve an old pasture very fast by top-dressing the dry knolls. I have been well satisfied in using sheep manure, ashes or straw, on dry land, but never when I used moist manure the nature of which is to keep moist, as it evaporates too rapidly and soon becomes worthless.

I well remember, when a little boy, that my father spread some flax on the grass to rot, but as it soon became dry, saltry weather, the flax would not rot and remained out several weeks, of course the flax was sun-burnt but it protected the grass roots through that dry weather so that there was a decided improvement in the crop on that little spot for two or three years after, although little or nothing was added to the soil, except what grass might have accumulated with the moisture under the flax, proving to my mind that braken, leaves, straw or anything of the kind, spread upon the meadows as soon as the crop is taken off, are of great benefit in protecting grass roots from drought.

Waterville, Vt., March 6, 1876.

[Our own experience in top-dressing dry lands when the grass roots are thin and feeble, in other words when there is a poor soil, indicates that it is a very uncertain way of using manure; the results are so dependent on the weather. When followed by moist weather for a long time, the benefit has sometimes satisfactory, but in cases where the application was succeeded by a drouth, there has often been a perceptible loss. When there already exists a poor soil, the soil being filled with hungry roots, reaching for food, a dressing of the manure will be immediately beneficial. In such cases the young grass springing up under the stimulus of the manure soon shades it and its own roots from the sun. And yet in every instance the results depend upon the weather and the soil. If the latter is moderately dry but the weather is wet, the effect of the manure may equal that on moist soil in dry weather, other things being equal.

Mulching with a light dressing of straw or coarse manure, if it is in such shape as to be evenly scattered over the surface, not in lumps or flakes, protects the soil from the scorching rays of the sun. The spreading of flax on the grass may have occurred in a very dry season, and have saved the grass roots from perishing by the scorching sun, while the soil on the adjacent land was impaired by this influence. Or some fertilizing matter may have been absorbed by the soil from the flax. Who shall say?

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highly coveted fruit. A little stratagem, however, in the way of using a pair of thick gloves will readily prove the superiority of mind over matter, or of man over the vegetable kingdom. It is surprising what a feeling of equanimity and exaltation seems to possess one as thus engaged who proceed with perfect ease to strip the hostile plants of their treasures. When gloves are not at hand if a little care is taken to raise the limbs separately with one hand, meanwhile picking carefully with the other, then the much dreaded thorns will prove near skin to friends, and what appeared to be rugged mountains in the way at first, will upon nearer approach turn out to be rounding slopes. The fruit of this variety is quite large, two or three times the size of the "Houghton," and is of excellent quality either for cooking or table use. Their color—a pale green or whitish green, and smooth skin with ribs very distinctly marked, makes them of special value for a table fruit, used either alone or interspersed with their more highly colored kinsmen, the "Houghtons." As the "Downing" becomes more generally known it will make many friends. It is, however, a favorite and tender flesh will make it as well for family use. Then its abundant foliage serves to keep the fruit from being scalded or burnt by the sun, and the shade formed helps to retain the dampness in the soil and consequently increase the size of the fruit. The plants will be found to be abundant and regular bearers and not affected by mildew.

"Smith's Improved" is another comparatively new seedling gooseberry. A younger brother as it were of the "Downing," as it also was grown from the seed of the "Houghton," claiming, however, the state of Vermont as the land of its birth. In habits of growth it is similar to the "Houghton," though possibly a little stouter and of more upright form. It is unusually productive when well cared for, and should be placed in the best situation and given rich and thorough cultivation. It will then show a desirable result for its treatment and will well repay the extra care bestowed upon it. The fruit is large, somewhat oval in form; of a pale yellow or greenish yellow color; thin skin; flesh moderately fine and of excellent quality, not surpassed by any of the American varieties. The plants ripen their fruit earlier than the others, and by planting them with the "Downing" and "Houghton" the season can be very much extended. This also is free from the habit of mildew, is largely and healthy, and can certainly be called a great acquisition to every garden.

"Houghton's Seedling." This though named last in this list is more widely known and more generally cultivated as yet than either of the other two, as the others have hardly been before the public a sufficient length of time to have their merits fully known; still the "Houghton" is highly prized by many notwithstanding its inferior size (small to medium) as its wonderful productivity gives it a very prominent place, and makes it a desirable variety for home use or market. Its branches at times seem to be literally covered with fruit; one being wedged in against its neighbor until there is hardly room for another. This sort is largely planted for market—the berries being stripped white green from the branches with gloved hands, say leaves or twigs that may be pulled off being afterwards separated. The fruit is roundish oval in shape; of a pale red color; skin smooth and slender; flesh sweet; very good. The plants are of vigorous growth; branches tender and drooping; hardy, healthy and not inclined to mildew. We find upon observation, that it is not always the great, but rather the useful ones that do the most good, and leave the world better than they found it; and so it is in the case of the "Houghton." With few features to make it remarkable, it is, nevertheless, almost superseded and driven from the land its mighty English cousins, who hosts of friends, and nearly revolutionized the cultivation of this berry in our garden.

The gooseberry can be grown on nearly all kinds of soil if naturally deep or well trenched, and will be found to be quite a valuable addition to the list of fruits which are worthy of cultivation. Obtain reliable plants, set them three or four feet apart, enrich the ground well, cultivate thoroughly and you will be well repaid for the expense incurred, and time and labor expended in growing them.
R. H. HAINES.
Malden-on-Hudson, N. Y.

Meeting of the State Board of Agriculture, Manufactures and Mining.

At Chelsea, Thursday and Friday, February 19 and 20.
The meeting was called to order by Col. J. B. Mead of the board. Mr. Ezra Walker of Chelsea was chosen to preside, and Mr. Pitkin was elected vice president.
Mr. Walker made a few opening remarks in which he spoke of the farmers as men of leisure and great readers, but that reading did them little good as qualifying them for their calling. Agriculture seems to be declining, and the thrift and general appearance does not appear to be improving. The work of the board of agriculture is to awaken an interest on these subjects and to inaugurate a spirit of improvement. They come now to hold a meeting among us, and for which we bid them a hearty welcome. Farmers, I assure you this is in my meeting, and we bid you to take a part in it, and help to make it interesting and instructive.
Mr. Hubbard seconded the motion in regard to its being a farmers' meeting.
Hon. C. W. Clark of Chelsea then read a paper upon "The Home, the Fire and the Work Shop."
Mr. Clark's paper was considered very elaborate and instructive. He gave a description of the condition and dispositions of men in ancient times, the commencement of agriculture, and its gradual modifications and improvements to the present time. He

told how the lack of education has always kept the laboring class down and subservient. He illustrated the superiority of mind over mere brute force. After showing the importance of the farmers to the wealth and prosperity of any nation of the world, he said, the question just now seems to be whether our young men will take the opportunity that is afforded them in securing a high agricultural education. All education must be addressed to a man's mind, but there is nothing that is not susceptible of education. Whoever achieves much does it by his brains. The mind directs and the muscles act in subjugation. It cannot be said of our farmers that they are not thoughtful, but they are slow to see that good results come only from long-continued thought and study. Nothing valuable in this world comes to us without labor—labor directed by thought. The institution of union stores by the farmers a few years ago resulted in failure and disaster for want of thought and disregard of the palpable fact that everything is governed by law. As the falling drop of water forms itself into a globe, so everything is subservient to establish an immutable law.

After this Geo. F. Smith of Washington read a paper entitled "Who shall succeed?" The tide of emigration goes westerly. Last year 30,000 went from two lines of railroad to occupy land. Of this number many are Swedes, kind and patient, and they form the beautiful part of the grand procession. Then there are our German sisters, joyful and full of hope, and lastly the Americans, ready to go anywhere if there is a prospect of making money. The West is a growing rich. It is estimated that every emigrant is equal to \$1,500. Cities and villages are growing rapidly, so much so that they seem almost to spring up in a night. But let us now look at home and see what the prospects are here in Vermont. Our soil is not equal to the Western prairies, where they crop year after year without manure, but soil 20 feet deep is not wealth under all circumstances. Strong muscles and broad acres do not necessarily produce the highest prospects. Mental labor is the great producer. There is nothing equivalent for brains. Here in Vermont we have no emigrants; we need none. Vermont will increase her wealth by moral and mental acquisitions. Improved methods of enriching the soil are going to be found out. No soil nothing will be allowed to run to waste. Vermont will not suffer in contrast with any state in her power of production. Here we have no drouth, no famine, no grasshoppers. We have advantages to invite capital and labor. Who then shall succeed, the West or the East? Young men, answer these questions, and do it in your best judgment. Do not say you have no home here in Vermont. Remember there is room in the upper story. Good qualities and good discipline never go begging.

Col. Mead: I am deeply interested in what has been read. Let me touch upon one topic—education of the farmer. I have thought that one-sided men have been of more benefit to the race than any others; such as Martin Luther and Fulton, who have by concentrating their minds on one thing ruled the world. The times and seasons seem to call for nothing more than systematic education. The resources that are at our hand are wonderful in their extent. The western fever is somewhat abated. People are thinking more of the resources here. Why not turn our attention to reapering our native soil? The West is not all composed of rich land; there are vast stretches of desert scattered here and there. If this be true, it is all the more important for farmers to turn their attention to working up the soil of their own state. We have samples of what has been done in improving worn-out land. It is our duty to avail ourselves of these experiments. If it be true that we can take a barren pine plain, and by spending \$8 per acre in chemical manures, bring it into a state of fertility, surely there is cause for encouragement. Farmers should be more ready to avail themselves of these means. There are many cases where men have doubled their crops on worn-out lands in five years. I do not say that every one can do it without experience, but there is encouragement. I know that farmers have been passing through what they call hard times, that they are depressed by taxation and by laws. Pastures are falling, and the hay crop is some seasons being diminished. But much of the so-called hard times they are responsible for. Old settlers cannot be called robbers for cropping the land too heavily without equivalent returns, for they did not know but the soil was inexhaustible. Our grandfathers, although they had rich soils, were obliged to work at great disadvantage. If we have a poorer quality of soil, we have as an offset greater opportunities for education, better facilities of transportation, and improved machinery. We owe it as a duty to posterity to replenish and improve the soil.

Mr. Smith: I thought it seemed a good way to get to Chelsea, but I have had a very pleasant meeting so far. I have gained new ideas and am much interested in these discussions. Let us go on and encourage one another.
Mr. A. Chapman: I wish to state a simple fact in regard to our boys going West. Many of those who went to California with high expectations are returning and tell us that they think they are better off here.
Mr. G. F. Smith: One thought in regard to the proceedings of our forefathers in exhausting the soil. Mr. Mead thinks they would not have done it if they had known what the results would have been. This is contrary to history. In every new country they first crop the soil till it begins to be unfruitful and then move on. So it is now in this country, people are going West for richer soil.
Mr. Hubbard: Whether our forefathers realized the fact that our soil was capable of being exhausted or not, we ought to realize it now, and whatever views we may take of

their actions our duty is plain. We must take an entirely different course from what we are pursuing. I believe that we can maintain the fertility of our farms, that we can increase it, and that it can be done very easily and very much to our advantage and profit. One way is to save all the fertilizing matter on the farm. We waste too much. I am guilty of it on my own farm, but I am going to do better in future. We are not raising corn to sell as we were once. We are compelled to stop this and buy corn instead. This is good for our farms. Another way to increase the fertility of our soil is to raise those crops that do not exhaust its fertility too much. In regard to Mr. Smith's question as to which shall succeed, the East or the West, I am glad he stands up for Vermont, I believe there is no state that offers greater inducements for the farmer than Vermont.

Col. Mead: Have any of you made experiments with human excrement as a fertilizer? Do you know how Japan has kept up such a dense population for so long a time? It is by saving and applying human excrement as one great thing. The amount of waste in this respect in this country is immense, and the diseases caused by accumulating filth is deplorable. It is one of the worst breeders of fevers and kindred diseases. I have seen privies that have not been cleaned out for four years. I have seen the manure composted from a family of eight persons sufficient to enrich four acres of land fit for any crop. There is more waste, disease, sickness, death and trouble resulting from accumulated filth in cellars and around dwellings than from any other cause. I know of farmers in Vermont, who have not cleaned their cellars for two years. You know that vegetable decay is one of the worst causes of disease. I know of a farmer who took 15 barrels of dried milk to his privy, and had the slops of the house poured on, and thus made a compost capable of enriching land for four acres of corn without any other application.
Mr. Hubbard: When I preached that Vermont was superior to the West, they asked me if I had been there. I have not, but I know a good many who have been there and would now be glad to get back. I know the case of a neighbor who took 100 acres of land in Kansas. He had a good farm well watered but no wood. There were no stones on it and soil eight feet deep. One good thing is they don't need any stone wall for their cellars the ground is so hard. Everything grows there with great rapidity but there are many things to prevent a good crop. When he had been there six years he had only two crops that came to maturity. Sometimes they have a dry wind that burns everything right down, and frequently the grasshoppers interfere with their prosperity. When everything is favorable they have enough to eat and that is all. Every one else is supplied and there is no sale.
Mr. Smith: I have been West. I went out with bright prospects, and was delighted at first and thought I would soon send for my family. But one morning I went out after one of those drizzling storms, and looking back, my tracks resembled the footprints of elephants. My stomach immediately began to feel badly and I took the next train East, and have ever since been contented here.

Mr. Barnes of Chelsea: There are two sides to this question. I am knowing to a case where a man went West and made his fortune, and would not come back for the life of his farm you might offer him.

Prof. Stealy: In regard to the offensive accumulations around dwellings, certainly if they are detrimental to health and also so soluble as fertilizers there ought to be great care taken in properly disposing of them. Mixing with dry earth is an excellent way. I use it within my own dwellings and if arranged properly all odors can be entirely prevented.
C. G. Pringle: I have tried to devise a plan to save and appropriate all the slops, leached ashes, bones, etc., and I recommend a large cemented reservoir where the substances can be composted and mixed with dry earth. In this way a large amount of valuable manure could be obtained, and at the same time all offensive odors would be obviated.
At the Thursday evening session two papers were presented, one by C. G. Pringle on "Grasses," and one by Prof. Stealy on "Leaves."
Friday Morning.

A paper was read by J. H. Mead of Rutland on "Sheep Husbandry" followed by one on "Horses for Vermont" by A. Chapman of Middlebury. The above papers have been previously reported. Next was a paper by Mr. Hemenway on "Morgan Horses." Mr. Hemenway said that this was the home of the founder of the best Morgan horse. The original Justin Morgan was old before used, was fourteen hands high and weighed 950 pounds, was dark bay color with black legs, main and tail. Some of the characteristics are, eyes small, very fine and set rather wide apart and pleasant expression, chest deep and wide, legs short and equal jointed, muscles large, hair short, soft and glossy. Their feet and limbs are faultless and they are docile and powerful. Their last characteristic is speed.
Mr. Hubbard: I believe in good breeds of all kinds of stock, but not in breeding to sell at fancy prices. I believe the farmers of Vermont ought to improve their stock by importing thorough-bred sires. I have been informed with great truth that the cattle of New England might be doubled in value in five years without increasing the numbers or the cost of keeping, by simply improving the breeds, and I believe the same is true in regard to horses and sheep.
Col. Mead: I believe it is possible to get back to our former breeds of horses. We can beat the world in horses of all work. We have got to have horses of all work in this country. Before I went into the army I had a horse that would trot forty miles in

four hours, but I do not know where I can find them now. But I want a horse that will do it if occasion requires and also be good to work. I crossed this mare spoken of with the Hambletonian but did not produce anything near his equal.
Mr. Smith of Washington: I am surprised to find that the Morgan horses are valuable for speed for my observation is that good workers are not usually good trotters.

Friday Afternoon.

Mr. Smith of the board was requested to speak on butter which he did as follows:
We want to know how we can make the most money from our cows. Some want to make butter and some cheese, and that is all well. I shall allude chiefly to my own experience. I have kept a dairy for a number of years and have made cheese till within about five years. My experience is that I had rather make butter than cheese. One reason why I dislike to make cheese is because it requires so much more labor to take care of it and frequently we are obliged to sell in the season of the year when the market is low. In case of butter, after it is made we can pack it and let it remain till we are ready to sell. I bought a set of Jewett pans for 100 cows and used it four years. Then bought a set called the "compartments pans." They are nice on account of the convenience of handling a part of the milk at a time. I skin the milk when sweet and use it for feeding purposes. In using these pans you can have water at the ends and sides only if you wish. I do not know as you can make any more butter by their use, but they save one-half in labor. I do not know as we can make a better quality of butter, but we can make a uniform quality which is a great advantage when you come to sell. I churn the cream at a lower temperature than some, say 52 or 54 degrees is what I generally have. It requires more labor, but I think it pays in a better quality of butter. I use the Sanborn churn and like it well. There is no danger of the dairy business being overdone, and Vermont is an excellent state to carry on the business or any other department of agriculture. I went West once and satisfied myself in regard to this matter. I tried buying cattle one time, thinking I could get a living easier that way. I got my friends to sign with me to get \$1,000 from the bank, then I bought cattle and sheep, and drove and hauled and run all summer and in the fall when I got my returns I found I was obliged to take \$1,000 that I had laid up to pay my notes. This satisfied me, and I went back to farming.

Mr. C. H. Hubbard then spoke on the "Grass Crop." We can increase the grass crop without other manures better than manure. The amount of grass cut per acre is not half what it used to be in many cases. The question is, how shall we increase its production? First, by top-dressing mowings. This is the cheapest and most expeditious way. The manure to be re-laid on meadows where there is already a fair quantity of grass roots in healthy condition and also where it is not too dry; otherwise we shall be greatly disappointed in our results. The manure used should not be coarse and lumpy for in this condition it will lay on the ground for years and not benefit the grass to any great extent except what little is washed into the ground by rains and there it reaches certain portions. Second, by plowing up and reseeded where the ground is dry, the grass will run out. In parts too rough and steep to plow to advantage put on fine manure in wet time and sometimes plaster can be used to advantage, but not on all soils. Plaster does best on clover. I use from a half bushel to a bushel of plaster per acre and apply it just after the clover starts from the ground. I recommend plowing and reseeded with manure, without raising any other crop, in order to get over the farm quicker. I consider ten loads of good manure per acre a fair dressing where nothing but grass is sown. At what season shall we top-dress the ground? The best time is the seed sown and grow? Some farmers think they must sow grain with the grass to shade it, but this is not necessary. I prefer to sow it as soon after having as possible as if it happens to sprout and then comes on dry weather, you see you need not let it rot on the ground for years and years. You can sow as late as November and get a good crop. But do not sow clover in the fall by any means, it is too sensitive to frost. It is not necessary to harrow in your seed if you sow early. When you sow seeds grass late, you must mow high the first year for the roots are not sufficiently established to stand exposure to the heat of the sun and dry weather. A peck of hard-grass, ten pounds of clover and a bushel of red top, make a good mixture per acre. Clover is very valuable on account of its taking so much of its food from the air. June grass I consider best to feed to cows, but it must be cut in June.

Mr. A. T. Smith: Give me good herbage and clover and I can get along very well with any other kind.
Mr. Hubbard: Mr. Smith does not mean that farmers are to confine themselves entirely to these two kinds for there are soils adapted to different kinds of grass, and farmers will do well to ascertain the adaptations. Orchard grass is good for most land and may take the place of swamp and wild grass. Two or three crops may be cut in one season. Hungarian grass will grow and mature in fifty days, and may be used when grain has died out. Some people grow fender corn, but my objection to that is that it takes a great deal of manure and it is a great labor to harvest it. Fodder corn should be allowed to wither before fed to cows, or it will cause them to give watery milk. I do not believe in top-dressing heavily enough to smother the clover, and in regard to roven it is better to mow it off early so that it can rot before being fed. Fodder corn should be cut again before being fed. In regard to starting hay it should be just dry enough not to heat in the mow and so that it will come out green in the winter.<