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R. A. MOORE,
Assistant to the Dean, College of Agriculture, U. W.

The Wisconsin Horticulturist.

VOL. III. MARCH, 1898. NO. 1.

When we decided to make the March number of the Horticulturist a souvenir for the students and alumni of the Short Course in Agriculture of the University of Wisconsin, it seemed to us that the most appropriate frontispiece would be a portrait of Mr. R. A. Moore, who has charge of that course.

Mr. Moore was born in Wisconsin and received his early education in Wisconsin schools, supplementing the common school work with a course at the Normal in Oshkosh. During boyhood and early manhood he worked upon the farm, but afterward taught school for several years. In 1890 he was elected Superintendent of Schools in his native county, Kewaunee. This position he held until about Jan. 1, 1896, when he resigned to accept his present position, assistant to the Dean in the College of Agriculture. That Prof. Henry chose wisely when he selected his assistant is evinced by the growing popularity of the Short Course. At the beginning of 1896 there were 90 students in the course; this winter there are 157.

Mr. Moore, being himself a farmer's son, understands the needs of farmers' boys. In addition to the regular work of the course, he sets aside certain evenings for special instruction in book-keeping, debating and parliamentary practice. District School meetings, Town meetings, meetings of Farmers' Clubs, and so on, are organized and carried forward. In this way the young men are taught the duties of citizenship, and to become self-poised, intelligent, capable members of the community. One who knows tells us that Mr. Moore has been absent only once in two years from the students' Friday evening literary society. Under his care we predict for the Short Course increased success in coming years.

THE "SHORT COURSE" EVENING.

One of the many pleasant features of Convention week in Madison was the joint session, Thursday evening, of the State Horticultural Society and the Short Course Alumni Association of the College of Agriculture, University of Wisconsin.

Chas. Whitmore, president of the Alumni Association, was in the chair. The program for the evening had been arranged by the Short Course students under the leadership of Mr. R. A. Moore.

The excellent singing by the Short Course quartette proved that at least four young farmers will not "die with all their music in them." Papers were read by two students, L. P. Martiny and G. E. Douglas; then His Excellency the Governor gave an address, extolling the work of the College of Agriculture, and expressing his pleasure at being invited to speak at this meeting. Gov. Scofield's personality is of the scholarly type. While in his presence you think of him as an intellectual, cultivated, thoughtful statesman, and lose sight of his affiliation with any political party.

L. E. Gettle of the State Department of Education delivered an eloquent address which we have the pleasure of publishing in this number of our magazine. Although it fills several pages, we assure you it will *seem short* and you will miss a treat if you fail to read it.

The recitations by Miss Taylor and Miss Whitmore gave a charming variety to the entertainment; the pathetic rendering of "Bobby Shaftoe" was especially fine. Both young ladies received enthusiastic encores to which they graciously responded.

A. J. Philips, Secretary of the State Horticultural Society, made the closing speech. Mr. Philips has been a boy himself and is now a father of boys, so he knows how to talk to young men. His remarks were off-hand but very pleasing to the audience, and the students gave him their college salute.

MRS. MARY C. C. JOHNSON.

HORTICULTURE WITH THE PRACTICAL FARMER.

Horticulture is an art to which fifty per cent. of the average farmers have paid little attention, yet no farmer can afford to be without fruit, both fresh and canned, in his home. Fruit is one of the finest of the luxuries which are served on the table of the farmer, and is so healthful that it ought to be counted a necessity. What farmer in Wisconsin is so taken up with any specialty of farming that he cannot produce the fruit he needs for home use? One good row each of raspberries, blackberries and grapes, and a few rows of strawberries in the garden would supply the average family with small fruit, while a few apple and plum trees planted in the back yard and odd places would furnish a quantity of other fruit that would be relished by all. To care for these would take but little time and labor and could be done at odd times.

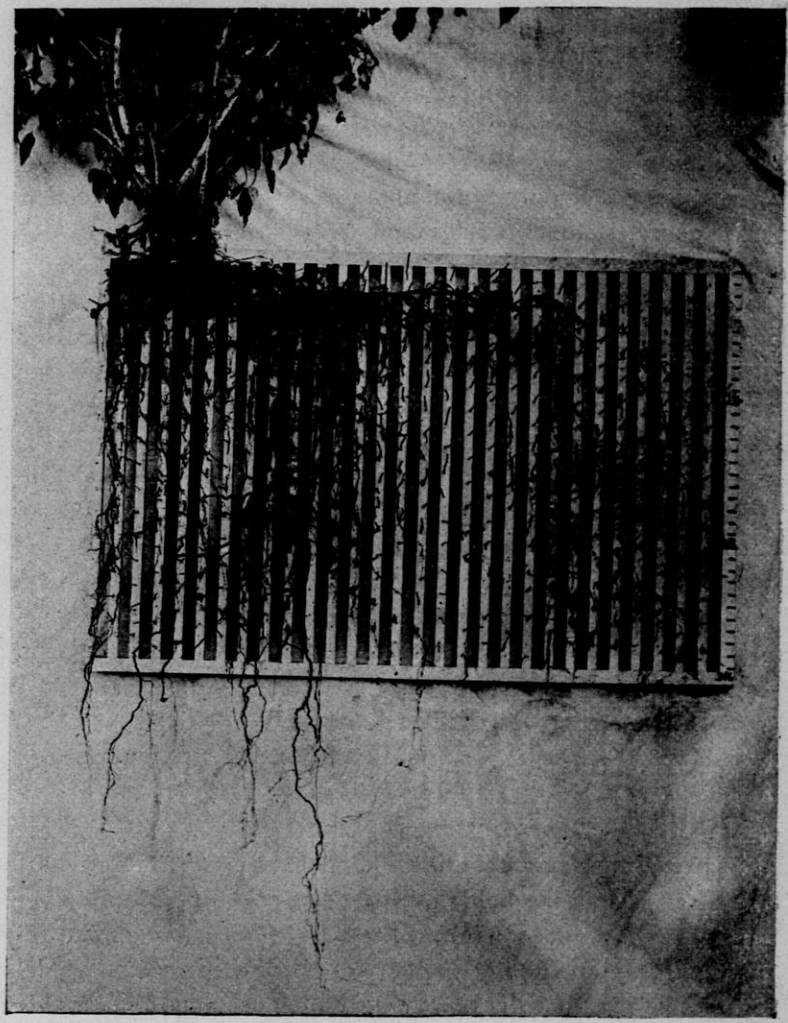
The training given the young men who attend the Short Course in Agriculture is going to inspire the younger farmers to produce the fruit for their own tables. In the Short Course we are taught the secrets of pruning, grafting, seedtesting, transplanting, cross-fertilization, the compounding of insecticides and fungicides, making of hot-beds and cold-frames. Instructions are also given about root growth and the protection of plants.

L. P. MARTINY, Student.

North Freedom, Wis.

Mr. Wm. Hanchett and C. E. Tobey report that one-half the black raspberry fields at Sparta have been plowed up because they have become unprofitable. Some growers will replant partly, but the red raspberries are the favorites for market. The Marlboro is reported to have been more profitable than the Cuthbert on account of its earliness, thus bringing a better price. It is also said of it that while not as productive as the Cuthbert last season, it is rather finer in appearance as a market sort and does not shrink so much in the boxes.

H.



Roots of a Raspberry Plant.

THE ROOTS OF THE RASPBERRY AND STRAWBERRY.

(Delivered at the last summer meeting of the Wisconsin State Horticultural Society at Omro, in June, 1897, by Prof. E. S. Goff of the University of Wisconsin.)

As I said last night, it seems to me that we have been neglecting one branch of horticulture, and that is the part of our plants that grows beneath the ground. We can do very little to change the temperature or composition of the air or the amount of sunlight. We may do very much to affect the fertility, aeration and moisture of the soil; and I think that, while we should not study the parts that grow above ground less than we have been doing, we should study the parts that grow beneath it more.

This is a somewhat difficult subject to study because much patient labor is required to separate the finer roots of plants from the soil, especially if the soil contains much clay.

Our objects in making this study were twofold; first, to find out as much as we could about the roots themselves, and second, to preserve those roots in a mounted form so that we can show them to others. The method adopted was this: After selecting the plant we wish to study, we dig a ditch, with perpendicular sides, in front of the plant, and close to it, but not so close as to divide the crown, carrying the ditch as deep and as far to one side as the roots appear to reach. Then we have made a wood frame that may be compared to a section of picket fence, as long as the ditch and as wide as it is deep, and set this frame up against the wall of our ditch on the side toward the plant. We then push straight pieces of wire, about ten inches long, through holes in the upright bars of our frame, into the soil, between the roots of the plant. Sometimes these wires pass through the roots; if they do, all the better.

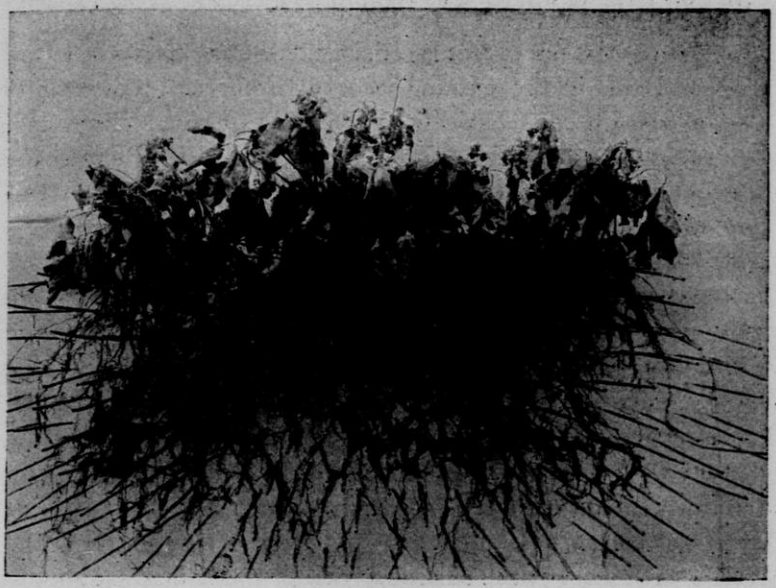
After we have pushed in a great many of these wires, we dig a second ditch parallel to the first on the other side of the plant, and far enough from the first ditch so as to just miss the ends of the wires; we then take a spraying pump and pump water gently against this wall of dirt that

now remains between the two ditches. When the soil is heavy, much patience is required to uncover all of the finer roots. If we attempt to hurry the work, by pumping a strong stream, we break many of the more delicate roots and thus injure our specimen. We gradually wash the earth away, leaving the roots hanging on the short horizontal wires, in nearly the position in which they grew and fully exposed to view.

The accompanying pictures show part of the roots of a plant of the Gregg raspberry that had been planted five years, and a cross section of a matted row of the Warfield strawberry that had been planted three years. As will appear from the picture of the strawberry roots we used a solid board in this, our first trial, instead of a latticed frame. We adopted the frame to enable the washing to go on from both sides, which permitted us to preserve the roots more nearly in their natural position.

The frame that supports the roots of the raspberry plant is four feet long and three feet wide, but the deeper growing roots reached two and one half feet below the frame. They even extended a little farther than this, but they were so delicate that we could not trace them farther. The roots extended laterally four and one half feet from the center of the crown. It is clear from looking at the picture that it would be unwise to do much plowing between raspberry rows, for unless we plow very shallow, we should be in great danger of cutting off some of the main roots.

The roots of the strawberry plant are different in some respects from those of any other plant we have examined. They neither extend as far laterally nor as deep, as do the roots of almost all other crops that we have investigated. While connected with the New York Agricultural Experiment Station, at Geneva, I assisted in washing out the roots of nearly all of the farm and garden crops that can be grown in the northern states. In nearly every case the roots, as grown on the soil about Geneva, extended as far laterally as the branches and sometimes much farther. They usually



Roots of a Strawberry Plant.

extended farther laterally than downward. We generally found the main part of the roots in the layer of soil that lies just beneath the plow line, but both at Geneva and at Madison, we have found that the roots of the strawberry plant extend laterally scarcely farther than the leaves and not as deep as those of most other plants. The roots of the plants shown in the illustration scarcely reached farther down than two feet, and only a small percentage of them reached farther than one foot. It would appear that in the strawberry plant, on our soil at least, the roots grow beneath the leaves and not elsewhere to any great extent. We may probably not hesitate to cultivate as deeply as we desire to between strawberry rows. It would seem that in irrigating the strawberry plantation, the best place to apply the water would be directly upon the rows, and not between the rows as it is generally applied. But how to maintain the level of the spaces between the rows permanently higher than the rows, is a difficult problem.

GRAPE NOTES FROM SOUTHERN WISCONSIN, CONCLUDED.

For trellis we prefer well seasoned burr oak posts nine feet long, set in the ground nearly three feet, and twenty feet apart, except two posts at each end of row. These are ten feet apart and very thoroughly braced, being subject to a great strain. Only two plain wires will be needed. The top one six feet from the ground and the other two and a half feet below it. Of late years we have aimed to have five or six canes of vine starting from the ground. When old enough to renew we cut off one of these canes each year and grow a new one in its place; taken in rotation each vine will be entirely renewed every five years, thus keeping the canes perpetually young and pliable. These canes are laid down and covered with manure in December, after being trimmed in November. In April before the vines try to leaf out they should be uncovered and tied in fan shape to the trellis with wool twine or binder twine. The manure should be spread all over the ground and plowed under. The ground should be thoroughly cultivated through the summer using a short whiffletree on cultivator and a muzzle on the horse. We do no summer pruning. Many people make the mistake of cutting away the leaves to let sunlight shine on the fruit to ripen it. This defeats the object aimed at. It is not necessary that a direct ray of sunlight should ever reach a bunch of grapes to ripen it. Let the sun shine on the leaves and they will do the rest. Cut away all the leaves and the grapes will never ripen. Another reason why we do not practice summer pruning is to conserve vitality in the vine to prepare it for our severe winters. Nature always strives to maintain an equilibrium between the vine and its roots; cutting away the top will check the growth of root and vice versa, cutting the roots checks the vine growth. We like a good strong root for winter. There is but little doubt that a slight circulation of sap exists at times even in the winter. This prevents the capillaries (so to speak) drying up and forever closing.

Some might ask why do we have the trellis so high?

Well, the chickens run in the vineyard and eat all the grapes they can reach by jumping at. They charge us nothing for picking. I am not going to start any wild theory about "grape cure for chicken cholera." Our chickens never have cholera. We also find that grapes grown near the ground are not so good as those high up.

JOHN RHODES,
Union Grove, Wis.

LATE CAULIFLOWER.

The raising of this vegetable is not so difficult as some make it out to be, providing a certain amount of good judgment is used.

The soil should be a strong sandy loam very fertile and moist, to get the best results, although this vegetable may be raised on any soil with success.

Our soil is of the sandy loam type and borders on the shore of Lake Michigan. It was plowed about eight inches deep a few weeks before setting out the young plants, and then received a top dressing of finely rotted manure at the rate of seventy-five loads per acre; this was well cultivated in with an "Acme" cultivator, going over the ground till manure and top soil were well mixed. This cultivating left the soil in a very fine condition and just right for setting out the plants. About the second week in May the seed may be sown, preferably near or on part of the plat where plants are to be set. No transplanting is considered necessary by us between the time of sowing and setting, the seed being sown thinly broadcast. If the weeds start to grow they are pulled out, the seed bed being kept as clean as possible so as to give the plants a chance to make a stocky growth. About the middle of June the plants will be ready to set out. Mark the ground both ways, making rows about three feet apart for the snowball varieties, setting the plants at the junction of the rows, using a dibber for this purpose. If weather is dry at time of setting it will be better to wait

till the close of the day. If a very large plat is to be set, a machine for setting plants will be found to be very useful, it not being necessary to stop for dry weather, as the machine pours water around each plant as it is set, thus insuring a more successful start of the young plants.

Cultivation should be steady and vigorous until plants begin to head, when it should be stopped, as after all cultivation ceases growth is checked and heading (or flowering) promoted.

It will be very beneficial if nitrate of soda is applied after plants are well started, then make another application about a month later, and finally when heading commences apply more.

Nitrate of soda seems to make young plants vigorous and heads to grow compact and firm, and large, although the smaller heads, if they are solid and white, sell better and bring a higher price in proportion to their size. We have found in our experience the best and simplest way to keep the heads white is to gather a few of the leaves together and tie them, not too tightly. This also seems to have a tendency to make them solid. The tying should be done as soon as the plants begin to head. When it is necessary to know if heads are ready to market a few of the leaves may be parted on one side.

To make cauliflower look neat and nice for marketing cut them with about one inch of stalk and leave about three layers of leaves; trim these down to the head and if intended for shipment place a piece of white paper over the heads and tuck down between leaves. This will keep them from becoming soiled, and if packed tightly very little danger will be experienced from bruised cauliflower.

The insect enemies of cauliflower are the same as those of cabbage and can be treated the same way. The worst insect and the only one needing much attention in this vicinity is the worm from the imported cabbage-butterfly ("Pieris Rapae.") This worm may be very easily controlled, our way being to make an application of Paris Green and land

plaster, one pound of former to one hundred pounds of the latter when the plants are young. As plants get older arsenites should never be used as there is danger of poisoning the consumer; hellebore or Pyrethrum may be used with impunity. Having now given a description of our way of raising cauliflower it probably will not be out of the way to say something about the purchase of the seed.

In our opinion any of the snowball varieties are good and although costing from thirty to sixty dollars per pound, it will pay those intending to make cauliflower raising profitable to purchase the higher priced seeds in preference to those of a lower price.

M. Ash, Class of '96.

Foscoro, Wis.

THE BANGOR BLACKBERRY.

By Thomas Tanner, Omro, Wis.

By request of the editor I write what I know about the Bangor blackberry. In the spring of 1890 I ordered twenty-five plants of Edward P. Snell, Rochester, N. Y., which cost me an even five dollars. Said plants were originated at Bangor, Maine. Mr. Snell recommended them to stand our winters without covering, and I have been experimenting with them ever since, and think that I have had them long enough now for a fair test. I claim them to have some merits over other kinds which I will mention:—

First, they do not grow over three feet high and are usually quite branching; if the top bud is pinched off they will be shorter. I can cover two rows of them in less time than I can one of any other kind, and the canes do not break as badly.

Second, I can plant one foot closer together between the rows than other kinds, thus setting more plants to the acre, so that they will yield as much to the acre as the larger varieties.

Third, they do not sprout as badly as the other kinds.

With shallow cultivation I have but very few sprouts, and the roots are more compact and finer.

Fourth, I consider the fruit of first quality for a blackberry, being sweeter and not as seedy as other kinds.

I would recommend covering in winter. I have tried both ways and have had fair success without covering when there was plenty of moisture in the ground in the fall, but when dry have not had good success.

I would say I have Snyder, Erie, Ancient Briton, Child's Tree, and Salzer's Early, and I consider the Bangor the hardiest of any of them and the fruit the best. I do not make a business of selling plants but if any of my friends wish a few and are willing to pay postage and trouble of packing they can have some. My plants have been set seven years and the hills are strong and thrifty. The only thing that I find against the Bangor is that it does not make growth enough the first year after planting to bear much fruit; but with good care will increase each year after. If there is any point that I have omitted I will try to answer questions if requested.

A RIPE GOOSEBERRY.

"As sour as a gooseberry."

The average American's thoughts (writer included) in regard to this berry may be summed up as follows: Found in a neglected grassy corner of the garden, picked when green as grass and hard as bullets, a few are chewed down and these few later on cause excruciating internal disturbance, which brings in the verdict from childhood's experience, "Not fit for small stomachs."

Since the days of experience with green gooseberries, I have often wondered why so desirable a dessert fruit as a real ripe gooseberry has not become more popular with the American people, and the only solution which presents itself to me is that it is merely a matter of education.

We (at home) have made a practice of leaving a certain

number of "Houghton" bushes to ripen their fruit for eating purposes, and by this means have cultivated the taste, not only of the family, but the entire neighborhood. Ripe gooseberry time is a season which is waited for with the pleasantest of anticipations.

I do not doubt that if fully-ripe gooseberries were placed on our markets as a dessert fruit, in a short time they would become as indispensable to us as to our English neighbors.

Whitesmith, Lancashire Lad, Industry, Golden Prolific and Chatauqua, bore exceptionally fine crops the past season on our fruit-farm in Racine County, being planted on rich prairie soil underlaid with red clay of the Niagara limestone formation.

As a rule though, the above mentioned varieties, which all have foreign blood in their make-up, are absolutely worthless for profit in our State. I would not recommend one of them except it might be in comparing with other varieties of the same strain.

The variety which will give the beginner best satisfaction and the commercial grower the most dollars and cents is the Houghton.

This berry will succeed anywhere throughout our State, whatever the soil. Here at Madison on the Potsdam sandstone the foreign varieties make an exceedingly poor showing and are badly affected with mildew.

The Red Jacket is working hard for recognition and is a fine berry, but the wood is too "spiney" for it to ever supplant the Houghton.

W. J. MOYLE, Class of '97.

Mr. S. H. Marshall of Madison is making a venture in cherry and plum culture near that city. Last spring he planted 100 trees of each fruit. He also planted an acre of apple trees. This is the beginning of a fruit farm which will probably grow, for Mr. Marshall is an energetic young man with a future before him.

BEAUTY AND BRAWN.

By permission of the editor, I wish to make a few statements solely for the benefit of the men and boys on the farm, and to remark upon the general appearance of the front yards of farmers as often found by personal observation. I trust that no new facts will be brought out. This is simply a review of the stereotyped remarks on this subject. Did you ever look critically at your front yard from the middle of the road? You have viewed it from the porch many times but how often have you taken in the view as others see it? Try it next spring. I have no doubt there are dead branches in some of the trees, that scatter refuse on the grass with every gust of wind, besides disfiguring the tree. It will pay to remove them. It is probable that the lilac bushes have been allowed to form suckers unmolested, until now the parent bush is lost in the forest. If many of these are cut back you will have flowers next year. Perhaps some tree or shrub has died and still stands, a skeleton rattling its bones, a discord in the song of life. Cremate it. It is quite safe to say that the sod is "patchy." Unless the turf has been well cared for, there will be bare spots that afford a breeding place for the outlaws of the field and garden, the weeds.

I am quite sure there are no flower beds or flowers. These add wonderfully to the appearance of the front yard and it will pay to arrange for one or more beds. Not in the most conspicuous place, for flowers should be used to give an added charm to the landscape, the main features of which should be trees, smooth turf and shrubbery, all arranged in imitation of Nature's plan. In southern Wisconsin, at least, there is not one farm yard in five hundred that has a satisfactory flower bed. The reason is, my dear Brethren, that you have never taken an active hand in it. You always leave all this to the women folks. They are cheerfully granted the privilege of spading the beds and are given full control of the floral work. This is not right. You are quite as fond of flowers as they and have ten times the muscle, and this is necessary to properly prepare a flower bed. Do

it in this manner: Lay out on the sod a bed of the desired shape. When the outline is determined, remove the sod with a sharp spade to a depth of two or three inches and use it to sod over those bare spots on the lawn. Next remove the soil down to the subsoil and pile it alongside the bed. Then dig out and cart away the subsoil until you have an excavation two feet deep. Fill in with the surface soil which was first removed, mixed with other rich soil to which has been added plenty of well rotted manure. Tramp a little, while filling, and raise the surface of the bed three or four inches above the surface to allow for settling. This means considerable work but it will pay. It is the biggest part of flower growing. You cannot plant potatoes in an unplowed field and raise 400 bushels per acre. Neither can you plant an apple tree successfully with a crow-bar. It is quite as impossible for either you, or the women of the household, to grow flowers well in a bed where the soil has only been stirred for an inch or two on the surface.

So much for the flower bed; but your responsibility does not end here. If the season is dry you should see to it that the bushes are mulched and the flower bed watered. Take hold after supper and carry several pails of water. Your muscle will count here also. You will also kindly see that no live stock is allowed to run at large in the door yard. Your reward for this will be the everlasting gratitude of the "better half" of the family, your own sense of satisfaction at having a well kept door yard, and more than likely you will learn to love the plants and flowers, in which case you will have gained something that will give you more real pleasure than all the dollars and cents that you will make during the remainder of your natural life.

FREDERIC CRANEFIELD,
Agr. Ex. Station.

By Word of Mouth.—"How can one tell whether or not a man has wheels in his head?" "By the spokes that come from his mouth, my boy."—Judge.

MR. A. J. PHILIPS,

Whose cut appears in this issue of the Horticulturist, is worthy of special commendation for the deep interest he has taken in the College of Agriculture. Many of the young men who have reaped the benefits of the Short Course instruction, received their first knowledge of the advantages of the Course from Mr. Philips. Not only in his own County but in all portions of the State, Mr. Philips has been an earnest advocate of agricultural education. During the past seven years he has visited the college annually and addressed the students of the Short Course at their literary meetings, always giving them fatherly advice and kind words of encouragement. The students now look forward to his annual visit with a great deal of pride, and try to reciprocate by extending to him the marked respect and cordiality due one who is laboring faithfully for the general welfare of the young men from the farms. We are in need of many like Mr. Philips to help promote the agricultural industries of the State, and no better method can be pursued than by earnestly advocating agricultural education.

R. A. MOORE.

A. J. PHILIPS was born near Philadelphia in 1834. His parents, of Welsh descent, were great admirers of fruit and flowers, hence Mr. Philips' horticultural education began in early childhood. He received a fair common school education, supplemented by a course in a Watertown (Wis.) school. In 1852 he decided to leave school and go to work on a farm in Jefferson County. This cutting short of his schooling he regards as a great mistake, for he has in later life felt the need of a better education. Since 1855 he has resided in La Crosse County. He followed general farming until 1868, when he began making a specialty of apples. In 1870 he joined the Wisconsin State Horticultural Society, since which time he has missed but two of its meetings.

In 1889, at the suggestion of ex-Gov. Rusk, the new

A. J. PHILIPS,
Secretary Wisconsin State Horticultural Society.

Secretary of Agriculture, Mr. Philips was appointed to a position in the Division of Pomology. This position he held for about two years, spending part of the time in Washington and part in traveling through Wisconsin, Minnesota and Iowa, searching for information regarding seedlings and new fruits. This has given Mr. Philips a wide acquaintance with horticulture and the noted horticulturists of the Northwest.

In 1894 he was chosen Secretary of the State Horticultural Society which position he still holds. He also selected the site and set the trees of the new State trial orchard at Wausau.

THE ROUND OF PLANT LIFE.

I have been asked to write an article for the Horticulturist, and I wish to state briefly some of the work in horticulture carried on during the "Short Course."

We have the good fortune to study the round of plant life under our worthy instructor, Prof. Goff. Our first hour is devoted to lecture work in the lecture-room of the new Horticulture-Physics Building, one of the best buildings, if not the best, of its kind in the country. The first few lessons are on germination. The next step naturally would be to study the structure of the plantlet, learning how the food is taken up by the roots and following it to the leaves, where it is prepared and sent back to the roots to be used by the plant.

The study of the roots is next in order, and we spend many days on this topic. A knowledge of the roots of plants, of the soil in which they grow and of the cultivation they need, is of the utmost practical importance. The leaves also serve a very important function, i. e. food preparation, hence we spend some time on the study of leaves.

As our plant has had good care and cultivation it is now in full bloom, so we will study the flowers, more particularly along the line of fecundation and pollenizing. We

next take up the study of the seed and fruit, and as they ripen we learn how to gather and store them.

Having now taken our plant to its decline of growth and rest period, the remainder of the term is spent in studying the plant as affected by unfavorable environment, such as excessive cold, excessive heat, insufficient water, unfavorable light, etc.

This ends the first year's work, so we will now turn the plant over to the second year students. Our first lessons the second year are on the propagation of plants, by seeds and by division of the plant. We are taught the numerous methods of propagation by division, as by suckers, by stolons, by division of the crown, by layering, by cuttings and by grafting. We have the privilege of putting in our spare time in mastering the science of grafting.

We will next take a lesson in transplanting apple-trees, and as our plant has stood the career of a two years' course in horticulture, we will consider it worthy of a place in the garden house. As the study of transplanting comes in the second year, we will grant the second year boys the privilege of transplanting our apple tree as shown in the following cut.

LESTER E. BIRMINGHAM, Student.

OUR SHORT COURSE BOYS.

Part of an address by L. E. Gettle, Department of Education, Madison.

Gradually, but pretty slowly, we have made the remarkable discovery—compared to which the feat of Columbus is nothing—that brawn and muscle even when combined with proverbial Yankee cunning are not enough to equip an American farmer.

I am not so sure that an appreciation of this discovery is nearly as widespread as one would expect it to be. I suspect that there are numerous farmers who are prone to ridicule the idea that anything else beyond early rising, long days of hard labor, and frugality, is essential to the best success on the farm. Such men usually delight in belittling agricultural papers; in their own estimation confusing and confounding the institute conductor; and in advising the boys not to fool away their time at school if they would succeed at farming. They point with some weight of argument at their own success as conclusive evidence of their superior position.

My hardest and yet, in some ways, most valuable farm experience, was with such a man. I was his "hired man" during a college summer vacation which was, for financial reasons peculiar to some boys who attend college, lengthened out at both ends so as to make six months. He had a magnificent farm of two hundred and forty acres there in central Illinois. His politics was work—with a little democracy thrown in. His religion was toil—with an occasional prayer for more strength to work harder. His patriotism was:—Protect, defend and work well the two hundred and forty acres of your blessed native land. His charity was:—Forgive last of all any real or apparent relaxation on the part of the "hired man" or the children. His educational maxim was:—"The proper study of mankind is man," so that when occasion offers you may do him if you can.

We lived on Slab-pork, often a little worse for wear, syrup, and hot biscuit. If ever a diet needed a divine

blessing it was this. My devotional thoughts at meal time were not such as were proper to express in the presence of the family.

Here was a man densely ignorant, yet he was the most practical of farmers. There was not a mule on the place that I did not love more and which was not a greater honor to its Creator and its country than was its master, yet I must give the devil his due. I had not been without practical experience on the farm, but that man taught me some valuable lessons. I learned to keep a straight furrow while ploughing; to pulverize the soil before planting, however much work it required; to set up a shock of grain so that it could stand against wind and rain; to stack hay so that the water would run down the outside of the stack, together with numerous other important accomplishments. Here was an extreme representative, perhaps, of a type of successful farmers. He accomplished with harshness, stinginess and unadulterated meanness what might have been accomplished by large-heartedness and knowledge. He should have been more than a mere despot in his own small kingdom. He should have been a citizen of worth and influence. A man with such energy as he had, if equipped with reasonable scholarship, with broad views, with generous impulses, would perforce not only make more money, but would in addition confer a dignity upon farming pursuits that the public is slow to accord them. The agricultural classes of our nation have heretofore furnished the conscience that has determined the balance on the right side of great public questions. From the sturdy sons of the soil, inured to physical hardships, possessing digestion and nerves unimpaired through enervating foods and drinks, with the courage and tenacity of purpose resulting from bodily vigor, have come the great majority of molders of public opinion, makers of laws, and directors of the world's great business enterprises. The farm as ordinarily conducted did not furnish a field of action commensurate with their ambitions and abilities. Thousands of boys of equal native capacity have remained

on the farms. If all these young men could be made to see the vast possibilities in agricultural science and to seek training that would organize their splendid powers, what an industrial, political and moral force agriculture might become in this country.

When I have attended farm institutes or other farmers' meetings, some man has almost invariably arisen to assert with great vehemence that farming is as honorable an occupation as the profession of law, medicine or theology; that the farmer, because he supplies practically all the food products, is the very foundation and prop of society; that the farmer is just as good as any other person living. Now the fact is that these assertions are very largely true; at any rate there is usually no one present who is willing to deny the statements. But the very frequency of these self-laudations seems to indicate that the speakers feel themselves at some kind of disadvantage when compared with representatives of other employments. It is usually the homely girl who most frequently asserts that she is just as good looking as any girl in the community, and unmated maidens of uncertain and unascertainable age are generally the ones to embrace every opportunity to speak of frequent chances of refusing matrimonial co-partnership.

It will be a better day for agriculture when farmers shall recognize that their occupation is one for which there can be no surplus of individual training and knowledge.

It is not by reiterated assertion, that farming will take the rank it held when statesmen were proud to hold the plow—when Cincinnatus went from the field to guide the destinies of the Roman nation and later gladly laid down the reins of government to guide again the plow.

Our farmers must be better educated, both along the lines of their immediate interests and in literature, general science and citizenship. It is not enough that they be able to read, write and cipher.

Training is more and more recognized as a necessity even for fairly simple occupations. Teachers must be

trained, lawyers must study longer than formerly before being permitted to practice. Plumbers, engineers, artisans generally, find careful preparation a prerequisite to measurable success in their work. Now, agriculture is not the simple process it seems usually considered to be. On the contrary it embraces the most complex and varied interests. An ideal technical preparation involves the acquisition of practical knowledge of numerous departments of science, each one of which offers field enough for a lifetime of study and experiment by a specialist. Of a necessity the farmer must understand the principles of chemistry, the laws of physics, the elements of mechanics and force, the constituency, adaptability and effectiveness of foods, the importance and methods of hygiene, the geology of soils, the science of plant life and growth, entomology in its relation to horticulture, the prevention and cure of disease in animals, the principles of breeding and—but there can hardly be an end to the possible enumeration.

Of course every one who farms knows more or less—very often less or least—of some or all of these departments. But no one can know them sufficiently well without availing himself of modern means of instruction by specialists. Keeping in view the requirements of the calling,—and it is just as much a calling as preaching,—I venture to say that every young man wishing to farm should not be content with less than a high school education. This should be supplemented by a course at such a magnificent school of equipment as the Wisconsin Experiment Station and College of Agriculture. This college has the true idea, namely, that its function is not only to give technical science instruction, but that it shall also help the young men coming within its influence to become more intelligent along the line of their duties as citizens of the state and nation.

These short course boys will go out from their brief but vital contact with men of talent and genius, to all parts of the State, as missionaries and living examples of what this institution may do for large numbers of the young farmers

of Wisconsin. Their influence will be felt in raising farming to higher planes, in building up and strengthening the common schools of the state, in making the farmer's voice and weight felt in securing better local and state government, and in speeding the day when the farmer shall not need to assert his claims to superiority over those of other callings, but when such fact shall be freely admitted by all.

IMPRESSIONS OF A STUDENT FROM THE "FAR NORTHWEST."

At Madison there are so many students that it is difficult to ascertain their number. They hail from the coast of Maine to the Gulf of California, young men of all nations, languages and colors. None of us feel ashamed of our relationship or attempt to deny our origin, through fear of error or misrepresentation.

Our first night here is confusion, and spent in imitating cats and opera singers and sawing fiddles. Next morning in the class room we are much like a colony of frogs, hemming and coughing and shaking our heads like Professors. We are all anxious to have a peep at the Professors, imagining them to be terribly wise, Quakerish and outlandish looking. When the gavel sounds we are speedily taught that these men work very methodically and with grim mathematical precision, and give us something else to think about besides the weather and our corns.

The boys are a conglomerate of brave, dapper, enterprising, bustling young chaps, who pay their own way, and expect a $20-a-month job with a nurseryman or a fruit grower, when they get through. Then there are the usual ten per cent of crazy-headed, topsy-turvy slang-whangers, who pay their 50-cents-on-a-dollar way from their fathers' pockets, and don't know enough to make the best use of their college training. It is to be hoped their parents will whip them when they go home and send them back next winter with-

out any spending money for the young ladies and bob-sleighs.

Every well-to-do farmer keeps stock, so we have lectures on stock-feeding under Prof. Henry; he cracks it right to us with sledge hammer blows,—charges us right up to the muzzle with feeds and feeding; and every time we leave the lecture room we feel so proud and stuck up to think how ridiculously unenlightened are Uncle Sam's prodigious mass of "the great unwashed" farmers! We are taught just how many millions of gold dollars Wisconsin is wasting every year in uneconomical farming and in loss of soil fertility.

In order to know how to handle soil without gloves, how to get it into condition for plant growth and how to keep it there, we have the good fortune to be permitted to enter Prof. King's sanctum. Here we are initiated into the deeper mysteries of the earth, and he explains and demonstrates practically, in the laboratory, where for the past four years he has been propounding it to the boys, all about Campbell's New Soil Culture;—it is Prof. King's four-years-old idea, but the other fellow claims it to be new, and gets all the credit together with the rake off.

Then comes Prof. Goff. He gradually swells up above the usual ecclesiastical size, when on some pet subject; but the boys are just as much in love with horticulture as the Professor, and ply him with questions relative to bugs, their size and habits, ants and their mode of destroying caterpillars, apples, plums, spinach, peaches and rhubarb, lettuce and onions; and all are interested in each others' ideas. He turns us loose with spades and shovels, Planet Juniors and Buckeyes, to transplant apple trees, make hot-beds, bud trees, prune them, graft trees, and the like. We are taught a lightning way to plant onions, strawberries and such things, in the least time, at the least cost and with the least labor. We are also taught the new onion culture, which has been taught here for four years now.

There's lots to learn. A few chapters each on bugs, grafting, budding, climate, frost, transplanting, would go a long way toward clearing off old cobwebs.

Hope to be able to raise wind enough to return next winter and finish the subject.

THOS. DIXON.

FIFTEEN MINUTES OF THINKING.

A. J. Philips, Sec'y Wis. Hortic'l Society.

I believe that the success of the Short Course has far exceeded the anticipations of its founders. When, years ago, at the annual conventions, Prof. Henry so earnestly entreated the farmers of Wisconsin to send their sons to the Agricultural College, to better prepare them for the successful handling of animal life on the farms, I am sure he never dreamed that the College would attain the national reputation it now has.

For one minute, think of bright young men from fourteen different States now taking the Short Course. For two minutes, think of the broadening influence on our Wisconsin boys, when discussing home questions in their debates, of having for their judges fellow-students from Tennessee, Nebraska, South Dakota,—in short from New York to Oregon, clear across the continent. For three minutes, think of the fact that young men who have taken the Short Course and the Dairy Course at Madison are now employed at different agricultural colleges, in noted creameries, and on the farms of rich men like the Vanderbilts, in nearly every State of the Union. For four minutes, think that scores of these young men have gone back to the homes of their birth and are now assisting in carrying on the old farm they love so well, and doing it in a much more intelligent way than their fathers did when they were young,—for which these same fathers feel truly thankful. In conclusion, for five minutes, think what you can do to encourage some bright young man to attend this school in future years, or what father and mother you can persuade to send a son.

The foregoing will afford you profitable reflection for more than the fifteen minutes which I have assigned to the different points.

"Een Davis was a handsome youth, but dry as any chip,
For Nature gave him gaudy clothes, but let the flavor slip."

MUSK MELONS.

Musk melons are a very uncertain crop but under favorable conditions from $100 to $300 per acre has been realized from them.

One of the main things in raising a profitable crop is to have them early. The first melons usually sell in the Fond du Lac market at from 90 cents to $1.00 per dozen, while later in the season they sometimes go for 15 and 20 cents per dozen; but the usual price is about 40 cents for good large melons.

We plow the ground in the fall, turning under a good coating of manure, and top dress with fine manure during the winter or spring. As soon as the ground is fit to work in the spring we go on with the disk harrow and cultivate once or twice a week until planting time. This gets the soil into good condition. There is nothing gained by planting too early. If the seeds are put into a cold, wet soil, ten chances to one they will never come up; and if they do the plants will be weak and puny. Wait till the weather is settled, the ground warm and all danger of frost is over, and the seeds will come right up and grow twice as fast. We usually plant from the 20th to the 30th of May.

Melons can be had a couple of weeks earlier by starting the plants on sods in a hot bed the latter part of April, and transplanting to the open ground when the weather becomes warm.

We plant in hills six feet apart each way, putting from eight to ten seeds in a hill, and when they are well started, thin to the three strongest plants. One good plant in a hill is better than half a dozen.

The little striped bug is our worst enemy and it usually gets around about the time the plants come up. We never have succeeded in killing them, so we merely try to keep them off until the melons get a start. As soon as the plants begin to come up we dust them over with air-slacked lime or land plaster and keep them covered with it until they get about the third pair of leaves, when they are usually

strong enough to take care of themselves. We sometimes have to go over the field every day, and sometimes once in two or three days will do, much depending on the weather. We put the dust into a bag made of mosquito netting and go along and shake it over each hill. The bugs begin to move about as soon as the dust is applied.

When the melons are ripe the stem loosens so that they pick off easily. We go over the field every day (except in very cool weather) and pick all that are fit, for they soon get soft and lose flavor if allowed to lie out in the sun after they are ripe. They are then taken to the packing house, where they are sorted and all imperfect ones thrown out. For shipping nothing but the first quality is used. These are washed or brushed clean, and packed closely in crates holding from one to two bushels. The larger portion of our melons are sold in our local market.

In our market there is the most demand for yellow fleshed melons, of which the Osage is the standard of excellence, and is perhaps the best known and most widely grown of any variety of musk melon. It has a dark green skin and a thick salmon colored flesh, and is very sweet and juicy but a little late about ripening.

The Surprise is a large showy melon, has a light yellow skin and is similar in flesh and quality to the Osage. It ripens a week or ten days ahead of that sort and holds its size well to the end of the season. For these reasons we plant it more largely than anything else.

Of the green fleshed sorts we prefer the Hackensack. It is of good quality and very large and solid, many specimens weighing from 14 to 16 pounds.

These three make up our list of varieties. Of course we try a number of new ones every year but as yet have found nothing better. We think it best to have a few good varieties that we can depend on so that our melons are the same every day and our customers know what they are getting. We give everything a thorough test before we plant in any quantity. Some of the growers thought they had a

bonanza in the Grand Rapids, and planted them quite largely. They ripen very early but are little better than a pumpkin, and after one or two pickings whole fields were left to rot on the ground, because nobody would buy them the second time. L. A. CARPENTER, Class of '93.

Fond du Lac, Wis.

H. R. 6894.

A BILL is now pending in the House of Representatives providing for the inspection of all nursery stock. We give a summary of this important bill:

Sec. I:—Makes it unlawful for any transportation company to offer for entry at any port in the United States any *foreign nursery stock* unless accompanied by a certificate of inspection by an official of the government from which the exportation is made, certifying that it is free from all insect and fungous diseases dangerously injurious to nursery stock.

Sec. II:—Gives the Secretary of Agriculture authority to quarantine against and prevent the importation of any variety of *Fruit* that may be affected by any seriously injurious insect or disease, until such time as it may appear to him that any such insect or disease has become exterminated in the country whence such fruit is being imported.

Sec. III:—"That all trees, plants, shrubs, vines, and buds, commonly known as nursery stock, grown within the United States, may become subjects of interstate commerce under the rules and regulations as hereinafter provided. The Secretary of Agriculture shall cause to be inspected by a qualified entomologist all trees, plants, shrubs, vines, and buds, known as nursery stock, which are subjects of interstate commerce, and which are about to be transported from one State or Territory or the District of Columbia into another State or Territory or the District of Columbia. This examination shall be made prior to September first of each year, in the manner provided for and prescribed by the Secretary of Agriculture; and if such nursery stock is found to be apparently free from dangerously injurious insects or diseases, the certificate of the officer making such examination and finding shall be issued to the owner or owners of such nursery stock, a copy of which certificate shall be at-

tached to and accompany each carload, box, bale, or package, and when so attached and accompanying shall operate to release all such nursery stock from further inspection, quarantine, or restriction in interstate commerce."

The remaining sections of the bill arrange for carrying out the foregoing provisions, and give the penalty for their violation. "This Act shall take effect on and after the thirtieth day of June, 1898."

Let the nurserymen of Wisconsin study carefully and weigh well the provisions of this Bill, then write *at once* to their Representative in Congress. Remember the number of the Bill, "H. R. 6894."

PLANT LIFE AND HORTICULTURE.

The hours spent with Prof. Goff, studying plant life and horticulture, are among the most pleasant and profitable of the course. The first year students study the Professor's book entitled, "Principles of Plant Culture," which treats of the outside influences that affect plants. Not only will the gardener and fruit grower be able to apply these principles with profit to his art of horticulture, but they will be of great value to the general farmer, dairyman or stock-raiser who grows grain for feed or market. As the work progresses the student perceives that the value of the study does not lie entirely in that it may help him to acquire money. He begins to feel a new pleasure in vegetable life, as he better understands the parts of the plant, their functions and the environments that influence them. He realizes more fully that it is a form of life he is handling, and he is often surprised at the close resemblance plant life has to animal life. This pleasure of knowing nature better is worth all the study the student may put upon the subject.

After studying the favorable environments of the plant, attention is turned to the unfavorable ones that influence it. Instruction is given as to how these misfortunes that are likely to befall the plant may often be prevented or cured. Gradually the work begins to turn toward plant manipulation, and before the term is over many of the methods of the horticulturist are taught.

The instruction the second year is carried on by informal

lectures and laboratory work. The students are encouraged to give their experiences and observations. This often results in very interesting discussions, the like of which can only be found in the State Horticultural Society.

HOMER HAMILTON.

EDITORIAL COMMENT.

We put in two extra pages this month, and yet some of the best papers from the Short Course students were crowded out. But they didn't go into the waste basket, young gentlemen; you'll hear from them at some future time.

When writing to our advertisers please mention the Wisconsin Horticulturist.

This issue is a "Short Course Special," in acknowledgment of the fine entertainment which the Short Course students gave at our annual meeting.

Just see how "fruity" our next will be! Help it on by sending us some items along that line.

It was Mr. Tanner of Omro and not Mr. Coe who told about the Bangor blackberry at our summer meeting.

Mr. W. J. Moyle, you will regret to learn, has resigned his position as Business Manager of the Horticulturist; the duties of the position conflicted with his engagements at the Wisconsin Experiment Station. We are glad to announce that he will still contribute to our pages.

Millinery is not alone responsible for the wanton slaughter of birds. Think of the cruelty of killing hundreds of songsters that their tongues may be served as a tid-bit for epicures! By the way do you read "Birds," the magazine published by the Nature Study Publishing Co., of Chicago? With its eight exquisite colored plates each month, and its interesting facts, it is winning protection for our "little brothers of the air."

"The Fruitman," published by M. E. Hinkley, of Marcus, Iowa, "makes his bow" to the horticultural public. We

drink to his health in the unfermented juice of the grape. May he live long and prosper.

We have been reading "The Principles of Plant Culture," a book written by E. S. Goff, Professor of Horticulture in the University of Wisconsin. What mistakes we might have avoided, had somebody written so helpful a book twenty years ago! It treats of the germination of seeds, of the structure of plants and the influences that affect their growth, tells of the diseases of plants and their remedies, tells how to spray, how to make Bordeaux mixture, etc.,—just those things which we want to know. Prof. Goff's style is direct and clear, and his explanations are plain and painstaking, making the book of great value as a hand-book of reference. We do not know whether or not it is on sale at book-stores, but the price by mail is $1.10. Doubtless Prof. Goff will mail the book to any one who remits that sum to his address, Prof. E. S. Goff, Madison, Wis.

A pretty catalogue is that of H. H. Berger & Co., who make a specialty of Japanese novelties. Its colored plates are beautiful. Write for it, mentioning the Wisconsin Horticulturist. For their address see ad.

Don't forget to send in your subscription to this magazine. We need your help, and you need ours. Fifty cents with premium, forty cents without. Address The Wisconsin Horticulturist, Baraboo, Wis.

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