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ART OF PRUNING
TREES AND ARBOR VINES,

BY JOHN DOLLINS,

Crozet, Albemarle County, Virginia.

The author of the treatise on the subject of Pruning Trees and Vines, as appears in the following pages, seeing the necessity of a more rational understanding in the treatment of Trees and Vines, dedicates this little work to Science, for the practical government of ~~its less informed~~ Tree and Vine Growers.

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THE ART OF PRUNING TREES AND ARBOR-VINES.

BY JOHN DOLLINS,

Crozet P. O., Albemarle County, Va.

IN all the details of the Georgic, or science of husbandry, Nature has not foreshadowed a surer incite to the artificial improvement of any of her works than she has to the physiological construction of trees and their concomitants, arbor-vines. The lessons from which we learn the art of pruning, are texted in the natural laws of shedding branches to form the fundamental trunk to tree-structure, which are exemplated in multiple repletion in the natural growth of trees everywhere.

The manner of tree-structure, in its fixed organization of parts, is a simple reproduction, in miniature form, of itself. The severed branch resembles the tree in whole, and the analogy may be traced on every divergency therefrom,

The structural growth being wholly directed to the epidermis of the plant, it cannot rise up in its stretches from crotch to crotch like the anatomy of the animal creation. Nature has provided cause to overcome this deficiency by the canopial system formed in the complexity of subjects. That is by clustering many trees together, a canopy is formed, and as it is the universal law of vegetable growth to seek light, and space being contracted and overshadowed below, a powerful strain of sap juice is forced directly up the main leader as each unit in the group vies with all of its competitors to lift up its head or top into the light above the canopy; and thus, as the lower divergencies have become overmatched and shut in from the light, having served their purpose, they are dwarfed, die and finally shed, to give a smooth trunk to the rising structure. But for this cause alone, as is fully illustrated by the isolated trees in the field, the first divergencies would absorb too much aliment from the fundamental part of the structure, branch upon branch would enter into the struggle for the juices of life, which would dwarf their leader and preclude the possibility of a long, smooth trunk to the figure; and we would have no timber in our primitive forest of any considerable commercial value, instead of the handsome pyramids of radiating branches mounted high on long smooth trunks, as all timber trees should be, and all other trees, ornamental and fruit, should have a smooth, well-defined trunk, in proportion to the habits of their kind.

But this cause alone, taught in the canopial text of shedding to form a trunk, whilst it will serve, in nature's slow way, to grow new plantations of forest trees, is a practical impossibility with the isolated ornamental or fruit

tree in the field. What a grand subject is here presented and insighted to the demonstration of art to improve "the useful and beautiful of earth!" But, alas, how little understood! The shockingly knotty, deformed trees left in our forests, the vacant places and neglected forms of ornamental, deciduous and evergreen trees around our dwellings, the miserable squatty, lopsided, deformed, lazy-looking appearance of our fruit trees, and last, but not least, the poor beheaded, bleak-bared grape-vine, with mildewed fruit in our vineyards, must attest.

But what wonder, whilst the country is flooded with practical illustrated treatises upon almost every other subject of domestic husbandry, there are but few or none, that I am aware of, dedicated entirely to the subject of pruning, founded upon the true principles of vegetable physiology, by practical authors. One authority says he prunes down instead of up, meaning that he beheads the tree to force it to outdo itself in deformity. Another teacher says better not prune at all than too much; suggesting the lazy idea of nothing more to do after planting. And the authorities in the vineyard slay the vine until the stump looks more like a chinquepin grub with its numerous sprouts than it does to its natural form in the embrace of the friendly tree.

Then we say, away with such teachings as these and many other theorems, just as novel, in which there is not a shadow of true demonstrated science; but is in direct contravention to nature's teachings. To prune does not mean to behead, nor the cleffing of vital parts, but simply the removal of useless parts. Those parts which have served their purpose and by their continued presence hinder perfect development. And this should be so thoroughly practiced on the tree or vine in its early stages, sighting to the stately form of maturity, that no vital members shall have to be cut away thereafter. To cut away from this anatomy vital parts, such as its leader and overgrown branches, is no more admissible than it is to amputate a leg or an arm of the animal anatomy, and only should be resorted to, to correct the deformities of casualty and neglect, which then becomes a simple act of surgery to make the best of it.

The manner of pruning consists in smooth operations close to the outline of the member from which the detachment is made, thereby placing the wound within the easiest reach of descending, modified aliment, from the leaves down the circular channel, between the bark and the wood, which deposits in its descent the tissues of which the cambium layer is formed to make the annual ring on the old wood; the wood thus artly situated will soon become enveloped with new wood and bark, and be lost to sight by the enlargement of the circumference of the member from which the detachment is made. The proper time to perform the operation of pruning young trees, forest and fruit trees, is at midsummer, as the modified aliment is descending to form the tissues of the cambium layer on its passage to the root, and will begin at once to form a lip of wood fibre and bark around the wound, the descending matter being too cloy to waste through the opening made in the main channel, it is lodged around the cut to close the opening according to physical laws. And the wood being mostly flexible at this season, the stems may be straightened or bent and tied to correct deformity, to the satisfaction of the operator. Late Autumn and early Winter finds the wood of the maturing tree and for the bearing fruit-tree in the next best condition to heal the wounds of the saw and pruning knife, to correct the deformities of neglect and casualty, being bare of leaves and fruit, its main features of deformity may be seen at a glance and operated upon to the best advantage, and the severed sap channels will have time to dry and contract before spring-time comes. The spring-time (at which unfortunately so much

cutting has been done) finds tree-structure of all kinds in the worst possible condition of helplessness to heal the wounds of surgery. Its main sap conductor has been broken into just as the simple fluid starts up the channel, which must bleed or leak out at the fresh incision for some considerable time, and when the said liquid sap is exposed to the open air, it cankers and festers the sore very much, to the detriment of the health of the tree. The secret of obtaining a complete cure in all operations requiring the removal of a branch, large or small, living or dead, consists in cutting close to and perfectly even with the trunk-line just at the time when the conditions of the organism is most favorable to heal the wound. And in the performance of this important work so thoroughly in the early stages of growth that there should exist no necessity of the removal of any large limbs in maturing life. In the cases of the removal of large limbs from neglected, and casualty-stricken trees, it is of prime importance after the wound, in all cases, has been prepared, as above directed, to apply at once some cauterizing matter, which will prevent the escape of sap and the introduction of water, and also preserve the clefted wood sound until enveloped with growing wood. Downing says that a composition of alcohol and gum-shellac, applied with a brush, make the best cauterizer; but more recently, it is said, for this purpose coal-tar, a waste product of gas works, has been found superior to the many other preparations which have been used. It has remarkable preservative properties, and may be used with equal advantage on living or dead wood. A single application forms an impervious coating to the wood-cells. It produces a sort of instantaneous cauterization, and preserves from decay wounds caused either in pruning or by accident. It is plentiful, cheap, and may be applied with an ordinary paint-brush. How much the trees in the woods, especially the young growing timber, may be improved by judicious and timely pruning! Their trunks may be preserved sound thereby, and carried to a greater length for timber.

Although the importance of growing new plantations of seedling timber-trees is not appreciated but by the few in this country, we insist that no more time should be lost to the proper consideration of this part of our subject—the improvement and production of timber and shade trees:

1st. Go into the woods and cut down the old knotty and doted trees for fire-wood, and cut off smoothly the hideous snags and useless limbs from the lively trees, taking great care to save the young undergrowth trees of the most valuable kinds, which we would also prune up nicely. Then in the Fall of the year we would gather seed from the most valuable kinds (around about the fields is the best situation to find them), such as the oaks, chestnut, and from the trees in the field. Black walnut, yellow locust, and in summer time, mazard cherry and mulberry, and white-ash (this last from the nurseries), which we would sow in drills like corn rows in a well-prepared and rich plot of loamy ground, sow the acorns, walnut and locust at once when gathered. The cherry and mulberry seeds should be packed in dry sand in a box covered with moss, so as to keep in about the same condition of moisture as when gathered until early Spring, then sown. The chestnut is more difficult to manage, the worms destroy them so much, and if they get dry will not germinate; but some that escape the worms may be kept in damp moss until Spring and then sown. Many plants from seed may be gathered in the woods and transplanted with success. Cultivate these seedlings nicely for two years or more, and thin out to desired thickness, planting out the thinnings in the adjoining lands, or a new plot, as many as wanted. Cultivate for a few years, and as necessity requires, prune for several years thereafter, and be proud of a valuable ornament to the farm. As to evergreens, the spruces, Norway, American black and white hemlock,

arbor vitæ, red cedar, &c., seedlings of which may be had cheap at most of the large nurseries, if liberally set out and cultivated for timber, alone from their ornamental presence and salutary influences, would make valuable additions to our forestry, especially in the neglected Middle and Southern States. The North and West having received more attention in these matters. What a happy suggestion of comfort they offer in barring off the bleak winds from our dwellings when introduced on the lawn and systematically arranged on the bleak side of our houses. A thick row of them would make a haven of rest on the lea-side.

FRUIT TREES.

In our general remarks on pruning, we endeavored to show the deficiency of natural cause to shed away the first or lower branches to give place for a proportional trunk to the structural development of the isolated tree in the field. And here it is in the orchard that we mostly need the practical art of pruning to serve that deficiency. Now, to apply the art of pruning completely, we must commence the work with the maiden tree-plant in the nursery. And just here before we do commence we disown any but the most friendly feelings in interfering with the *modus operandi* of the professional nursery-men, who have done so much to fill the land with the "beautiful and the good." But to elevate that profession to which we belong, by trying to disabuse it of error, is our highest aim. And too, we do not know that the profession is any more to blame for the error we are about to assail than its patrons are.

However, the preference has obtained for heavily low-branched fruit-tree transplantings, the flattering model of perfection. The nursery-man, to cater to the preference of his customers, resorts to the practice of beheading his maiden trees to arrest the upward tendency influenced by the little canopy formed by his thickly growing subjects, which must cause the stilled buds on the stem below to push out into branches, and thus prematurely form miniature old age. In this form it is sent out and transplanted in its permanent isolated place, with directions to grow low branched trees. And this is where the great error is committed, in violating the precepts of nature at the very foundation of the structure. We have said that the tree-structure was not like animal structure. The beautiful babe has, from the first creation, a complete organism of stature for extension. It needs no more limbs, hands, nor feet, for complete development. Not so with tree organism. It has a reproductive structural form of development, which, from its fixed principles of organism, require the detachment of members which have served their purpose to give place for perfect development. Therefore the miniature tree in the field cannot maintain proper proportions to maturity. Its side branches must be pruned away and the leader preserved, or it will develop into the worst sort of deformity. Then it must appear that the top of the plant should not have been cut off, but that the side branches left on should have been cleared away so effectually as to maintain the proportions of a frame only, to be still further extended principally as a frame by the fruit grower, until it gradually, from age, assumes the form of maturity. The maiden tree-plant, of whatever species, fruit bearing, standard or dwarf, deciduous, ornamental, or coniferous, which has been bereft of its top, and thereby lost its main base-line leader, and does not out caliper and overtop its greatest side branches, is a deformity in the beginning, and without true artificial government with the pruning knife, must develop into misshapen form, not able to stay its own weight from casualty of storm, and the fruit-tree would be wrecked by the additional weight of its maturing fruit. Such trees are deformed more or less, according to the height at which their cen-

trical trunk-line stools, the lower in the base-line, the greatest and the highest the least deformed. Each species of trees consist of a progeny of variety from seed resembling its parent, more or less, according to the inwardness of reproduction. Some of the species have been reproduced until they have a numerous progeny of varieties, each of which have been impressed constitutionally with a different habit of growth in conjuncture of parts and vigor of size, varied from the drooping bush up to the lofty tree. Here, again, we must allude to the professional nursery-man's duty. He should be a thoughtful man, well up in nature's works, that he may profit by demonstrating what he may see in nature. It is known by experiment that the propagation of plants from scions or grafts, cut from the lower drooping branches of a tree, will produce still more drooping habits, and that propagations cut from the vigorous top shoots of the same tree will develop into a more upright growing tree. If the variety is too much drooping in habit, the nursery-man, with his correct judgment, should choose only the leading upright branches from which to propagate. And if the variety should be too much inclined upright and forky, he should choose propagations only from the lowest horizontal branches, and thus raise up or lower the habit, as might be wished, to give the most useful form. Especially should these principles be observed with fruit trees requiring surface and strength to bear up their heavy loads of fruit. Another point with the nursery-man. To sturdy the fruit-tree in place is one of the prime objects of pruning, and therefore we must examine the under-ground works of our tree. Both ends of a tree-plant from seed grow alike in general features, adapting themselves to different elements, the one to supply the raw material from the ground and the other to receive and prepare and send it back to all parts for extension. The seed in the soil first sends its root-stem down, then the top stem up. The root-stem casts out a radii of branches in the soil, which serve both as feeders and props to the rising stem above ground, which also casts out its branches in a corresponding ratio. Thus we see that the constitutional members of the under-ground part is just as liable to different habits as we have shown the up-ground part to be. The main root-stem plunges deep into the subsoil, casting out-side branches in a decreasing ratio as it goes down until it has but little disposition to cast out any more branches at all, penetrating very deep into the earth, if no obstacle prevents. This main stay is the base of the fundamental trunk above ground. It has its braces, props and feeders near the surface, each part maintaining the habit to suit its purpose. The one to seek moisture in the deep earth in dry weather, and the others to prop and feed in seasonable weather. Varieties of trees are largely multiplied by grafting scions on short bits of main roots, especially the apple tree, is much treated so. That is, seed are sown and cultivated one or two years. They strike deep into the ground and make long, straight root-stems. These stems are cut into lengths of about four inches. One seedling root making from two to four cuts, on which the grafts are joined. Now, from the disposition of habit of these parts, the first or surface cut takes off a large proportion of the propping and feeding principle, but is bereft of the deep tap-root principle. The second cut may, in a majority of cases, have enough left of both principles to make a tolerable tree; but the third and fourth cuts, true to instinct, mostly send down long roots void of feeding fibres, and when used, are of but little worth.

Now, in propagating by this mode, the seedling stock should only be sheared so as to maintain both of these vital principles, and one tree only made of each stock; they may be clipped to about eight inches on well-grown one year old seedlings, and transplanted with the union about two

inches below the surface. This mode so treated, with a whole seedling to each graft, secures all the principles of a budded seedling, which more nearly approaches a seed production than any other by which identical variety can be multiplied; and we prefer this mode for the apple to budding, as it secures all of the vital principles and makes more handsome trees, and is provided with a better fibered root to transplant. The apple and the pear, grafted on this whole-stock principle, or budded on transplanted seedlings, properly pruned in the nursery, make transplantings of the highest excellence. For stone-seeded fruits—cherries, peaches, plums, apricots, &c.,—budding on whole stocks, is the only mode by which these fruits can be successfully propagated in perpetuation of identical variety. Nursery apple trees, grafted on cut sections of root, and all grafted stone-fruits, are but cheap stock, to make the best of it.

The nursery tree, of most kinds, are in better condition to remove and transplant at two and three years old than at any other age. The two years old tree should consist only of a single straight stem with its leaf spines left undisturbed by the propagator. The three-years tree may have a few, three to four, small limbs on the upper third of its height, with also its spurs left on. This constitutes the frame to build on. After this frame has been set in its permanent place, it should be watched and kept standing perfectly erect and worked often and pruned annually in midsummer, permitting more branches to remain on the stem as it rises up, keep the trunk-line always in the lead and don't permit the branches to tier around the trunk. Leave well-defined sections of the trunk, from one single branch to the next, on the opposite side. Treat the branches same way, but do not rob them of leaf spurs. If any of the upper branches on the small stem push too strong, cut them back to their small side branches, or, if they can be spared, cut them entirely away, to keep the leader in the ascendancy. It is often the case, that the largest limb on the leader of the young tree should be pruned out to maintain an even balance of weight on the stem, and if it cannot well be spared, cut it back to a small up or side branch or bud, to check its growth. Also, it is often necessary to cut back the extremities of the branches to preserve balance and symmetry of form. Thin out crowded parts and keep the head light and airy, so as to take the sail off in time of storms, when the ground is soft, that they may not blow down, nor lean to one side. Look at the trees in the old orchards now in that one-sided fix. Should this unbalancing occur, straighten up immediately after the storm, whilst the ground is still wet. If the leader bends to one side, put a muffle of old rags around its stem at the proper place and attach a wire to it and draw it to its perpendicular, making the other end of the wire fast to a stake driven in the ground at a suitable distance. Also, any limb on the tree may be directed by the wire to suit the notions of the operator. These directions apply to all trees. But, of course, the operator will be governed by the size to which the different kinds of trees attain at maturity, and the use for which they are intended. Standard fruit trees should have smooth trunks from one-fourth to one-third their height. Dwarf, one-fifth, and forest trees one-half to two-thirds, and ornamental (except the outside wind breaks) high enough to walk under. A little good judgment will be well paid for in this matter. To plant, cultivate and frink, is the duty of man, the gardener.

THE VINE.

The irrational method of pruning the vine, which lays the knife to the vital member of physical development and unshields bare its maimed subjects to the extremes of uncongenial temperature, to freeze in the bleak field

in winter and broil with surfeited sap-vessels in the arid plain in summer, is what's the matter with the Hannah of grape-growing in this country.

The grape-vine is the natural concomitant of its lords, the trees, consequently it is an arbor production, requiring the support and the ameliorating influences of the trees, as plainly indicated by its anatomy and natural habits. It is the tender nursling of the trees, and therefore not adapted to bare-field culture, without true artificial government. The natural position should be imitated, and the main features of the anatomy of this production must be preserved as well as those of any other production in the vegetable kingdom. Does the use of the scythe in the field promote the physical development of bushes into trees? No, final death is the object of slaying them, and the vine is no exception; save being of a more sensitive nature. But here it must have been from seeing the hasty sprouts gathering around these stumps in the effort to cast off their gorge of simple sap, that the violent theories of slaying the vine were conceived.

Our guides in the vineyards of this new world, Messrs. Hussman, Fuller, etc., catching at these flattering ideas, first conceived by the old authors of Europe, and being themselves flattered by experiment in this country, have also mistaken the effects produced by the scythe in the field for true demonstrated science. Verily, the science founded by the scythe in the dismemberment of bushes in the field goes it with a rush in the vineyards of this country.

The effects produced by pruning down the vine to this method is this: The stump of dismembered anatomy being thereby bereft of its channels of reception, become gorged with sap (unmodified aliment), and in an effort to cast off its superabundance of sap, sprouts are formed around the base of the stump as rapidly as leaves can be produced to restore the breath of life, and through which the simple aliment can only be modified to send back to form wood, which now begins to grow rapidly, and drain the gorge, as more and more leaves are produced. But, in the meantime, the drain has not been sufficient to absorb the abundance of sap furnished by its whole system of roots, and they have suffered with stagnation and inaction. And if the shock of repeated dismemberment is practiced, serious trouble must result to its roots. True, as experiment has proven, these hasty stump-sprouts will produce a few crops of often mildewed (more so as the shock is repeated) and always insipid fruit, because of inadequate preparations; and premature exhaustion, and even untimely death, must result. Let us recount by interrogation. The vast importance of more light upon this subject cannot be over-estimated. Then what wonder if these stumps of dismembered anatomy, bared bleak in winter and scorched in the arid plain in summer, gorged with sweltering, unmodified aliment, which the cleft member, with its system of reception, should have absorbed, and its fully matured leaves could only have prepared to send back the properly modified aliment for the extension of its anatomy and the storage of albumen in its fruit-organs for the final development of healthy fruit? I say, what is the wonder if these oft-repeated-violated vines do, after a time, groan out from their aching bowels mildew and blight on their, at best, insipid fruit (produced, as before said, from inadequate preparations), and if their rootlets do knot from retention of aliment?

I submit the question: Are not these conditions to which the grape-vine have been subjected, wretched enough to beget mildew and rot in the fruit, and phyloxera in its roots? But, alas! ignored by the over-weening scientist, who is looking with optic-eyes for molecules in the air, and more recently, curious insecta in the ground, for a solution of all these troubles. Well, there be such things. But come not they to prey upon robust life. Like

the worms and the vultures do upon the animal creation, they come to take possession of the sick, wounded and dead, which nature has given them as a heritage for life. We know of some Catawba vines planted and trained on an arbor by a German lady, which have not failed to produce annually an abundant, well-ripened crop of berries in the last twenty years. We know another single Catawba vine, a very old one, in a different locality, similarly treated, which, a few years since, produced all the grapes that a medium-sized family and visiting friends wanted to eat in season, and enough was left to make a barrel of good wine. In both instances, these vines were trained on arbors protected by shade trees, and all were pruned like a tree, and the main features of anatomy preserved as they should have been.

With the rising interest in grape-growing for both table and wine-making purposes, and in view of the excellent achievements of science already secured in the production of new varieties (to the manor born), a more rational system of treatment to the vine should be understood.

Every year, about the month of July, we hear the cry of our grape-growers calling a council of war, to which they invite their most distinguished generals, when the enemy is upon them. But, dear me, what do they do? Well, we have not been in the council, and don't know. But as the enemy is not driven away, we suppose that the council drink some sour wine of last year's war-ravaged vintage, talk knowingly of molecules in the air and of insecta in the ground, and debate lively upon war ordnance charged with stinking super-sulphatic powder, which is to be shot on every plantation in the hope that it will disgust the olfactory senses of the enemy and thereby drive him to seek more inviting fields with the unpolluted smell of new-mown hay to revel in. Then the council empty the wine-bottles and drink rousing bumpers to each other's health, and adjourn in the hope that measures have been taken at least to stay the enemy from total destruction in the vineyard, ignorant that they themselves who compose the council, have, by first violating the plainest dictates of nature in the practice of silly, methodic treatment, so-called art, in the management of their vineyards, prepared the spoil for the easy capture of the enemy. The grape-vine should receive the tenderest care both as to variety and position. Trees, deciduous and evergreen should be introduced in the vineyard so as, by art, to imitate in the field the natural circumstances which we find governing that production. And the vine should be pruned (like a tree) to dress only its natural form. That is, the main leader, as a root, should be preserved and all deformed branches, and all pining branches, suffering from the supersession of advancing growth, should annually be cleared away. Now, as the habitual form of the grape-vine is such that it will not stand upright in its slender length alone, and it would be impracticable in the vineyard to stand a tree to each vine, we must resort to some sort of support, which, to be convenient to get at, the vines must take the horizontal form, of which many kinds have been improvised, but mostly they have been adapted to stump-treated vines, and we have nothing yet introduced save the old-fashioned fork and rail arbor for whole-grown vines, which, at best, is bunglesome and inconvenient and not at all adapted to field culture. Then, what shall we do with our long vines? Why, we will take a modicum of the old arbor to each vine, and range it the entire length of the row in the field, and on this stringer we will chase our whole vines, one after another, throughout the length of the rows, all one way. The highest approach to natural conditions in field culture would be secured by setting posts about $4\frac{1}{2}$ feet high at suitable distances along the rows and cap them with a stringer of wood or wire on the top of them, from one end of the rows to the other. The vines may be planted at least one year previous to the setting of posts, and they should

have been pruned to single stems high enough to reach the top of the range. When the vines are being planted, also be prepared with some young seedling locust or black walnut trees (seedling trees are best), or any variety of trees which feed in the deep subsoil and enrich the surface soil, and a few evergreens, common cedar would be charming, which plant in the same furrows, one for every six or seven grape-vines, interspersing here and there a cedar to give a warmer aspect in Winter, and their healthy influences may be appreciated by calling to mind that the most perfect wild grapes are found among the pine bushes in the old field. In the next 6th or 7th parallel row of vines, the trees should be set opposite the middle space of the first trees, which will give a sort of quincunx form to the plantation of trees in the vineyard. Cultivate all nicely with the shovel-plow, and hoe during the Summer, taking great care to assist the young vines by constantly keeping off all sprouts from their collars save one, the main cane, which is to form the uprise of the vine, and should that begin to stool by forking within six feet of the ground, cut away at once the weaker branches. And should the young vines be much disturbed by wind, drive sticks in the ground in the rows, to which tie them. The next season cultivate and treat in same way, and in the Fall or Winter of the second year, dig holes and set in posts five feet high, with an even range of top at suitable distances in the rows, upon which cap a stringer of board 4 in. x 6, of which there may be many substitutes. Nail the stringer to the top of the posts, and your simple trellis is finished, save perhaps, a few rods to stand by such vines as may not yet reach to the top of the range. Now, raise up the vines and place their extensions all one way on the top of the rest, so as to chase one after the other. A few staples, driven lightly over the stems of the vines, will serve to hold them in place on the top of the trellis; prune with the idea of a festoon on the rail. That is, annually, to thin clear out from the main stem and side branches all wood which appears to be weakened by the super-session of advancing growth, and cut back the side branches drooping on either side of the rail, first on the new wood to four buds from the stem. These four buds are supposed to make four arms the first season, on each stub so treated. The next season cut away to one good bud, the first and third arms on each stub, and the second and fourth arms cut back to only about thirty inches, to fruit that season. During the fruiting time pay particular attention to the one-bud stubs to encourage the new cane to grow by rubbing off all other sprouts from concealed buds around the base of the stub. These two new canes are for the next season's fruiting. The next, or third season, alternate the work, and cut out, in like manner, the old canes which have just fruited, and leave the new ones, same length, to fruit, and so on from year to year, keeping the main leader, untopped, advancing on the trellis. They may even be permitted to embrace the friendly trees, which are by this time beginning to rise up to exert their influence. Prune but sparingly in Summer, which should be confined to superfluous sprouts and rambling branches.

The trees in the vineyard should be pruned up to the range of the trellis, and their heads given a fan-shape, by cutting away freely the branches between the rows, and their tops cut off to keep in bounds.

Cultivate nicely, but lightly, hereafter, and supply the whole surface with as much vegetable manure, in the form of mulch, leaves, grass, straw, rotten wood, &c., as may be had; ashes, and soap-suds from the wash-tub, sprinkled on the vines, would be of great advantage. The best variety to plant to make money is the Catawba. Like the Albemarle pippin-apple, its quality for the table and market is the best, when grown in localities to suit it, which are limited, and therefore the production never equals the demand.

The Ives is well proved to be a profitable table-grape, adapting itself to all kinds of localities, and the Norton's Virginia, is now the great wine-grape of this section. As to apples, there is a hundred good varieties of Summer, Autumn and Winter fruits in this country, some suiting one locality and some another. For a family selection, to ripen in succession, I will name May-Apple, Striped July, Summer Rose, Cluster July, Early Harvest, William's Favorite, Early Joe, Summer Cheese, American Summer Pearmain, Bonnum, Mother-Apple, Richard's Graft, Annette or Old Betty (not the common-so-called Annette, which is nearly worthless), Baltzley, Fall Cheese, Buckingham, Curtise Cheese or Yellow-fleshed Winter Cheese, Fallwater, Grimes Golden, White Sweet Pearmain, Piedmont Pippin, Wine-Sap, Albemarle Pippin, Johnson's Winter, Rock Greening and Limber-Twig, are all good varieties to suit this section.

PEARS.—The following list embraces the best kinds in our acquaintance: Dearbon's Seedling, Osband's Summer, Julianne, Bartlett, Tyson, Belle Lucrative, Beurre Bosc, Flemish Beauty, Washington Lawrence, and Winter Nelis.

CHERRIES.—Hearts, Early Purple Guigne, Belle d' Orleans, Rockport Bigarreau, are the best old sorts in our acquaintance. We are not sufficiently acquainted with the Dukes and Morellos, to name choice kinds in that strain of variety.

PEACHES.—Amsden's June, Early Alexander, Stump the World, Snow Cling, Chinese Cling, Gross-migion, Salway, and Heath Cling.

PLUMS.—Coe's Golden Drop and Green Gage, are the very best of kinds.

QUINCES.—The Orange we think the best, and Damson. The Old Virginia Blue, the best and most profitable. The Shropshire Damson, so-called, Downing says is a plum; and we say, when worked on peach-stocks, is entirely worthless.

In conclusion, we would say to all of our farmer-readers, plant more trees, forest, ornamental, and especially evergreens, on the bleak-side of the house-yard. Lay off new orchards and vineyards, and treat them in accordance with the principles, which we have, in this little pamphlet, been trying to teach; and we are sure that you will be benefited manifold the cost of money and labor expended, according to our directions. Adieu.

JOHN DOLLINS,

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ERRATA—For treatise on “The Art of Pruning Trees and Arbor Vines”: Page 2nd, 3rd paragraph, read *wound* thus artly, for “wood thus artly”; page 4th, 2nd paragraph, read *cater* for “cator”; 6th page, 2nd paragraph, read *prink* for “frink”; 8th page, 2nd paragraph, read *as a rule* for “as a root.”