

**FORESTRY MANUAL OF
THE IOWA STATE
HORTICULTURAL SOCIETY**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649265688

Forestry Manual of the Iowa State Horticultural Society by H. W. Lathrop

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

H. W. LATHROP

**FORESTRY MANUAL OF
THE IOWA STATE
HORTICULTURAL SOCIETY**

FORESTRY MANUAL

OF THE

IOWA STATE HORTICULTURAL SOCIETY.

"Timber-growing is no longer an experiment, but, with care, a certain and complete success. If planted in belts around the farm, the protection is worth more than the rent of the land on which the timber stands. All the timber which I have planted, or will plant under the present law, will stand, when ten years old, without having cost me a cent.

"It renders a farm so much more comfortable, beautiful, and attractive as a home, and so much more valuable if we ever wish to sell.

"One can hardly look on these beautiful groves, with their cool shade in summer, and protection in winter, without a feeling of self-conscious satisfaction that he has done one good thing for himself, for his State, and for his posterity."

HON. C. E. WHITING.

For Gratuitous Distribution to Iowa Tree Planters.

REVISED FROM THE FORESTRY ANNUAL BY H. W. LATHROP.

DES MOINES:
F. M. MILLS, STATE PRINTER.
1881.

to be at early - 7.0.6.

INSTRUCTIONS

FOR

PROCURING AND PLANTING SEEDS, CUTTINGS, PLANTS AND TREES, INCLUDING SMALL FRUITS, PLANTS AND VINES, AND ORCHARD TREES.

THIS Manual is issued by the State Horticultural Society for the benefit of those having but little experience as to the best methods of propagating, handling and setting trees.

STRAWBERRIES.

The preparation of the ground for strawberries should be made by deep plowing and thorough pulverizing, and it should be sufficiently rich to produce a heavy crop of corn. The plants may be put out in September, or early spring, and if for field culture, in rows four feet apart, with plants one foot apart in the row; if for garden and home culture, the rows two feet apart. If put out in the fall they should be mulched with coarse litter to prevent winter-killing. In large plantations they may be tilled with a straddle-row cultivator, the same as corn, and they should have a plowing every week or ten days during the first part of the season, and the plants may be allowed to spread until they occupy the space of one foot in the row. They should be mulched at the beginning of the winter with some material that is free from seeds, such as corn or sorghum stalks, prairie hay or coarse straw. The mulch, after the frost is out of the ground, is to be raked between the rows to retain the moisture in the ground, and afford a clean path on which to do the picking, and to enrich the ground by its decay.

When the plantation is to be renewed, which should be done every fourth year, plow the ground between the rows, set out the plants therein and then plow up and cultivate the old row.

For varieties, select from the list recommended by the State Horticultural Society. Strawberries thrive best in moist soils, if well drained, and they flourish better in a wet than in a dry season.

RASPBERRIES.

The preparation of ground should be the same as for strawberries, the rows to be from five to seven feet apart, depending on the length the canes

are permitted to grow. The ground should be richer than for strawberries. The plants may be put out in the fall or spring, but if in the fall, a small mound of earth should be raised over them before the ground freezes. Set them from one to three feet apart in the row and cultivate as you do corn. When the young plants have made a growth of from one and a half to two feet, pinch or cut off the terminal bud; it will then throw out branches, and when the branches have made a growth of one foot or more, cut off their terminal buds. After the crop of berries is harvested, the old bearing canes should be removed, and only from three to five new canes should be permitted to grow from one stool. If you plant the suckering varieties, unless the suckers are wanted for transplanting, treat them as you would weeds, and subdue them on all suitable occasions with the plow or hoe.

BLACKBERRIES.

The planting and cultivation of this fruit should be similar to that of the raspberry. It will flourish with partial shade better than any other fruit, and may be planted on the north side of a grove, or in a young grove not too thickly shaded. In the blackberry days of early times it succeeded best on our sparsely-timbered lands and in our hazel thickets.

CURRANTS

Should be planted in rows five feet apart, and three to five feet in the row, depending upon the number of canes left in the hill. Prepare the ground as for raspberries, and plant cuttings or rooted plants. If cuttings, they should be made from the last year's growth, soon after the leaves have fallen, and if then put in the ground and well protected during the winter, will become callused and frequently-rooted, so that they may be put out in the spring following. The currant is a gross feeder, and will use to good advantage an abundant supply of manure. A heavy mulching should be applied each year and left on the ground to decay and fertilize it. From five to eight canes only should be left in a hill, and all superfluous sprouts should be removed. Occasional pruning of canes may be made when they branch too much, and as the plantation attains age the old canes that become enfeebled should be removed and their places supplied by young sprouts.

GOOSEBERRIES

Should be planted, and cultivated, and cared for like currants.

CHERRIES AND PLUMS.

Trees of these fruits should be planted much like apple trees, and have about the same care, but being of smaller growth they can be planted nearer together. In our climate it is useless to try any but our native plums, or those closely allied to them, and of cherries only the Richmonds and Mollis have succeeded.

GRAPES.

Should be planted quite deeply—18 inches or more—and then be well protected the first winter by being laid down and covered with earth, and if of tender varieties they should be protected every winter. The first year but one cane should be grown, the next not more than two, and the third a little fruit may be obtained. Plant in rows six to eight feet apart and train to trellis or stakes, vines four to eight feet in the row. A trellis may be made of three wires, the highest not more than four to five feet high, or stakes may be used from two to four inches in diameter. With the trellis you can cultivate or plow but one way, while with the stakes plowing may be done both ways. The pruning should be done in the fall, winter or spring, before the buds begin to swell. No definite rule can be given for pruning, but in doing it we should bear in mind that only the last year's growth produces fruit. A young or feeble vine should not have too much bearing-wood left on lest it overbear, while a strong and well-established vine may be more heavily taxed. Cultivation of the vines with the plow, cultivator, one-horse harrow or hoe should be begun as soon as the ground is in good condition to work in the spring, and it should be kept up until well into midsummer or later. Close pruning induces the growth of large berries and large bunches, while a superabundance of fruit-bearing wood tends to the production of numerous small bunches, with smaller berries. Each bud on last year's growth of wood may be counted on to produce from one to five bunches of grapes when the vine is well pruned.

ORCHARD PLANTING AND CARE.

For orchard planting preparation of the ground should be begun in October by giving the soil a deep plowing, or what is still better, a good trench-plowing or subsoiling, and the plowing should be done so that each row of trees can be planted in a dead-furrow. Fall is preferable to spring plowing, for the reason that the soil is then in better condition to be worked, and where the plowing is deep the frosts of winter and the rains of spring render the ground more friable, especially if the soil or subsoil be stiff clay. The distance of the trees apart should not be less than twenty-five feet and, where land is plenty, thirty feet is better. By a quincunx arrangement of the rows a greater number of trees can be planted to the acre and still be the same distance apart than where each tree stands directly opposite its fellow tree in the adjoining rows.

In selecting trees get them from a good, reliable nurseryman, and procure them in the fall, soon after defoliation, and keep them over the winter well buried in the ground, and by well buried I mean covered root and branch with the earth in close contact with all the roots. If trees have to be transported far from nursery to orchard the roots should be well protected from the drying effects of both sun and winds.

As soon in spring as the ground is in condition to be worked the planting should be done. In the first place the rows should be measured off the re-

quired distance and a stake be set where each tree is to be planted, and, unless the surface of the ground is so uneven as to prevent, the stakes should be made to form straight rows east and west, north and south, northeast and southwest, and northwest and southeast. If the rows running north and south and east and west are eighteen feet apart and the trees are set on the quincunx plan they (the trees) will be a little over twenty-five feet apart, and if the rows are twenty-two the trees will be about thirty feet apart. The holes should be dug of sufficient width to receive all the roots in their natural position, and if a foot wider all the better, and the bottoms of them should be well spaded up to the depth of ten or twelve inches. Particular care must be taken to have the soil in close contact with all the roots, and it should be tramped with the feet unless a bucket full or so of water be applied as the process of filling the hole proceeds. Care must be taken that all the roots are in their natural position. Set the trees so that they will incline about ten or fifteen degrees to the southwest, as the tendency of most orchard trees is in the opposite direction when set perpendicular.

The trees should not be more than three years old, and perhaps two-year-olds are better, as they can be removed from the nursery with less loss of roots. Before being planted each tree should be encircled with a piece of common building tar-paper, extending from the surface roots to the limbs. This will protect them from the depredations of borers and rabbits, and prevent sun-scald during warm winter days. It should be large enough to encircle the tree after it shall have made several years growth. The depth of planting should not be much greater in the orchard than the nursery, but very soon after the planting is completed culture should be begun by plowing the ground to the trees, which will give them the depth they need. Soon after this plowing is done a good mulch of hay, straw or coarse manure should be spread around each tree, extending far enough to well cover the roots, and sufficient earth be thrown upon it to prevent the wind from blowing it away. If this mulch cannot be obtained the soil about the trees can be kept moist by frequent stirring, and the more frequent the better. That crop and that culture is the best for a young orchard which calls for the most frequent working of the surface soil during the early part of the season, and hence potatoes, corn, beans, mangets and kindred crops should occupy the ground for the first four or five years. Fodder-corn and buckwheat are both good orchard crops after the trees have become large enough not to be shaded by them. I have sometimes practiced sowing my orchard with peas—broadcast—but in a dry season they are not a very certain crop.

At the first two plowings the earth should be turned toward the trees, and after that alternately to and from them until the orchard is to be seeded to clover or timothy, when the last two plowings should be toward them. From three to four years at a time is sufficiently long for an orchard to remain in grass, when it should be replowed and cultivated a year or two and then put in grass again. If hogs with noses "*full-jeweled*" can be permitted the run of the orchard after the trees have become sufficiently large not to be injured by being rubbed against by them, it may be of equal benefit to a

good cultivation, but the grass *must not be fed off too close by them*, lest they strip off the bark from the trees. After an orchard has been planted and the trees have become well established the height at which they are to form their heads should be determined, and, except in cases of upright growers, like Benoni and Red June, the distance should not be less than four feet from the ground. Where trees have been headed lower than this in the nursery a pruning of the lower branches will have to be resorted to to produce the desired result. While some trees have a tendency to form too close a top, others have a different habit, and the tendency of one can be checked by thinning out and the habit of the others corrected by cutting back the branches. Under the scorching suns and the blasting winds of our arid climate a close top is preferable to an open one, and the pruning-knife should be used with care, skill and judgment. The time to prune is at all times except the cold weather of winter, for a branch that needs to be removed should never be permitted to grow so large that it cannot be readily cut off with an ordinary pocket-knife. If, however, pruning has been neglected till the saw must be called into requisition I know of no better time for its use than late fall or early winter. Wounds then made rarely ever bleed, and the part from which the circulation of sap is cut off becomes so well dried and seasoned when the spring flow of sap commences that but little, if any, decay takes place before the wound is healed over. Let the pruning be done so that all cross-growing and in-growing branches be removed, and so that the lowest branches shall be the largest and longest ones. If any nests of the tent caterpillar have escaped destruction the trees should be visited soon after the buds burst in the spring, when the young insects will be found pitching their tents in the forks of the limbs, where they can easily be destroyed by the hand or be brushed off with a bunch of rags tied to the end of a pole. Early in June the bodies and large limbs of the trees should have a good washing in strong soap-suds or weak lye from wood ashes. This washing will keep the bark smooth and healthy, and prevent the formation of hiding places for insects. If borers have ever found a lodgment in any of the trees they should be made the subject of watchful extermination. The knife and wire probe are the best weapons of offense against these troublesome pests. A never-failing sign of their presence is their saw-dust-like deposits about the roots. An application of boiling lye from the spout of a tea-kettle to the outside of their places of retreat is said to be effectual in destroying them in the early stages of their existence. The advent of bark-lice, canker-worms, cicadae, codling moths, fall web-worms and all other insect enemies should be met with a fixed resolution for their immediate extermination if possible, for while the price of berries may be a few cents per quart, and of grapes two or three cents per pound, the price of apples is "eternal vigilance."

On the great prairies, the first trees planted should be the fast growing ones.

The new settler on the prairie is in absolute need of some wind-break that will modify the force of our summer storms, and our winter blizzards;

and his early need of poles taken from the tree plantation for various farm uses, including fuel, should induce him to plant such varieties as will make the most wood-growth in the shortest time. Of these are the poplars, cottonwood, Balm of Gilead and White willow.

COTTONWOOD.

The Yellow and White varieties of this tree are identical, the *apparent* varieties growing out of the different conditions of growth, the Yellow predominating in thickly planted groves, where the growth is slow and the trees are shaded, and the White predominating where trees are grown sparsely.

In starting a grove, secure young plants from the rivers and creek bottoms where they are obtainable. If these cannot be got, take cuttings from thrifty young trees; the cuttings should be from young wood, as the roots from this strike more readily.

In making plantations, if cuttings two or three feet in length, and from one to two inches in diameter be used, they will grow with more uniformity and give less trouble in cultivation than small cuttings, or even small plants. These cuttings should be sawed off into lengths wanted, and the lower end sharpened with a keen ax, with a sloping cut *all on one side*. Set these cuttings by making holes with a light iron bar, in which the cuttings are driven carefully with a wooden mallet; all of the poplar and willow family of trees grow best from cuttings put out in the fall, if they are set firmly and deeply. Either in fall or early spring, set them where wanted as soon as a wagon load of cuttings is prepared. They are much injured by lying around, even for a day or two. If more convenient, the cottonwood may be grown by the million from the seed, with very little trouble. Gather the catkins in June, rub them apart with the hand when ready to sow, and mix them up with sand to facilitate even sowing. Put in drills on mellow, moist soil, and cover not more than one inch deep: all of the willows and poplars may be started in great quantity in this way where the catkins are abundant.

Do not put cottonwood trees too near the orchard or small fruit plantation, as they make severe drafts on the soil, both for moisture and plant-food.

LARGE ASPEN.

This is a tall, erect tree, covered with a smooth bark of a soft, light greenish-grey color. It is a native tree in the northern part of the State, but not very abundant. Where its value is known, it is used for hewing sticks, for which purpose it is well adapted, where it can be kept dry. But used for sills, it has proven fully as durable as pine. It is stiffer than pine, and not as liable to settle under weight. It grows very straight, and retains its size, making it suitable for long sticks—many houses on the Cedar River were finished with this lumber in an early day. It is not liable to warp, and is susceptible of a smooth finish—if dry when used it shrinks less than pine.