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HOME OFFICE

Since 1887

OREGON NURSERY COMPANY



ORENCO, OREGON

Directions to Customers

You'll find the Index of contents for this catalog on the inside back cover.

In ordering please use the order sheet in back of this catalog.

We exercise the greatest care possible in all departments to keep varieties true to label. However, in the event any of our trees should prove untrue to label, we will upon proper proof of same either replace with proper trees or refund the original purchase price paid. It is agreed and understood by and between ourselves and the customer that we shall not be liable for any greater sum than the original amount paid.

CASH-WITH-ORDER DISCOUNT—To all customers remitting in full for their orders direct to the Company's office *not later than 10 days after placing it*, we will give either 2 per cent cash discount or additional nursery stock equivalent to 5 per cent of your order. This discount applies only to orders given before Sept. 1st, if for Fall delivery, or before Feb. 1st, if for Spring delivery. Remittance must be sent direct to the office.

Claims for shortages, mistakes, etc., in shipments must be made to us within ten days after the arrival of shipment.

We do not guarantee against loss by transplanting, climatic effects or after culture. No stock which arrives in good condition will be replaced.

Our stock is all carefully inspected by State Horticultural authorities, thus insuring you perfectly healthy, clean trees from our nursery.

We accept all orders on condition that the same shall be void should injury befall our stock through floods, fire, frost, drouth and other causes beyond our control.

TERMS—Orders of \$50.00 or over, 10 per cent with order, balance on delivery. Orders under \$50.00, cash on delivery unless otherwise specially provided for.

Address all communications to the Company.

OREGON NURSERY COMPANY,
ORENCO, OREGON.

Established 1867

Descriptive Catalogue of
Fruit, Nut and Ornamental
TREES
Small Fruits, Shrubs, Roses, Vines

WHOLESALE AND RETAIL



“GOLDEN ANNIVERSARY EDITION”
50 Years in the Nursery Business

NINTH EDITION

Oregon Nursery Company
ORENCO, OREGON

Copyright. 1917, by Oregon Nursery Company.



To Our Patrons

¶ Fifty years ago, in 1867, Mr. O. Dickinson, of Salem, Oregon, that esteemed nurseryman and seedsman, known and respected by the pioneers of that day, established the nurseries of the OREGON NURSERY COMPANY. In 1890 the business was purchased by M. McDonald and A. McGill, under whose management it was continued and greatly increased. In 1912 Mr. McGill retired and the company was reorganized with Mr. McDonald continuing as president. With the reorganization a number of former employees, who had been associated with the Company in various capacities, assumed an interest in the Company, and thus the upbuilding of a business started fifty years ago is being carried on.

¶ It is, therefore, with unusual pleasure, mixed with humble pride, that we present to our many friends this Golden Anniversary number of our Descriptive Catalogue, and trust it may render you the service it is designed to supply. In the following pages you will find a complete list of our Fruit and Ornamental stock propagations with their descriptions and seasons of maturity, together with such other information as will, we hope, be helpful to the amateur Fruit Grower as well as the more experienced.

¶ We feel proud of the confidence shown us by our thousands of friends and customers throughout the Northwest by their very liberal patronage, and wish to express our thanks for same. It shall be our aim to be at all times worthy of their confidence and patronage.

¶ You are cordially invited to visit our Nurseries at any time it is convenient. We shall be glad to show you over our extensive plant and let you see for yourself the painstaking care exercised in producing "Orenco Trees."

Respectfully,

OREGON NURSERY COMPANY.

Information of Value to All Interested in Planting Trees.

Suitable Soil, Favorable Climate, Expert Knowledge and Our Fifty Years Experience Combine to Insure You Maximum Quality in Orenco Trees. The Class of Trees You Plant Will Largely Determine Your Success.

ORENCO, the home of the Oregon Nursery Company, is located on the Forest Grove branch of the Oregon Electric Railway just twelve miles directly west, in an air line, from the heart of the city of Portland. Here are our main propagating grounds, which at this time embrace upwards of one thousand acres.

While we do not wish to assume an attitude of boastfulness, it probably will be interesting to many to know that our plant at Orenco is one of the largest nursery plants, if not the largest, in one solid body in the entire Northwest, if not in the United States, and, inasmuch as the largest nurseries in the world under one management are in the United States, we may rightly lay claim to having the largest acreage in one tract in the entire world devoted to the production of all classes of Fruit Trees planted in the temperate zone, as well as a very extensive list of Shade Trees, Flowering Shrubs, Roses, Vines, etc. We do not, however, rely upon the magnitude of

our plant to merit your patronage, for magnitude alone does not insure quality, and it is quality that counts in trees and in which planters in general are most interested. It naturally and logically follows, however, that as in any undertaking large quantities of trees can be produced at a lower percentage of cost than they can be produced in small quantities.

Furthermore, the growing of nursery stock is unlike the producing of many commodities that are made by machinery or otherwise, in that Trees and Plants are the product of



THE WAGENER APPLE.
Two-thirds natural size.

proper soil and climatic conditions, personal attention and cultivation coupled with the inflexible law of time and seasons, all of which can only be rightly utilized and handled by men trained and experienced in the business. Therefore, as large propagators of Nursery Stock, we have developed an organization of experienced, efficient men insuring the highest quality of trees possible to produce.

Another thing we would have the reader know is that our present site was selected because of its suitability for nursery purposes, and we believe Orenco Trees substantiates our claim that nowhere in the United States can better trees be grown than are grown in our nurseries.

Orenco Trees Grown Under Natural Moisture.

Orenco Trees are grown entirely without artificial irrigation. Nature alone supplies their moisture. This is a question that we are asked times without number, and it has been a

cause for wonder to many how Orenco Trees can attain their marvelous growth and development without unnatural forcing by unlimited moisture. However, the cause for the high standard of Orenco Trees is due to the soil in which they are grown being amply supplied with plant food, the manner in which they are handled and the fact that by proper cultivation we are able to retain the natural moisture and make it available for the strong root system on which Orenco Trees are grown. But in no manner is additional moisture supplied to that which nature provides.

Good trees cannot be produced on soil that is lacking in plant food, or that is continually producing trees year after year. In order to maintain our soil at a high point of productiveness we grow trees on the same land only once every three or four years, in the meantime planting other crops, which tends to rebuild the soil and cleanse it from



A budding crew at work in a block of pears.

any bacterial diseases that might be detrimental to the highest development of tree life. We use red clover very extensively for fertilizing and recuperative purposes, so that at all times our soil is in the highest state of fertility, which not only produces a well developed tree in size but likewise in firm wood growth and thereby strong in vitality, insuring the greatest success when planted in orchard form.

As in the production of all commodities, there are two ways: The cheap and easy way, and the right way. This is doubly true with regard to producing trees. It may be advisable in the purchase of some articles to sacrifice quality for price; but when you consider that a tree or shrub when planted is intended to live and serve for perhaps the planter's entire lifetime and even longer, it is obvious that it is short-sightedness and false economy to plant anything but the best in trees and shrubs. Naturally good trees cost more to produce, and they must, therefore, be sold for higher prices. But take the slight difference in price and balance it against the earlier and added productiveness of a fruit tree, or the more rapid development and greater satisfaction and pleasure afforded by the ornamental tree or shrub and the cost sinks into insignificance. Nothing is truer than that in planting nursery stock, the best is much the cheapest.

Believing that the majority of planters of nursery stock desire the best that can be produced, and that the matter of growth and permanency in this business depends upon "quality and reliability" we continually strive toward perfection.

The following illustration shows the difference between trees which are grown by the cheap, inferior method and trees grown by the ORENCO method.

Fig. No. 1 is a one-



Fig. 1—1-year-old whole root seedling

year-old whole root seedling which is grown from the seed of an apple, cherry or pear, for instance. By the inferior method the tap root of this small seedling is cut into two or perhaps three parts, and to each piece of root is grafted a small scion of the particular variety that is to be propagated, as shown by Fig. 3. The seedling end of this combination is then

planted in the soil and develops a root system which in time will make a tree, but which is naturally and logically deficient in the proper root system to insure a

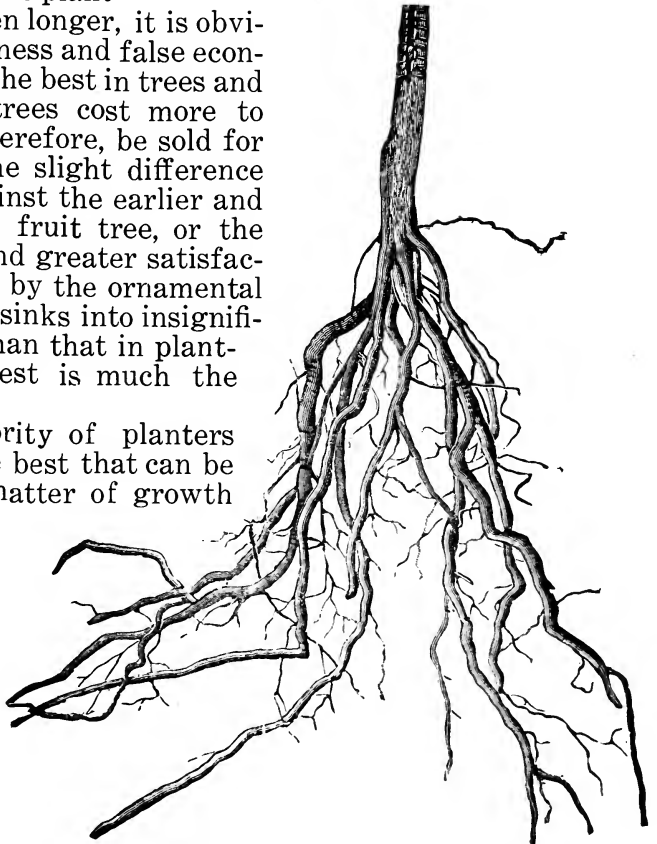


Fig. 2—A two-year-old whole-root seedling, showing dormant bud.

strong, vigorous, long-lived tree.

Compare this with Fig. 2, which is also a one-year-old seedling, enlarged. Instead of dividing this seedling into several parts, to make more trees, it is planted in the nursery row intact. This planting is usually done during the months of January or February if conditions

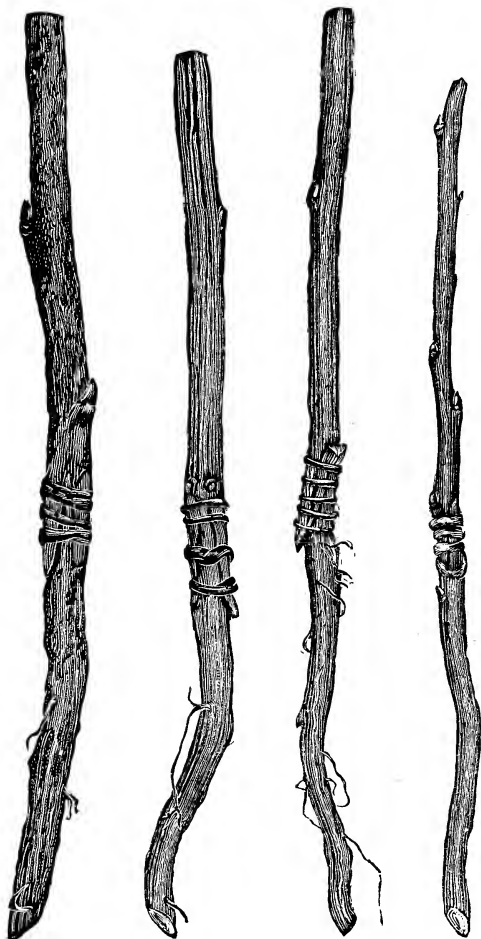


Fig. 3—Four-piece root-grafts made from one seedling, and planted in this form.

permit. In the following July or August a bud of the particular variety of fruit that is desired to be grown is inserted in an incision in this seedling which rapidly adheres to the seedling stock, going into dormancy with the seedling with the coming of autumn. The follow-

ing spring the seedling stock is cut off just above the inserted bud and the growing energy of the seedling is diverted into this inserted bud, thus developing it into a tree—whence we get our famous ONE-YEAR-OLD BUDDED TREE ON A THREE-YEAR-OLD ROOT, for you will recall that the seedling that was first planted was one year old when planted in the nursery row. It remained in the nursery one growing season, during which it was budded, and at the end of two years or beginning of the third year the seedling was cut back and it made another year's growth, thus making the top one-year-old and the root three years old. The root system is the life power of the tree, and unless a tree has a strong root system it is impossible to have a vigorous, productive top.

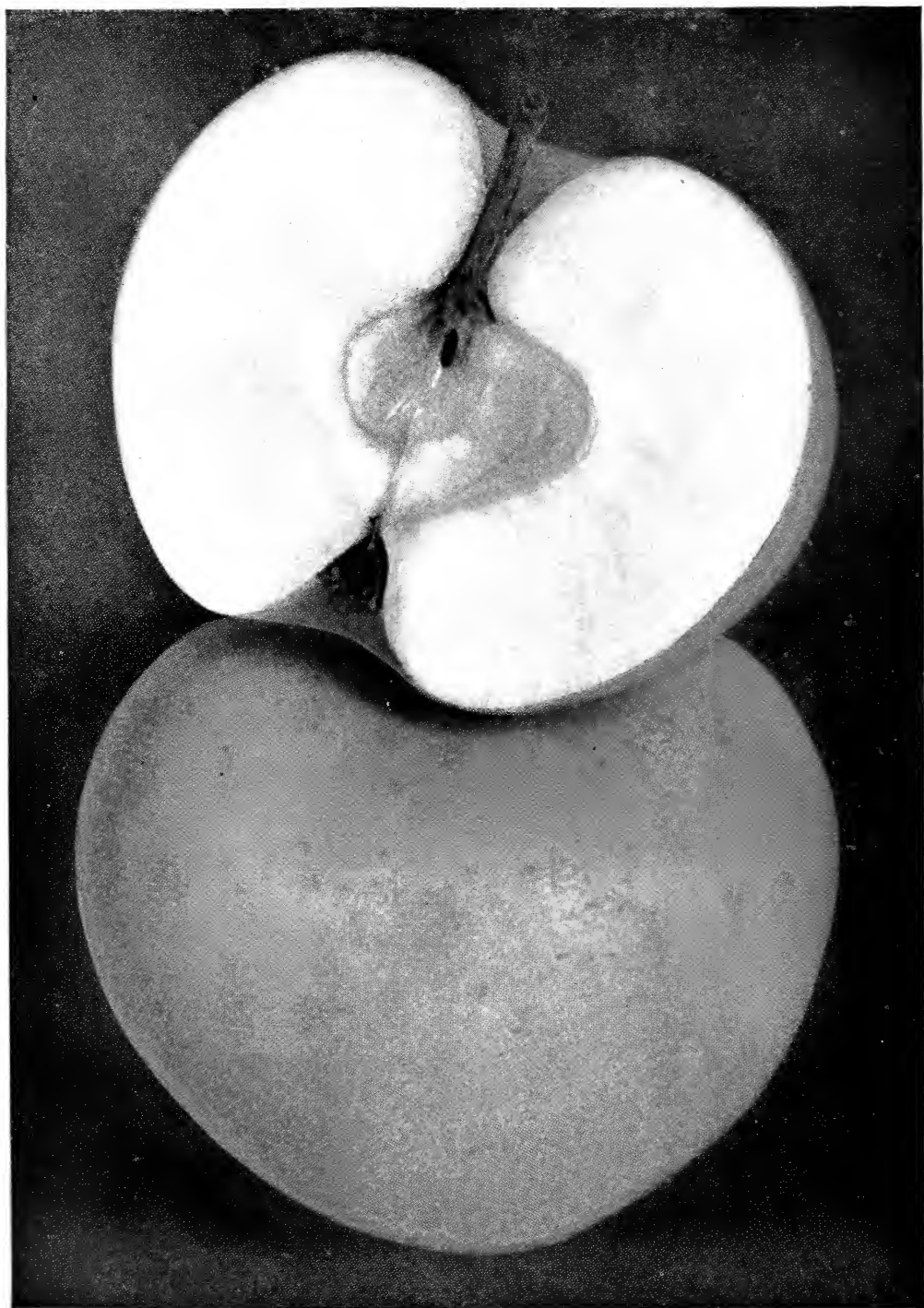
We wish to explain, however, that the above does not apply to trees propagated on peach seedling root. Such fruit trees as peaches, prunes, some plums and some apricots, also some almond trees that are grown on peach root, have a two-year root with a one-year top. Customers, therefore, will understand that it is the trees which are by nature larger growing and longer lived, such as apples, cherries and pears, which are produced on three-year-old roots.

Few people realize the amount of work that is necessary in the proper development of the tree or shrub that you plant. From the time that the bud of the variety to be propagated is inserted, it is necessary for the nurseryman to go over each and every tree many times, to trim and train the young, tender, growing plant. They have to be intensively cultivated to make plant food and moisture available for the growing trees. They must be carefully watched and guarded to avoid their being attacked and injured by diseases and insect pests.



WALDRON BEAUTY

A new variety originated near Oregon City, Oregon. Medium size, roundish oblate; flesh white, resembling the McIntosh Red; color almost full red, underlaid with greenish yellow; skin smooth, and takes a very high polish. A profuse bearer; quality good. A promising autumn variety, September to December.



IDEAL

New early apple, ripening a few days later than the Yellow Transparent. Possesses splendid keeping and shipping qualities; the best of all early apples for far-away markets; greenish yellow, turning to full yellow when ripe; color very similar to Yellow Newtown Pippin; flesh crisp and tender; sub-acid. The best of cooking and eating apples.

Hardiness of Orenco Trees.

Some people have the erroneous impression that in order for a tree to be hardy it must be grown in a rigorous climate. This is not true. Any ordinary tree that becomes perfectly dormant will stand quite severe temperature, and it is only where trees are not thoroughly ma-

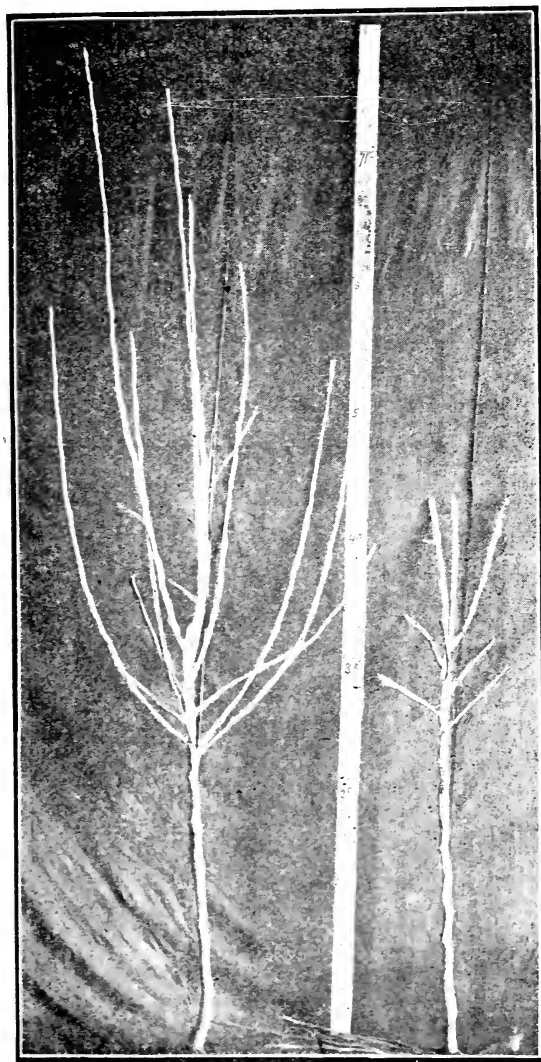
tured that they are injured by frost, and this will apply in any case.

Strange to say, many western planters think that in order to get good trees they must send East. To such we would say that our average ONE-YEAR-OLD budded tree is as good as the average TWO-YEAR-OLD Eastern tree. One very important fact in this connection which should not be overlooked, is the fact that many eastern-grown trees are affected with what is known as "black heart." This is caused by the trees being injured by frost when they are very young, and while many of them will for a time survive, the heart of the tree being injured decay sets in and ultimately the tree will be lost. Very often outwardly the tree will appear all right, but when it begins to carry fruit and is subjected to the strain incident to a high wind it is unequal to the occasion and will break off. This is a condition that is not found in ORENCO TREES.

When the tree is young and tender it requires a mild, congenial climate for its proper development, and uncongenial conditions will no more tend toward making a tree robust and hardy than will uncongenial conditions and improper food and care make a child strong and healthy. That ORENCO TREES have withstood the most severe climates is amply proven by illustrations shown on pages 8, 9, and 13.

Plant Young, Thrifty Trees.

We are frequently asked if we can furnish fruit trees three and four years old. We do not recommend planting any fruit tree that is more than two years old and, in fact, for general



One year after planting in the orchard, before pruning

The same tree after pruning

The above cut shows one of our one-year budded trees one year after purchaser has planted it in the orchard, also showing the proper method of pruning back the tops to form a well balanced head that will bear up a full load of fruit.

purposes prefer our standard one-year-old trees for, with proper care, our one-year-old budded tree on three-year-old root will, at the end of the second year, be as far advanced as would a two-year-old tree.

A one-year-old tree does not suffer from the shock of transplanting proportionately with the older trees and recovers more rapidly; therefore, we would advise anyone planting any considerable number to take our standard one-year-old tree. If, however, a customer is planting only a few trees and is so situated that he can give them extra care the first year so as to avoid any backset, very good success can be attained with 2-year-old trees that are not too large.

The standard of perfection in trees is a budded 1-year-old top on a 3-year-old root, or if on peach root 2 years old, and if you want the best, with the greatest possibilities for

results, insist on planting no other.

Grading.

ORENCO TREES are graded into uniform sizes, both as to height and caliper. Generally speaking our first grade in fruit trees stand from 4 to 6 feet in height. The reader will understand that all trees do not have the same habit of growth, so that while one tree might attain a height of six feet, another variety equally good according to its natural habit of growth would not exceed 4 or 5 feet, hence the necessity for allowing reasonable leeway.

In deciduous shade trees, evergreen trees, etc., there is a greater variation in habit and rapidity of growth than in fruit trees. Our prices, therefore, are based on the most suitable sizes for general planting, and if a customer should desire a larger tree we can usually supply



Orchard near Hamilton, Montana, planted with Orenco Trees.

his needs at a slightly increased cost over our printed price list.

It would be interesting to any reader to visit our plant during the packing season and to become acquainted with the thoroughness with which ORENCO TREES are handled. Unmarketable trees are discarded and burned and nothing but good trees are retained for filling orders.

Insuring Reliability.


To insure ORENCO TREES being true to label, we have developed a large scion orchard which contains trees of practically all the varieties listed in our catalogue. These trees were propagated from bearing trees of the best strains of their respective varieties found thruout the country. From these trees we get our scions with which to propagate our own trees, thus eliminating the necessity of securing scions from

other sources. In other words it is the policy of the Company to use only the best propagating wood possible and to do everything in our power to avoid mistakes. So long, however, as business is done by human beings there is a possibility of mistakes, and all orders are accepted subject to the guaranty agreement on second page of cover.

Importance of Proper Handling and Packing.

The best trees grown can be rendered worthless by improper handling, hence to insure the same degree of efficiency in this respect our packing house is equipped with all the most modern conveniences necessary for the proper handling and packing of trees.

Our packing house is the largest of its kind in America, covering two acres of ground under one roof, and



**Don't fail to include
the Orenco apple in
your order, if you de-
sire the very best.**

Henry Buck's orchard at Stevensville, Montana, planted with Orenco Trees.

contains a compartment that is both heat and frost proof, thus enabling us to keep the trees dormant until very late in the Spring for customers residing in sections where spring is later than here, as well as affording any necessary protection against injury from frost.

ORENCO TREES are packed in boxes in a manner that will insure their arrival at destination in as good condition as the day they leave our establishment. We have made shipments to Europe, South Africa, Australia and China, in fact, to almost every country in the world. Hence, you need have no fear but that any order you place with us will be properly packed to insure reaching you in A-1 condition. However, if they do not, we want you to so advise us.

Time of Delivery.

While there are exceptions to all rules, it is our experience that better success attends the planting of trees in the Spring in sections lying east of the Cascade mountains, while west of the Cascades, as it applies to Washington, Oregon and Northern California, trees can be planted in either the Fall or Spring season. There are some sections lying east of the Cascade mountains where Fall planting can be done, but risk is taken even in these apparently favored portions of the country. Sometimes it is necessary to have the trees shipped in the Fall. In such cases we would advise customers to trench the trees in during the Winter, selecting some well-drained site. Do not use straw or any other similar material for covering your trees, as it



KING

Two-thirds natural size.

A good apple to plant in the home orchard.

only serves as a harbor for mice, which are not considerate of your trees—in fact, it will not hurt to cover them entirely. With this treatment the trees will emerge in the Spring in fresh, vigorous condition.

ORENCO TREES are sold on the basis that they will be delivered to our customers in good condition and that the purchaser will arrange to receive the trees promptly upon being notified that they are on hand for him.

With the increased cost of innumerable items entering into the production of trees, it is understood that after trees are accepted by a purchaser as being in good condition, no further responsibility attaches to the Company, insofar as any that may fail to live are concerned. If for any reason the trees are not in good condition when received we must be notified at once, and we will always be willing



Thos. Jaycox, of Jerome, Idaho, and a 2-year-old Orenco apple tree.

to adjust any legitimate and reasonable complaint.

How to Care for Your Trees.

More trees are allowed to die thru improper care than many people imagine. It is natural to hold the nursery responsible for much of this loss which justly and logically does not belong to them. After a nursery has taken every care and precaution possible to insure the delivery of their trees to you in good condition their responsibility must necessarily cease, and from that point the purchaser who gives his trees the proper care and attention will be proportionately rewarded, and, likewise, the party who thru indifference or unknowingly gives improper care will suffer accordingly.

It is our desire, however, that every purchaser of ORENCO TREES may know how to properly care for his trees and thus enjoy the maximum benefits, and if the following simple rules are observed the losses will be materially reduced:

How to Successfully Plant Orenco Trees.

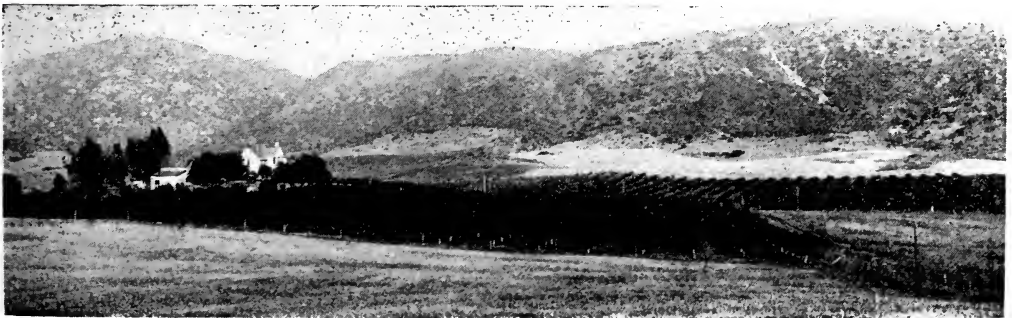
Arrange to protect the roots of your trees and plants from exposure to the sun and wind while taking them home from the delivery yard. Take along some gunny sacks or old blankets or anything of that nature to cover the trees with while on the way. Have trench dug in advance,

if the ground permits, and heel the trees in immediately, sloping them on an angle of about 45°, with the heads pointed south (if you are going to leave them in the trench any great length of time.) Cut the lower string on the bundle, loosening up the bundle so as to allow the earth to fill in around the roots. Have your trees heeled in where there is good drainage.

When ready to plant, prune off the ends of all the roots, cutting back so as to leave four to six inches of the root. Cut from the under side toward you, making a slanting cut so that the cut end will lie flat on the ground. Trim back the top of the tree in proportion to the amount of root you have pruned off. As a safe rule to follow, cut back one-year-old "whip" fruit trees to a height of from 20 to 30 inches from the ground after they are planted. Shade trees should be cut back to a height of from 6 to 9 feet, depending, of course, upon the size of the tree and the amount of branches it has. Do not, however, be afraid to trim your trees too much; most people make the mistake of not pruning enough.

Evergreen Trees.

These require very little, if any, pruning either of their tops or roots. Our conifers are all balled (that is dug and packed with a ball of dirt



Orchard of Mrs. A. A. Ralph at San Marcos, Calif., planted with Orenco Trees.

with the roots and securely wrapped in burlap.) In planting these trees simply plant burlap and all, cutting the strings so as to loosen the bindings. When the burlap is left on it is permissible to use well rotted manure in the hole in moderate quantity. This will help the burlap to decay and still the young roots will readily avail themselves of the plant food. Prune only to obtain a uniform and symmetrical shape.

Give the Roots Room to Expand Easily.

Dig the holes for your trees twice as large as you think necessary. A hole 20 inches square and 18 inches deep is sufficient for the average fruit tree, while shade trees require holes 30 inches square and 18 to 24 inches deep, depending upon the root growth. Loosen up the earth as far down as you wish to dig—not less than a foot and a half to two feet — then fill in the hole with the top soil so that the tree when planted will be as deep in the soil as it stood in the nursery row. Work the dirt in around the roots with your hand. Tramp it in firm and leave the top soil loose. If

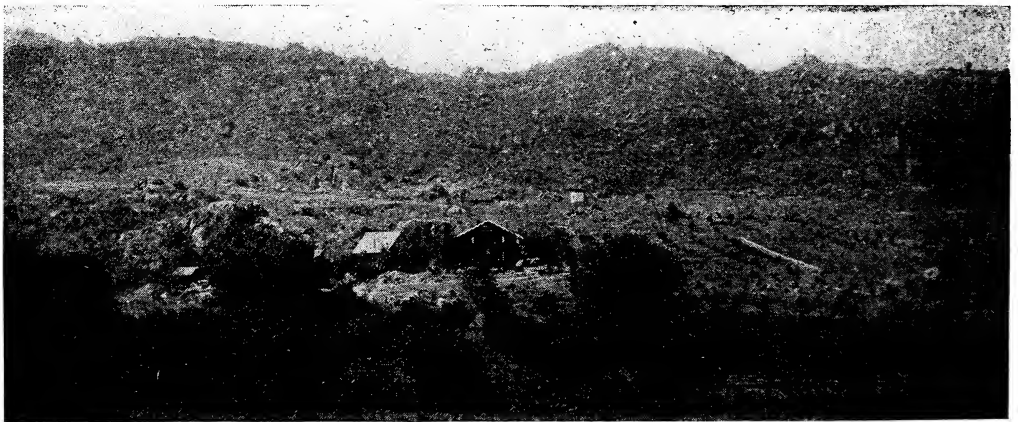


WINTER BANANA APPLE.

the ground seems too dry, put in half a bucket of water. Do not put any manure in the hole so that it will come in contact with the roots. If you have some well decayed manure put it in the bottom of the hole with the dirt on top, mixing it with soil before putting in the tree.

Keep the Soil Around Your Trees Loose and Mellow.

After your tree is properly planted, remember it needs further attention during the Spring and Summer. Keep the ground hoed for two



Orchard of Ex-Gov. H. Bois, of Iowa, at Hemet, Calif., planted with Orenco Apricot Trees.

or three feet around it. If the season is dry and the soil is liable to become hard and baked, give it some water and then loosen up the surface soil with your hoe. A little extra care expended on your trees the first two or three months after transplanting will determine your success with them.

We Cannot Guarantee to Make Your Trees Live.

It is understood, of course, that we cannot and do not guarantee that all your trees will grow, even if given, seemingly, the best of care; but we do all possible to have your trees in A-1 condition when they reach destination, and if you will call at once for your trees when notified they have arrived, it is seldom much loss occurs.

Sometimes if a shipment is not called for promptly, the trees may appear dry when you get them. In that case, if possible, stand them in a barrel of water for half an hour; or, if this cannot be done, then wet them down and give them plenty of water in the trench.

If you will follow these simple instructions we are satisfied you will be well repaid. We want you to feel

free to write us for any information on planting you may desire.

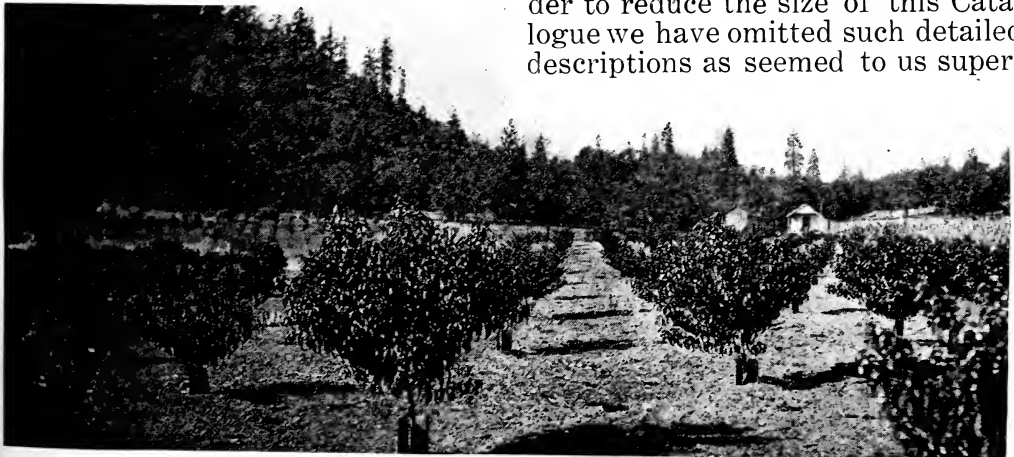
If ORENCO TREES please you, tell your friends and neighbors; if they do not please you, tell us and give us an opportunity to adjust your complaint.

Importance of Spraying.

In order to attain success in any line it is necessary to give thought and close attention to your business, and the day is past when good fruit can be produced without proper and intelligent spraying. In the last pages of this book you will find full directions for orchard spraying, prepared by H. S. Jackson, Plant Pathologist, and H. F. Wilson, Entomologist, of the Oregon Agricultural College, Corvallis, Oregon, which the reader will find concise, yet complete. These gentlemen are recognized authorities on fungus and bacterial and insecticidal pests. We have this Spray Calendar printed in separate folder for those who desire it.

Fruit Descriptions.

The descriptions of Fruits in this Catalogue necessarily cannot apply to all conditions of climate and altitude, thus allowance must be made for variations in this respect. In order to reduce the size of this Catalogue we have omitted such detailed descriptions as seemed to us super-



Thos. McDonough's Orchard at Tolo, Oregon, planted with Orenco Peach Trees.

fluous, and have endeavored to make them concise without eliminating any essential features.

New Varieties.

We are continually experimenting on new varieties of fruits, etc., which are not listed in our Catalogue for the reason that our experiments have not developed sufficiently to justify offering these varieties to the public. We are always glad to hear from people who have knowledge of new creations, for only in this way can the new improvements of nature be enjoyed by the general public and their benefits thereto extended.

Likewise, we shall always be glad to render such service as we can to parties who are unfamiliar with the best varieties for their localities, and to select the proper varieties for them. ORENCO SERVICE is one commodity of which we have an unlimited supply; while it requires time



THE BALDWIN APPLE.
Two-thirds natural size.

Consult our Landscape Department regarding the best Trees, Shrubs, etc. for your home

and seasons to produce ORENCO TREES, Orenco Service is always on "tap."

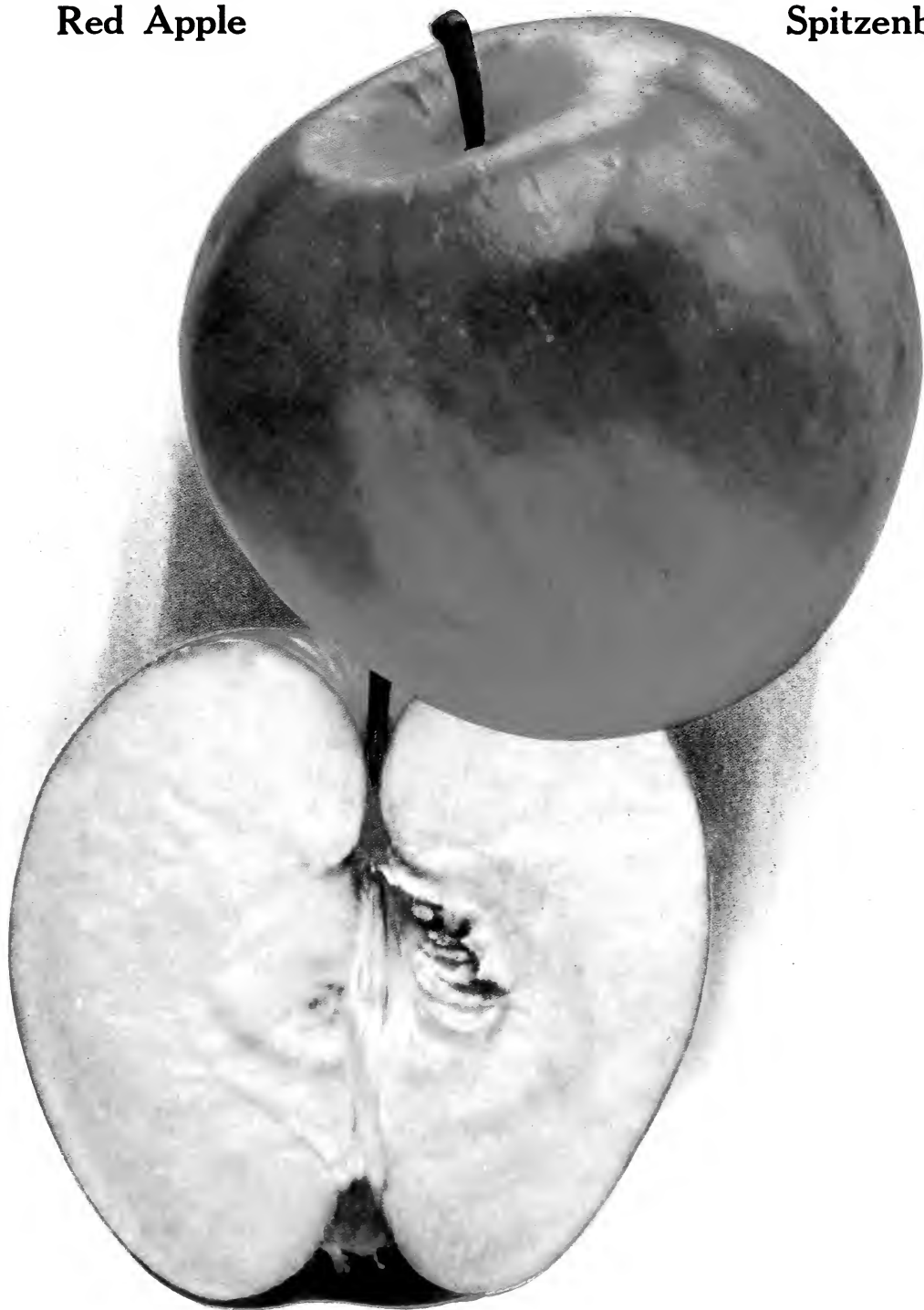


Rows of trees a mile long in our nursery. The view here embraces upwards of 300,000 trees, all grown under natural conditions without irrigation.

THE VANDERPOOL RED

A Long-Keeping
Red Apple

Better than the
Spitzenberg



A High-Class Apple for a Particular Quality-demanding Market.
The Apple-eating Public Demands It.

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year-old whole root seedling which is grown from the seed of an apple, cherry or pear, for instance. By the inferior method the tap root of this small seedling is cut into two or perhaps three parts, and to each piece of root is grafted a small scion of the particular variety that is to be propagated, as shown by Fig. 3. The seedling end of this combination is then planted in the soil

and develops a root system which in time will make a tree, but which is naturally and logically deficient in the proper root system to insure a

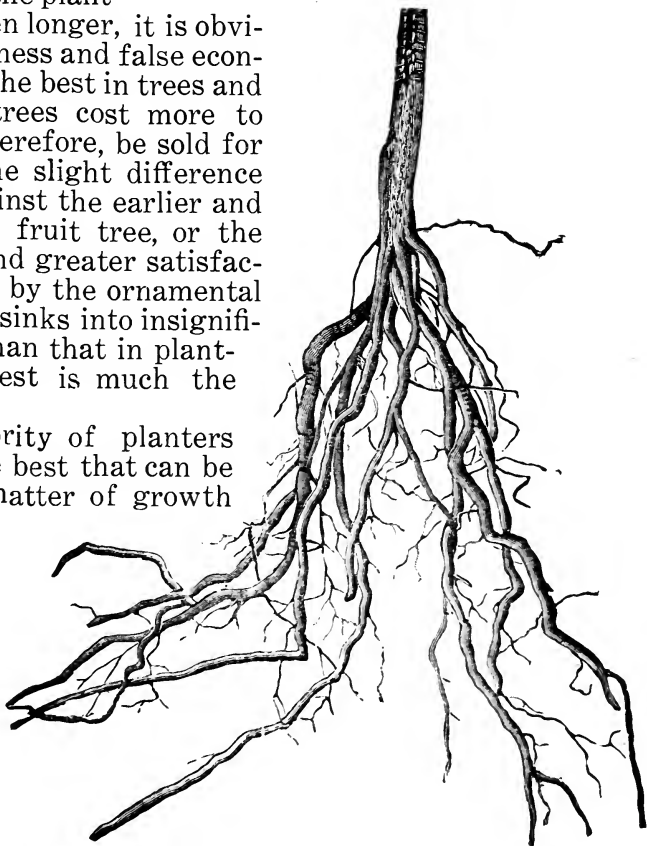


Fig. 2—A two-year-old whole-root seedling, showing dormant bud.

strong, vigorous, long-lived tree.

Compare this with Fig. 2, which is also a one-year-old seedling, enlarged. Instead of dividing this seedling into several parts, to make more trees, it is planted in the nursery row intact. This planting is usually done during the months of January or February if conditions

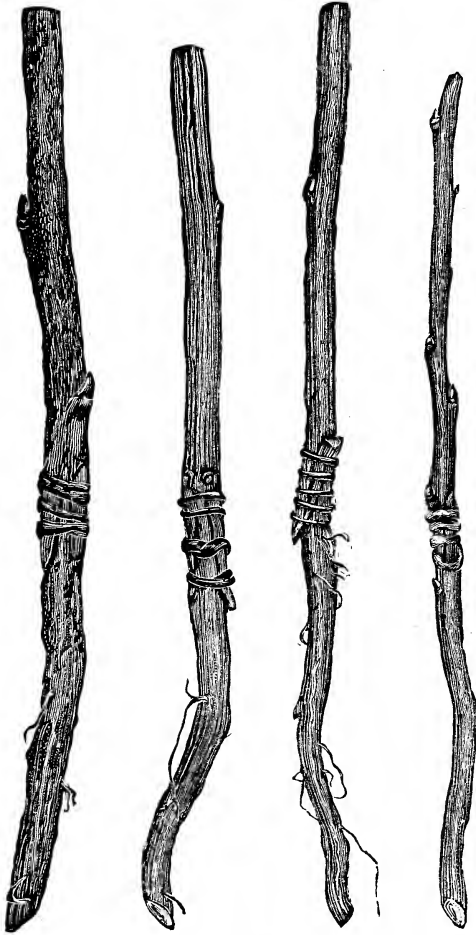


Fig. 3—Four-piece root-grafts made from one seedling, and planted in this form.

permit. In the following July or August a bud of the particular variety of fruit that is desired to be grown is inserted in an incision in this seedling which rapidly adheres to the seedling stock, going into dormancy with the seedling with the coming of autumn. The follow-

ing spring the seedling stock is cut off just above the inserted bud and the growing energy of the seedling is diverted into this inserted bud, thus developing it into a tree—whence we get our famous ONE-YEAR-OLD BUDDED TREE ON A THREE-YEAR-OLD ROOT, for you will recall that the seedling that was first planted was one year old when planted in the nursery row. It remained in the nursery one growing season, during which it was budded, and at the end of two years or beginning of the third year the seedling was cut back and it made another year's growth, thus making the top one-year-old and the root three years old. The root system is the life power of the tree, and unless a tree has a strong root system it is impossible to have a vigorous, productive top.

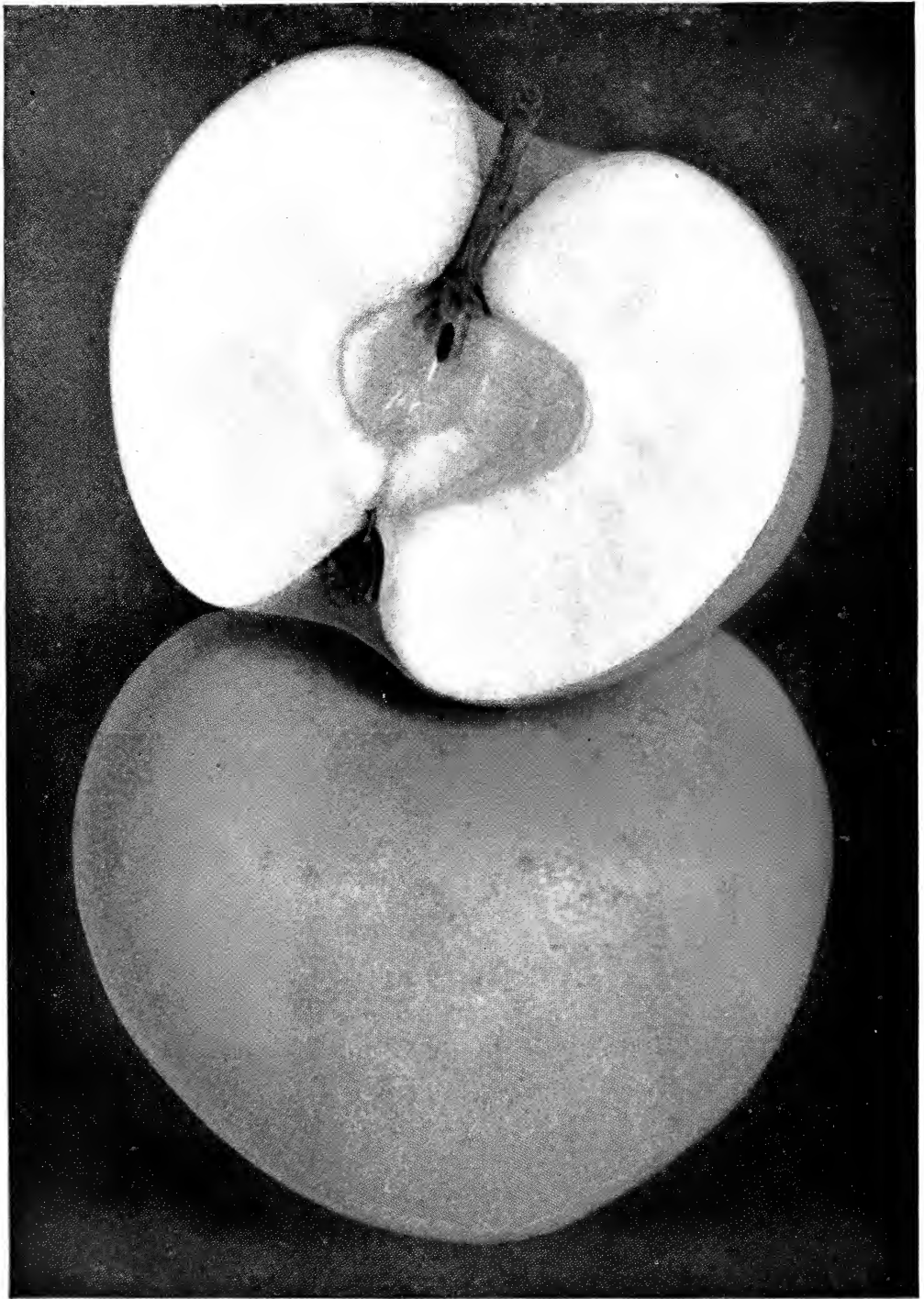
We wish to explain, however, that the above does not apply to trees propagated on peach seedling root. Such fruit trees as peaches, prunes, some plums and some apricots, also some almond trees that are grown on peach root, have a two-year root with a one-year top. Customers, therefore, will understand that it is the trees which are by nature larger growing and longer lived, such as apples, cherries and pears, which are produced on three-year-old roots.

Few people realize the amount of work that is necessary in the proper development of the tree or shrub that you plant. From the time that the bud of the variety to be propagated is inserted, it is necessary for the nurseryman to go over each and every tree many times, to trim and train the young, tender, growing plant. They have to be intensively cultivated to make plant food and moisture available for the growing trees. They must be carefully watched and guarded to avoid their being attacked and injured by diseases and insect pests.



WALDRON BEAUTY

A new variety originated near Oregon City, Oregon. Medium size, roundish oblate; flesh white, resembling the McIntosh Red; color almost full red, underlaid with greenish yellow; skin smooth, and takes a very high polish. A profuse bearer; quality good. A promising autumn variety, September to December.



IDEAL

New early apple, ripening a few days later than the Yellow Transparent. Possesses splendid keeping and shipping qualities; the best of all early apples for far-away markets; greenish yellow, turning to full yellow when ripe; color very similar to Yellow Newtown Pippin; flesh crisp and tender; sub-acid. The best of cooking and eating apples.

Hardiness of Orenco Trees.

Some people have the erroneous impression that in order for a tree to be hardy it must be grown in a rigorous climate. This is not true. Any ordinary tree that becomes perfectly dormant will stand quite severe temperature, and it is only where trees are not thoroughly ma-

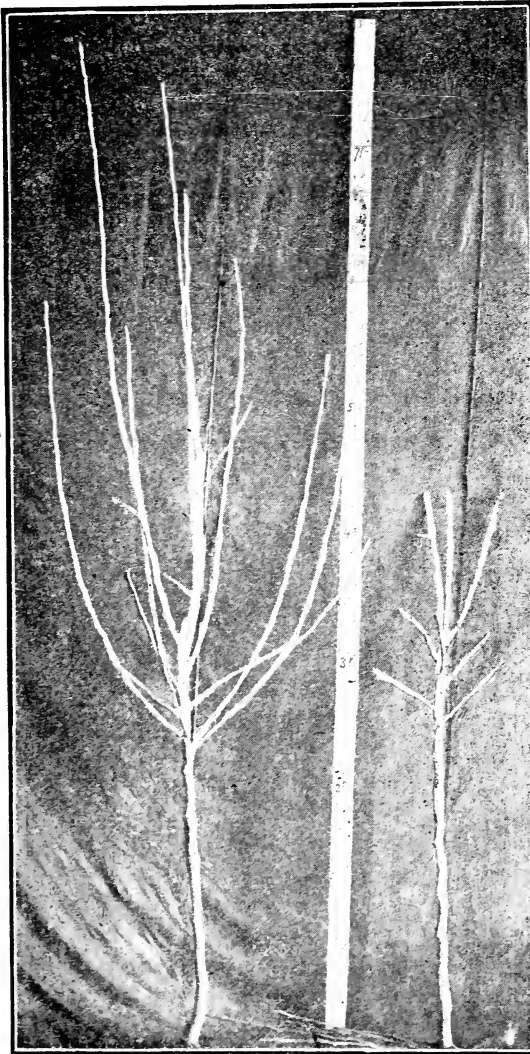
tured that they are injured by frost, and this will apply in any case.

Strange to say, many western planters think that in order to get good trees they must send East. To such we would say that our average ONE-YEAR-OLD budded tree is as good as the average TWO-YEAR-OLD Eastern tree. One very important fact in this connection which should not be overlooked, is the fact that many eastern-grown trees are affected with what is known as "black heart." This is caused by the trees being injured by frost when they are very young, and while many of them will for a time survive, the heart of the tree being injured decay sets in and ultimately the tree will be lost. Very often outwardly the tree will appear all right, but when it begins to carry fruit and is subjected to the strain incident to a high wind it is unequal to the occasion and will break off. This is a condition that is not found in ORENCO TREES.

When the tree is young and tender it requires a mild, congenial climate for its proper development, and uncongenial conditions will no more tend toward making a tree robust and hardy than will uncongenial conditions and improper food and care make a child strong and healthy. That ORENCO TREES have withstood the most severe climates is amply proven by illustrations shown on pages 8, 9, and 13.

Plant Young, Thrifty Trees.

We are frequently asked if we can furnish fruit trees three and four years old. We do not recommend planting any fruit tree that is more than two years old and, in fact, for general



One year after planting in the orchard, before pruning

The same tree after pruning

The above cut shows one of our one-year budded trees one year after purchaser has planted it in the orchard, also showing the proper method of pruning back the tops to form a well balanced head that will bear up a full load of fruit.

purposes prefer our standard one-year-old trees for, with proper care, our one-year-old budded tree on three-year-old root will, at the end of the second year, be as far advanced as would a two-year-old tree.

A one-year-old tree does not suffer from the shock of transplanting proportionately with the older trees and recovers more rapidly; therefore, we would advise anyone planting any considerable number to take our standard one-year-old tree. If, however, a customer is planting only a few trees and is so situated that he can give them extra care the first year so as to avoid any backset, very good success can be attained with 2-year-old trees that are not too large.

The standard of perfection in trees is a budded 1-year-old top on a 3-year-old root, or if on peach root 2 years old, and if you want the best, with the greatest possibilities for

results, insist on planting no other.

Grading.

ORENCO TREES are graded into uniform sizes, both as to height and caliper. Generally speaking our first grade in fruit trees stand from 4 to 6 feet in height. The reader will understand that all trees do not have the same habit of growth, so that while one tree might attain a height of six feet, another variety equally good according to its natural habit of growth would not exceed 4 or 5 feet, hence the necessity for allowing reasonable leeway.

In deciduous shade trees, evergreen trees, etc., there is a greater variation in habit and rapidity of growth than in fruit trees. Our prices, therefore, are based on the most suitable sizes for general planting, and if a customer should desire a larger tree we can usually supply



Orchard near Hamilton, Montana, planted with Orenco Trees.

his needs at a slightly increased cost over our printed price list.

It would be interesting to any reader to visit our plant during the packing season and to become acquainted with the thoroughness with which ORENCO TREES are handled. Unmarketable trees are discarded and burned and nothing but good trees are retained for filling orders.

Insuring Reliability.

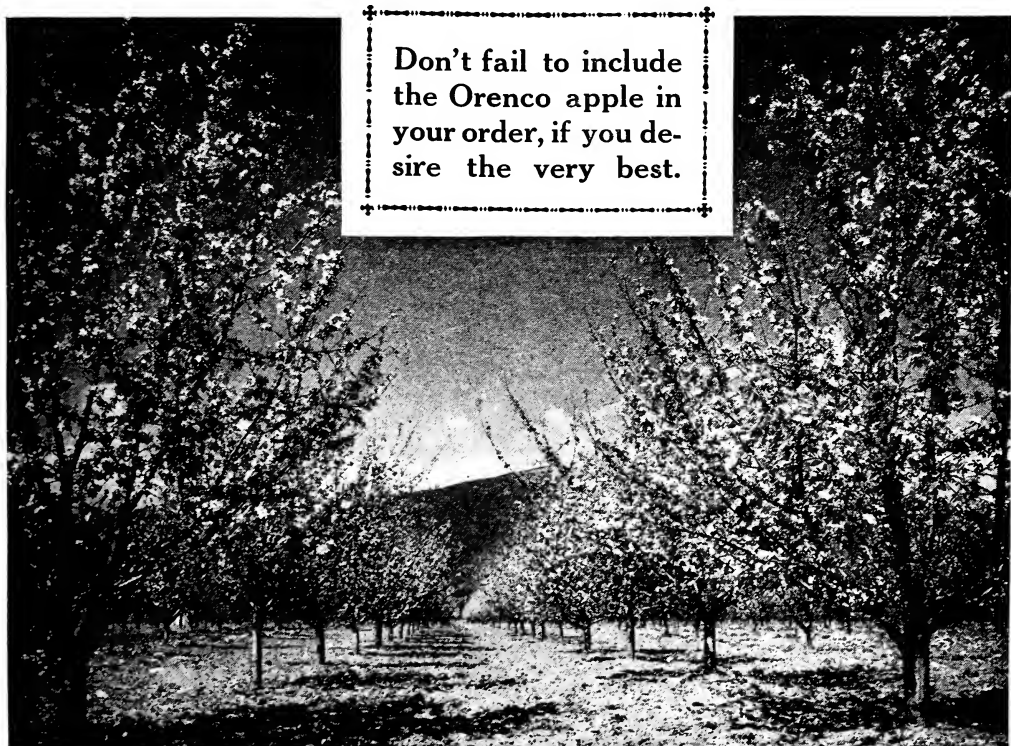
To insure ORENCO TREES being true to label, we have developed a large scion orchard which contains trees of practically all the varieties listed in our catalogue. These trees were propagated from bearing trees of the best strains of their respective varieties found thruout the country. From these trees we get our scions with which to propagate our own trees, thus eliminating the necessity of securing scions from

other sources. In other words it is the policy of the Company to use only the best propagating wood possible and to do everything in our power to avoid mistakes. So long, however, as business is done by human beings there is a possibility of mistakes, and all orders are accepted subject to the guaranty agreement on second page of cover.

Importance of Proper Handling and Packing.

The best trees grown can be rendered worthless by improper handling, hence to insure the same degree of efficiency in this respect our packing house is equipped with all the most modern conveniences necessary for the proper handling and packing of trees.

Our packing house is the largest of its kind in America, covering two acres of ground under one roof, and



**Don't fail to include
the Orenco apple in
your order, if you de-
sire the very best.**

Henry Buck's orchard at Stevensville, Montana, planted with Orenco Trees.

contains a compartment that is both heat and frost proof, thus enabling us to keep the trees dormant until very late in the Spring for customers residing in sections where spring is later than here, as well as affording any necessary protection against injury from frost.

ORENCO TREES are packed in boxes in a manner that will insure their arrival at destination in as good condition as the day they leave our establishment. We have made shipments to Europe, South Africa, Australia and China, in fact, to almost every country in the world. Hence, you need have no fear but that any order you place with us will be properly packed to insure reaching you in A-1 condition. However, if they do not, we want you to so advise us.

Time of Delivery.

While there are exceptions to all rules, it is our experience that better success attends the planting of trees in the Spring in sections lying east of the Cascade mountains, while west of the Cascades, as it applies to Washington, Oregon and Northern California, trees can be planted in either the Fall or Spring season. There are some sections lying east of the Cascade mountains where Fall planting can be done, but risk is taken even in these apparently favored portions of the country. Sometimes it is necessary to have the trees shipped in the Fall. In such cases we would advise customers to trench the trees in during the Winter, selecting some well-drained site. Do not use straw or any other similar material for covering your trees, as it



KING

Two-thirds natural size.

A good apple to plant in the home orchard.

only serves as a harbor for mice, which are not considerate of your trees—in fact, it will not hurt to cover them entirely. With this treatment the trees will emerge in the Spring in fresh, vigorous condition.

ORENCO TREES are sold on the basis that they will be delivered to our customers in good condition and that the purchaser will arrange to receive the trees promptly upon being notified that they are on hand for him.

With the increased cost of innumerable items entering into the production of trees, it is understood that after trees are accepted by a purchaser as being in good condition, no further responsibility attaches to the Company, insofar as any that may fail to live are concerned. If for any reason the trees are not in good condition when received we must be notified at once, and we will always be willing



Thos. Jaycox, of Jerome, Idaho, and a 2-year-old Orenco apple tree.

to adjust any legitimate and reasonable complaint.

How to Care for Your Trees.

More trees are allowed to die thru improper care than many people imagine. It is natural to hold the nursery responsible for much of this loss which justly and logically does not belong to them. After a nursery has taken every care and precaution possible to insure the delivery of their trees to you in good condition their responsibility must necessarily cease, and from that point the purchaser who gives his trees the proper care and attention will be proportionately rewarded, and, likewise, the party who thru indifference or unknowingly gives improper care will suffer accordingly.

It is our desire, however, that every purchaser of ORENCO TREES may know how to properly care for his trees and thus enjoy the maximum benefits, and if the following simple rules are observed the losses will be materially reduced:

How to Successfully Plant Orenco Trees.

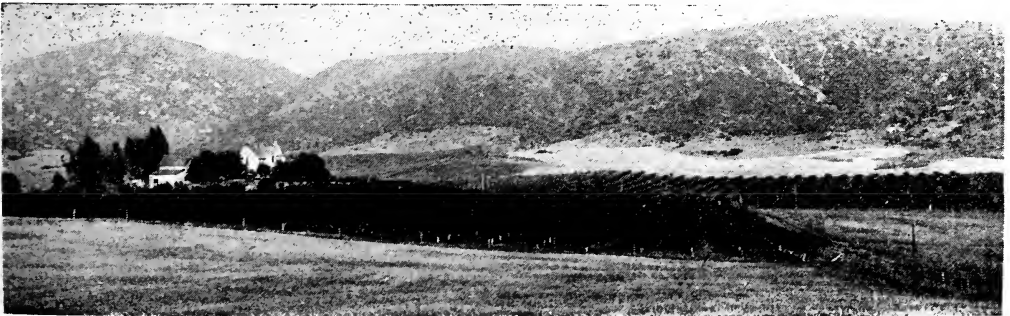
Arrange to protect the roots of your trees and plants from exposure to the sun and wind while taking them home from the delivery yard. Take along some gunny sacks or old blankets or anything of that nature to cover the trees with while on the way. Have trench dug in advance,

if the ground permits, and heel the trees in immediately, sloping them on an angle of about 45°, with the heads pointed south (if you are going to leave them in the trench any great length of time.) Cut the lower string on the bundle, loosening up the bundle so as to allow the earth to fill in around the roots. Have your trees heeled in where there is good drainage.

When ready to plant, prune off the ends of all the roots, cutting back so as to leave four to six inches of the root. Cut from the under side toward you, making a slanting cut so that the cut end will lie flat on the ground. Trim back the top of the tree in proportion to the amount of root you have pruned off. As a safe rule to follow, cut back one-year-old "whip" fruit trees to a height of from 20 to 30 inches from the ground after they are planted. Shade trees should be cut back to a height of from 6 to 9 feet, depending, of course, upon the size of the tree and the amount of branches it has. Do not, however, be afraid to trim your trees too much; most people make the mistake of not pruning enough.

Evergreen Trees.

These require very little, if any, pruning either of their tops or roots. Our conifers are all balled (that is dug and packed with a ball of dirt



Orchard of Mrs. A. A. Ralph at San Marcos, Calif., planted with Orenco Trees.

with the roots and securely wrapped in burlap.) In planting these trees simply plant burlap and all, cutting the strings so as to loosen the bindings. When the burlap is left on it is permissible to use well rotted manure in the hole in moderate quantity. This will help the burlap to decay and still the young roots will readily avail themselves of the plant food. Prune only to obtain a uniform and symmetrical shape.

Give the Roots Room to Expand Easily.

Dig the holes for your trees twice as large as you think necessary. A hole 20 inches square and 18 inches deep is sufficient for the average fruit tree, while shade trees require holes 30 inches square and 18 to 24 inches deep, depending upon the root growth. Loosen up the earth as far down as you wish to dig—not less than a foot and a half to two feet — then fill in the hole with the top soil so that the tree when planted will be as deep in the soil as it stood in the nursery row. Work the dirt in around the roots with your hand. Tramp it in firm and leave the top soil loose. If

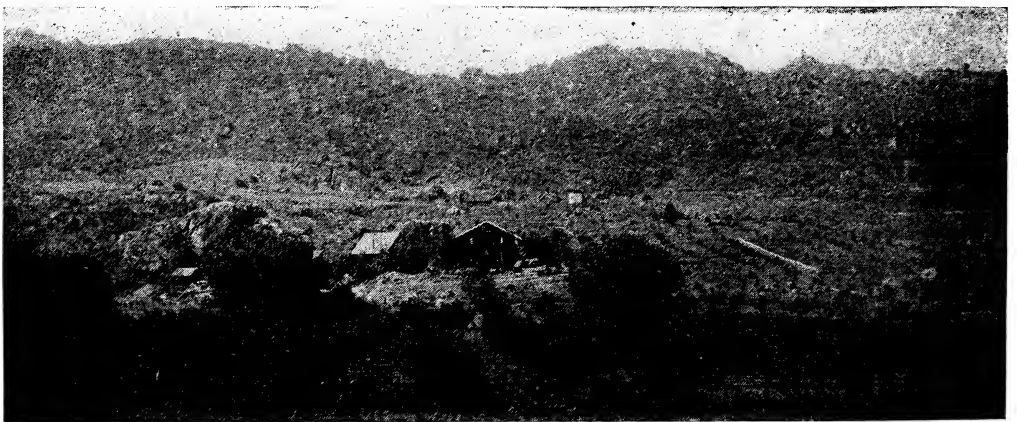


WINTER BANANA APPLE.

the ground seems too dry, put in half a bucket of water. Do not put any manure in the hole so that it will come in contact with the roots. If you have some well decayed manure put it in the bottom of the hole with the dirt on top, mixing it with soil before putting in the tree.

Keep the Soil Around Your Trees Loose and Mellow.

After your tree is properly planted, remember it needs further attention during the Spring and Summer. Keep the ground hoed for two



Orchard of Ex-Gov. H. Bois, of Iowa, at Hemet, Calif., planted with Orenco Apricot Trees.

or three feet around it. If the season is dry and the soil is liable to become hard and baked, give it some water and then loosen up the surface soil with your hoe. A little extra care expended on your trees the first two or three months after transplanting will determine your success with them.

We Cannot Guarantee to Make Your Trees Live.

It is understood, of course, that we cannot and do not guarantee that all your trees will grow, even if given, seemingly, the best of care; but we do all possible to have your trees in A-1 condition when they reach destination, and if you will call at once for your trees when notified they have arrived, it is seldom much loss occurs.

Sometimes if a shipment is not called for promptly, the trees may appear dry when you get them. In that case, if possible, stand them in a barrel of water for half an hour; or, if this cannot be done, then wet them down and give them plenty of water in the trench.

If you will follow these simple instructions we are satisfied you will be well repaid. We want you to feel

free to write us for any information on planting you may desire.

If ORENCO TREES please you, tell your friends and neighbors; if they do not please you, tell us and give us an opportunity to adjust your complaint.

Importance of Spraying.

In order to attain success in any line it is necessary to give thought and close attention to your business, and the day is past when good fruit can be produced without proper and intelligent spraying. In the last pages of this book you will find full directions for orchard spraying, prepared by H. S. Jackson, Plant Pathologist, and H. F. Wilson, Entomologist, of the Oregon Agricultural College, Corvallis, Oregon, which the reader will find concise, yet complete. These gentlemen are recognized authorities on fungus and bacterial and insecticidal pests. We have this Spray Calendar printed in separate folder for those who desire it.

Fruit Descriptions.

The descriptions of Fruits in this Catalogue necessarily cannot apply to all conditions of climate and altitude, thus allowance must be made for variations in this respect. In order to reduce the size of this Catalogue we have omitted such detailed descriptions as seemed to us super-



Thos. McDonough's Orchard at Tolo, Oregon, planted with Orenco Peach Trees.

fluous, and have endeavored to make them concise without eliminating any essential features.

New Varieties.

We are continually experimenting on new varieties of fruits, etc., which are not listed in our Catalogue for the reason that our experiments have not developed sufficiently to justify offering these varieties to the public. We are always glad to hear from people who have knowledge of new creations, for only in this way can the new improvements of nature be enjoyed by the general public and their benefits thereto extended.

Likewise, we shall always be glad to render such service as we can to parties who are unfamiliar with the best varieties for their localities, and to select the proper varieties for them. ORENCO SERVICE is one commodity of which we have an unlimited supply; while it requires time



THE BALDWIN APPLE.
Two-thirds natural size.

Consult our Landscape Department regarding the best Trees, Shrubs, etc. for your home

and seasons to produce ORENCO TREES, Orenco Service is always on "tap."

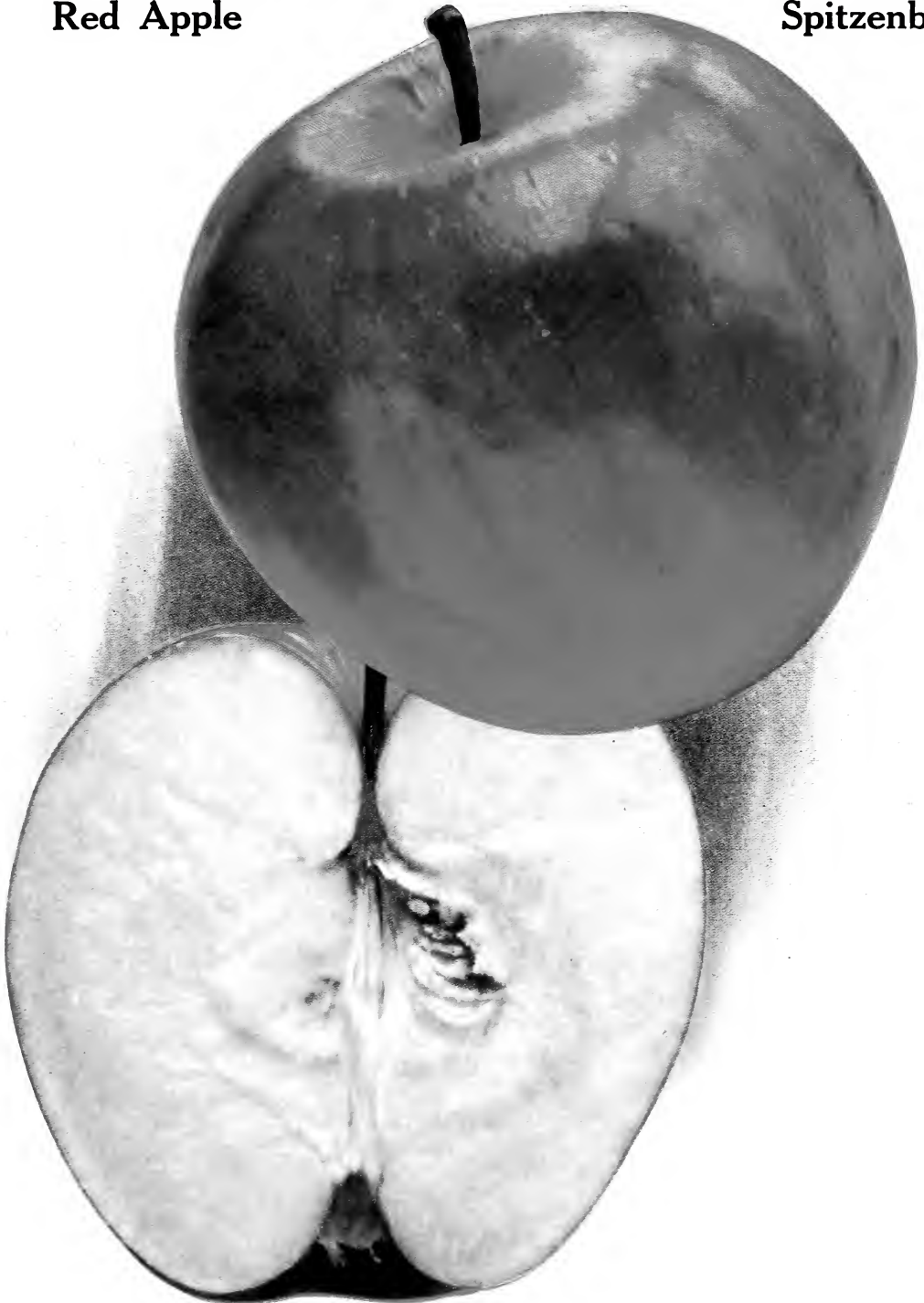


Rows of trees a mile long in our nursery. The view here embraces upwards of 300,000 trees, all grown under natural conditions without irrigation.

THE VANDERPOOL RED

A Long-Keeping
Red Apple

Better than the
Spitzenberg



A High-Class Apple for a Particular Quality-demanding Market.
The Apple-eating Public Demands It.

The Vanderpool Red Possesses More Superior and Essential Qualities of a High-Class Commercial Apple than Does Any Other One Variety

- 1.—The tree is a STRONG, THRIFTY grower.
- 2.—The wood fiber is tough and will not break or split under a heavy crop.
- 3.—Both the tree and fruit are decidedly resistant to fungous diseases. This is a very important item, and is not the case with many other otherwise splendid varieties.
- 4.—The fruit grows close in on the main limbs—thus lessening the tendency of losing fruit by wind-fall.
- 5.—It is practically a sure annual bearer of a heavy crop.
- 6.—Tree commences to bear early in life.
- 7.—Bears very heavy—equal to the Ben Davis.
- 8.—Fruit desirable commercial size—strong four tier.
- 9.—Has pleasing attractive color—brighter red than the Spitzenberg.
- 10.—Attains its color early in the season.
- 11.—Succeeds equally well in different altitudes;—Albany, Oregon, 240, Ellenburg, Wn., 1518 feet.
- 12.—Combines long-keeping qualities with those of fine texture, flavor, size and color.

HOW TO ORDER

You can either order through our regular authorized salesman, or write to the office direct. Prices quoted are on one-year-old trees, four to six feet high, delivered to your nearest railway station.

\$1.25 each

\$15.00 per dozen

If ordered to be shipped by express, customer pays express charges and may deduct 5 per cent from the face of the bill

Address all communications to the

OREGON NURSERY COMPANY
ORENCO, OREGON

Special Landscape Service.

To the average person it is more difficult to select a suitable and satisfactory assortment of shrubbery and trees for lawn planting than it is to make their choice of fruit trees, berries, etc., and furthermore, after a selection is made there is even a greater problem in the matter of their planting so as to create the proper harmony of color and arrangement.

It has been determined by men who have made a study of the matter that the planting of \$25 worth of shrubbery on the average city lot will increase the value of the property \$150 in three years time, providing it is planted properly. With a view, therefore, of assisting our customers in this we have added a Landscape Department to our organization with a practical, trained landscape man in charge.

For further information on this point refer to the Ornamental Department of this Catalogue.

The Size of an Acre.

By Gilbert E. Bailey.

When the acre was limited officially to "as much as a yoke of oxen could plow in a day" a premium was put on beef, haste and wits. The fight is still on in many places abroad, but the United States in 1893 adopted by executive order the yard as 3600-3937 of a meter, an inch as 1-36 of a yard, and the foot as 1-3 of a yard, and these today are the legal standards. The acre is a superficial measure of land 40 poles in length by 4 in breadth, but 160 square perches or poles, or 4840 square yards, or 43,560 square feet make an acre however shaped.

One acre equals 43,560 square feet.

One acre equals 660x66 feet.

One acre equals 209 feet square (nearly.)

One inch deep of water on an acre equals 362.8 cubic feet.

100 U. S. gallons per minute equals 0.223 second-foot.

100 U. S. gallons per minute for one day (24 hours) equals 0.442 acre-foot.

1,000,000 U. S. gallons equals 3.07 acre-feet.

1,000,000 cubic feet of water equals 29.95 acre-feet.

One acre inch of water equals about 1 second-foot; or 7.48 U. S. gallons per second; or 448.8 gallons per minute; or 656,317 gallons per day; or 86,400 cubic feet per day.

One cubic foot of water weighs 62.5 pounds.

One second-foot equals 40 California miners inches.

One second-foot equals about one acre-inch per hour.

100 California miners inches equals 18.7 U. S. gallons per second or 4.96 acre-feet for one day.

Cooks, Wn., March 11, 1916.

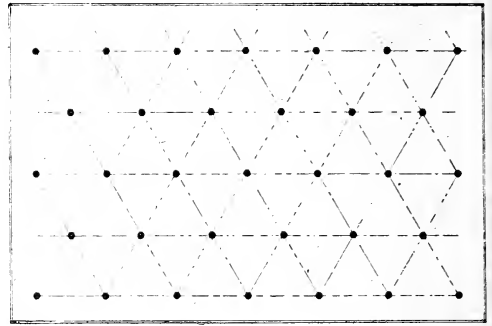
The nursery stock came in on time, and in good condition. The trees are a specially fine lot, and show what nurserymen can do when they understand the business, and have the right soil conditions, etc. Last summer was an unusually dry season, but these trees show excellent growth. I believe that I am fairly well acquainted with horticultural conditions in many parts of the Northwest, and I put your Company first as positive influence in Northwest horticulture. I am not handing you a bunch of roses in January, but after inspecting nurseries and plantings in the Rogue River Valley, in the Willamette Valley, in various parts of the Puget Sound region, in the Yakima Valley and in many smaller areas, I decided that the Orenco Company had a better quality of goods than I had been able to find elsewhere. I am sure my Eastern principal has not made a mistake in permitting me to select the planting of his tract, and I am in hopes of eventually showing him ample returns on the investment.

With best wishes all around, I remain, yours sincerely,

J. M. JESSUP.

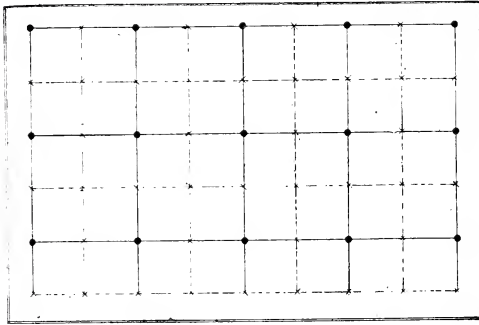
Systems of Planting.

The following illustrations show the various systems used in planting trees. The rectangular or square method is the simplest and the most used. If fillers are to be planted the quincunx system, which is in reality the same as the rectangular system with a tree set in the center of the square, is most satisfactory. The hexagonal system is not as popular as formerly on account of the disadvantage it affords in carrying on the cultivation.



The "Triangular" Method of Planting.

The triangular method here illustrated places all trees the same distance apart in each direction and gives 15 per cent more trees per acre than the square method.



The "Square" Method of Planting

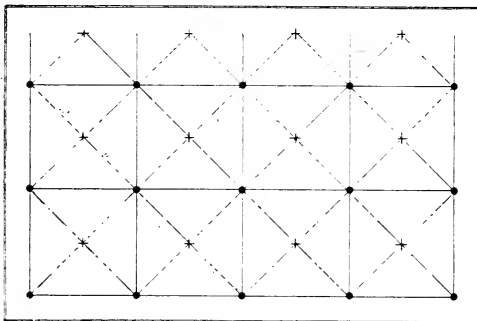
The above illustrates the most common method of planting, known by orchardists as the "square method."

Standard Distances for Planting.

Apples, standard	25 to 30 feet
Pears, standard	16 to 20
Pears, dwarf	10 to 15
Cherries, standard	20 to 25
Cherries, Dukes and Morrellos	16 to 18
Plums, standard	16 to 20
Peaches	16 to 18
Apricots	16 to 18
Nectarines	16 to 18
Quinces	10 to 12
Walnuts	50 to 60
Currants	3 to 4
Gooseberries	3 to 4
Raspberries	3 to 5
Blackberries	6 to 7
Grapes	8 to 12

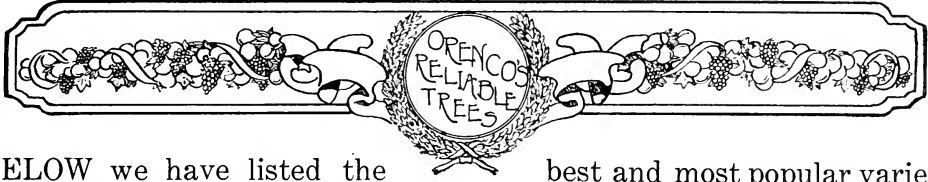
Number of Trees or Plants on an Acre.

Feet	Rectangular Method.	Hexagonal Method.	Quincunx Method.
1x 1	43,560	50,300	77,736
2x 2	10,890	12,575	19,383
3x 3	4,840	5,890	8,615
4x 4	2,725	3,145	4,850
5x 5	1,745	2,010	3,106
6x 6	1,210	1,600	2,153
8x 8	680	785	1,210
10x10	435	505	774
12x12	305	350	542
15x15	195	225	345
16x16	170	190	303
18x18	135	155	239
20x20	110	124	192
25x25	70	80	125
30x30	50	55	85
35x35	35	40	62
40x40	27	31	48



The "Square" Method with Fillers.

This shows the permanent trees planted by the square method with a filler in the center of the square.

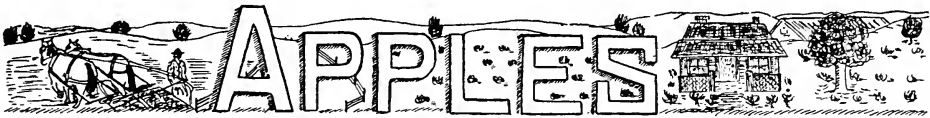


BELOW we have listed the best and most popular varieties of the leading fruits divided into their respective seasons of Summer, Autumn and Winter. It contains the leading commercial sorts as well as those most popular and serviceable for home orchards.

In case you are undecided as to the best varieties to plant in your section, if you will advise us the number of trees you want, signifying the number of Summer, Autumn and Winter varieties desired, we will gladly select the choicest varieties for you. Our many years of experience in supplying customers in all sections of the Northwest has given us an unusually good understanding of the requirements of each district. Why not take advantage of "Orenco Service" in your planting problems?

The (*) signifies the varieties that are extra hardy and suitable for rigorous climates.

The varieties set in heavy type are those which we recommend as being of good quality and most suitable for planting in home orchards.



Pyrus Malus.

The apple, is, perhaps, the most generally grown fruit we have. When planting apple trees for home consumption the individual's taste and fancies govern his choice of varieties. If the undertaking is of a commercial nature, then more attention should be given to such features as proper location, soil conditions, drainage and varieties.

Apples require a strong, heavy, loam soil, such as will retain moisture and still permit ample drainage. The best orchard land is usually of a rolling nature rather than flat, low lands. Rolling land affords better soil and air drainage, consequently diminishes the danger from late Spring frosts injurious to the setting of fruit. In choosing an orchard site the direction and extent of prevailing winds should be taken into consideration so as to escape the dangers of undue exposures from these elements.

In selecting varieties for a commercial apple orchard many mistakes have been made by selecting varieties that succeed to a high degree of perfection in some other section. Simply because the Spitzenberg and Yellow Newton Pippin, for instance, are a success in the Hood River Valley, or because the Winesap excels in the Yakima country, or because the McIntosh leads in Montana and the Yellow Bellflower and Gravenstein have a reputation of their own in California, should not induce you to select any of these varieties for your particular location and conditions, unless it is known that your conditions will insure their success to an equal degree in your locality. Before determining on the varieties to plant ascertain the varieties that are succeeding in your community and confine your planting to these regardless of the reputation of other varieties in other localities.

Apple trees should be planted from 25 to 30 feet apart in regular orchard form, and the best tree to plant is universally conceded to be a one-year top on a three-year root. When planted this tree should be headed back to whatever height you wish to form the head of your tree. This varies under different conditions, ranging from 18 to 30 inches. If you are located where you have unusually heavy snowfall during the Winter, which would endanger the lower branches resulting from the snow settling, the trees are headed higher.

In preparing your land for planting keep in mind that this will be the last thorough plowing possible and it is well to use a sub-soiler in order to loosen up the earth as deep as possible. Work your soil as thoroughly as you would were you going to sow a crop of grain. In some instances blasting the holes is desirable and beneficial. If, however, your sub-soil is porous it is generally considered unnecessary.

Cultivation after planting is most important. Different types of soil require different treatment, but the object in view is to keep the soil well pulverized and maintain a dust mulch in order to retain the moisture.

In planting trees some prefer the square method, while others prefer the hexagonal system which permits planting 15 per cent more trees to the acre. By the hexagonal system the trees are set the same distance apart from each other in every direction. Cultivation and spraying is not as conveniently done when the trees are planted under this method as when planted by the square method, but the additional yield per acre will compensate for this inconvenience.

Proper pruning of the trees while young is very important. The object in view during this period is one of training and developing them into proper form. All shoots or branches growing out the first year should be cut off excepting those desired for forming the head. The following Winter the growth of the main scaffold limbs should be pruned back one-half to two-thirds of their season's growth, depending upon the growth made. Care should be taken to have these main scaffold limbs sufficiently distributed up and down and around the trunk to avoid crowding in later years. The second year's pruning consists in removing any superfluous shoots beyond two from each of the main scaffold limbs. You now have the main frame work of your tree started and future pruning should be determined by the orchardist. In order to develop a properly formed tree, keep in mind the necessity for the circulation of light and air through the interior of the tree.

In order to produce fancy fruit it is necessary to avoid over-production, and proper thinning of the fruit is as essential as is proper spraying. Directions for spraying will be found in the spray calendar in the back part of this catalog.

We wish to emphasize that unusual care is exercised in producing Orenco Trees by selecting scions from trees and orchards which we know to produce good fruit of the respective varieties. Every care is taken to insure against mis-labeling varieties.

SUMMER VARIETIES.

✓ American Summer Pearmain. Medium; red streaked; flesh yellow, tender, juicy; a good bearer. August.

*Astrachan, Red. Large, deep crimson, juicy; vigorous grower, good bearer.

Bough, Large Sweet. See Sweet Bough.

✓ Carolina Red June. (Red June.) Medium, red; tender, juicy. June.

*Early Colton. Entirely hardy, valuable for family use. August.

✓ Early Harvest. (Yellow Harvest.) Medium; pale yellow, fine flavor. August.

✓ Early Strawberry. Medium, striped with red. August.

✓ Golden Sweet. Large, pale yellow, sweet; good bearer. August.

✓ Summer Queen. Medium to large; yellow streaked with red; flesh yellow and tender. July and August.

✓ Sweet Bough. Large; pale greenish yellow, tender and sweet. August.

SUMMER APPLES, Continued.

Sweet June. Medium, roundish, regular; light yellow, very sweet. August.

*Tetofsky. Hardy as a crab; good size; yellow striped with red; juicy, pleasant, acid, aromatic. July and August.

IDEAL. — This is a comparatively new apple and is therefore not known or appreciated like some of the older and better known sorts. It is a large apple of golden yellow color, firm texture, crisp, sub-acid, good cooking and table apple during its season of July and August. As it becomes better known we believe it will displace the popular Yellow Transparent.

AUTUMN VARIETIES.

*Alexander. (Emperor.) Large, deep red; crisp, tender. October.

*Duchess of Oldenburg. Large, streaked with red and yellow, subacid; very hardy; early and abundant bearer; one of the most valuable sorts for domestic use. Sept.

Fall Pippin. Large, yellow, tender, juicy; tree vigorous. Oct. to Dec.

*Fameuse. (Snow Apple.) Medium size; whitish, striped with deep red. Nov., Dec.

Emperor. See Alexander.

Gloria Mundi. Very large, greenish yellow; valuable for cooking and drying. Oct.

Gravenstein. Large, striped, tender and juicy. Sept. and Oct.

Jefferis. Medium, yellow, striped mostly red; tender and delicious. Sept. to Nov.

Jersey Sweet. Medium, striped red and green; tender, juicy and sweet. Sept., Oct.

WALDRON BEUATY. — This splendid variety originated near Oregon City, Oregon, and was introduced by us a number of years ago, and we take pleasure in recommending it to you as a specially fine Autumn apple. It is of medium size, almost full red underlaid with a greenish yellow on the underside; meat is white similar to the Snow or McIntosh Red. The tree is a very heavy producer and the apple has attracted attention at several Fairs.

WINTER VARIETIES.

Arkansas Beauty. Large, crimson, fine-grained; enormous bearer. Nov. to March.

*Arkansas Black. Large, deep crimson, almost black, fine-grained, rich.

*Baldwin. Large, deep bright red, crisp, good flavor. Nov. to Feb.

Black Twig. See Mammoth Black Twig.

Bellflower, Yellow. Yellow, with blush; tender, juicy, subacid. A moderate grower and good bearer.

Ben Davis. (New York Pippin, Kentucky Red Streak, etc.) Yellowish streaked with red; a late keeper.

White Astrachan. Very large, skin smooth and nearly white. August.

Williams' Favorite. A large handsome dessert apple, agreeable flavor, abundant bearer. July to September.

Yellow Transparent. Medium size, early and abundant bearer. Two weeks earlier than Early Harvest.

King of Tompkins County. Large, handsome; striped red and yellow. One of the best. Nov. to May.

Maiden's Blush. Medium, pale yellow, red cheek. Sept. and Oct.

Rambo. Medium, yellowish streaked with red, mild. Oct. to Dec.

Red Bietigheimer. Large, pale green, firm; abundant bearer. Sept. and Oct.

Snow. See Fameuse.

St. Lawrence. Large, yellowish striped with carmine; flesh white, crisp, tender. Sept.

Twenty-Ounce. (Cayuga Red Streak.) Large, yellow striped with red; good bearer. Nov. and Dec.

Waxen. Medium, pale yellow, crisp, tender, juicy. Nov.

*Bismarck. Large, yellow with red cheek. Remarkably early fruiter.

Blue Pearmain. Large, purplish red, mild, aromatic. Oct. to Feb.

British Columbia. Hardy and abundant bearer; large; russet on yellow, sometimes striped with red. Jan. to June.

Delicious. Dark, brilliant red; large. Tree hardy; best in medium altitudes. Oct. to Feb. on Pacific Coast.

*Delaware Red Winter. (Lawver.) Large and hardy, beautiful dark red; valuable as a late market sort. Dec. to May.

WINTERS APPLES, Continued.

Gano. Good size, deep red; flesh pale yellow; good shipper; tree vigorous, hardy and prolific bearer. Feb. to May.

Grimes' Golden. (Grimes' Golden Pippin, Sheepnose.) Medium to large, yellow, highest quality. Jan. to April.

Jonathan. Medium, yellow, nearly covered with dark red; fine-grained and tender. Nov. to April.

Kentucky Red Streak. See Ben Davis.

Lady. Small, pale yellow with red cheek; crisp and excellent. Dec. to May.

Lawver. See Delaware Red Winter.

***McIntosh Red.** Medium, nearly covered with dark red; flesh white, tender, juicy. Nov. to Feb.

Marshall or Red Bellflower. Very large, oblong, deep crimson.

Minkler. Medium, pale greenish yellow, splashed with red; pleasant subacid; vigorous grower. Jan. to April.

***Missouri Pippin.** Large, rich red, fair quality; immense bearer, late keeper.

Mammoth Pippin. (Red Cheek Pippin.) Large, greenish yellow with red cheek. March or April.

Mammoth Black Twig. (Paragon.) Large, dark red, firm, a long keeper.

Newtown Pippin. Large, golden yellow, fine keeper; one of the very best apples as to quality. Dec. to May.

New York Pippin. See Ben Davis.

Northern Spy. Large, striped with red; flesh white and tender, delicious flavor. Jan. to June.

Northwestern Greening. Hardy, yellow, rich; of good size, extra long keeper.

Opalescent. Light shading to very dark crimson; smooth; flesh yellowish, tender, juicy and good. Dec. to March.

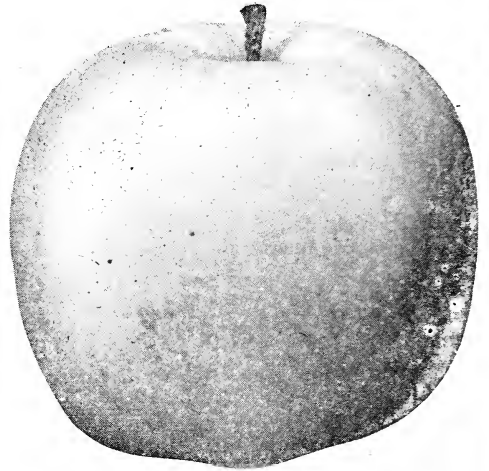
Oregon Red Winter. Large, fine grained, crisp, juicy and rich; bright red with a dark cheek. Jan. to May.

ORENCO — A High-class dessert apple. Almost full red overspread with numerous light colored dots. Flesh crisp, tender and juicy with a small core; flavor mild with a pleasing aroma. Tree hardy and vigorous. Fruit superior to McIntosh Red or Spitzenberg as a dessert apple. Nov. to May. Ask for special literature.

Ortley. See White Bellflower.

Peter. Fruit large, red, subacid and a long keeper.

Red Bellflower. See Marshall.



GRIMES' GOLDEN, an apple of the highest quality.

Red-Cheek Pippin. See Mammoth Pippin.

Red Romanite. (Gilpin.) Medium, smooth streaked with deep red and yellow; firm; an excellent cooking and dessert apple; very prolific. Feb. to June.

Rhode Island Greening. Large, greenish yellow; tender and rich. Dec. to April.

Rome Beauty. Large, yellow, shaded with bright red; flesh yellowish, tender, juicy, subacid. Nov. to Feb.

Russet, English. Medium size, smooth, firm, crisp and rich. Jan. to July.

Russet, Golden. Medium, dull russet; crisp, juicy and high flavored; a great bearer. Nov. to April.

Russet, Roxberry or Boston. Medium, greenish or yellow russet; crisp, good; long keeper. June.

Sierra Beauty. Originated in the Sierra Nevada mountains; beautiful crimson-red; flesh white, crisp and tender; tree hardy; a splendid cooking and eating apple. Jan. to May.

Smith Cider. Large, yellow striped with red; juicy, crisp, subacid; abundant bearer. Dec. to March.

Spitzenberg Esopus. Medium to large, deep red; flesh yellow, crisp, subacid, high flavored. Nov. to April.

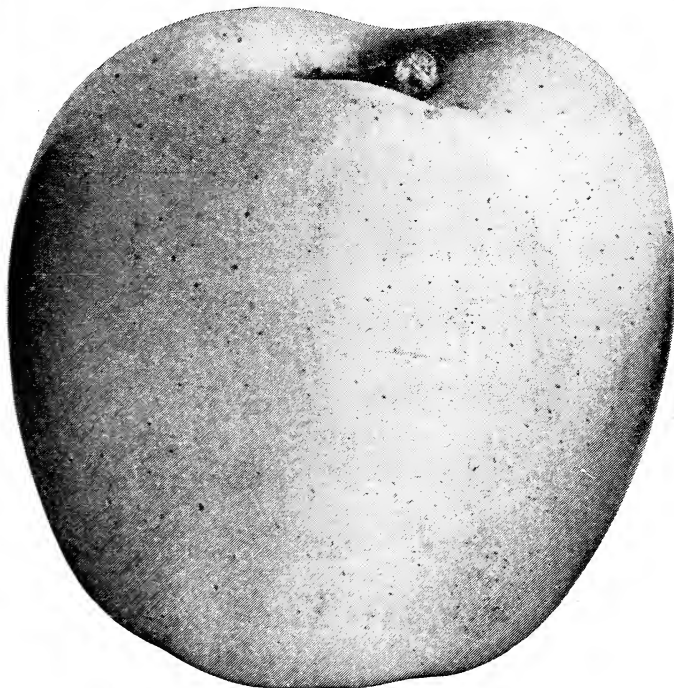
Spokane Beauty. Very large, greenish

WINTER APPLES, Continued.

yellow, shaded and striped with deep red; crisp, juicy; a very long keeper.

✓ **Stayman's Winesap.** Much larger and better flavored than Winesap; greenish yellow, striped and splashed with dark red; firm, subacid, aromatic; best quality. Dec. to April.

***VANDERPOOL RED** — This is probably one of the most promising varieties we have listed. It is from medium to large in size depending upon the altitude and conditions under which it is grown. Color, full bright red; very heavy producer and an exceptionally long keeper considering that it is also an apple of high quality which combination is rarely found to such a marked degree. No home orchard is complete without it and as it becomes better known it will take its place in the commercial ranks with the very best red apples.



YELLOW NEWTOWN APPLE.

✓ **Steele's Red Winter.** See Red Canada.

✓ **Talman's Sweet.** Medium, pale yellow, slightly tinged with red; firm, rich and very sweet; vigorous and productive. Nov. to April.

✓ **Vandevere.** (Newtown Spitzenberg of the West.) Medium size, waxen yellow, striped with red; flesh tender, yellow, rich and fine. Nov. to March.

✓ **Tulpehocken.** See Fallawater.

✓ **Wagener.** Medium, deep red in the sun; flesh firm, subacid and excellent; very productive, bears young. Dec. to May.

✓ **Wealthy.** Perfectly hardy; medium size, red, streaked with white; quality good. Dec. to Feb.

✓ **White Bellflower.** (Ortley) Medium to large; greenish yellow, becoming fine yellow at maturity; fine grained, very pleasant. Nov. to Feb.

✓ **White Winter Pearmain.** Large, pale yellow, extra high flavor; one of the best. Dec. to Feb.

✓ **Winesap.** Medium; dark red, subacid, excellent; abundant bearer. A favorite market variety in the West. Dec. to May.

✓ **Winter Banana.** Fruit large perfect in form; golden yellow, beautifully shaded and marbled with bright crimson-red; flesh lemon-yellow, fine grained, subacid, rich aromatic flavor, and of highest quality. A good keeper. Its early bearing is simply wonderful, generally producing a fine crop of fruit the second year. Nov. to May.

✓ **Wolf River.** Very hardy and productive; fruit large, red; flesh white. One of the largest.

✓ **Y. N. Pippin.** See Newtown Pippin.

✓ **York Imperial.** Medium; whitish, shaded with crimson in the sun; firm, crisp. Nov. to Feb.

For customers living remote from freight or express facilities we can either cut back our larger trees or send small trees, shrubs, roses, etc., by Parcel Post. Submit your list now for quotations.

Crab Apples (*Prunus prunifolia.*)

CRAB APPLES succeed equally well in all sections, because of their adaptability to cold sections where only a few varieties of apples can be successfully grown, and are also valuable for cider, preserving, jelly, ornament, and some of the improved sorts are excellent for eating. Sent to the Eastern markets they command a very high price. Every orchard should contain a few, as the trees are handsome, ornamental growers, annual bearers and usually fruit the second year.

Florence. Very hardy, heavy bearer; fruit medium in size, good quality.

Gen. Grant Fruit in dense clusters; quality equal to Duchess of Oldenburg. Oct. to Dec.

Hyslop. Large, deep crimson; very popular on account of its large size. Keeps well into the winter.

Large Red Siberian. Grows in clusters; yellow, lively scarlet cheek; bears young and abundantly. Sept. to Oct.

Large Yellow Siberian. A fine amber or golden yellow color.

Transcendent. All things considered, this is one of the most valuable varieties of Crab Apples grown; immensely productive; fruit from 1½ to 2 inches in diameter, being large enough to quarter and core for preserving and drying. Excellent for sauce and pies, both green and dried. Skin yellow striped with red. Sept. to Oct.

Whitney's Seedling. Large, smooth, glossy green, striped with carmine; firm, juicy and rich; very hardy.



(*Pyrus communis*, or *P. Sinensis*.)

PEARs are adapted to a greater variation of altitude, soil and climatic conditions than almost any other fruit. They seem to do best on a strong loam properly drained. We grow trees on both French and Japanese pear seedling roots as well as a limited number on quince root, the latter for dwarfing purposes. Our observations tend toward favoring the Japanese root as it makes a stronger feeder and is less subject to insect attack. In orchard form pear trees are usually planted from 16 to 20 feet apart, while for garden use or where dwarf trees are planted they can be set as close as 10 to 15 feet. It is characteristic of pears to set an excess of fruit and thinning is very essential to insure size to the fruit and non-injury to the tree. The fruit should be picked before it ripens on the tree. The proper time to pick is when by gently lifting the fruit the stem will readily separate from the limb. This is usually from one to two weeks before it is fully ripe. Place in a cool dark room until matured and mellow. Winter varieties should remain on the tree until time for Fall rains or frosts. The remarks on page XI respecting how to plant trees will apply to pears, so extended remarks on planting and pruning are omitted here. The following list contains the varieties which experience has demonstrated are most suitable and generally profitable.

TOP-WORKING STOCK.

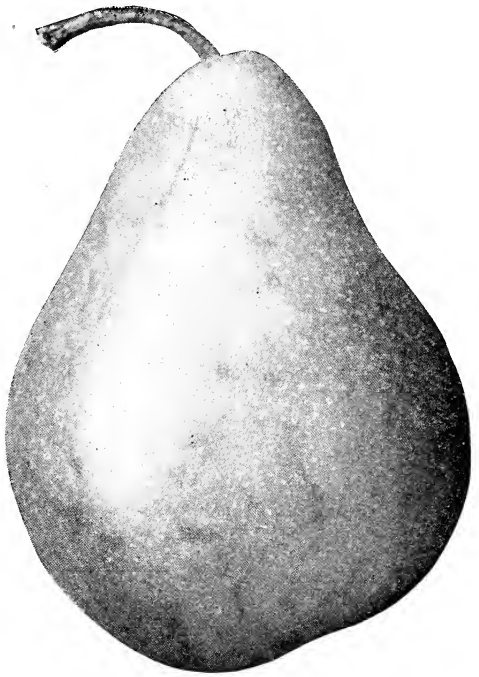
✓ ***Surprise.** A blight resistant stock recommended by the Oregon Agricultural College Experiment Station at Talent, Ore. It is an extremely vigorous grower with an upright slightly spreading habit, making a desirable tree for top working. We bud the Surprise on Japanese root which makes this stock as nearly blight proof as experience makes possible.

✓ ***Orel No. 15.** A blight resistant stock tested and recommended by the Oregon Agricultural College Experiment Station, Talent, Ore. Is of Russian origin. Like the Surprise we bud this variety on Japanese pear seedling roots, which will be top worked later by the orchardist to the variety desired.

SUMMER VARIETIES.

✓ **Bartlett.** Large size, buttery, juicy, high flavored. Tree a strong grower, bearing early and abundantly. Last of August and first of September.

✓ ***Clapp's Favorite.** A large pear resembling the Bartlett but without its musky flavor; pale lemon - yellow, with brown dots; fine texture, juicy, with a rich, sweet, delicate, vinous flavor. Tree



THE BARTLETT PEAR.

hardy and productive. Desirable in all sections. August and September.

✓ ***Koonce.** A strong, upright grower and hardy; has produced crops when all other varieties were killed by frost; fruit medium yellow with carmine cheek; juicy, spicy, sweet and delicious quality. An excellent shipper; bears young. July and August.

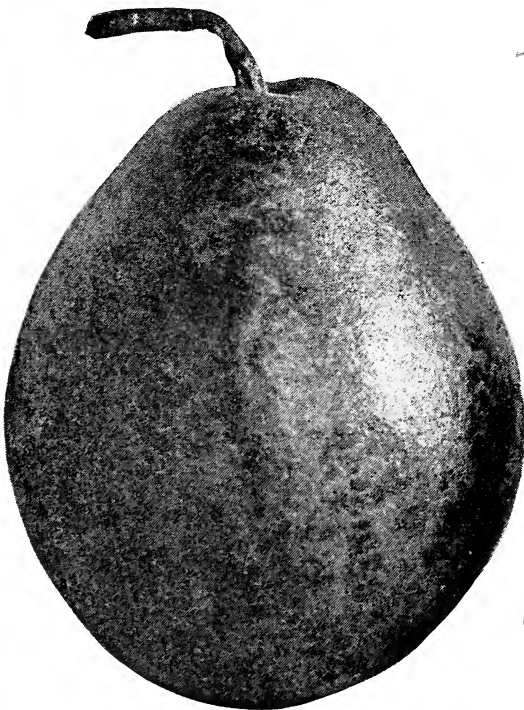
AUTUMN PEARS.

✓ **B. Clairgeau.** Very large, pyriform; yellow and red, high flavored. Tree a good grower and an early and abundant bearer; a good market fruit. October and November.

✓ **B. d'Anjou.** A fine large pear, buttery and melting with sprightly, vinous flavor. Tree a fine grower and good bearer. Oct. to Jan.

✓ **B. Bosc.** Large pear with long neck; cinnamon - russet, juicy, slightly perfumed and delicious. Tree a fine grower and productive. Sept.

✓ **Crocker Bartlett.** Originated at Loomis, Cal., by L. L. Crocker, who describes it as follows: "It is preferable to the standard Bartlett; better flavor, about the same size; juicy and melting; high golden yellow color; prolific bearer. Trees



DOYENNE DU COMICE.

AUTUMN PEARS, Continued.

never overloaded, although they bear heavy every year. The pears are picked in October and laid away the same as winter apples, until about January, when they mellow up and are delicious; is hardy and a good shipper."

Doyenne du Comice. Large, yellow, with a crimson and fawn cheek and russet dots, melting, rich, perfumed and luscious. Tree vigorous and productive. Oct. and Nov.

Duchess d'Angouleme. Large greenish-yellow, sometimes a little russeted. One of the best. Oct. and Nov.

***Flemish Beauty.** Large, juicy, melting; a strong grower and good bearer; hardy everywhere Sept. and Oct.

Howell. Large, light waxen yellow, with a fine red cheek; sweet, melting; perfumed aromatic flavor. Tree an upright, free grower and early bearer; hardy. Sept. and Oct.

***Idaho.** Large, nearly globular, obtusely ribbed; light, rich yellow surface, covered with many small dots; cavity deep and narrow and strongly furrowed; stem small and calyx closed; flesh white, fine-grained Sept. and Oct.

***Kieffer's Hybrid.** Tree a remarkable grower with so vigorous a constitution that it rarely, if ever, blights. Fruit of fine size, rich color and good quality; best when picked at maturity and house ripened. Oct. and Nov.

Louise Bonne de Jersey. Rather large; greenish-yellow, with a bright red cheek; juicy; productive. Sept. and Oct.

Rossney. Size medium to large, fine grain; flesh melting and juicy, sweet. Ripens two weeks after Bartlett. Is an excellent shipper and

keeper. Tree much stronger than Kieffer. September.

***Seckel.** Small, rich, yellowish-brown; one of the best and highest flavored pears known; productive. Sept. and Oct.

***Worden Seckel.** In color, when well ripened, it closely resembles Clapp's Favorite, with a skin that is usually as smooth and waxy as if it had been varnished. Tree a more upright and rapid grower than Seckel; hardy; fruit keeps well retaining its quality to the last.

WINTER PEARS.

Beurre Easter. Large, pale yellow, sprinkled with round dots, often dull red cheek; quality good; one of the best winter pears. Keeps all winter.

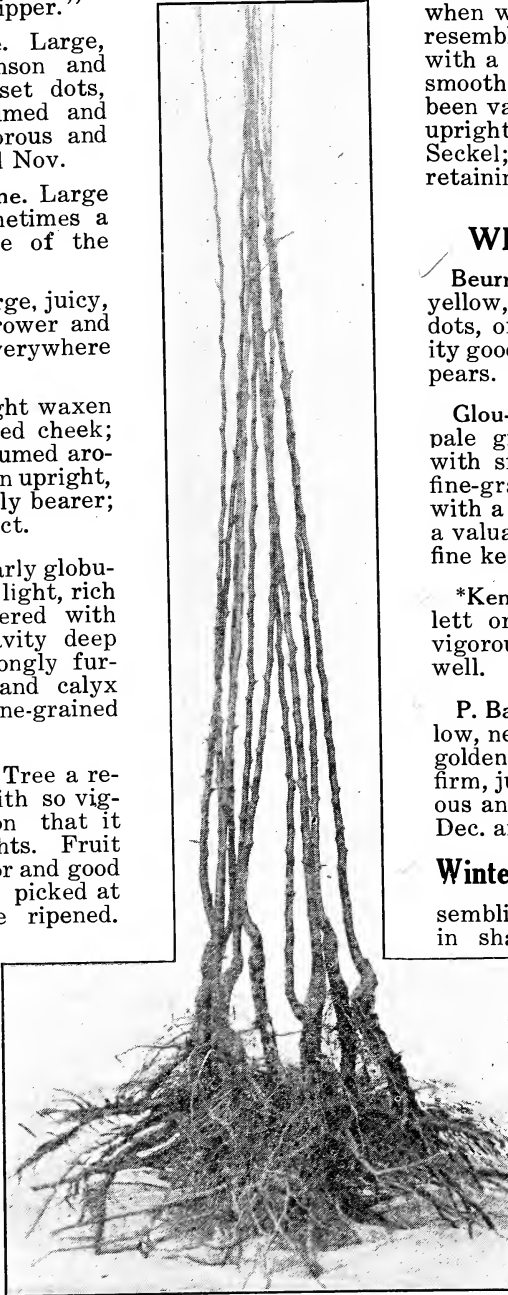
Glou-morceau. Large; skin pale greenish-yellow, marked with small green dots; flesh fine-grained, buttery, melting, with a sugary flavor. Not only a valuable table fruit, but a fine keeper. Dec.

***Kennedy.** Superior to Bartlett or Winter Nelis; hardy, vigorous growing tree; bears well.

P. Barry. Large, deep yellow, nearly covered with a rich, golden russet; flesh whitish, firm, juicy, sweet, slightly vinous and rich; an early bearer. Dec. and Jan.

Winter Bartlett. Fruit large, closely resembling the Bartlett in shape and appearance; perfectly smooth, flesh tender, juicy and melting; flavor similar to the Winter Nelis, but season a little later, and as good as can be desired.

WINTER NELIS. Medium in size; yellowish-green and russet; fine grained, melting; one of the best. Tree straggly, slender grower, but productive. Dec.



One-year-old Pear trees on 3-year-old roots.

CHERRIES

Hearts and Bigarreaus (*Cerasus Avium*)

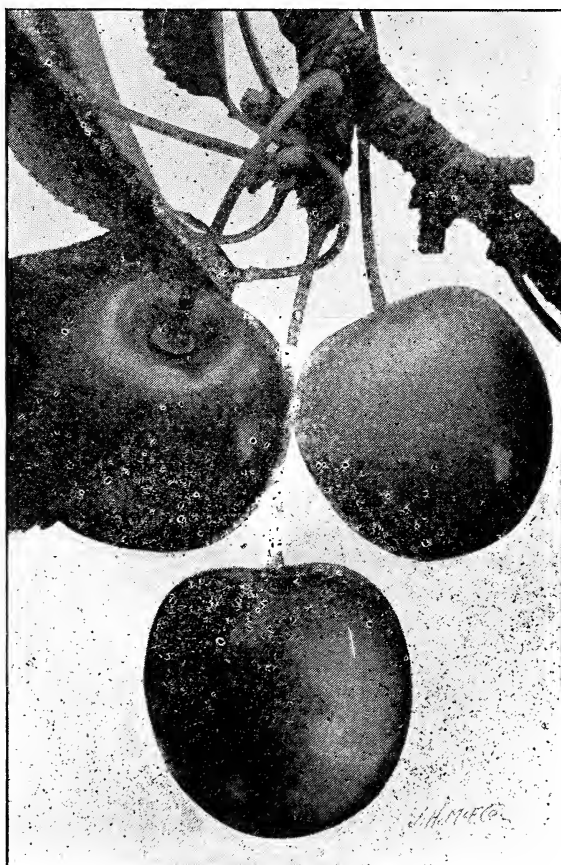
Dukes and Morellos (*C. Vulgaris*)

THE CHERRY thrives best on a sandy or gravelly soil, and there attains its highest perfection, but will do very well in almost any situation except a wet one. It is one of the most ornamental of all fruit trees, which with its delicious and refreshing fruit, makes it very desirable for planting near dwellings, where beauty and shade as well as fruit are so desirable.

We divide them into two classes — Hearts and Bigarreaus, and Dukes and Morellos. The first, being strong and vigorous growers, make large, open, spreading heads or tops, are best suited for the purpose of shade, and produce large, heart-shape sweet fruit. The Dukes and Morellos are of slower growth and do not ever attain so large size, and are more hardy, less liable to get injured by bursting bark, and generally produce acid fruits, and make the most beautiful dwarfs. One and two-year-old trees are the most desirable for transplanting, and are usually from 3 to 5 feet high.

The Hearts and Bigarreaus will successfully resist cold weather so as to be grown in most sections, except the extreme north, while the Dukes and Morellos, or acid sorts, are perfectly hardy and are starred (*) in this catalogue.

Cherry trees require the same general treatment in the way of pruning and planting methods as do apples until they are four or five years



Bing Cherry, popular both as a commercial and home variety.

old, after which only such branches as interfere should be removed. Cherry trees should not be unduly forced in their growth.

***Baldwin.** The tree is an upright, vigorous grower; fruit large, almost perfectly round, dark, yet almost transparent; flavor slightly subacid, yet the sweetest and richest of the Morello type; stems rather large, of medium length, more inclined to grow in pairs than in clusters. It is remarkable for earliness, vigor, hardiness, quality and productiveness. A general favorite.

Bing. This grand black cherry was originated by Seth Luelling, of Milwaukee, Ore. Size large, blackish purple; flesh solid, flavor of the highest quality. Tree thrifty, upright grower, hardy and productive. A fine shipping and market variety.

Black Republican. (Luelling.) A native of Oregon. Fruit large, shining black; flesh solid and firm; a good keeper and will bear transportation well. Tree a moderate grower and rather tender. An early and productive bearer.

Black Tartarian. Large, bright purplish black, half tender, juicy, rich, excellent flavor. Tree a vigorous grower and productive. June.

Centennial. A seedling of the Napoleon Bigarreau, larger than its parent, more oblate in form and beautifully marbled and splashed with crimson on a pale yellow ground. Its sweetness is very marked. Specimens have been carried to Europe without apparent injury.

Chapman. The earliest of all shipping varieties, bears early crops of fine, luscious fruit; size large, form roundish; stem long and slender; surface smooth, color purplish black; flesh half tender; stone small; flavor of the highest quality. On account of its beauty, quality and earliness it is a profitable market variety.

Early Richmond. (Kentish, Virginian May) Medium size, dark red; melting, juicy, sprightly acid flavor. One of the most valuable and popular of acid cherries. Tree a slender grower, with a roundish, spreading head; productive. The most hardy of all varieties. Ripens thru June.

English Morello. Medium to large, blackish red; rich, acid, juicy and good; productive. August.

Governor Wood. Large, rich; light yellow with red cheek; juicy and sweet. Last of June.

***Kentish.** See Early Richmond.

Lambert. In size the largest known; smooth, glossy; color dark purplish red

with numerous, minute indented, russet dots; flesh dark, purplish red with whitish veins, firm meaty texture; small oval stone, semi-cling; flavor sweet or mild subacid, rich and of high quality; form roundish, heart-shaped; long slender stem. A fine shipping variety. Tree thrifty, hardy and vigorous grower.

Late Duke. Large, light red; late and fine. Last of July.

Luelling. See Black Republican.

***May Duke.** Large, red, juicy and rich. An old excellent variety. Vigorous and productive. June 15.

***Montmorency Large.** A large, red cherry, larger than Early Richmond and fully ten days later.

Napoleon Bigarreau (Royal Ann.) A magnificent cherry of the largest size. Pale yellow with bright red cheek; flesh firm, juicy and sweet. One of the best for market and canning. July.

***Olivet.** Fruit large, globular, and of a deep shining red. Tender, rich and vinous, with sweet subacidulous flavor.

***Osthem.** Fruit large, roundish, ovate; skin red, dark at maturity; stalk long; flesh liver-colored, tender, juicy, almost sweet. Perfectly hardy.

Royal Ann. See Napoleon Bigarreau.

Royal Stewart. A new variety of the Royal Ann type, originating in Lane county, Oregon, but maturing from four to six weeks later than this standard variety. Fully as large as the Royal Ann and possessing all of its excellent qualities, but surpasses it in marketing features, especially for sections west of the Cascade Mountains where cherry crops are frequently damaged by rain just at the picking season. It has been claimed by authorities on the subject that a cherry equal in quality to the Royal Ann but ripening at a time to escape injury from rain would be worth a million dollars to the Willamette Valley alone. Such a cherry we feel sure we have found in the Royal Stewart. Is a firmer and better shipping variety than Black Republican. Ask for special literature.

Windsor. Originated at Windsor, Canada. Fruit large, liver-colored; flesh remarkably firm and of fine quality. Tree

CHERRIES, Continued.

hardy and prolific. Valuable for late market and for family use.

✓ *Wragg. Much like English Morello. More productive and excels in size, yield

and quality. Hardy and produces crops at the northernmost limits of cherry growing.

✓ Yellow Spanish. Large, pale yellow, with red cheeks; firm, juicy and excellent. Vigorous and productive. Last of June.



(*Prunus.*)

THE PLUM tree, like the pear and other finer fruits, attains its greatest perfection in our heavy soil, being entirely free from disease. Plums are hardy and grow vigorously in nearly all sections, succeeding best on heavy soils in which there is a mixture of clay.

Most of the cultivated varieties of plums are Europeans, or descendants of European varieties. But in recent years certain extraordinarily good varieties of native plums have been widely disseminated, and recently we have received some extremely valuable varieties from Japan.

The finer kinds of plums are beautiful dessert fruits, of rich and luscious flavor. For cooking and canning they are unsurpassed. For best flavor they should be allowed to remain on the tree until fully ripe; but for shipping to market they must be gathered a few days earlier, when they may be shipped long distances, arriving in good condition. Overbearing should not be allowed.

Some varieties, especially of the native plums, are extremely hardy and will stand the climate of the extreme northwest.

JAPANESE, or ORIENTAL PLUMS.

This race is as distinct from our native varieties as the Yellow Newtown is from the Baldwin apple. Many of these varieties succeed well in sections where the European varieties cannot be depended upon. They unite size, beauty and productiveness, and come into bearing at the age of two to four years. Flesh firm and meaty, will keep for a long time in excellent condition. Their early blooming habit renders them unsafe in some sections and they never will take the place of our older varieties, but possess many valuable characteristics.

We group plums under the following divisions: A, American type, very hardy (Chickasaw types). D, Domestica, European types. J, Japanese type. J* (starred) Japanese Hybrids, and crosses of the Japan plums.

✓ **Abundance.** J. Medium size; rich, bright cherry-red, with a distinct bloom; flesh light yellow, juicy and tender, quality excellent. Tree rapid grower, vigorous, hardy, heavy grower.

✓ **Bartlett.** J* Productive. An ornamental tree, with glossy green leaves. Fruit oval,

yellow, turning to deep crimson when fully ripe; flesh light salmon-colored, firm and juicy. Ripens before Burbank.

✓ **Bradshaw.** D. Fruit large, dark violet-red; flesh yellowish green, juicy and pleasant. Tree vigorous, erect and productive. Middle of August.

PLUMS, Continued.

Burbank. J. Vigorous grower; early and heavy bearer; fruit large, yellowish ground with red cheeks in the sun; flesh yellow, firm and sweet when fully ripe; small pit, which clings. Middle of June.

Climax. J*. This is well named the "King of Plums," as extreme earliness, immense size, high color, delicious flavor and fragrance place it in the lead among the early shipping Plums. Fruit heart-shaped, color, deep, dark red. Flesh yellow. Tree vigorous and productive.

Clyman. D. A good bearer, fruit medium to large, mottled reddish purple, with beautiful blue. Freestone, quality of flesh superior; valuable on account of its earliness and its shipping qualities.

Coe's Golden Drop. D. Large and handsome, light yellow, firm, rich, sweet. One of the best late Plums. Last of September.

Columbia. D. Fruit of the largest size, 6 or 7 inches in circumference, nearly globular. Skin brownish purple, dotted with numerous fawn-colored specks. Flesh orange, not very juicy, but when at full maturity very rich, sugary and excellent. Last of August.

Combination. J*. Early, regular and abundant bearer of large, nearly globular fruit of uniform size. Flesh straw color, extremely sweet with a pronounced pineapple flavor. Stone small and nearly free when fully ripe.

Damson. D. Fruit small, oval; skin purple, covered with blue bloom. Flesh melting and juicy, rather tart; separates partly from stone. September.

Green Gage. D. Small; considered the standard of excellence; slow grower. Middle of August.

Forest Rose. A. Fruit round; larger than Wild Goose; skin rather thick and of a beautiful dark red color, covered with a delicate bloom; stone small; fine quality.

Jefferson. D. Large, yellow, reddened in the sun; juicy, rich and delicious. Last of August.

Kelsey. J. Large; rich reddish purple on yellow ground; tree a prolific and early bearer; largely planted for shipping East.

Lombard. D. (Bleeker's Scarlet.) Medium, round, oval; violet-red; juicy, pleasant and good, adheres to the stone. Tree vigorous and productive. A valuable market variety; one of the most hardy and popular. Last of August.

Maynard. J*. Large, often measuring 7½ in. in circumference. Nearly round, slightly flattened at the ends; of richest crimson-purple, deepening to royal damask as full ripeness is reached. Tree hardy, vigorous and compact grower. Surpasses all other varieties in keeping and carrying qualities. Flesh firm, even when dead ripe, but melting and juicy, with a deliciousness indescribable.

Milton. A. Rather large; dark red; skin thin; flesh firm; good quality; ripen earlier than Wild Goose; its large size, good quality and extreme earliness make it valuable; a strong grower; productive.

Moore's Artic. D. Size medium, purplish black, with a thin blue bloom; flesh greenish-yellow, juicy, sweet and of a pleasant flavor. Tree healthy, vigorous. An early and abundant bearer.

October Purple. J*. Fruit large and uniform in size; color a dark rich maroon; stone small; flavor fine. Tree fine grower. Ripens middle September.

Peach. D. Very large and handsome; dull red; good; very productive. Last of August.

Pond's Seedling. See Hungarian Prune.

Pottawattamie. A. A cross of Chickasaw and Swedish Sloe. Quality excellent. Tree perfectly hardy, a strong, vigorous grower; an immense annual bearer; curculio-proof. Four-year-old trees have borne a crop of two bushels to the tree.

Prunus Simoni. J. (Apricot Plum.) A distinct species from China. Growth erect; flowers small, white, appearing early in the spring. Fruit flattened, of the size and appearance of a Nectarine, and of a brick-red color; flesh yellow, with a peculiar aromatic flavor.

Red June. J. Medium to large; deep vermilion red, with handsome bloom; flesh light lemon-yellow, firm; moderately juicy; fine quality. Tree upright, spreading, vigorous and hardy; productive. Last of July or early August.

Reine Claude de Bavay. D. (Bavay's Green Gage.) Large; greenish-yellow; spotted with red; juicy, sugary and fine quality; productive. September.

Satsuma. J*. (Blood Plum.) Fruit has a pleasant flavor; red flesh; small stone; good keeper and shipper. Early July.

Shipper's Pride. D. Large, nearly round; dark purple; quite juicy, sweet; splendid shipper and marketer; moderate grower, productive.

PLUMS, Continued.

✓ **Shiro. J*.** Fruit egg-shaped, medium size, smooth, bright yellow, thin bloom; flesh clings to pit.

✓ **Sultan. J*.** Its huge size and deep purplish crimson color render it valuable for the market. The flesh is firm, fragrant, sweet; dark crimson, clouded and shaded with pink, salmon and light yellow. Rapid grower, with wood and leaves much like a Royal Ann Cherry.

✓ **Washington. D.** Large, green, somewhat reddened; juicy, sweet and fine; productive. Last of August.

✓ **Weaver. A.** Flesh firm, with flavor resembling the apricot. As a substitute for the peach it has no rival. Curculio-proof.

Wickson. J*. Sturdy, upright grower, productive almost to a fault. Fruit remarkably handsome, deep maroon red, covered with white bloom; stone small; flesh fine texture, firm, sugary and delicious. Excellent keeper and shipper.

Wild Goose. A. An improved variety of the Chickasaw, evident in the great vigor of the tree and increased size of the fruit, which is nearly as large as the Green Gage. Skin purple, with a bloom; flesh juicy, sweet and adheres to the stone. Last of July.

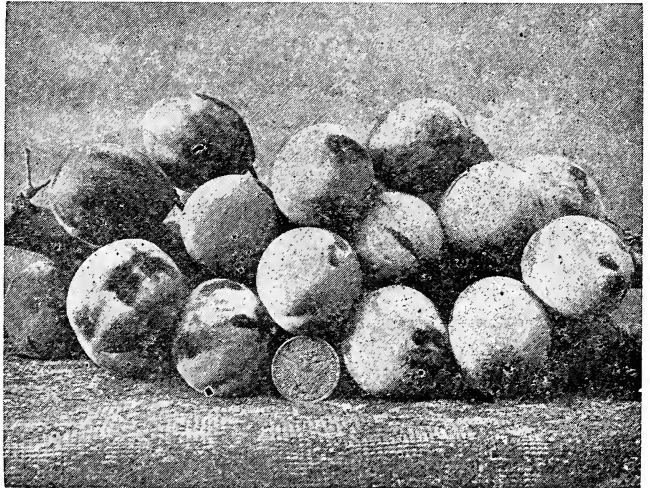
✓ **Yellow Egg. D.** (Magnum Bonum, Yellow.) Large and beautiful, egg-shaped; a little coarse, but excellent for cooking. Tree a free grower and productive. End of August.

PRUNES (*Prunus*)

THE plum of history is the *Prunus domestica*. It also gives us the prunes which are characterized by sweet, firm flesh, and capable of making a commercial dried product. They may be of any color, although blue-purple are best known. Any plum that can be successfully cured, without removing the pit, into a firm, long-keeping product, may be used for making prunes, the chief requisite being a large proportion of solids, more especially sugar.

We follow the distinction made between plums and prunes, as is common in the horticultural literature of the Pacific Coast. By the term "prune" is signified a plum which dries successfully without the removal of the pit and produces a sweet, dried fruit.

To such proportions has the prune industry grown that it may now be classed as one of the most important productions of the Pacific Coast, the exportations to the world markets reaching hundreds of millions of pounds annually.



PRUNES COMPARED WITH A HALF DOLLAR.

✓ **Dosch. D.** Color purple, very large; flesh juicy, delicious, sweeter than the Italian, but not so sweet as the Petite;

flavor excellent and for canning has no equal; dries very heavy. Tree hardy, thrifty grower, ten days to two weeks earlier than the Italian.

PRUNES, Continued.

Fellenberg. See Italian.

FRENCH. See Petite.

✓ **German Prune.** D. A large, long, oval variety, much esteemed for drying; color dark purple; of very agreeable flavor. September.

✓ **Giant Prune.** D. (California.) One of the largest prunes known, the fruit averaging one and one-half to two ounces each. Its unequalled size, handsome appearance, rare keeping qualities and great productiveness make it desirable for home use or market. September.

✓ **Hungarian Prune.** D. (Grosse Prune, or Pond's Seedling Plum.) Large, dark red, juicy and sweet. Its large size, bright color, productiveness and shipping qualities render it a profitable variety for home or distant markets. September.

✓ **Imperial.** D. (Epineuse.) Large size, light or reddish purple color; thin skin; sweet and high flavor. Tree stout, stocky, rapid grower.

✓ **Italian.** D. (Fellenberg.) A late prune; oval; purple; flesh juicy, delicious, parts from the stone; fine for drying. Tree very productive. September.

✓ **Petite D'Agen.** D. (French Prune.) The well-known variety so extensively planted for drying. Medium size; reddish purple; juicy, sugary, rich and sweet. Bears immense crops. Sept.

✓ **Pacific.** Fruit freestone, large and handsome. Flavor the finest; rich, sugary and luscious. A good shipper. The best of drying prunes.

✓ **Robe de Sargent.** D. Fruit medium size, oval; skin deep purple, approaching to black and covered with a thick blue bloom; flesh greenish yellow, sweet and well flavored, sugary, rich and delicious, slightly adhering to the stone. A valuable drying and preserving variety. Ripens in Sept.

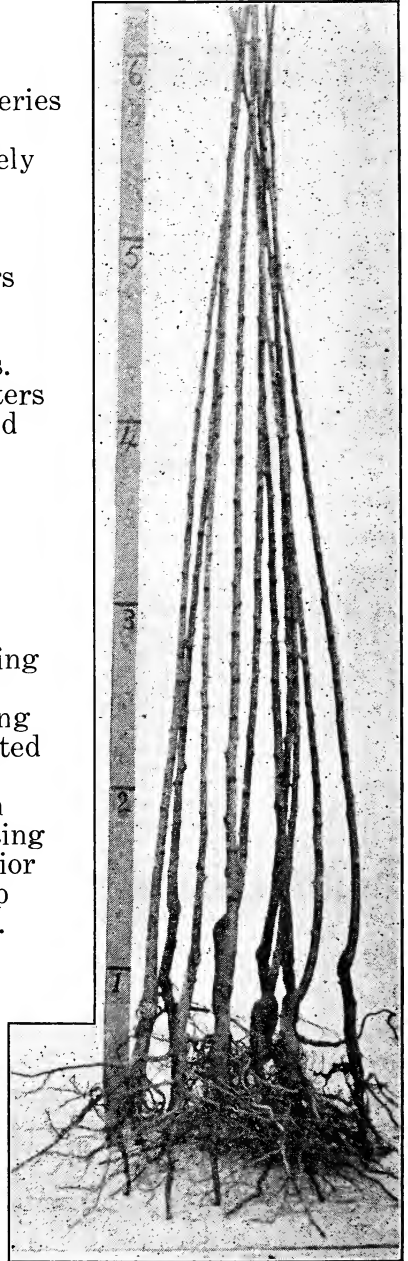
✓ **Silver.** D. Originated in Oregon and said to be a seedling from Coe's Golden Drop, which it very much resembles; is much more productive and tree more vigorous. The fruit on account of its large size, is ranked among the most valuable prunes and drying plums. October.

✓ **Standard.** A variety of recent introduction, being a cross between the Tragedy and Sugar prunes. Skin dark reddish with a heavy blue bloom, flesh honey yellow, fine grained, sweet, juicy, but quite firm; a perfect freestone, large size. Reported to be a heavy bearer. As yet it has

not been sufficiently tested in the various prune growing sections to demonstrate fully its general value.

Sugar. Ripens 28 days earlier than the French (Petite d'Agen). Almost one-fourth sugar (analysis has shown it to

Our Nurseries are entirely free from root borers of all kinds. Planters should keep in mind the risk they are running of getting infested trees when planting inferior cheap trees.



One-year-old Prune Trees on 3-year-old roots.

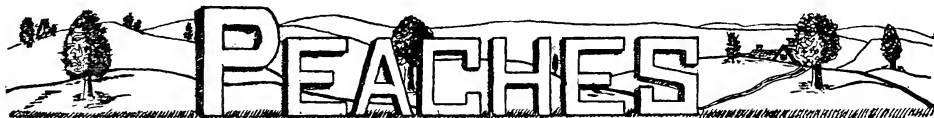
PRUNES, Continued.

be 23.92% sugar). Three times larger than French, of which it is seedling. Tree vigorous, hardy and productive; bears young. Color purple; good shipper. Aug.

✓ **Tennant.** D. Large; dark purple, with a bloom; flavor of the highest quality; rich, sugary and delicious. Tree

hardy and productive. Bears transportation well. August.

✓ **Tragedy.** D. This most valuable of all prunes for early eastern shipments appears to be a cross between the German prune and the Purple Duane; medium size, nearly as large as a Duane; skin dark purple; flesh yellowish green, rich and sweet, freestone. Ripens in July.

*(Prunus Persica vulgaris.)*

PEACHES thrive best on well drained, warm, sandy loam. If planted on heavier soil, special care should be taken to have it well drained. It should be remembered that peaches are all borne on wood of the previous season's growth, consequently making it necessary to prune the trees yearly to stimulate new wood growth and to remove dead branches, in order to let in sunlight and permit of free air circulation.

Peach orchards require thorough cultivation. As a rule, peaches are planted a distance of sixteen to eighteen and sometimes twenty feet apart. The height at which the head of the tree is formed varies according to the conditions existing in the different parts of the country. In California the young transplanted tree is frequently pruned back to a height of twelve inches from the ground. Under favorable conditions peaches will begin bearing fruit from the third to the fourth year after planting. Peaches will, as a rule, set a much larger quantity of fruit than the tree will support and thinning is necessary, not only in order to secure larger and better fruit but to preserve and protect the life and vitality of the tree. Fruit should be thinned so as to be at least three to four inches apart. This will insure a high grade product.

Since California is a very large peach growing district, we grow varieties planted there very extensively and have enjoyed a very liberal patronage from California planters who are fast realizing that our trees grown in the north, under natural conditions and without irrigation, are more desirable than are trees grown in California under irrigation and unusually high temperature. It is a recognized fact that southern planters prefer northern grown seeds, such as potatoes, corn, etc., and the same reason applies equally strong for preferring northern grown trees.

Freestone varieties are indicated in the following list by the letter "F" following the name of variety, Clings by the letter "C" and Semi-Cling by "S. C."

✓ **Admiral Dewey.** F. Skin deep orange yellow, with crimson cheek; flesh clear

yellow, of uniform color and texture to the stone; juicy, melting, vinous; quality good.

PEACHES, Continued.

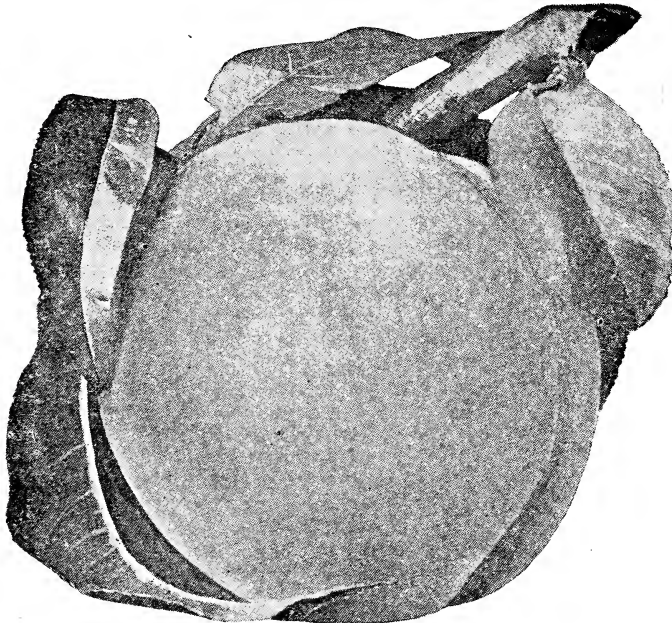
Ripens with Triumph; has better form and brighter color on surface; equally hardy and productive; tree strong and symmetrical grower. One of the best early freestones.

Alexander's Early. (Alexander.) C. Medium size; skin greenish white, nearly covered with rich red; flesh melting, juicy, sweet; tree vigorous and productive. Ripens two weeks earlier than Hale's Early.

Amsden's June. (Amsden.) C. Medium size; skin greenish white, nearly covered with purple in the sun. Ripens with the Alexander and closely resembles that variety, but some think it a little higher flavored.

Banner. F. Tree very hardy both in wood and bud, bears young. Fruit large, deep yellow, with crimson cheek; flesh yellow to the pit; firm, rich and of excellent quality; pit small, free; equal to any as a shipper or keeper. Last of Sept. and Oct.

Bokhara. F. A Russian variety, which is claimed to be the hardiest peach grown; in fact it has stood a temperature of 28 degrees below zero without injury. It is a beautiful yellow peach, with bright red cheek; perfect freestone, delicious flavor; its exceedingly tough skin makes it a splendid shipper.



THE FOSTER PEACH.

Brigg's Red May. F. Fruit medium to large, skin greenish white, with rich red cheek, flesh greenish white, melting and juicy. A standard early variety and one of the most extensively planted in California. Middle of June.

California Cling. C. Very large, round, regular; orange, nearly covered with dark rich red; flesh deep yellow; flavor delicate, rich, vinous. Middle of August.

Carman. F. Large, resembling the Elberta in shape; creamy white or pale yellow, with deep blush; skin tough; flesh tender and fine flavor; juicy; prolific bearer. Profitable market variety. June 20.

Champion. F. A particularly hardy seedling of Old Mixon, from the west, which is noted for the hardness of its blossoms, thus insuring a good yield in spite of heavy spring frosts. A large, handsome peach, with a creamy white skin and beautiful red cheek. In flavor it is exquisite, and is a true freestone. Middle of July.

Crawford's Early. F. A fine large, yellow peach, of good quality. Tree vigorous and productive. Its fine size, beauty and productiveness make it one of the most popular sorts; no other variety has been so extensively planted.

Crawford's Late Melocoton. (Late Crawford.) F. Fruit of large size; skin yellow, or greenish yellow, with dull red cheek; flesh yellow; tree vigorous, moderately productive. Last of September.

Crosby. F. The tree is of low, spreading, willowy habit of growth, similar to Hill's Chili, Wagner and others of that class of hardy peaches. However, it is even more dwarf than these, and often the entire product of a tree, two bushels, or even more, can be picked by a man standing on the ground. Fruit is of medium size, roundish in form, slightly flattened, with a distinct seam on the blossom end; bright orange-yellow, splashed with streaks of carmine on the sunny side; of beautiful appearance, and not so acid as most yellow peaches of the Crawford class. Ripens between Early and Late Crawford, or about with Old Mixon.

PEACHES, Continued

✓ **Early Charlotte.** F. An improved seedling from Early Crawford, originated at Salem, Oregon, in 1878, by Dickinson. Succeeds in Oregon where many other varieties fail; flesh yellow, melting and juicy, with a rich and excellent flavor. Freestone. Ripens ten days after Crawford's Early.

✓ **Early Imperial.** F. Fruit large, deep yellow, with dark red cheek; flesh rich, juicy and very firm. A very highly colored peach and remarkable for its firmness. Resembles Yellow St. John in form but earlier, larger and more highly colored. Ripens with Hale's Early.

✓ **Elberta.** F. A cross between Crawford's Early and Chinese Cling; very large; bright yellow, with a beautiful mottled red cheek; flesh yellow, juicy, sweet; tree a uniform and regular bearer and strong grower. Ripens last of July.

✓ **Everbearing.** F. A remarkable peach, having the peculiarity of ripening its fruit successfully over a period of eight weeks. Creamy white, mottled and striped; flesh white with red veins; juicy, rich and fine.

✓ **Fitzgerald.** F. An improved Early Crawford. Fruit large, brilliant color, bright yellow, suffused with red; flesh deep yellow, best quality. Early Sept.

✓ **Foster.** F. Large, deep orange-red, becoming dark red on the sunny side; flesh yellow, rich and juicy, with sub-acid flavor, ripening earlier than the Early Crawford and superior in many points, flesh is firmer, without so much red at the stone, which is smaller; one of the very best for drying, market or canning.

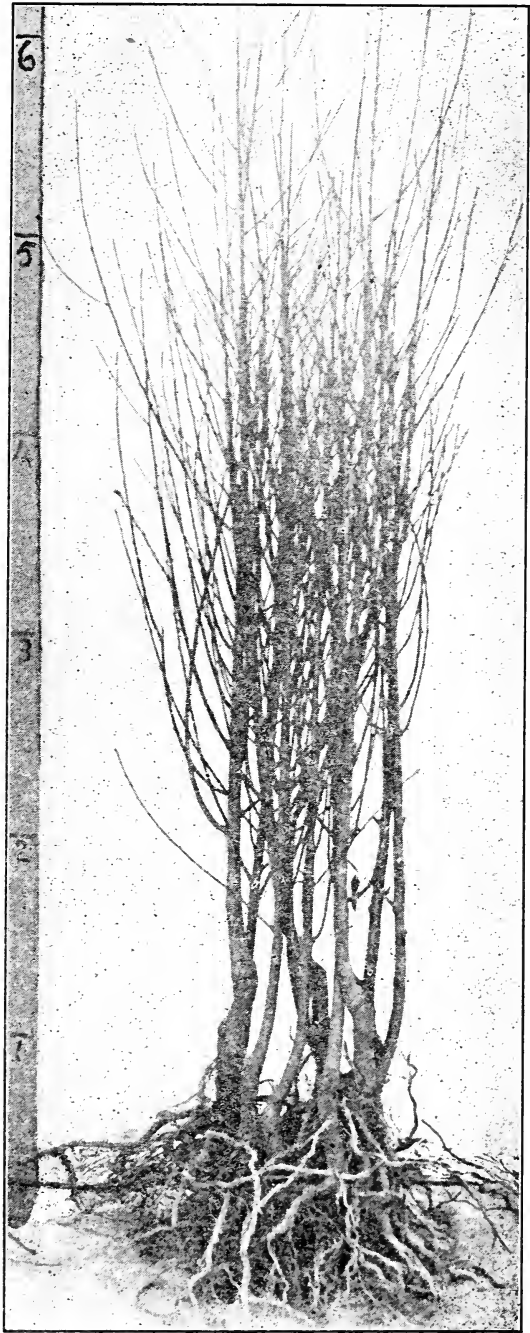
✓ **Gillingham.** F. Large yellow, resembling the Early Crawford in form and appearance, ripening a few days later; flavor excellent. Bears young and abundantly.

✓ **Globe.** F. Large, flesh firm, juicy, yellow, quality good, pleasant, rich, vinous and luscious. October.

✓ **Greensboro.** S. C. Ripens with Alexander, but much larger. Round, flesh white, juicy, of good quality, bright red over yellow, highly colored in the sun.

✓ **Hale's Early.** S. C. Medium size, greenish-white with red cheek, first quality. Tree healthy, good grower and productive. One of the earliest good peaches we have.

✓ **Heath Cling.** C. A most delicious cling. Very large, skin downy, creamy white, with faint blush of red, flesh white, slightly



One-year-old Peach trees, the proper age trees to plant for best results.

PEACHES, Continued.

red at the pit, tender, juicy and sweet, valuable for canning. Season closes early September.

Henrietta Cling. See Levy Late.

Indian Cling. (Indian Blood.) C. Large, deep claret color with red veins, downy, flesh red, juicy and refreshing. Last of August.

Lemon Cling. C. Large and beautiful lemon-shaped variety; skin light yellow with a rich, vinous, subacid flavor. Ripens first week in August.

Levy's Late or Henrietta Cling. C. Large size; skin a deep yellow, a shade of rich brownish red in the sun; flesh deep yellow, firm, juicy, sweet, half melting, slightly vinous. Latest of all clings and highly esteemed for canning and market. Middle of September.

Lovell. F. A California seedling; large; almost perfectly round; flesh yellow to the pit, firm and of excellent quality; a superb canning, shipping and drying; tree a good grower and bearer. Ripens a few days after Muir.

McDevitt's Cling. C. Very large, rich, golden, becoming quite red when ripe; flesh yellow, firm and superior flavor; excellent shipper. Last of August.

McKevitt's Cling. C. White, flesh firm, rich, sugary and highly flavored, white to the pit, excellent for shipping and canning. Tree a remarkably strong grower and not subject to curl. Early in September.

Mountain Rose. F. Large, handsome, red cheek, flesh white, juicy; one of the best. August.

Muir. F. Large, pale yellow, very firm flesh, very sweet. Best for drying. Last of August.

Newhall. F. Large size, skin yellow, with a dark red cheek, flesh deep yellow, juicy and rich, vinous flavor. Tree hardy, healthy, vigorous and not affected by curl like Crawford's Late.

Orange Cling. See Runyon's Orange Cling.

Perfection. F. The fruit is of the largest size, yellow with beautiful blush cheek, flesh is thick and fine grained, yellow with red around the pit, which is nearly as small as a prune seed. It tough skin, firm flesh and good keeping qualities place it in the lead for a good shipping and market variety. Ripens September 10th to 15th.

Philip's Cling. Fine, large; yellow; flesh firm, clear yellow to the pit, which is very small. Preferred by canners to any other variety of cling. Its firmness, fine texture of flesh and lateness, not ripening until September, when other clings are practically harvested, makes a demand for this variety far beyond the supply.

Prolific. F. Fruit large, attractive, firm; color yellow, crimson cheek, flesh yellow to pit, pit small. The tree is productive and hardy. Sept.

Runyon's Orange Cling. C. The fruit is large, yellow with a dark crimson cheek; flesh golden yellow, rich and sugary with a vinous flavor. Tree is an immense bearer and not subject to mildew like the common sort. A splendid fruit for shipping, canning or drying. Ripens early in Aug.

Salway. F. Large, roundish, deep yellow with a rich marbled, brownish red cheek, flesh firm, juicy, rich and sugary. A late, showy, market sort.

Seller's. A variety of Orange Cling, of larger size. Skin, fine yellow with a dark red cheek, flesh yellow, firm, juicy and rich. A desirable sort for canning, ripening a few days after Runyon's.

Sneed. S. C. It is claimed for this peach that it is ten days earlier than the Alexander, of same size and appearance, but more yellow, the flesh is tender, juicy, melting and delicious; clings slightly to the pit.

Strawberry. F. Medium size; white marbled with dark red; flesh white, red near the pit; juicy with a rich delicious flavor. July.

Susquehanna. F. A large handsome variety, nearly globular; skin rich yellow with a beautiful red cheek; flesh yellow, sweet, juicy, with a rich vinous flavor.

Triumph. S. C. Above medium; skin downy, dark orange-yellow, nearly covered with dark carmine; flesh yellow half-way to the stone, where it changes to a greenish white and adheres to the stone like Alexander; juicy, melting and slightly sub-acid; quality good. Maturity June 15. The great value of this peach for shipping purposes is its yellow color and attractive appearance, it being the earliest peach so far known.

Tuskena Cling. (Tuscan, Yellow Tuscan.) C. Large, yellow cling, the earliest fine cling; flesh juicy and of fine flavor and clear yellow to the stone. A good shipping and canning peach and very desirable on account of its earliness, ripening with the Early Crawford.

We grow the commercial varieties on peach, apricot and plum roots, while the non-commercial varieties are grown principally on peach root.

Soils suited for peaches are likewise satisfactory for apricots, while if plum or apricot roots are used, a heavier soil can be used for apricot culture.

Alexander. Hardy and immense bearer; fruit large; yellow flecked with red; beautiful, sweet and delicious. July.

Blenheim. Large, oval; flesh full to the pit; yellow, rich and juicy; ripens evenly and soon after the Royal; regular and prolific bearer; profitable for canning, drying and marketing.

Hemskirk. Large, roundish, but considerably compressed or flattened on its sides; orange, with red cheek, flesh bright orange, tender, rather more juicy and sprightly than the Moorpark, with a rich and luscious plum-like flavor. July.

J. L. Budd. Tree strong grower and profuse bearer. Fruit large, white with red cheek, sweet, juicy, with a sweet kernel; as fine flavored as an almond. The best late variety and decided acquisition. Aug.

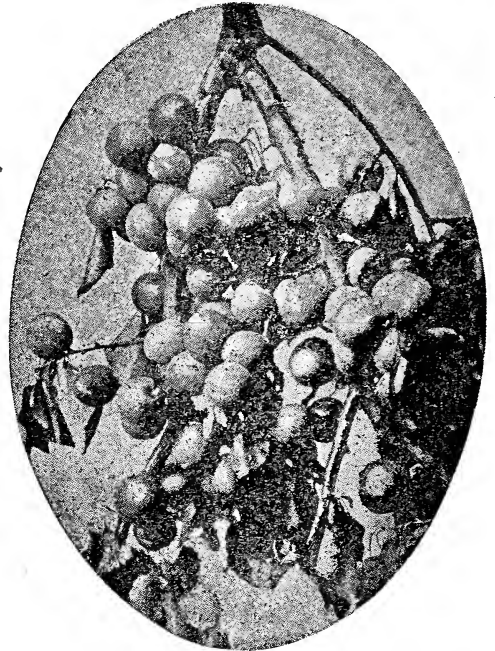
Moorpark. One of the largest. Orange, with a red cheek, firm, juicy with a rich flavor; productive. August.

Peach. (Marysville Peach.) Large handsome and of delicious flavor, skin deep orange, mottled with dark brown, flesh of a fine saffron-yellow color, juicy, rich and high flavored. August.

Royal. Large, oval, slightly compressed; yellow, with orange cheek, faintly tinged with red; flesh pale orange, firm and juicy, with a rich vinous flavor; exceedingly productive. July.

Tilton. Its large size, rich apricot color,

high flavor, uniform ripening, sure and unusual productiveness, with frost resisting qualities and vigorous growth, easily place it far in advance of all other varieties. For drying or canning it is much superior to any of those older varieties.



TILTON APRICOTS, the most successful variety for the north.

QUINCES AND NECTARINES

(*Cydonia vulgaris*)

THE QUINCE is of late attracting a good deal of attention as a market fruit. Scarcely any fruit will pay better in the orchard. The tree is hardy and compact in growth, requiring but little space; productive; gives regular crops and comes into bearing early. The fruit is much sought after for canning for winter use. When put up in the proportion of about one quart of quinces to four quarts of other fruit it imparts a delicious flavor.

It flourishes in any good garden soil, which should be kept mellow

and well enriched. Prune off all the dead and surplus branches, and thin out the fruit if bearing too freely.

✓ **Champion.** Fruit large, fair and handsome. Tree handsome, surpassing other varieties in this respect, bears abundantly while young, flesh cooks as tender as an apple and without hard spots and cores; flavor delicate, imparting an exquisite quince taste and odor to any fruit with which it is cooked.

✓ **Pineapple.** The name comes from the flavor, which is suggestive of the pineapple. The fruit in form and size resembles the Oregon Quince. Makes a superior jelly. Can be eaten raw and is said to cook as tender in five minutes as the best cooking apple, possessing most exquisite and delicious flavor not equaled by any other quince.

NECTARINES (*Prunus Persica*, or *P. laevis*)

A MOST delicious, smooth skinned fruit, which thrives wherever peaches will grow. Much superior to the peach as a dried fruit, and excellent for preserves. Commands a high price in the Eastern market; as it is considered as somewhat of a novelty.

✓ **Boston.** Large and handsome, deep yellow, with a bright blush and mottles of red; flesh yellow to the stone, sweet, with a pleasant and peculiar flavor; free stone. One of the most valuable sorts for market.

✓ **Lord Napier.** Large, cream color, dark red cheek; flesh white, tender, juicy and sugary; freestone. July.

✓ **New White.** Large, white, nearly round;

flesh white, tender, juicy, with a rich, vinous flavor; stone small and separates freely. August.

Stanwick. Large, often as large as a peach, skin pale greenish white, shaded into deep rich violet in the sun; flesh white, tender, juicy, rich, sugary and delicious. For drying and shipping not excelled by any other variety. August.



GRAPES (*Vitis*)

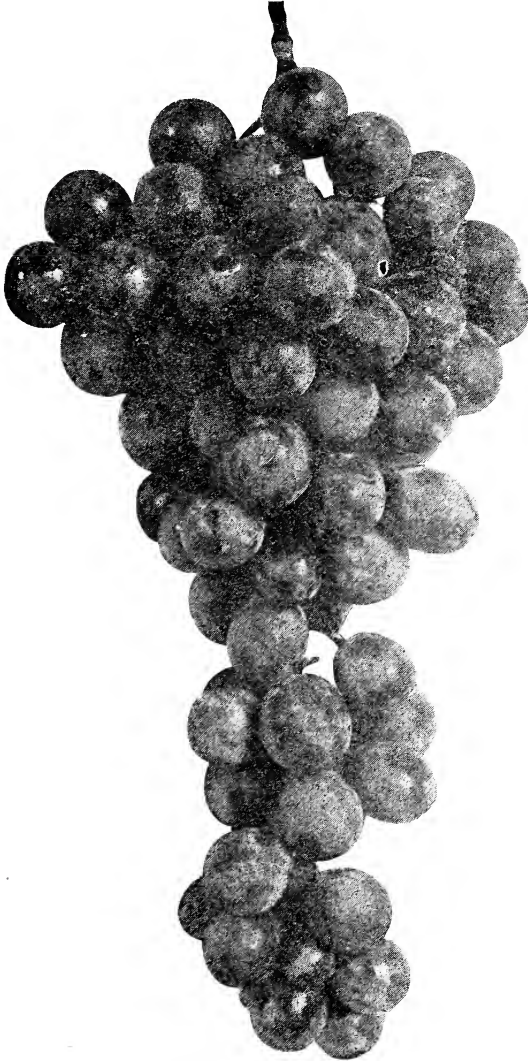
THE GRAPE is the most healthful of all fruits, and the most esteemed for its many uses. It can be secured by every one who has a garden, a yard or a wall. It can be confined to a stake, bound to a trellis, trained over an arbor or extended until it covers a large tree or building, and it still yields its graceful bunches and luscious, blooming clusters. Capable of most extraordinary results under wise management, it is prone, also, to give the greatest disappointment under bad culture or neglect. Other fruits may be had from plants that know no care, but grapes are only to be had through attention and forethought. We will give a few essential points in its successful culture, and refer the cultivator to other and more extended works for more details.

Distance.—In setting out vines, the character and strength of the soil is a very important point to be considered, 8 by 8 and 10 being the popular distance, 10x10 and 10x12 for the more robust growers.

Soils.—Good grapes are grown on various soils, sandy, clayey, loamy,

etc., that is not too shallow or too heavily pregated with alkali. The soil must be well drained, and there should be a free exposure to the sun and air. Hillsides, unsuitable for other crops, are good places for grapes.

Crops.—Crop grapes moderately if you would have fine, well-ripened fruit. A vine is capable of bringing only a certain amount of fruit to per-



WYOMING GRAPE.

fection, proportioned to its size and strength; but it usually sets more fruit than it can mature; reduce the crop early in the season to a moderate number of good clusters and cut off the small inferior branches; the remainder will be worth more than the whole would have been. A very heavy crop is usually a disastrous one.

Pruning.—Annual and careful pruning is essential to the production of good grapes. If the roots are called upon to support too much wood, they cannot bring to maturity a fine crop of fruit. The pruning should be done in November, December, February or March, while the vines are entirely dormant.

Gathering and Keeping.—Grapes for keeping, to be used in their fresh state, should be allowed to remain upon the vines until perfectly matured, but not much longer. Pick them when perfectly dry. Let them stand in open baskets or boxes for about ten days in a cool, dry room; and after sorting out all decayed and imperfect berries, pack them in shallow boxes and cover closely. Use no paper, but basswood or elm boxes, if convenient. Pine and

AMERICAN VARIETIES.

Brighton. R. Cross between Concord

and Diana Hamburg. Resembles Catawba in color, size and form and bunch of berry; flesh rich, sweet and of the best quality.

GPAPES, American Varieties Continued.

Ripens earlier than Delaware. Vine vigorous and hardy.

✓ **Campbell's Early.** B. Its strong, hardy, vigorous growth, thick, heavy, perfectly healthy foliage, early ripening and abundant bearing of large and handsome clusters of excellent quality, combined with the most remarkable keeping and shipping qualities, form a combination unequaled by any other grape. Its period of full maturity is from the middle to the last of August, according to the season. In dessert quality it is unrivaled by any of our present list of first-early market grapes. It is, both as to cluster and berry, of large size, of a gloss black color, with a beautiful blue bloom, pulp sweet and juicy, free from foxiness, seeds small, few in number and part readily from the pulp.

✓ **Catawba.** R. Well known as the great wine grape of Ohio, Kentucky, etc. Bunches large and loose, berries large, of a coppery red color, becoming purplish when well ripened, requires the most favorable soils and situations, good culture and warm seasons to mature perfectly. Last of September.

✓ **Concord.** B. A large, handsome grape, ripening a week or two earlier than Isabella; hardy and productive. Succeeds over a great extent of country, and although not of the highest quality, it is one of the popular market grapes.

✓ **Delaware.** R. Bunches small, compact, shouldered, berries rather small, round, skin thin, light red, flesh juicy, without any hard pulp, with an exceedingly sweet, spicy and delicious flavor. Vine moderately vigorous, hardy and productive. Ripens two weeks before the Isabella.

✓ **Eaton.** B. Seedling of the Concord. Bunch and berries of largest size, showy and attractive, leaf large, thick and leathery, berries round, covered with heavy bloom, pulp tender, separating freely from the seeds.

✓ **Green Mountain.** (Winchell.) W. The earliest white grape. Combines hardiness, vigor, good size and excellent quality. Bunch medium to large, shouldered; berries medium; greenish-white, skin thin, tough; pulp tender, sweet, with few seeds; of excellent quality; free from foxiness, and the flavor is excellent, ranking in this respect as a grape of the first-class.

✓ **Isabella.** B. An old standard sort, highly prized where it will thoroughly mature. Bunches long, loose, berries large, oval, sweet and musky. A good keeper.

Moore's Early. B. Bunch large, berry round (as large as the Wilder or Rogers' No. 4); color black, with a heavy blue bloom; quality better than the Concord; vine exceedingly hardy and has been exposed to a temperature of more than 20 degrees below zero without injury to it; has been entirely exempt from mildew or disease. Its earliness makes it desirable for an early crop, and more particularly adapts it to Canada and the northern portion of the United States, maturing, as it does, ten days before the Hartford and twenty days before the Concord.

✓ **Moore's Diamond.** W. Vigorous grower, with dark, healthy foliage, entirely free from mildew. A prolific bearer, bunches large, handsome and compact slightly shouldered; color delicate, greenish white, with rich yellow tinge when fully ripe; skin smooth and free from specks. Pulp tender, juicy and nearly transparent, with very few seeds. Berry about the size of Concord. Quality best, rich, sprightly and sweet, resembling the foreign Chasselas. Ripens about two weeks before the Concord.

✓ **Niagara.** W. Occupies the same position among the white varieties as Concord among the black. The leading profitable market sort. Bunch and berries large, greenish white, changing to pale yellow when fully ripe. Skin thin and tough. Quality much like Concord.

✓ **Salem.** (Rogers' No. 22.) R. A strong, vigorous vine, berries large, Catawba color, thin skin, free from hard pulp, very sweet and sprightly, ripens first of September.

Wilder. (Rogers' No. 4.) B. Large and black bunches generally shouldered, berry round and large, flesh buttery, with a somewhat fibrous center, sweet, rather sprightly.

Worden. B. This new variety is a seedling of the Concord, which it greatly resembles in appearance and flavor, but the berries are larger. The fruit is said to be better flavored and to ripen several days earlier.

✓ **Wyoming.** R. Vines hardy, healthy and robust, with thick, leathery foliage, color of berry similar to Delaware, but brighter, being one of the most beautiful of the amber or red grapes, and in size nearly double that of the Delaware; flesh tender, juicy, sweet, with a strong native aroma. Ripens before Delaware. Best early red for market.

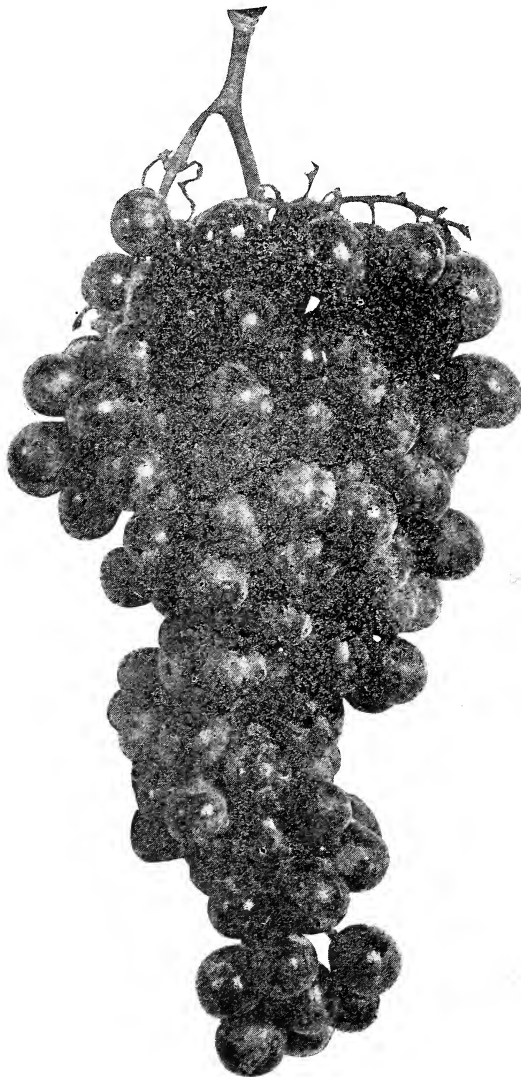
GRAPES—FOREIGN VARIETIES.

For Table, Raisins, Shipping and Wine.

Black Hamburg. B. A fine, tender grape producing large, magnificent, compact bunches; berries black, large and oblong. A great favorite everywhere, especially for table use.

Black Malvoise. B. Vine a strong grower; berries large, oblong, reddish black, with faint bloom; flesh juicy, flavor neutral. An excellent table as well as wine grape.

Black Prince. B. Bunches very long, tapering; berries medium, ovate, with thick bloom, juicy and sweet.



BLACK HAMBURG GRAPE.

Chasselas de Fontainebleau. See White Sweetwater.

Chasselas Golden. R. Bunches medium, compact; berries of an amber color, sweet and watery. Ripe latter part of July.

Cornichon Black. B. Bunches long and loose; berries oval, tapering at both ends, skin thick and dark, covered with bloom, flesh firm, with pleasing flavor, a desirable variety for shipping and marketing; ripens late.

Emperor. R. Vine a strong grower and heavy bearer, bunches large, long and loose-shouldered; berries large, oblong, deep rose-colored, resembles the Tokay; covered with light bloom; firm; skin thick; one of the most profitable late varieties to plant for market, its firmness, good keeping qualities and rich color cause it to be in great demand in Eastern markets every year. Withstands rain better than any other variety. Does well on granite soil of the foot hills. Should be staked to get best results.

Flame Tokay. R. Bunches large and moderately compact; berries large; skin thick, pale red, covered with bloom; flesh firm, sweet. An old standard variety. Always commands a good price in the Easter markets, and as a table grape is more extensively planted than any other variety.

Malga. W. Vine strong grower and productive, thriving in almost any soil. Bunches large, often weighing ten pounds, compact, shouldered; berry large, oval, yellowish-green. Skin thick, fleshy. One of the best shipping grapes. Makes a second quality raisin.

Mission of California. (Gordo Blanco.) W. Bunches long and loose, shouldered. Berry oval, sometimes round, yellowish-green; skin thick; flesh with a decided Muscat flavor. This is the variety so extensively planted for raisins. The distinctive feature between the Alexandria and the Gordo Blanco is supposed to be in the shape of the berries, the former being oblong and the latter round. On the coast, in most localities, the two varieties have been found so nearly identical, round and oblong berries being found on the same vine, that they are classed as Muscats, and no distinction is made by even the most experienced raisin vineyardists.

Rose of Peru. B. Vine a strong grower, bunch large, shouldered, loose; fruit round, large, with firm and crackling flesh. A handsome grape of fair quality, and highly esteemed as a market variety.

Thompson's Seedless. W. Perfectly

GRAPES, Foreign Varieties, Continued.

seedless. Is very attractive, larger than the Seedless Sultana, more oblong, and in color greenish-yellow; resembles the Muscat. Is of good quality, claimed to be superior to the Seedless Sultana. Dries rapidly and evenly, and being a sweet, heavily. A strong grower and unusually productive.

✓ Tokay. See Flame Tokay.

White Sweetwater. (Chasselas de Fontainebleau.) W. Bunches large and compact; berries medium size, round; skin thin, transparent, greenish-yellow; pulp tender, juicy, sweet and richly flavored. One of the best early grapes.

✓ Zinfandel. B. Bunches large, compact; berries round, dark purple. The most extensively planted grape in California for making claret.



These Strawberries are bringing returns during the development period of this man's orchard.

STRAWBERRIES (*Fragaria*)

They may be successfully grown on any soil adapted for garden purposes, or where good crops of grain or potatoes can be raised. The ground should be well prepared, thoroughly enriched and be kept mellow and free from weeds.

✓ Admiral Dewey. Larger than the Wilson; firm; good shipper and unexcelled for canning. Color beautiful dark red, and, unlike other berries, the flesh is red to the center, no white core; shape conical, much like Clarke's Seedling. Very early and abundant bearer, continuing through the season. Flavor resembles that of the wild strawberry.

✓ Clarke's Seedling. (Hood River.) This new berry originated at Hood River, Oregon, where it is planted to the exclusion of all others for long distance shipments. Larger than Wilson, very firm; beautiful dark red, and in quality unsurpassed.

✓ Gold Dollar. One of the earliest berries on the market. Fruit good, medium size, and dark red all through; rather tart; fine flavor; foliage heavy, large and spreading, which protects the bloom from the early frosts. Has a perfect bloom, and strong

stems that hold the berries up from the ground, which helps to keep color and flavor during the early rainy season. A heavy cropper for so early a berry.

✓ Hood River. See Clarke's Seedling.

✓ Jessie. On rich soil and with good culture, this is a valuable sort. Fairly productive; berries average large, of great beauty and high quality.

✓ Magoon. Has proved to be a leader in hardiness, in addition to all of its other good qualities. The Magoon alone has come through the trying hard winters without injury. It always brings top price in the Portland market, and is a remarkable yielder.

New Oregon. (Improved.) One of the finest and most satisfactory strawberries ever introduced. It always looks bright, fresh and attractive. The berry is large,

STRAWBERRIES, Continued.

firm and handsome, rich dark red extending to the center. Flavor sweet and delicious. For table use and canning it cannot be equaled. The "Oregon" ripens early and continues in bearing until late in the season.

Oregon Everbearing. A vigorous grower

and adapted to all soils and locations. On the Pacific Coast it is a constant and abundant bearer of large, handsome berries of good quality, from early in May until killed by frost.

✓ Wilson's Albany. Medium to large, dark red, hardy, vigorous and productive.

RASPBERRIES (*Rubus*)

COMING immediately after Strawberries, when there is a dearth of other fresh fruit, Raspberries are equally desirable for planting in the garden for home use and in the field for market. They are easily cultivated. Beds seldom require renewing. Their season of ripening is long. The fruit bears transportation well, and aside from its immediate consumption, it brings highly remunerative prices for drying and canning.

RED AND YELLOW.

Cuthbert. (The Queen of the Market.) Large, conical, deep, rich crimson, excellent quality. A vigorous grower, entirely hardy and immensely productive.

Golden Queen. A seedling of the Cuthbert, but the color of the fruit is a rich golden yellow. The flavor is of the highest quality, pronounced by some superior to the old Brinkle's Orange, the finest flavored of all the raspberries. Equal to the

Cuthbert in size, immensely productive. A strong grower and hardy enough even for extreme northern latitudes, having stood uninjured even when the Cuthbert suffered. The desire for a yellow raspberry of high quality, combined with vigorous growth and perfect hardiness, is believed to be fully met in this variety.

Herbert. A large early raspberry. In hardiness it easily takes first place, standing a lower temperature than any other kind. The cane is strong and vigorous, slightly prickly. Fruit bright red, somewhat oblong, larger than Cuthbert or Loudon. Flavor sweet and juicy, one of the very best for table use. Enormously productive. Season from five to six days before Cuthbert. Holds its size well to end.

Japanese. (Wineberry.) Ornamental both in fruit and plant. Canes covered with purplish red hairs; leaves dark green, silvery gray beneath. Fruit in large clusters, and each berry at first tightly enveloped by the large calyx, forming sort of bur, which is covered with purplish red hairs. These gradually open and turn back, exposing beautiful wine-colored fruit of medium size; brisk subacid, retaining flavor when cooked. Highly esteemed for canning, preserves, jellies, etc.

Loudon. The best red mid-summer berry. Its points of superiority are vigor of growth, large fruit, beautiful rich dark crimson color, good quality and productiveness and hardiness, enduring winters without protection and without injury to the very tips. It stands shipping the best of any variety, and will remain on the bushes the longest without injury.

Marlboro. The largest early red rasp-



Raspberry Plants Pruned for Planting.

RASPBERRIES, Continued.

berry, ripening only a few days after Hansell. Beautiful bright scarlet; of good but not of high quality. Hardy and productive.

✓ **Miller's.** Bright red color, which it holds after picking. Stout, healthy, vigorous growth, canes not so tall as Cuthbert, but well adapted to carrying their immense load of berries. Berries large and hold their size to the end of the season; round, bright red; cores small, do not crumble; firmest and best shipper; rich fruity flavor. Commences to ripen with the earliest.

✓ **Queen of the Market.** See Cuthbert.

Turner. (Southern.) Very desirable as an early sort for the home garden. Berries good size; bright crimson; sweet.

PURPLE CAPS.

Cardinal. This wonderful berry is a surprise in the fullness of its merits--its great growth, its extreme hardiness and the exceeding productiveness of its choice red, rich, pure flavored berries. It is not a novelty, but a variety of great value.

Columbian. An improvement on Shaffer's which it resembles, but the berry is finer; dark red, adheres to the bush much longer, and retains its shape better, both on the market and for canning. Bush a stronger grower, attaining a very large size. One of the hardiest and wonderfully prolific. Unexcelled for productiveness. and stands at the head for canning, making jam, jelly, etc.

Haymakers. A purple cap, not so dark as the Columbian or Shaffer, and much larger and firmer than either of those varieties, never crumbles and stands up well in shipping. Sample crates have been shipped to distant points with entire satisfaction. It is a berry to grow for either home use or market.

BLACK CAPS.

✓ **Cumberland.** In size the berries run from $\frac{7}{8}$ to 15-16 of an inch in diameter, and are of such handsome appearance that the fruit has often sold for ten cents per quart when other varieties were selling for from five to seven cents per quart. The quality is very similar and fully equal to Gregg. In spite of its usually large size, the fruit is possessed of great firmness and is thus well adapted for standing long shipments. The bush is healthy and vigorous, throwing up stout, stocky canes, well adapted for supporting their loads of large fruit. Midseason.

✓ **Gregg.** Of good size, fine quality; very

productive and hardy. It takes the same position among blackcaps as Cuthberts does the red sort. No one can afford to be without it.

✓ **Kansas.** Strong, vigorous grower, standing extremes of drought and cold, and bearing immense crops. Early, ripening just after the Palmer. Berries size of Gregg; of better color; jet black, almost free from bloom; firm, of best quality; presents a handsome appearance and brings highest price in market.

✓ **Mammoth Cluster.** Large in size; next to Gregg. Cane of strong growth and prolific. Berries large and of fine quality.

Munger. The fruit of Munger is black, and resembles Gregg very much. It is a better flavored berry than the Gregg, tougher in texture, and therefore a better shipper. In size it excels the Gregg by almost 25 per cent, being extra fine for canning and evaporating. In seasons when most others are dry and seedy, Munger ripens up sweet and juicy, and readily brings an advance of 50 cents per bushel over other kinds. The canes, too, resembles Gregg, are free from disease; upright in growth and extremely hardy.

✓ **Ohio.** A strong-growing, hardy sort; fruit nearly as large as the Mammoth Cluster; more productive than any other variety. Valuable for market.



GOLDEN QUEEN RASPBERRY

RASPBERRIES, Continued.

Souhegan. (Tyler.) A new variety, commended very highly as a market sort by those who have grown it. The bush is said to be productive, perfectly hardy and free from disease.

"We have raised the Souhegan for a great many years and never have had a failure of crop. They are earlier than the larger varieties, juicy, excellent flavor and of a finer texture than any of the

other varieties; resemble the wild raspberry very much in appearance and flavor. They do not winter kill nor are they subject to blight. They are not ordinarily a large berry but if they are planted on good ground and properly cultivated they will grow quite large. They grow in clusters of from five to seven berries each, turning red first and then black when ripe."

H. W. SAVAGE & SON,
Salem, Oregon

BLACKBERRIES (*Rubus, or Rubus villosus*)

THESE require the same kind of soil and treatment as raspberries, except that they should be planted in rows eight feet wide and four feet apart in rows. For self-sustaining bushes clip off the points of the growing canes as soon as the plants are about four feet high, and repeat the operation several times until they assume the form of a bush. Mulching is of great advantage to both raspberries and blackberries.

Cazadero. A blackberry similar in appearance to the wild blackberry (*Rubus Vitifolius*), and possessing the wonderfully rich, snappy flavor of that great blackberry. There is no berry its superior or equal for home canning, jellies, jam, etc. Its freedom from the big thorns so prominent on most blackberries, makes it easy to pick with the bare hands. The vines carry berries virtually from the ground to the tip of the two-year-old canes. Begins to bear in ordinary years about the first of June, several weeks earlier than the common wild blackberry.

Early Harvest. Early in time of ripening and always reliable. The canes are strong and upright in growth, branching, stout and vigorous. Hardier than Kittatinny or Lawton; an enormous bearer. The berries sweet and of the highest quality, though not so large as some varieties.

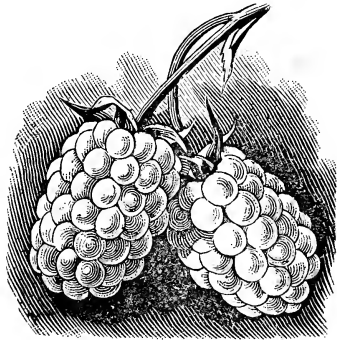
Era. Free from rust and other diseases, and wonderfully productive (exceeding even the prolific Lawton). Fruit large, excellent quality, handsome and firm, and ripens exceedingly early; fruit uniform both in size and shape.

Eldorado. Vines are vigorous and hardy, enduring the winters of the far northwest without injury. The berries are large, jet black, borne in large clusters, and ripen well together. Sweet, melting and pleasing to the taste, have no hard core, and keep eight or ten days after packing with quality unimpaired, combining nearly all the good qualities found in a blackberry.

Evergreen. Introduced from Oregon, origin unknown; beautiful cut-leaved foliage which it retains during the winter; berries large, black, sweet, rich and delicious. It continues to ripen from July to November, which makes it one of the best berries for family use; excellent trellis and arbor plant.

Himalaya Giant. Vigorous grower; canes sometimes reaching 30 or 40 feet; must be trained on trellis. Fruit large, black; abundant bearer, excellent shipper; shape more round than Kittatinny or Lawton, more juicy and smaller seed. Mr. Brodie, Superintendent Experimental Station, at Puyallup, states that it has yielded at the rate of 400 crates (9,600 quarts) per acre, and thinks it might be made to yield 600 crates per acre on proper soil.

Iceberg. The fruit is white, transparent;



THE ICEBERG BLACKBERRY.

BLACKBERRIES, Continued.

the seeds, which are usually small, can be seen in the ripe berries. The clusters are larger than those of Lawton; individual berries as large, but earlier, sweeter and more melting than Lawton. Like all blackberries the Iceberg is slightly bitter when not thoroughly ripe.

✓ **Kittatinny.** Large, black, sweet; soft when black; hardy; ripens up gradually like Lawton. One of the best except in the northern sections.

✓ **Lawton.** (New Rochelle.) The well known market variety.

✓ **Mammoth.** Supposed to be a cross between the wild blackberry of California and the Crandall's Early. Grows entirely unlike any other blackberry plant known. It is a rampant grower, trailing on the ground and under favorable conditions will grow 20 feet in a season. The canes are large, of deep red color when exposed to the sun; the foliage is large, thick, of a deep red color. Enormously productive and exceedingly early, ripening three weeks before other cultivated kinds. Fruit enormous, specimens measuring 2½ inches long; seed small, soft and abundant; core small; soft.

✓ **Mercereau.** Originated in northwestern New York, where the mercury falls from 15 to 20 degrees below zero and where it has stood in open field culture for many years without the slightest protection. As a shipper and keeper it is unsurpassed, remaining firm without bleeding in handling. The canes are of exceedingly strong upright habit, attaining upon fairly good soil a height of eight feet if permitted to grow unchecked, and are so stout as to always remain erect; foliage large, deep green and abundant. Its season is early to mid-summer, ripening with the Snyder, in advance of Kittatinny, Lawton, Taylor's Prolific or Erie, but not so early as Early Harvest or the Wilson.

✓ **Rathbun.** A strong, erect grower with strong stem,

branching freely. Hardy, having endured 20 degrees below zero and produced a good crop. Forms a neat, compact bush four to five feet high, producing its immense fruit abundantly. Fruit is sweet and luscious without hard core, of extra high flavor, jet black, small seeds, firm enough to ship and handle well.

✓ **Snyder.** Extremely hardy, productive, medium size, no hard, sour core; sweet and juicy. The leading variety where hardiness is the consideration. Ripens early.



THE HIMALAYA GIANT.

BLACKBERRY-RASPBERRY (HYBRIDS)

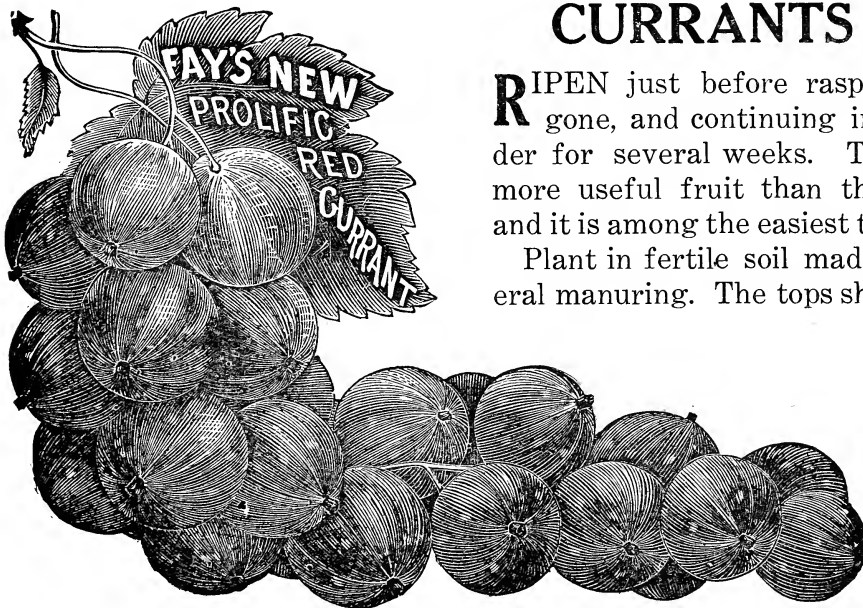
Loganberry. (Raspberry-Blackberry.) Judge J. H. Logan, of Santa Cruz, is the discoverer of this wonderful fruit. It is thought to be raised from a cross of the Aughinbaugh blackberry and the Red Antwerp raspberry. The vine grows entirely unlike the blackberry or raspberry; it trails upon the ground like a dewberry. The canes are very large, without the thorns of the blackberry, but very fine spines like those of the raspberry. Leaves resemble those of the raspberry, more than of the blackberry, are of a deep green color, coarse and thick. An exceedingly strong grower and an enormous bearer. The fruit is as large as the largest sized blackberry of the same form and shape, a dark bright red color when fully ripe, and combines the flavor of both the raspberry and the blackberry, having a mild and pleasant vinous flavor not found in any other fruit. Raw, it is excellent for the table, also stewed and for jelly and jam it is without an equal. Fruit ripens early, the bulk being gone before the blackberries or raspberries become plentiful. It is firm and a fine shipper.

✓ **The Phenomenal Berry.** The result of a cross between the Improved California dewberry and the Cuthbert raspberry. Larger than the largest berry ever before known; bright crimson raspberry color, productive as could be desired and the most delicious of all berries for canning and drying. The berries grow in clusters, each have from five to ten or more, and individual berries often measure three inches around one way by four the other and weigh one quarter ounce each.

DEWBERRIES (*Rubus Canadensis*)

✓ **Austin Improved.** Is of a glossy, shining black color; its very appearance has a tempting effect on those who see it. Its flavor is most excellent.

Lucretia. One of the low-growing, trailing blackberries; in size and quality it equals any of the tall-growing sorts. Perfectly hardy, healthy and remarkably productive, with large snowy flowers. The fruit, which ripens early, is often $1\frac{1}{2}$ inches long by 1 inch in diameter, soft; sweet and luscious throughout, with no hard core, ripens before late raspberries are gone. Should be mulched to keep berries from the ground.



CURRANTS *Ribes*

RIPEN just before raspberries are gone, and continuing in prime order for several weeks. There is no more useful fruit than the Currant, and it is among the easiest to cultivate.

Plant in fertile soil made so by liberal manuring. The tops should be cut back so only three or four branches will grow the first season. Thin out the old

wood early, opening the bush considerably. At the first appearance of currant worms they are easily destroyed by sprinkling with a can of water in which powdered white hellebore is stirred—one ounce to three gallons. Plant in rows five feet apart and three feet in row.

CURRENTS, Continued.

✓ **Black Champion.** Very productive; large bunch and berry; excellent quality; strong grower; the leading, well-tested black sort.

✓ **Black Naples.** Large; black; rich; tender and excellent for jelly and wine. Productive.

✓ **Cherry.** Large; deep red; rather acid; bunches short; plants erect, stout, vigorous and productive.

✓ **Fay's Prolific Black.** A cross between Cherry and Victoria; of large fine flavor and extremely productive.

✓ **La Versailles.** Large; red, bunch long; of great beauty; good quality. One of the finest and best. Should be in every collection. Productive.

✓ **Lee's Prolific Black.** The fruit is large and of superior quality; the bush is a vigorous grower and productive.

✓ **North Star.** The strongest grower among the red varieties; should be given plenty of room and ground kept well enriched; bunches average four inches in length and freely produced. Combines extreme hardiness, vigorous growth, extra quality and great productiveness.

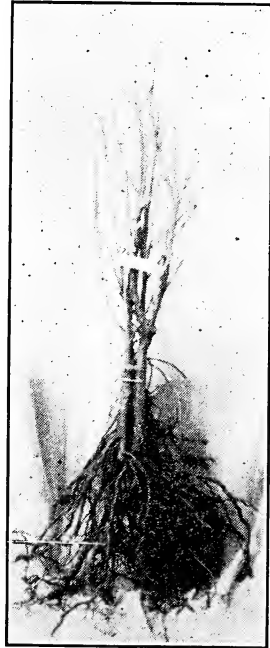
✓ **Perfection.** A cross between Fay's Prolific and White Grape. The color is a beautiful bright red; size as large or larger than the Fay, the clusters average longer. The size of the berry is well maintained to the end of the bunch. The Perfection has a long stem, from point of attachment to the bush to the first berry, making it easy to pick without crushing the fruit. Is a great bearer, resembling its parent, the White Grape in this respect, superior to the Fay, or any other large sort with which we are acquainted. On account of this great productiveness the plants should be kept well cultivated and fertilized, as should all heavy bearers. The season of ripening is about the same as that of the Cherry or Fay. Rich, mild, subacid, plenty of pulp with few seeds. Less acid and of better quality than any other currant in cultivation. In habit of growth it is intermediate between its parents Fay and White Grape, with remarkably large, healthy foliage.

✓ **Pomona.** Of good size. A beautiful, clear bright, almost transparent red; has but a few small seeds; easily picked; hangs a long time after ripe, and is one of the best to hold up in shipping or on the market. A vigorous grower, healthy and hardy; the most productive, one of the sweetest and best in quality; continues

longest in profitable bearing; retains its foliage; hangs on bush in good condition the longest; comes into bearing early; is easily and cheaply picked. Holds an unparalleled record for actual acreage yield in ordinary field culture.

✓ **Victoria.** A splendid variety, ripening two or three weeks later than the others. Bunches extremely long; berries of medium size, brilliant red.

✓ **White Grape.** Large; yellowish white, sweet, or very mild acid; excellent quality and valuable for the table. The finest of the white sorts. Distinct from the White Dutch, having a low, spreading habit and dark green foliage. Productive.

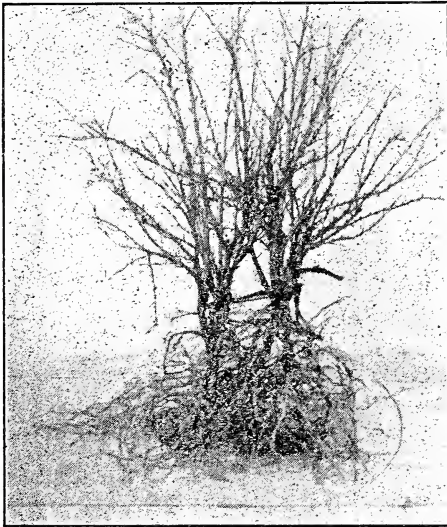


Currant bushes, cut back ready for shipment. Our plants are all heavily rooted, and will frequently bear some fruit the first year, but will with proper care always produce the second year.

The trees ordered from you last fall were received in fine condition, and they are a fine lot of trees, the best I ever saw at the price. I will speak a good word for the Oregon Nursery Company's trees and shrubs.—H. G. Hayes, Heppner, Oregon.

Gooseberries *Ribes*

GOOSEBERREIS thrive well on a variety of soils if well drained and fertile. The cultivation should be thorough early in the season. European varieties are of large size and various colored. The green fruit is sent to the early markets and is profitable. The best American gooseberries are superior to European sorts in productiveness, hardiness, quality and freedom from mildew. Mildew may be kept under control by frequently spraying with potassium sulphide. Bordeaux mixture is not recommended because it spots the fruit. After the fruit is gathered the Bordeaux mixture may be used against the leaf blight.



Gooseberries. Note the root system, the result of being carefully dug.

Crown Bob. Large; thin skin; hairy; bright red; flavor good.

Downing. Fruit larger than Houghton; roundish; light green, with distinct veins; skin smooth; flesh soft; juicy and fine flavored. Vigorous and productive.

✓ **Houghton's Seedling.** Vigorous grower, abundant bearer; fruit of medium size; pale red, sweet and juicy. Free from mildew.

✓ **Industry.** This is said to be the best English gooseberry yet introduced. It is of vigorous, upright growth, and a great cropper. The berries are of the largest size, dark red, hairy, rich and agreeable. Mildews in Willamette Valley.

✓ **Josselyn.** (Red Jacket,) An American seedling of large size; smooth, prolific and hardy; of best quality. Has been well tested over a wide extent of territory by the side of all the leading varieties, and so far the freest from mildew, both in leaf and fruit of them all. A wonderful cropper, with bright, clean, healthy foliage.

✓ **Oregon Champion.** A variety introduced from Oregon, where it originated; large, round; an immense bearer, and entirely free from mildew.

✓ **Victoria.** The best gooseberry in England, the champion bearer for the London market. Strong grower, making shoots three feet nine inches in a season. Berries larger than Crown Bob or Lancaster Lad. Pale red, of excellent flavor. A late bloomer and a sure cropper; hardy.

Asparagus.

TO make a good asparagus bed the plants may be set in the Fall or early Spring. Prepare a place of fine loamy soil, to which has been added a liberal dressing of good manure. Select 2-year or strong 1-year plants, and for a garden set in rows 18 to 20 inches apart, with plants 10 to 12 inches in the row. The roots should be spread and planted so that the crowns when covered shall be three inches below the surface of the

ground. If planted in the Fall the whole bed should be covered before Winter sets in with two to three inches of stable manure, which may be lightly forked in between the rows as soon as the ground opens in the Spring.

Conover's Colossal. This variety is much superior in size and quality to any of the old common varieties, being remarkably tender and of very fine flavor.

Columbia Mammoth White. It produces shoots which are white and remain so as long as fit for use. In addition to the marvelous advantage of its white color, it

is more robust and vigorous in habit, and grows larger shoots, and fully as many of them as the Conover's Colossal. Market-gardeners, growers for canneries and amateurs should give this great acquisition a thorough trial.

Palmetto. A very early variety. Even, regular size; excellent quality.

Rhubarb or Pie Plant.

THIS deserves to be ranked among the best early products of the garden. It affords the earliest material for fine pies and fresh table sauce, continues long in use, and is valuable for canning. Make the ground rich and deep and thus secure a more tender growth. A deep, rich soil is indispensable to secure large, heavy stalks. Plant in rows four feet apart, with the plants three feet distant. So that the crowns are about an inch below the surface. Apply annually in the Fall top dressing with stable manure and fork under in the Spring.

Australian Crimson Winter. Is fully six months earlier than any other rhubarb. The stalk is of medium size, well-grown ones average 12 to 18 inches in length and about $\frac{3}{4}$ to one inch in diameter, they are pale greenish crimson color, turning, when cooked to a light crimson and of very best quality. The plants are somewhat more inclined to blossom than the other kinds, which is easily remedied by topping. Crimson Winter starts to grow vigorously by October and continues to produce stalks continuously until after the common varieties make their first appearance. If

moist, will produce stalks abundantly at any season in warm districts.

Dodge's Prolific. A valuable new variety; seedling from the Myatt's Linnaeus. Ripens between the Victoria and Linnaeus. Large, stalks often three to four feet high; tender. The best variety that has been introduced, unless it is the Australian Crimson Winter, which stands in a class by itself.

Linnaeus. Large, early, tender and fine. The very best of the old varieties.

Victoria. Large and valuable for market. Early.

Mulberries.

THE MULBERRY is valuable as an ornamental shade tree, and the fruit is much liked in many sections. Plant in deep, rich, sandy loam. The tree requires little or no pruning, and is of easy culture.

Downing's Everbearing. The beauty of this as a lawn or a street tree is quite enough to commend it, but, in addition, it yields an abundant supply of its large refreshing berries for about three months. Henry Ward Beecher says: "I regard it as an indispensable addition to every fruit

garden; and I speak what I think when I say I would rather have one tree of Downing's Everbearing mulberries than a bed of strawberries."

New American. Equal to Downing's in all respects, and a much hardier tree.

MULBERRIES, Continued.

Vigorous grower; productive; the best variety for fruit. Ripe from middle of June to September.

Noir of Spain. A new everbearing mulberry of large size, larger than the Lawton blackberry, which it greatly resembles. Color black; flavor tart, like a blackberry, and not the insipid sweet of most of the *Morus* family, and preferred by many to a blackberry. The tree is a sure bearer, strong grower, hardy and a tendency to weep, and could almost be classed as a weeping tree, making the fruit easily gathered. A very desirable orna-

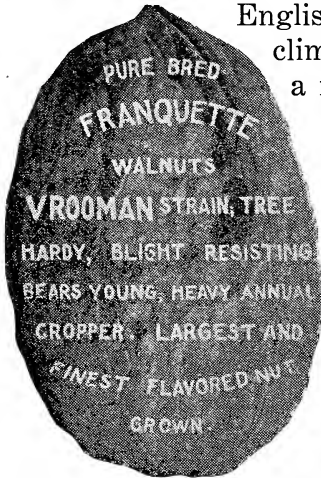
mental tree, as well as one of the hardiest and most abundant bearers. By far the most desirable of the mulberries.

✓ **Russian.** (*Morus Tatarica alba.*) A hardy, rapid-growing timber tree of great value, especially of the West. Introduced by the Mennonites. Foliage abundant and said to be very desirable in the culture of silkworms. Fruit good size and produced in great abundance.

✓ **White.** (*M. alba.*) This has both white and black-fruited trees. It is also known under the names Moretti, Italica, etc. It forms a large, spreading tree, and in addition to its fruit, its foliage makes good food for silkworms.

NUT TREES.

THE planting of nut bearing trees, particularly walnuts and filberts, has greatly increased throughout the Northwest in the past few years. Experience is showing that the hardier and late blooming varieties of English walnuts are adapted to a much wider range of climatic and soil conditions than was thought possible a few years ago.



Previous to the war the importations of walnuts, particularly from Europe, was very heavy, but whether these heavy importations will continue after the war is questionable. If not, the demand for walnuts in this country will far exceed the supply and prices will be greatly influenced as a result.

There are few farms that do not have suitable soil for growing nut trees of some kind. Considering the small amount of care nut trees take and the high price of their product, it is surprising that even a greater number are not planted.

Walnut and chestnut trees are particularly suitable for street planting as well as along farm lanes, in pastures, etc., thus proving serviceable as a shade and windbreak, as well as for their bountiful yield of profitable nuts.

We have special literature describing more fully the Vrooman Pure Strain Franquette Walnut, which will be sent free to any one desiring it.

ALMONDS: (*Prunus; Amygdalus*)

The almond requires a light, warm soil.

✓ **Drake's Seedling.** Originated with Mr. Drake, Suisun, California. Of the Languedoc class. Bears abundantly and reg-

ularly where the Languedoc is a total failure.

✓ **Hard-Shell.** A fine hardy variety, with large plump kernel. The tree is very ornamental when in bloom.

ALMONDS, Continued.

I. X. L. Large, generally single kernels; hulls easily; soft shell. Tree a strong, upright grower and bears heavily and regularly.

Jordan. Introduced from Spain about 1893. Origin of name, "Jordan," unknown. Nut long, narrow, but plump with hard, smooth shell, truncated base and somewhat bent at apex, edge sharp and knife-like. Fruit thin-fleshed and covered with a heavy pubescence; kernel nearly fills the entire cavity and is covered with a most delicate papery skin, much thinner than on any other almond, which is one of its most valuable qualities. In flavor and texture the flesh far surpasses in delicacy any other variety. The most valuable addition to the nut list that has been made for many years.

Ne Plus Ultra. Similar to above, but of different habit of growth.

Nonpareil. Large, full kernel, thin shell. Tree of weeping habit and a strong grower. One of the best varieties.

Peerless. Originated near Davisville, California. A sure and heavy bearer; shell harder than the I. X. L. and preferred by some to that excellent variety; single large kernel.

CHESTNUTS: (*Castanea*.)

Italian or Spanish. (*C. sativa* or *C. vesca*.) A highly ornamental tree of free growth, esteemed alike for its beautiful foliage and valuable timber. The nut is sweet and generally large, but as the tree being raised from seed, the fruit often varies in size and quality.

Japan Mammoth. (*C. crenata*.) A monstrous fruit larger than the European; and flavored like the American Sweet. Tree bears when quite young.

FILBERTS: (*Corylus*)

Barcelona. A magnificent variety of Spanish origin; nut large, round, first quality. Productive; trained as a low standard tree or as a bush.

Du Chilly. The largest filbert fruited on the Pacific Coast. Elongated oval, broad; often more than an inch long by three-quarters of an inch wide. Nuts uniformly large, well formed, full fleshed and sweet.

English. Is of the easiest culture, growing six to 10 feet high, entirely hardy and one of the most profitable and satisfactory nuts to grow, succeeding on almost any

soil, bearing early and abundantly. Nut nearly round, rich and of excellent flavor. Admired by all for dessert. The Kentish Cob and Red Hazel are the two leading varieties.



Filberts in orchard form.

Kentish Cob. Not very large, oblong, and somewhat compressed; shell pretty thick, of a brown color; kernel full and rich, and great bearer. The best of all the nuts.

Purple-leaved. (*C. Avellana*, var. *atropurpurea purpurea*.) A very conspicuous shrub, with large dark purple leaves. Soon after the leaves expand they are almost black, but later on fade to a light purple. Valuable for planting in groups of large shrubs to secure color effect. Distinct and fine.

Red Hazel. Medium size; shell rather thick; kernel has crimson skin, with a peculiar excellent flavor.

HICKORY:**(*Carya*, or *Hicoria* *Pecan*)**

Shellbark. (*Carya alba*.) To many, no other nut that grows, either foreign or native, is superior to this; in quality it possesses a peculiar rich nutty flavor, excelled by none. The tree is of sturdy, lofty growth. The wood, on account of its great strength and elasticity, is highly prized for making agricultural implements and is unsurpassed for fuel.

WALNUTS: (*Juglans*.)

Black American. (*Juglans nigra*.) This specie of walnut is a common and stately forest tree in the middle and western states. Makes a fine shade and ornamental tree. Produces large crops of rich and oily nuts.

Butternut, White Walnut. (*J. Cinerea*.) A native of the eastern states. The cultivation of this sort, so highly prized in the

WALNUTS, Continued.

eastern states, has been neglected here. It is a beautiful growing tree, and yields large nuts with a rough, hard shell, within which are sweet, rich, white, oily kernels, of marked, though most delicate flavor. This variety does well in the coast countries and in well-watered regions of the foothills; not suited to the dry, hot valleys.

California Black Walnut. (*J. California.*) This species of walnut is indigenous to California. The fruit is spherical, the nut is hard but smooth, and not furrowed like the eastern black walnut; the kernel is rich and oily. This walnut is of rapid growth, spreading out more than the eastern kind, and bears sooner.

PERSIAN WALNUTS. (*Juglans regia.*)

Also known as English, Maderia and French Walnuts.

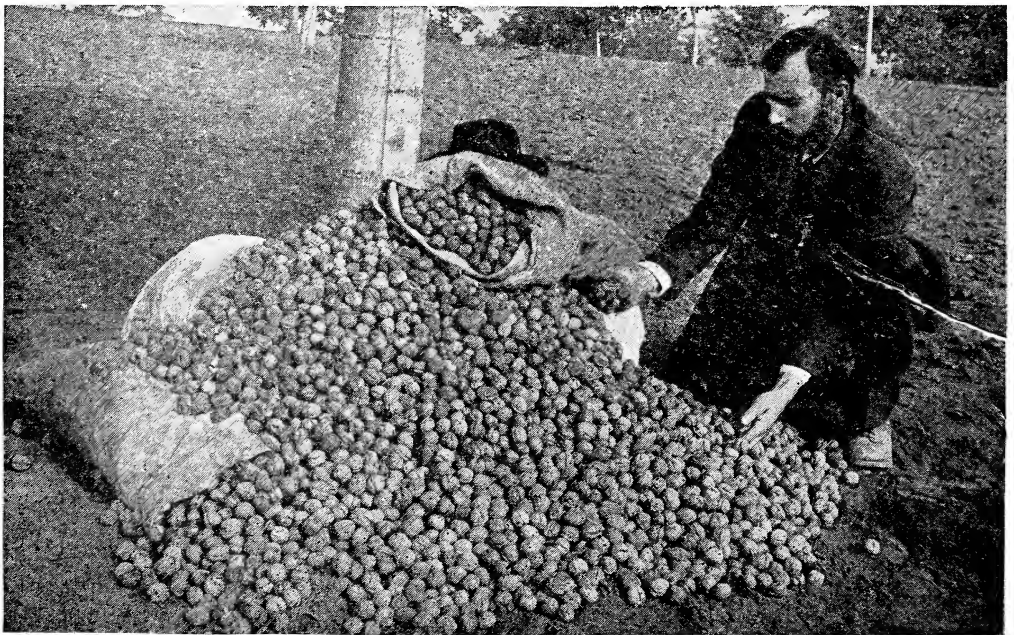
We would call special attention of the public to the following most valuable varieties of walnuts. The varieties we recommend to plant for market are tested varieties that cannot be surpassed for beauty, size of walnut, quality of meat and hardness of tree. Commercial walnut culture is concerned with *Juglans regia*, commonly known as English walnut, but in reality Persian, and sometimes known as the Ma-

deria, and French walnut, as it was imported in to England from France. It is, however, a native of Persia or Southern Asia.

FRENCH VARIETIES OF THE PERSIAN.

These we grow from nuts secured in France, excepting the Franquette (see our 16-page Walnut Book), from grafted first-generation trees, thus making ours the second-generation tree. These should not be confused, or prices compared with the common, tender varieties grown by most nurserymen as "English Walnuts," which are not hardy enough for the cold, northern sections, and are very often barren, caused by the staminate (or male) blossom or catkin being out, while the pistillate (or female) blossom is yet in a dormant state; so that, when the latter is out, there are no male catkins to fertilize the nuts, which drop off after attaining about the size of a pea. Thousands of good healthy trees can be seen both in California and Oregon of this class which are worthless, except for shade.

Grafted Walnuts. We are prepared to furnish grafted trees on American and California Black, also on English roots. Franquettes will be grafted directly from the Vrooman orchard and guaranteed to be first generation. Other French varie-



Chas. Trunk, one the leading walnut growers of the Willamette Valley, gathering the crop in his grove at Dundee, Oregon.

WALNUTS, Continued.

nuts are grown from best French types of their kind that we have been able to secure in France.

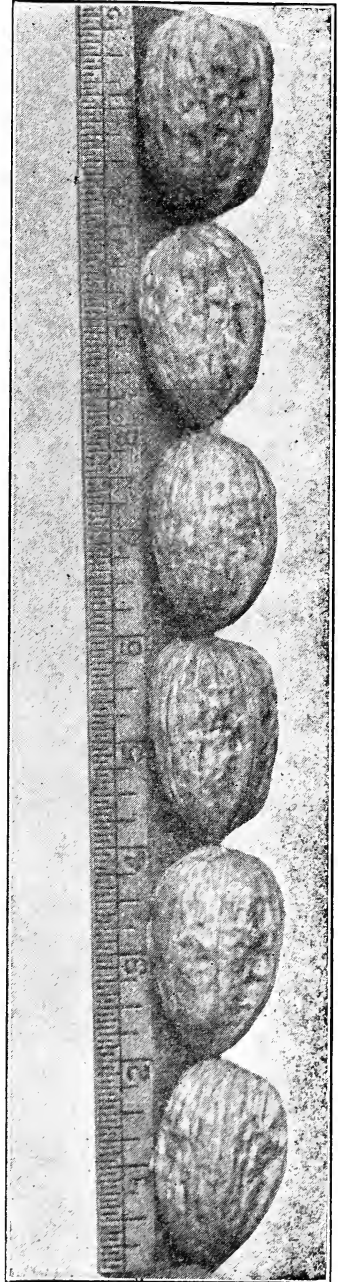
✓ **Chaberte.** An old and most valuable variety; late in budding out. The nut is well-shaped, roundish oval, and of fair size, though it is not what is called a large nut; the kernel is of extra fine quality; a good bearer. The Chaberte was originated over a century ago by a man named Chaberte, hence its name.

✓ **Vrooman Franquette.** An admirable and distinctive form of the Franquette walnut having important and individual characteristics not found in the ordinary Franquette. It is especially adapted to the northwest, and is hardy, prolific and blight resisting to a marked degree. It is also an early bearer, which further commends it. We will gladly send special descriptive literature concerning the Vrooman Franquette, on request.

Franquette. Possesses distinctive characteristics. The tree is very hardy, withstanding the cold winters of eastern France, where it originated. It is a clean, vigorous grower, has never been attacked by disease; a late bloomer, escaping late frosts; a regular and abundant bearer. The hull, or outside covering, is much thicker than in the soft-shelled varieties, and consequently the nuts do not sunburn during hot spells, when most others burn very badly. The Franquette is the ideal nut for dessert and confectionery use; it is of large, uniform size, long in form, and has a smooth, well-filled shell of medium thickness, which insures its safe shipment to market. Being long in form, it carries one to two ounces more meat per pound than the round or chunky sorts. Its pillicle is pale yellow in color; meat of exquisitely rich, oily, nutty flavor.

The Franquette is the peer of all French varieties and the heaviest bearer; unlike the Mayette, which produces a nut of fair quality, but is a decidedly shy bearer; not like the Praeparturien or other early-blooming soft-shelled varieties, which only occasionally bear a crop of nuts of mixed sizes and inferior quality. The tender, soft-shelled varieties that have been planted in Southern California must be left severely alone in the North, in order to insure an annual and successful crop. First, the tree of the soft-shelled kinds are

not hardy enough to withstand our coldest winters; and, second, because they bloom too early, they are almost sure to be caught by the frost.



Six nuts to the foot rule or 2 inches per nut. These nuts were grown on a 4-year-old tree.

WALNUTS, *Continued.*

Mayette. This is a fine dessert nut; it is quite large, well shaped, with light-colored shell; the kernel is full fleshed, sweet and nutty. It is said to be very late in budding out, enabling it to escape the disastrous effect of late frosts in the spring. This is the nut imported into the United States under the name of Grenoble, but on account of the duty of three cents per pound as the nut is a high priced nut in France, a common and cheaper grade is mixed with it, to the disgust of nut importers in New York and Chicago. The Mayette was originated by a man by the name of Mayet, over 125 years ago, the nut having ever since been a great favorite. Said to be a shy bearer.

Parisienne. This beautiful nut, also one of the finest for dessert and market, was originated in Southern France, and not in the neighborhood of Paris, as the name would imply; its beauty causes it to be called the "Parisienne," in honor of the capital of France. The nut is large, broader at the small end than the Mayette and the Franquette, and has a very pretty shape. It is as late and hardy as Mayette.

Praeparturien. Perfect soft-shelled of first quality. One of the most productive kinds, but nuts are small.

CALIFORNIA SOFT-SHELL VARIETIES

Placentia Perfection. The favorite soft-shell walnut in California. Nut is large and of high quality. The tree is strong and vigorous and begins to bear young. An improved Santa Barbara soft shell.

Santa Barbara Soft-Shell. A variety originating with Joseph Sexton, of Santa Barbara, California. Tree a vigorous grower, early and abundant bearer. The nut is large; kernel white, sweet and readily extracted; shell thin, easily broken. One of the favorites in Southern California.

JAPANESE VARIETIES

As the name indicates, they were introduced from Japan, and are sure to prove of great importance in nut-growing districts. Easily transplanted, hardy, abundant and early bearers, with little, if any, tap-root compared with other varieties, but abundantly supplied with laterals. Nuts superior to those of native species, and will probably become valuable where *J. regia* is too tender.

Cordiformis. (*J. cordiformis*). This, as the name indicates, is a heart-shaped nut. It differs from the Sieboldi in form of the nuts, which are broad, pointed, flattened, somewhat resembling the shell-bark hickory; meat large, of best quality and easily removed, as the shell is thin and parts easily at the sutures, enabling one to get the kernel out whole. The flavor is something between that of an English walnut and a Butternut. As a dessert nut it has few superiors; the meat being very sweet, is used extensively for candied nuts. We recommend it as one of the best Japanese varieties.

Sieboldi. (*J. Sieboldiana*). If it produced no nuts, it would be well worth cultivation for an ornamental tree. Grows with great vigor, surpassing all other nut trees, assuming a handsome form, needs no pruning; leaves large, charming shade of green. Nuts are borne in clusters of 12 to 15 each at tips of previous season's branches; have a smooth shell; thicker than the English, but not so thick as the Black walnuts, much resembling pecans; meat is sweet, of good quality, flavor like butternut but less oily. Commences bearing young; trees three to four years in nursery rows frequently produce nuts. Perfectly hardy, standing 21 degrees below zero without injury to bud.

IN 1910 and 1911 I planted over eighty acres of walnuts. The trees were Franquette seedlings 4 to 6 and 6 to 8 feet high. The trees were from the Oregon Nursery Company and first class in every respect. These trees have made good in most every case except where the gray digger squirrels, which are a pest in the hills, injured them. I planted the trees 47½ feet apart with fillers of apples, peaches and prunes, 19 walnuts and 51 fillers per acre. Of this latter planting I have a fine uniform stand both of walnuts and fillers. Observation and experience has taught me some things about walnut growing: (1) The best stock you can get to plant is none too good. (2) An 8-foot tree establishes itself as quickly as an 18-inch tree. (3) A Franquette seedling planted in the same row with an American Black makes a finer, thriftier looking tree at five years. (4) Good cultivation the first two years gives good results. (5) It pays to mulch your trees with barn-yard manure or straw.

J. W. JENKINS, Eugene, Oregon.



Ornamental Department.

In the Nursery.

THIS DEPARTMENT of our institution is very extensive, comprising many acres, where shade trees, evergreens, and thousands of shrubs are cultivated in large blocks. People who have never seen a large nursery little realize the extent of the industry, the amount of experienced labor employed, the cultivation practiced, or the amount of capital necessarily invested to keep the stock up to the standard of excellence maintained by us. This department is annually growing; each year we add to our stock new varieties of plants that have been carefully tested for their ornamental merits and hardiness by us, it being our plan to have everything of ornamental value in stock, and to offer nothing but that which has been carefully tested and proved.

Visitors Welcome.

A visit to the nursery is a trip that would be a pleasure to you, for truly the sight of so many plants in bloom is one that is never to be forgotten. It would pay you to come if you are thinking of purchasing plants, for, although we have done our best with descriptions and illustrations to assist you in making an intelligent selection, actually seeing the plants

and discussing their respective merits with us will be more helpful to you. If it is at all possible, we invite and urge all customers to visit the nursery. If driving, take the Orengo-Hillsboro road, which passes through the nursery; or if coming on the train, it is but a few minutes ride on the Oregon Electric from Portland. Get off at Orengo and you will be but a few steps from our office, where someone will be found who will gladly show you about the grounds.

Descriptive Arrangement.

The goods described in the Ornamental Department of this Catalogue is divided into classes, such as Deciduous Trees, Conifers, etc., all plants being arranged alphabetically according to their botanical names. This may seem too technical to some, but the other arrangements have proved unsatisfactory. Many of the trees and shrubs listed have no well-known common name, and therefore, must be listed botanically anyway, and where the plants do have common names they often differ in different localities, which results in confusion, and sometimes in the customer getting a plant other than desired. To avoid mistakes and to simplify matters, we have adopted the new arrangement. The Catalogue is carefully indexed for all common names and synonyms, as well as botanical names, so any desired item can quickly be located by referring to the complete index in the back of this Catalogue.

Nomenclature.

In accordance with the resolutions adopted by the Pacific Coast Association of Nurserymen, we have used as a standard for botanical names the 1914 edition of Bailey's Cyclopaedia of Horticulture. Where the height of a plant is given it must be remembered that it is approximately based on heights attained in their native habitat. This varies often under cultivation.

Landscape Suggestions.

Following the descriptive portion of the Ornamental Department will be found a division which we believe will be of great value to our patrons. Here we have given briefly a few of the basic principles followed by the most successful landscape architects and others in placing their home plantings. Added to this are to be found several lists containing trees and shrubs grouped according to their various unusual characteristics and uses. With this information added to that which is given in the descriptive matter we feel that we have placed in the hands of our customers something more than a mere catalogue — a book of real horticultural value, and one that will be a real pleasure to the reader.

For helpful selection hints see index for "plants listed for special purposes"

Deciduous Trees

UNDER THIS HEAD are included both upright and weeping trees which are devoid of foliage in winter. Deciduous trees are often the backbone and support of the planting. They are used more often than any other plants for background planting, and it is these trees that provide the interesting skyline effects. This group also comprises many valuable trees for specimen use because of their beautiful bloom, and value for shade, as well as the best trees for street planting.

Trees of a deciduous type often form the frame for the picture and give a home an established character which otherwise would be wanting. Nothing else can impart the quality of quietness and appearance of permanency that is lent by fine trees. The deciduous trees can be planted nearer the house than conifers because they do not hold dampness and add cheer rather than gloom. Eagerness for quick results often causes people to use quick growing trees, which unfortunately are not long lived and in the end prove unsatisfactory. Such trees have their place and are justifiable when used as screens or wind-breaks, etc., but provision should be made to replace them with more permanent, slow-growing trees. Our long list of trees will provide for all needs, and by reference to our lists for **special uses** or to the descriptive matter about any given tree, you will be able to learn whether or not the tree in question is suited to the particular purpose which you have in mind.

ACACIA.

A. decurrens. (Black Wattle.) Deciduous tree 40 to 60 feet; rapid grower with broad round head; leaves feathery green; flowers pale yellow or creamy; fragrant.

ACACIA. (False-acacia.) See Locust.

Acer: MAPLE.

Trees are of great value and highly ornamental. The Maples are symmetrical in outline, beautiful in foliage, vigorous growers, hence are a most serviceable tree for specimen, park and street planting. Added to this the foliage of nearly all assumes gorgeous autumnal tints. Being free from all diseases, and adapted to all soils, they have become universally popular.

A. argenteo-variegatum. SILVER VARIEGATED. One of the most attractive ornamental trees grown. The leaf is variegated so that at a short distance it has the appearance of being silvery-white. Tree is hardy. A specimen should be in every lawn.

A. campestre. ENGLISH CORK-BARK-

ED MAPLE. Europe. A tree of slow growing habit, of compact roundish form, with corky bark, and small handsome foliage. Hardy and very ornamental.



Variegated Silver-Leaf Maple in foreground.

Acer: MAPLE, Continued.

A. circinatum. VINE MAPLE. Pacific Coast. Will grow well up to an altitude of one thousand feet; it can be developed to a round headed tree on a single stem or allowed to develop on a number of leaders. The leaf is thin and almost circular, very uniform in size and shape. In summer they are green, with prominent veins and veinlets, and pale linings. In autumn they turn to brilliant orange and scarlet. No maple is more effective or beautiful in its full colorations. It is very popular for lawn purposes.

A. dasycarpum. SILVER or SOFT MAPLE. North America. A tree of rapid growth, large and irregular rounded form; foliage bright green above and silvery beneath; perfectly hardy and readily transplanted.

Var. *Wierii laciniatum.* WIERS' CUT-LEAVED MAPLE. North America. A variety of the above, (*A. dasycarpum*), with cut or dissected foliage. Rapid growth with shoots slender and drooping, having a habit similar that of the Cut-Leaved Birch. It makes an unusually attractive tree for lawn purposes.

A. macrophyllum. OREGON MAPLE. North America. A large, stout-limbed tree, with compact head and drooping lower branches. Leaves very large, dark green, lustrous above, paler beneath; turn orange-yellow in autumn.

A. negundo. BOX ELDER or MANITIBA MAPLE. North America. A quick growing tree with a spreading top; foliage light green, pinnated, very hardy. It is especially remarkable because of the variation of altitudes it will cheerfully endure. It will thrive in low bottom land or at an elevation of six thousand feet above the sea. It can be used well as a lawn tree, for wind breaks and for shelter breaks. It distinctly is not a street tree and should not be used as such, because it is easily broken and is of temporary habit and cannot fill the place of the better trees with harder wood.

Var. *A. n. aureum.* GOLDEN VARIEGATED. Foliage, golden yellow.

A. platanoides. NORWAY MAPLE. Europe. This is one of our best imported maples, growing rapidly and to great size. The tree is of spreading habit, symmetrical form, with wide, deep green, glossy foliage. It makes a compact growth and fits into a lawn or street parking with equal harmony, making it very desirable.

Var. *Schwedlerii.* SCHWEDLERS' NORWAY MAPLE. A variety of the above

with this difference: the young leaves are deep purple or crimson color. As summer advances the purple changes to green. Very beautiful when used as a specimen plant.

A. Pseudo-platanus. SYCAMORE MAPLE. Europe. A thrifty handsome tree, upright growth, with smooth ash-gray bark. It may be known by its thick 5-lobed, sycamore-like leaves, and long pendulous racemes of flowers or keys, which may be found at any season on good sized trees. It is chiefly set as a street tree, but care should be taken to use it only on wide avenues, as its head is rather spreading.

Var. *atropurpurea.* PURPLE-LEAVED SYCAMORE MAPLE. Leaves deep green on upper surface, purplish red beneath, producing an interesting effect when the leaves are in motion. A fine specimen tree for the lawn, or as an accent in a group.

A. rubrum. RED or SCARLET MAPLE. North America. A spreading symmetrical medium sized tree. Bark dark gray, twigs and buds are red. Flowers are deep red and appear before the leaves. In the Fall the tree suddenly becomes clothed in scarlet. There is no more desirable tree for the home grounds, for parks and roadsides, than the Red Maple. It is quick and sure to grow if the soil is moderately rich and moist. The frame of the tree is admirably adapted to resist breaking in the wind. The tree is beautiful at all ages and thru all seasons, and has no bad habits.

A. saccharinum. SUGAR or ROCK MAPLE. North America. Tree of excellent pyramidal form. Its upright habit of growth, dense shade and adaptability to different soils have rendered it one of the most extensively used. Valuable for sugar or timber, as well as ornament and shade.

JAPANESE MAPLE.

Japan is the ancestral home of the maple, more native varieties being found there than elsewhere. Two-thirds of the forest trees in the islands belong to the genus *Acer*, hence it is not surprising to observe that the artistic and skillful Japanese gardeners have developed a great number of beautiful garden varieties. These are dwarf forms, almost without exception, low and usually spreading in habit, as if to show to best advantage the wonderful form and exquisite coloring of the foliage. From the plants that the Japanese have so developed we have spared no time or expense

JAPANESE MAPLE, Continued.

in selecting the best varieties that are hardy in our country, and we are pleased to say that we can offer some very beautiful plants as a result of our efforts. We include only those we can especially recommend.

A. palmatum. GREEN JAPANESE MAPLE. This little tree is perfectly at home in our gardens. It has not been used to the extent that has been the lot of the other more striking varieties, nevertheless it has great beauty as compared with other similar plants and deserves to be used more. As do all other Japanese maples, it prefers semi-shade. The foliage is small, deeply lobed, coppery green, changing to brilliant and gorgeous tints in the Autumn.

Var. atropurpureum. DARK PURPLE-LEAVED. An exceeding fine plant, with dark purple and deeply cut foliage. Spoken of by some as the best of the Japanese maples, and it is indeed the hardiest.

Var. aureum. GOLDEN JAPAN. This type has golden yellow foliage, which varies but little thruout the Summer. Care should be exercised where it is used, for its color is very noticeable.

Var. dissectum. CUT-LEAVED PURPLE. This is an unusually interesting tree, and one of the most striking sorts to be found. Its leaves are so deeply and delicately cut that they remind one of a rare piece of old lace in form, but not in color. The shades of color vary in the new leaves from a beautiful rose color, changing to a deep and constant purple as they become older. The form of tree is dwarfed and weeping.

Var. sanguineum. BLOOD-RED JAPAN. Next to the Dark Purple this is the most popular and the best of the very best Japanese maples, it being the brightest and most constant in color of the red-leaved sorts.

A certificate of inspection, testifying to the freedom of our stock from insect pests or diseases, accompanies every shipment of trees sent out to our customers.

Alnus: ALDER.

Small water-loving trees of rapid growth. They are deserving of cultivation because of the fine glossy foliage.

A. glutinosa. BLACK ALDER. A remarkably rapid growing tree, tall and erect, with dark green, round or oblong leaves. In the early Spring they hang out their long yellow catkin fringe on the bare twigs, producing a sight that would repay a visit. This species is especially adapted to very moist conditions. It flourishes well everywhere, however.

Var. laciniata. This tree has all the merits of its parent, *A. glutinosa*, with the added distinction of having lace-like leaves giving it a dainty and attractive appearance. It is a splendid tree for ornamental purposes.

A. Oregona. OREGON or RED ALDER. Pacific Coast. Tree to 80 feet, forming a symmetrical head. It thrives in low and high altitudes equally well.

Aralia: ARALIA.

The trees of this group are all small, with large, finely divided foliage and snowy heads of white flowers. Very useful in producing subtropical effects.

A. chinensia. ANGELICA TREE. An interesting distinct tree from China and Japan; spreading habit, with immense finely divided foliage. Grows well in somewhat dry, rocky or clay soil.

A. spinosa. HERCULES CLUB. Native.



BLOOD-RED JAPANESE MAPLE.

Aralia: ARALIA—Continued.

A spreading spiny tree, with club-like branches. Its broad handsomely cut foliage and immense clusters of white flowers in July or August are very showy. The leaves turn to red and gold in Autumn. They sway in the Summer winds, giving the tree the appearance of a royal palm. The purplish berries make a fine showing in the Fall and Winter.

Aesculus: HORSE-CHESTNUT.

Trees that are excellent for lawn and parking purposes. They develop a round symmetrical head, and their spreading habit affords fine shade. The foliage is magnificent, the leaves being palmately compound with large leaflets. They are of added merit because of the beautiful spikes of flowers produced in May and June.

Ae. glabra. OHIO BUCKEYE. North America. This tree attains a height of 70 feet, with small spreading top; leaves are smooth, light green; flowers yellow; blooms in May and June.

Ae. Hippocastanum. HORSE - CHESTNUT. Asia. Although an exotic, this tree is well known in America. It is hardy and

does well in most locations, but develops best away from choking dust and smothering pavements. The tree becomes large and handsome, regular in outline, and is free from disease. In May, when in bloom, it is a superb sight, covered with a thousand pyramids of white flowers.

Var. rubicunda. RED-FLOWERED HORSE-CHESTNUT. Its habit is similar to the above, except in that it blooms a little later and has deeper green foliage. Its greatest difference is in the color of the flowers, which are red.

BALM OF GILEAD. (See Poplar.)

Betula: BIRCH.

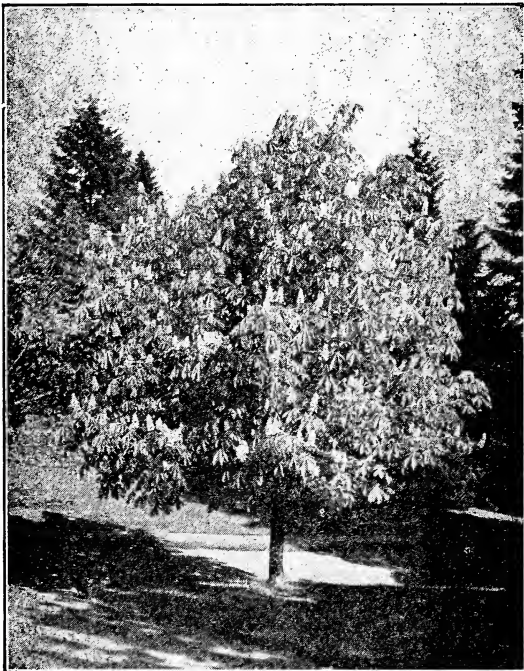
This genus embraces a very popular and highly ornamental class of trees. Their elegant, graceful habit, silvery bark, slender branches, and light airy foliage, render them general favorites. As a single specimen on the lawn, or employed as avenue trees, the upright varieties are very imposing and handsome. When planted in groups of three to five in close proximity, they are even more effective. They thrive in the forest soils and in exposed situations.

B. alba. EUROPEAN WHITE BIRCH. A graceful tree with silvery bark and slender branches. Upright and slender in form; 40 to 60 feet.

Var. pendula laciniata. CUT-LEAVED WEEPING BIRCH. For grace and beauty this variety excels the preceding. It is very popular and makes a desirable specimen tree. It is tall and slender yet of vigorous growth. With its drooping branches, silvery-white bark and delicately cut foliage, it presents a rare combination of distinct and attractive characteristics.

Var. pendula Youngii. YOUNG'S WEEPING BIRCH. Grafted on stems five to six feet high, it forms attractive pendulous heads, and its slender shoots droop gracefully to the ground.

B. populifolia. AMERICAN WHITE BIRCH. North American. A small tree 25 to 40 feet high, with slender horizontal branches and tremulous foliage. The bark is chalky white or grayish, which does not rub off; branches dark brown.



FLOWERING CHESTNUTS. Fine for parking.

Castanea: CHESTNUT.

While also grown for its edible nuts, the chestnut is one of the handsomest deciduous ornamental trees.

C. crenata. JAPAN MAMMOTH. Japan. A tree of uniform habit and excellent foliage. The fruit is very large.

C. sativa. ITALIAN or SPANISH CHESTNUT. Asia Minor. Valuable species both for ornament and fruit. It forms a fine lawn tree and produces an abundance of large fruit.

Catalpa: CATALPA.

The Catalpas flower in July when few trees bloom. Their blossoms are large, showy and fragrant. The leaves are large, heart-shaped and light green. They make fine specimen trees.

C. Bungii. UMBRELLA CATALPA. China. Grafted on stems 6 to 8 feet high, it makes a round head which needs no pruning. Very useful for formal use. Perfectly hardy and flourishes in most soils and climates. Leaves are deep green, large, glossy and heart-shaped.

C. speciosa. WESTERN CATALPA. Very desirable ornamental tree. Rapid grower, 40 to 60 feet high or more. Flowers white, dotted with yellow and purple.

Cercis: JUDAS TREE or RED BUD

C. Canadensis. AMERICAN JUDAS TREE. A dainty tree, sometimes 40 to 50 feet high, oftener much smaller, with broad, flat head of slender, smooth angular branches. It has perfect heart-shaped leaves of a pure green color, glossy surface above and grayish green beneath. The tree derives the name Red Bud from the profusion of delicate reddish purple flowers which cover it before the foliage appears.

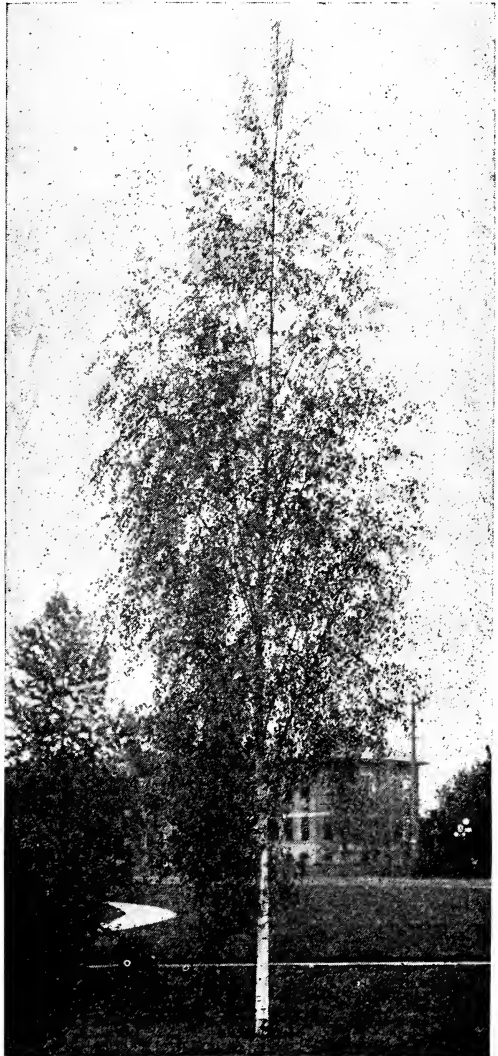
Chionanthus: FRINGE TREE.

C. Virginica. WHITE FRINGE. Native. A slender, narrow headed tree, 20 to 30 feet high, or less. Long glossy leaves of dark green, yellow in early autumn. Blooms in May and June, white in pendulous clusters, petals fringe-like. The flowers are pure white as indicated by the Greek name, which means snow flower.

Cornus: DOGWOOD.

C. Nuttallii. NATIVE WESTERN TREE DOGWOOD. A tree that if once seen in bloom will never be forgotten. In May and

June they are in full splendor with bloom, then again in the autumn they are even more glorious if possible, coloring to rich red and scarlet. The flowers, which are very large, are at first creamy-yellow, turning to pure white as they increase in size, and they are produced in great profusion. The tree is much taller than its Eastern relative, sometimes it reaches 100 feet in height. A more fitting tree for lawn purposes on the Pacific Coast does not exist and it is rapidly gaining in popularity.



CUT-LEAF BIRCH, one of the most graceful and ornamental trees grown. Should be planted in the open where its gracefulness can be seen and enjoyed.

Crataegus: THORN.

C. The Thorns justly deserve to be classed among the most beautiful flowering trees. They are generally dense, low growers and well adapted to the city lot. The foliage is varied and attractive, the flowers are showy and often highly perfumed. The fruit is very effective and ornamental in autumn. One hundred and twenty-eight species are listed as native to the United States, hence varieties can be found for any soil.

C. *coccinea* fl. pl. **DOUBLE SCARLET THORN.** Flowers deep crimson, with scarlet shade, double. The foliage is a rich green.

C. *alba* fl. pl. **DOUBLE WHITE THORN.** Has small double white flowers. Highly ornamental variety, on account of both foliage and flowers.

C. *oxyacantha* c. fl. pl. **Paulii. PAUL'S DOUBLE SCARLET THORN** An improved variety from the celebrated English plant. Flowers are bright carmine red. Superior to any of its color.



AMERICAN DOGWOOD, unusually attractive when in bloom. Should be in every yard.

ELAEGNUS (Russian Olive.)

E. *Angustifolia.* Small deciduous tree; leaves very narrow and silvery; fragrant bloom, yellow in color; the fruit and smaller branches covered with silvery scales; the old wood dark glossy brown; very desirable tree for dry regions.

Fagus: BEECH.

The Beeches are noted for their rich glossy foliage and elegant habit. They are noble and imposing, yet graceful in appearance. The Purple-Leaved and Weeping are remarkable trees, developing into magnificent specimens as they acquire age. They are all difficult to transplant.

F. *sylvatica.* **EUROPEAN BEECH.** Europe. It grows to a noble size in America and makes an ideal shade tree.

Var. *pendula.* **WEEPING BEECH.** A remarkably vigorous picturesque tree of large size. Its mode of growth is extremely curious. The trunk is generally straight, with the branches curled in a tortuous fashion. When covered with luxuriant foliage, it is wonderful in its grace and beauty.

Var. *purpurea.* **PURPLE-LEAVED.** An elegant vigorous tree, growing 45 to 50 feet high. Foliage deep purple, changing to crimson.

Var. *purpurea Riversii.* **RIVER'S BLOOD-LEAVED BEECH.** This is the richest of all the purple-leaved trees. Compact, symmetrical habit, crimson foliage early in the season, which later changes to a dark purple.

Fraxinus: ASH.

F. *excelsior.* **EUROPEAN ASH.** A lofty tree, rapid grower, with a spreading symmetrical head and gray bark. The leaves are pinnate and very beautiful.

Ginkgo: MAIDENHAIR TREE.

G. *biloba.* **MAIDENHAIR TREE.** Japan. This is a remarkable little tree in that it combines the characteristics of the conifer and deciduous tree. The leaves are fan-shaped, leathery, bright green in the summer and gold in autumn. When young, the tree is tapering, very trim and pretty, widening to a pyramidal form with years. The tree makes a rapid growth which is very uniform. It is a rare tree and always prized highly in any collection.

Gleditscha: LOCUST.

G. triacanthos. HONEY LOCUST. Native. A large handsome tree, with rigid, horizontal branches, with powerful spines and delicate foliage. It makes a rapid growth. Used as an ornamental shade tree, and also good as a hedge. It has the feature of being interesting in winter because its brown bark gives it an "alive appearance." The foliage mass is wonderfully light and graceful. New leaves with a silvery sheen upon them are constantly appearing. The color is a clear, intense emerald. The fruit pods add interest with their many shades of changeable red and green velvet.

Gymnocladus: COFFEE TREE.

G. Canadensis. KENTUCKY COFFEE TREE. A native. A good ornamental tree, small size, rapid, upright growth, with rough bark, stiff blunt shoots and feathery, bluish green foliage.

Juglans: WALNUT.

J. cinerea. BUTTERNUT. Native. A short trunk medium sized tree, with a broad head. The limbs are horizontal rather than upright, and the head is wider than high. The leaves are compound, large and beautiful. Should be planted in a more or less sheltered position, because the wind breaks the limbs.

J. nigra. BLACK WALNUT. Native. A majestic spreading tree, with a tall trunk. Bark, very dark, and deeply furrowed. Foliage beautiful, each leaf is composed of many leaflets. The tree is large and needs room to develop, is best suited to parks or expansive lawns.

Koelreuteria: VARNISH TREE.

K. paniculata. VARNISH TREE. China. A hardy small round-headed tree, particularly valuable for its brilliant, golden blossoms, which are produced in July when few other trees are in bloom. It is very useful for small gardens, and grows well in any ordinary garden soil.

Laburnum: GOLDEN CHAIN.

L. vulgaris. GOLDEN CHAIN. The Laburnum is one of the most beautiful of all our Spring flowering trees, being in every way distinct from anything else in bloom at that time. The long pendulous racemes of yellow blossoms suggested the name "Golden Chain." The Laburnum will grow in almost any soil and is a delightful town or city tree.

Larix: LARCH.

L. Larix Europaea. EUROPEAN LARCH. A native of the Alps and south of Europe. The Larix is a conifer with the distinction of being deciduous. In the spring when the young leaves are pushed out, few trees are more charming and fragrant. It grows rapidly into a fine pyramidal tree.

Liquidambar: SWEET GUM.

L. styraciflua. SWEET GUM or BILSTED. Native. This tree bears a great resemblance to some of the maples. Its most prominent characteristics is the brilliant red or purplish red tints assumed by the leaves in autumn, and retained for sometime before they drop. It is worth planting for its autumn coloring alone. It is of medium size and moderate growth.

Liriodendron: TULIP TREE.

L. tulipifera. TULIP TREE or WHITE-WOOD. Native. This is truly a noble and magnificent tree. It is of a tall, pyramidal habit. The three lobed fiddle-shaped leaves are remarkable for the abrupt termination of the central one, so distinct from those of any other tree. The blossoms are tulip-shaped and appear in June. The leaves turn in the autumn to rich yellowish shades.

Maclura: OSAGE ORANGE.

M. pomifera. OSAGE ORANGE. America. This is a medium-sized spiny tree with spreading branches, forming an open irregular head, with rather large bright green leaves changing to clear yellow in the fall. The fruit is orange-like, but inedible. Not particular as to soil and is used principally as a hedge.

MAGNOLIA.

A magnificent group of flowering trees and shrubs, the majority blooming during the spring months. Their superior stateliness of form and splendor of growth the size and richness of their foliage and lavish yield of fragrant flowers, all tend to place them in the foremost rank of ornamentals. As a class, they prefer a good deep open soil of a loamy nature that is not dried up at any time. They are not robust-rooting plants, forming but few fibres, hence great care should be exercised upon transplanting.

M. acuminata. CUCUMBER TREE. A

MAGNOLIA—Continued.

native. Quite a tree, with wide spreading pyramidal head, clothed with bright glossy ovate leaves about 6 inches long. The flowers are borne in June after the foliage has completely developed. They are about 4 inches in diameter and greenish yellow in color, tinted with bluish purple.

M. tripetala. UMBRELLA TREE. This is a large tree, with leaves nearly 18 inches long, and arranged around the points of the shoots regularly, hence its name. The large creamy white flowers are borne in May and June, after the expansion of the leaves.

CHINESE and JAPANESE MAGNOLIAS.

The Chinese and Japanese specimens are not so large growing as the native plants, their maximum height being 20 to 30 feet. They can be trimmed to a single stem form, or allowed to grow bushy as shrubs.

M. conspicua. CHINESE WHITE MAGNOLIA. China. A bushy tree, with large pure white sweet-scented blossoms borne in great profusion generally in April, on the still leafless branches, and therefore very conspicuous. The plant is also known as the Yulan, is occasionally called the Water Lily Tree from the great resemblance that the pure white flowers, with their massive petals, bear to those of the White Water-Lily. When in full bloom the plant seems wreathed with snow and remains beautiful for some time. It is well to plant the early flowering Magnolias in some fairly well sheltered spot, where the



Magnolia Conspicua, a desirable tree for lawn planting in mild climates.

big flowers are thrown into high relief by a dark-tone background.

M. purpurea (obovata). It forms a spread-bush 6 feet in height, with flowers purple without any light within; they flower soon after the above.

M. boulangeana. A hybrid between *M. conspicua* and *M. purpurea*. It is the most popular in the group, being of a vigorous growth and blooming profusely, even when quite small. The flowers are large, pink without and white within. Blooms latter part of April.

M. stellata (Halleana). HALL'S JAPAN. Five to six feet. This is a charming little species, the first of all to flower. It is a compact freely branched shrub, and a rapid grower. The flowers are star shaped, white, tinted with pink in the bud, semi-double, and quite fragrant.

Morus: MULBERRY.

M. Tatarica pendula. TEAS' WEEPING RUSSIAN. A weeping variety of the now well-known Russian Mulberry. One of the most graceful and hardy weeping trees in existence. Wholly unlike anything heretofore introduced. Forms a perfect umbrella-shaped head, with long, slender, willow branches drooping to the ground. All who have seen it agree that in light, airy gracefulness, delicacy of form and motion, it is without a rival. It has beautiful foliage; is wonderfully vigorous and healthy; is one of the hardiest, enduring the cold of the North and the heat of the South; safe and easy to transplant. Admirably adapted for ornamenting small or large grounds, or for cemetery planting. A very happy use of it lately seen was in the form of a canopy or tent, making a most pleasant play house for children, who set their table and enjoyed themselves in the cool shade of its foliage.

Platanus: PLANE TREE or SCYAMORE.

P. Large ornamental deciduous trees with smooth limbs from which the whitish bark peels in irregular flakes.

P. occidentalis. SYCAMORE or BUTTONWOOD. Large stately tree of excellent habit. Very good for lawn purposes. The leaves are broad and lobed like a maple's, and the seed balls are striking characteristics.

P. orientalis. ORIENTAL PLANE. A highly ornamental tree under any conditions, and very much so for city use. It is a lofty wide spreading tree, and is par-

Platanus: **PLANE TREE** or **SYCAMORE**—Continued.

particularly valuable because of its handsome foliage. It is free from insect attacks and not as subject to disease as our native tree.

Populus: POPLAR.

As quick growing trees for damp places the Poplars are generally planted and some of them are very handsome. Although certain varieties are used for and serve a good ornamental purpose, they are as a group more generally planted as wind-breaks and to hold the banks of streams. Certain varieties are very good trees for Idaho, Montana, Eastern Oregon, Eastern Washington, and similar regions.

P. alba. **WHITE** or **SILVER POPLAR**. Europe. This tree forms a round head; makes a rapid growth and is very good for quick results. The silvery velvet of the leaf linings is in sharp contrast to the dark, shining upper surfaces of the leaves. When the leaves are seen quivering in the breeze they give the tree a peculiar white appearance.

P. var. Bolleana. **BOLLES POPLAR**. Very compact upright grower, resembling

the Lombardy Poplar, with leaves glossy green above and white beneath. This and the Silver Poplar have two bad habits: their roots send up suckers, and their leaves accumulate and hold dust and coal soot until they become quite filthy. They should be planted to the back ground, where the suckers can be controlled without damage to the lawn and where distance lends enchantment to the view of its foliage.

P. Carolinensis. **CAROLINA POPLAR**. Native. Strictly a pyramidal tree of vigorous and surprisingly rapid growth. For city use the varnish on the leaves protects them from dust and smoke. They should be planted, however, with the expectation of being replaced with the slower growing more desirable trees. The new growth should be well cut back for the first few seasons.

P. nigra Italica. **LOMBARDY POPLAR**. Europe. This tree is too well known to demand description. It makes a rapid upward growth, spire-like form. As a shade tree it is of little use, but is used with great success as an accent in planting where the branching of other trees are horizontal. They add interest to the sky-line and are very fitting in their place. The twinkling of the green leaves gives an added interest.

P. balsamifera. A large tree with a stout trunk, rapid luxuriant growth, large, shin-



An Avenue of Poplars.

Populus: POPLAR, Continued.

ing dark green leaves that are pale beneath. The fragrant wax that coats the young leaves gives the tree its name. The tree is handsome in winter and summer. It has all the good points of the Carolina Poplar, and none of the bad.

Prunus: PLUM.

P. Pissardi. PURPLE-LEAF PLUM. Persia. Small tree that is fine for ornamental purposes. The leaves when young are lustrous crimson, changing to dark purple. They retain the purple tint until they drop in the autumn. When in bloom the contrast between the snowy white flowers and the dark purple foliage is very beautiful. The fruit is also very attractive, being a wine-colored purple and produced in great quantities. The tree is hardy and makes a rapid growth.

P. triloba. DOUBLE-FLOWERED PLUM. China and Japan. An excellent small tree or bush that flowers usually in April. The flowers which are double, are about 1½ inches in diameter and of a beautiful rose-tint when first opened, but with age they turn white. The flowers are thickly set on the slender branches, making a beautiful display.

Pyrus: FLOWERING CRAB.

P. ioensis. BETCHEL'S FLOWERING CRAB. Native. This is usually called *P. floribunda* and there is some confusion about it, but, whatever its name, no dwarf flowering tree is more precious. It is a tree of great beauty, when its shoots are wreathed with flowers in May. Its growth is slender, and the flowers are crimson in the bud, but expand almost white, and one has the contrast of the two, which makes a rich effect. Added to this, it is of merit because of its pleasing fragrance. As for culture, it succeeds well in any soil not overly wet, and it is very hardy.

Quercus: OAK.

The *Quercus* is a very numerous family, embracing the Oaks, representatives of which are to be found in all the temperate regions of the globe. All but a few species are large and picturesque, and are important features of landscapes where the grounds are large enough to warrant their presence. It should be remembered that as they grow older, they need an abundance of room for good development. The acorn

distinguishes the oak from all other trees.

Q. alba. WHITE OAK. Native. Large tree which develops a broad dome in open areas. It is one of the best of our American varieties, deriving its name from the whitish character of its young bark. The lobed leaves are pale green above and glaucous beneath, turning reddish purple before falling. The acorns are edible. The tree-lover as a rule considers this the King of the Forest, and the noblest tree of its race; justly so, for as one gazes upon it, they cannot but feel the smouldering fires of ancestral tree-worship flame once more in their breasts.

Q. coccinea. SCARLET OAK. Native. This is a favorite ornamental oak because of its excellent habit, comparatively rapid growth and hardiness, but more especially because of its truly wonderfully fall coloration. There is no tree that equals the splendor of the Scarlet Oak's autumn foliage. The tree blazes like a torch against the duller reds and browns of other trees and often keeps its brilliancy until after snowfall. It is impossible to convey in words how wonderfully effective this tree is in the landscape during the late season. In the summer the large, deep-lobed leaves are glossy green, blending in complete harmony with any other foliage.

Q. palustris. PIN OAK. Native. This tree has a broad pyramidal form, with slender branches stretched out horizontally as far as they can reach. The spur-like twigs that cluster on the branches are the "pins" that characterize this species. When young, the tree is very graceful. When in foliage, the tree is a glistening pyramid of leaves, that dance as the breeze plays among them; for the leaf stems and twigs are slender and flexible, and the blades, catching the wind, keep the tree top in a continual flutter. Added to this, the flush on its open leaves, the red flame that lights the tree in autumn, all combine to make an ornamental tree with many valuable virtues. It is hardy and easy to transplant and makes an excellent street tree.

Q. rubra. RED OAK. Native. Quick growing, handsome shade and ornamental tree, easily transplanted and free from insect pests. This is a highly prized tree in Europe, and is used extensively in their ornamental plantings. The leaves are large and bright green, turning purplish scarlet in the autumn. The tree is very stately in form. It makes the most rapid growth in the Oak family. This species is also good for street ornamentation.

Robinia: LOCUST.

R. pseudacacia. BLACK LOCUST—FALSE ACACIA. Native. Here is a tree deserving of special mention because of its unusual heat and drought resisting qualities, together with its ornamental merits. It makes a tall slender tree 40 to 80 feet high, with erect branches forming an oblong head making it particularly well adapted to street use. It is usually planted as a shade and an ornamental tree, however, the wood is exceptionally durable and strong and is used extensively in ship building for ship pins, for mill cogs, posts, wagon hubs and spokes, and is excellent fuel. The locust is a beautiful tree, and being a rapid grower, becomes sturdy and spreading in a few years. It is very effective in the spring when it unfolds its delicate leaf spray which turns dark green as the masses of white fragrant flowers appear. From a little distance the green leaves are obscured by the mass of bloom, which is heavy with perfume and alive with bees. From the bee-man's view point, the locust is a very practical tree to plant. The tree is of special value for those people living in the rather arid regions because of its interesting habit of folding its leaflets and drooping its leaves on the approach of evening, a habit which avoids the excessive loss of moisture due to heat. Their preferred habitat is gravelly soil in which they thrive and retain their freshness thruout the drought. The flowers bloom in May and June and hang in great drooping racemes, white, fragrant and pea-like and of good size.

R. hispida. ROSE ACACIA. Small tree with spreading branches, and the young shoots clothed with hairs. The flowers are produced in great drooping clusters, pea-shaped and rosy-pink in June and July. The foliage is delicate in form and light green in color. It is a charming little tree, and well adapted for specimen use on the lawn or in the shrubbery border.

Salix: WILLOW.

The Willows are chiefly quick-growing water loving trees and shrubs with slender, supple twigs. The flowers are produced in catkins. They are distributed from the equator to the Arctic Circle, from the sea-level to the mountain tops. Most of them prefer moist soil; a few dry. Their most fitting use as ornamentals is on the banks of streams and pools, here they are more at home than any other tree and the

effect produced is very pleasing. They are of great practical value for retaining banks that are apt to wash away, or embankments that may slide. They are of good value in new countries when used for quick growing shelter belts.

S. babylonica. BABYLONIAN, or COMMON WEeping WILLOW. This tree rises to a height of 30 to 60 feet; the branches stretch out in curves to a great width and then fall in lengths. This tree truly deserves the name "weeping" as this peculiarity of growth constitutes a trait characteristic of the species and not artificially maintained by deviation from the natural mode of growth. The branches droop naturally, without the clumsiness or appearance of being forcibly curved downward. Care should be exercised not to use the tree to excess in the landscape, as one large weeping willow or group of such trees on the margin of water, gives much better effect than a number scattered about promiscuously. The effect of the weeping willow is that of a fountain of water; the branches rise lightly into the air, to fall again gracefully of themselves.

S. caprea pendula. KILMARNOCK WILLOW. A distinct variety, having reddish shoots and large, glossy foliage; grafted at a proper height, about 5 feet from the ground, it makes a very desirable lawn tree, having a perfect umbrella-shaped head, with the branches drooping gracefully to the ground. It is well suited for planting in cemetery lots or other small enclosures. Extensively planted, and should be in every collection of ornamental shrubbery. Hardy and vigorous growth.

S. purpurea pendula. AMERICAN WEeping. An American dwarf slender-branched species; grafted 5 to 6 feet high it makes one of the most ornamental of small weeping trees; more hardy than the Babylonica.

S. vitellina. GOLDEN WILLOW. This is valued very much for its bright, golden-barked twigs in the winter season, for the effect of which it is much planted. It is especially showy when planted in large groups. To produce the best results, it should be severely trimmed every winter to induce a quantity of strong young growths.

Sorbus: MOUNTAIN ASH.

The handsome foliage and showy clusters of flowers and fruits make this a favorite genus of trees for ornamental planting. Their contentment with poor soil and exposed situations adds to their value.

Sorbus: MOUNTAIN ASH, Continued.

Their foliage is rich green and always attractive. In the spring the clusters of white flowers impart quite an additional feature, and a far more brilliant one is furnished in the autumn by the bright scarlet berries. In the late autumn the berries are matched by the ruddy foliage. The birds often depend on the berries for food in snowy winters. On a lawn a mountain ash is a neat and decorative tree during any season.

S. Americana. AMERICAN MOUNTAIN ASH. Small tree attaining 30 feet, with slender spreading branches, forming a pyramidal head; fruit small, scarlet, berry-like; it ripens in September, and hangs on all winter. The flowers are creamy white in large flat topped clusters and appear in May and June. They prefer rich moist soil.

S. aucuparia. EUROPEAN MOUNTAIN ASH. This tree is more often found in our lawns than the native variety. It is trim, round-headed and very conventional. It may be known at any season by the woolly fuz that whitens buds, twigs and linings of leaves. The leaflets are small and dark green. The flowers and fruits are larger than those of the native species and more showy.

S. quercifolia. OAK LEAVED. A very distinct and desirable tree, with compact, pyramidal head and dark lobed leaves, downy underneath; producing the same flowers and berries as the preceding. Hardy and desirable for planting on lawns or in dooryards. When fully grown, 20 to 30 feet.

Tilia: LINDEN.

The Lindens are all beautiful trees. They are close, dense headed, rapid in growth and are excellent for shade. They are also well adapted to street, park and lawn planting. They do well in nearly all situations except in alkali soil, where they are sure to fail. The flowers of all are fragrant.

T. Americana. AMERICAN LINDEN, or BASSWOOD. Native. Tall, stately, with a spreading round top, 75 to 125 feet high when old. The leaves which are obliquely heart-shaped, are rather light green, the flowers are small and clustered, very fragrant. It is used extensively for bees.

T. argentea. WHITE or SILVER-LEAVED. A handsome, vigorous growing tree; pyramidal form; large leaves, whitish on the under side, and having a

a beautiful appearance when ruffled by the wind, its white color making it conspicuous among other trees. Blossoms very fragrant.

T. Europaea. EUROPEAN LINDEN. A very fine pyramidal tree, with large leaves and fragrant flowers. A valuable tree for street and lawn planting, developing into beautiful specimens.

Ulmus: ELM.

The Elms are so well known that it is unnecessary to refer to their great beauty and value for ornamental planting. For a street tree the American Elm is second to none.

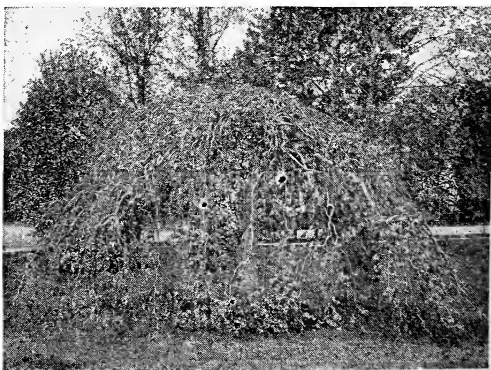
U. Americana. AMERICAN ELM. A tall, graceful, stately wide-spreading tree, 75 to 125 feet high, usually of symmetrical vase shape. When planted along avenues these trees in time form a perfect Gothic arch over the roadway, making a sight splendid to behold.

U. campestris. ENGLISH ELM. This tree is strikingly different from the American. Dignity is characteristic of each. Each bears a burden of leaves, but the English is stocky while the American is airily graceful; the former compact, the latter loose in form.

U. racemosa. CORK BARK ELM. The bark is corky, the tree an upright, fast grower.

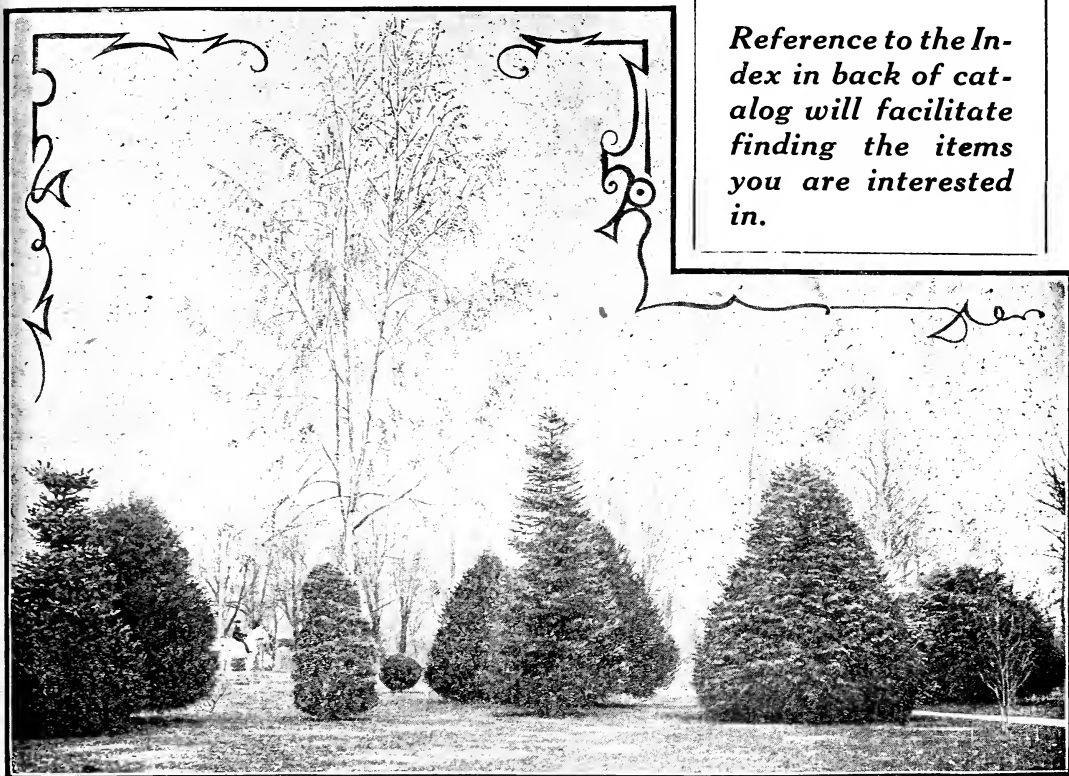
U. purpurea. PURPLE LEAVED. Erect in growth, with slender branches, densely clothed with dark, purplish green foliage.

U. Camperdownii pendula. CAMPERDOWN ELM. A vigorous grower, and forms one of the most picturesque drooping trees. Leaves large, dark green and glossy, and cover the trees with a luxuriant mass of verdure; very desirable.



The Camperdown Elm.

Reference to the Index in back of catalog will facilitate finding the items you are interested in.



Coniferae: EVERGREEN TREES.

THE DISTINGUISHING FEATURE of this great group of trees is the cone-bearing habit. The ornamental value of the conifers consists in their evergreen habit, for all except the Larch, Golden Larch, Bald Cypress and Ginkgo retain their leaves throughout the Winter. In an ornamental way they are highly prized because of their interesting characteristics, which are, in the main: their somber foliage of gray to dark green shades; their symmetrical, conical form during the early period of their life, with a branch system persisting at the base for a long time; in the dignity of the straight, cylindrical trunk and high towering, variously shaped crown in later life and in the picturesque and rugged beauty of the old and time-worn trees. Although they lack the interesting seasonal changes of the deciduous trees, the persistence of their foliage makes them especially effective for Winter scenery and for shelter. However, special care is necessary in the location and proper use of this family.

On account of their shape, mode of growth, and relative inability to repair damage, they are not fit for street trees. Their best use is as single specimens or in small groups or as screens. Most of them being somber and having a tendency to promote dampness, they should not be placed near houses. An over planting of them produces a gloomy appearance as well.

Conifera: EVERGREEN TREES.

Abies: FIR.

Trees of pyramidal habit with wide-spreading horizontal limbs bearing thick foliage masses. Generally speaking they require cool positions for best success. They are usually of slow but persistent growth and highly shade enduring. They do best in a deep rather moist soil. Few insects attack them.

A. concolor. COLORADO SILVER or WHITE FIR. A narrow pyramidal tree of graceful habit. It is known as a silver fir, from the pale foliage and gray bark of its branches. In a way its appearance at a distance is similar to that of the Colorado Blue Spruce. It is very ornamental with its long soft, gray-green needles and splendid form. It is of rapid growth and without any troubles. As an accent in an evergreen planting it is unsurpassed.

A. grandis. GRAND FIR. Native of the Pacific Coast. This is a stately tree with slender trunk, limbs sweeping outward in graceful curves. The needles are thin, flexible, deeply grooved; apple green above and silvery lined. The contrast of the dark green with the silvery white in the foliage makes the tree cheerful in the extreme.

A. Douglasii. (Common COMMERCIAL FIR.) See *Pseudotsuga taxifolia*.

ARAUCARIA.

A. imbricata. MONKEY PUZZLE-CHILI PINE. A tree of very unusual appearance and one that attracts everyone's attention. Its habit of growth is open, trunk is straight, the branches are coarse, blunt in regular whorls, the leaves are broad, short and triangular, very sharp, overlapping like shingles, closely surrounding the trunk and branches. There is no other tree similar to it.

Cedrus: CEDAR.

The true cedars are large trees from Africa, Asia Minor and India and hence are well suited to the Pacific Coast and southern climates. Very distinct and picturesque in form, with a stately, wide-spreading habit and rigid foliage in fascicles, cones erect. They need well drained soil and are subject to no special troubles. To be used mainly for specimen trees.

C. Atlantica. SILVER CEDAR, MT. ATLAS CEDAR. North Africa. 120 feet. The hardest. Large pyramidal form, rather open and upright.

Var. glauca. BLUE MT. ATLAS CEDAR. Similar to the above in form, with intensely glaucous or silvery needles.

C. deodora. DEODOR, INDIAN or HIMALAYAN CEDAR. From the Himalaya Mts.; pyramidal form, with somewhat pendulous branch tips with bluish green, very long (2 inches) rigid needles. It makes a rapid growth and is light, airy and graceful as a lawn tree.

Chamaecyparis: CEDAR.

A genus of medium-sized to tall, highly ornamental trees, which are characterized by the broad, flattened sprays of foliage and pyramidal habit, with erect branches. The foliage is variable and changes with age; the young form, which largely gives rise to many nursery forms (*Retinispora*), is linear and sometimes sharp pointed. These are especially fine in masses. Moist sandy soil is generally preferable; they are somewhat shade enduring.

Chamaecyparis Lawsoniana. LAWSON CYPRESS. PORT ORFORD CEDAR. Oregon and California. This is a well known species, having excellent graceful foliage and pendulous branch tips — an arborvitae foliage with Hemlock habit. It is extremely variable, giving rise to over sixty forms, with various color and habit, from which we have selected the three best types for propagation.

Var. alumi. A variety having a dense growth and columnar habit. Foliage very glaucous, with a decidedly bluish metallic hue.

Var. erecta viridis. A remarkably handsome variety differing in its color and compact growth. The branchlets all stand vertically and close together. The foliage is a clear rich green with no glaucous markings. It develops into a beautiful symmetrical specimen for individual planting.

RETINISPORA.

These Japanese plants, juvenile forms of *Chamaecyparis*, widely cultivated in many horticultural forms, were assigned to a separate genus by certain authorities, others consider them as *Chamaecyparis* or *Thuja*. These evergreens in youth have different foliage from that of the adult trees—a sufficient reason for confusion. Even though the botanical affinities have established them as *Chamaecyparis*, the trade name will probably remain *Retinispora*, and people will plant these handsome evergreens in increasing numbers as such.

RETINISPORA, Continued.

C. pisifera, (R. *Pisifera*.) SOWARA CYPRESS. A hardy dwarf tree with fine feathery green pendulous foliage.

Var. plumosa, (R. *Plumosa*.) PLUMED CYPRESS. Of dense conical habit, branches almost erect, with slender branchlets of feathery appearance, leaves pointed, light green.

Var. plumosa aurea. GOLDEN PLUMED RETINISPORA. Similar to the above except the young growth is a beautiful golden yellow, making it very showy.

Var. squarrosa. RETINISPORA SQUARROSA. A densely branched, bushy tree or shrub, with spreading feathery branchlets; leaves linear, glaucous above, silvery below. A very distinct and beautiful variety.

Var. filifera. R. FILIFERA. Branches elongated and slender, thread-like, gracefully pendulous with distinct branchlets and leaves. A very decorative form.

Var. filifera aurea. Similar to the above except it has the added distinction of having golden tipped foliage.

C. obtusa (R. *obtusa*.) HINOKA CYPRESS. Has horizontal branches; branchlets frond-like arranged, flattened pendulous; leaves are bright green shining above with whitish lines beneath.

Var. aurea. Same as above with golden yellow foliage.

Var. breveramea. Of narrow pyramidal habit, with short branches, crowded branchlets; leaves are glossy green on both sides. This is a very excellent and interesting plant for grouping or to be used as a specimen. It is frequently seen potted by the Japanese, who distort it into miniature picturesque forms.

Var. ericoides. Of a low subglobose habit with bluish gray linear spreading blunt leaves, marked with a green line above.

Cryptomeria: JAPAN CEDAR.

C. japonica elegans. JAPAN CEDAR. A pyramidal tree, with a straight slender trunk, reddish brown bark and spreading pendulous branches, rather dense. Bright green changing to reddish bronze in Fall and Winter. It is very handsome and makes a rapid growth.

Juniperus: JUNIPER.

This genus contains mostly small trees and shrubs of pyramidal and even columnar form, rather stiff of habit, hence useful in small places, the low forms for rocky slopes, covering embankments, etc. They are less

symmetrical than other conifers. They are as a rule, adaptive to soil conditions from sand to lime, from swamps to dry, rocky or gravelly hillsides, and among the best conifers for seaside planting, being easily transplanted. They are also well adapted for hedge work.

Juniperus communis. COMMON JUNIPER. A small tree with irregular open head of erect branches. Leaves in threes, spiny dark green, shiny below. Bronze green in Winter. Berries bright blue, soft. Planted as specimen trees for hedges and wind-breaks.

Var. aurea. This is the Golden Juniper. Spreading growth with bright golden foliage throughout the year. A distinct charming variety.

Var. hibernica. IRISH JUNIPER. A narrow columnar form, upright branches, deep green. Tips of branchlets erect. Very dense, resembling a green pillar. Especially good as a specimen plant in formal gardens.

Var. suecica. SWEDISH JUNIPER. Narrow columnar form, similar to the Irish, foliage not quite as rich a green; branchlets with drooping tips, more bluish in color than *hibernica*.

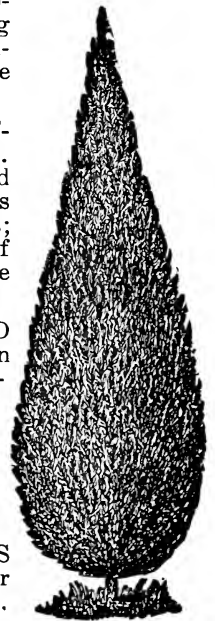
J. Chinensis procumbens. CREEPING JAPANESE JUNIPER. Branches rather slender, variable in habit. Glaucous foliage. An excellent plant for ground cover.

Var. aurea. Rather upright form with young branches, gold and yellow color, becoming more brilliant in full sun.

Var. Pfitzeriana. PFITZER'S JUNIPER. Forms a broad pyramid with horizontal branches and nodding branchlets; grayish green. One of the most highly desirable Juniper.

J. Virginiana. RED CEDAR. Well known American tree with conical head and spreading branches. Variable species, somewhat stiff and regular; makes an excellent ornamental hedge.

J. Sabina. SABIAN'S JUNIPER. Spreading or procumbent shrub. Branches rather slender. Quite variable. Thrives in a poor soil.



Irish Juniper.

Conifera: EVERGREEN TREES, Cont'd.

Picea: SPRUCES.

Pyramidal evergreens with tall tapering trunk, slender horizontal branches ending in stout twigs. This group includes some of the most useful as well as the most ornamental of all the conifers. They are medium fast growers, very symmetrical in form. Most of them are adaptive to any soil, except extremes of dry or wet. They are adapted to planting as specimens and in groups for wind-breaks, etc. The Norway spruce is the most common species in cultivation.

P. excelsa. NORWAY SPRUCE. As an ornamental it is valued for its grand symmetry of graceful flowing outline. Beset with dark green foliage, a very rapid grower, making sometimes three or four feet in a season. It is well adapted for wind-breaks, screens and hedges, standing shearing quite well.

P. Engelmannii. ENGELMANNII SPRUCE. Tree of rather pyramidal shape with slender sprouting branches, leaves bluish green. Somewhat resembles *P. pungens*.

P. pungens. COLORADO BLUE SPRUCE. Noted for its remarkable blue to silvery foliage. The persistence of the blue color depends upon satisfactory well watered soil conditions. Its habit is regular, compact, pyramidal. Leaves are rigid, very acute.

Var. *glauca*. Variety of the above in which the blue tone is more marked.

Var. *glauca pendula*. WEEPING SPRUCE with decidedly drooping branches. Growth very irregular and picturesque.

Var. *Kosteri*. KOSTER'S BLUE SPRUCE. An extremely blue variety with shorter leaves and more compact growth. The most attractive of all the blue spruces.

Pinus: PINES.

This is the largest genus of conifers. Adapted to the driest soil and to drought conditions as well as to swamps and humid climates. Somewhat like the spruces in habit. Less formal, more open in growth. Foliage is less dense. Nearly all are rapid growers.

P. nigra. BLACK or AUSTRIAN PINE. A remarkably hardy tree, rather spreading in habit. Leaves are long, stiff and dark green. A rapid grower.

P. Montana Mughus. SWISS PINE. A dwarf tree or shrub, with several stems from the ground. In bush form popularly used where low mass foliage is desired. Used to screen unsightly places. It is a dark rich green color. Perfectly hardy.

P. Strobus. WHITE PINE. Foliage rather feathery. Planted as specimens or in groups. Best suited to medium soils. Very rapid grower. Well suited for mixture with deciduous trees.

P. sylvestrus. SCOTCH PINE. Tall tree, native of northern Europe. Noted for its rapidity of growth. Branches rather stout and stiff. Foliage gray green. Very good for mass effects.

Pseudotsuga: RED FIR.

Pseudotsuga taxifolia (*P. mucronata*, Sudw.) THE RED FIR or DOUGLAS SPRUCE. Pyramidal tree, upright trunk, horizontal branches. With pendulous branchlets. Bright green foliage. Tree is very useful as an ornamental. Can be used as specimen tree or in mass plantings to good advantage.

PODOCARPUS.

Japonica. JAPAN YEW. A peculiar, charming, erect tree from Japan, hardier and denser than the Irish Yew, eminently fitting it for cemetery purposes.

RETINISPORIA. (See *Chamaecyparis*.)

Sequoia Gigantea: CALIFORNIA BIG TREE.

A pyramidal tree attaining great height. Has a straight erect trunk, dense spreading branches, slightly curved downward. Foliage rather light green. Very handsome tree for a large lawn. Tree makes quite a rapid growth.

Taxus: YEWES.

The Yews are not conifers as is generally supposed. They are generally grouped with the evergreens. They are evergreen trees and shrubs with spreading horizontal branches and flat leaves. The growth is slow; fruit is berry like, red in color.

Taxus braccata. ENGLISH YEW. Native of Europe. Tree or large shrub, of slow growth, very bushy head, densely branched, thickly covered with dark green leaves. Can be pruned into any shape.

Var. *erecta*. Similar to the above except that it is pyramidal in habit, of very dark green foliage.

Taxus: YEW, Continued.

Var. *Taxus fastigiata* (T. *hibernica*.) IRISH YEW. Particularly tall and slender; upright in growth. A rich dark green in color. Produces attractive bright red berries. Is so uniform in growth as to render it especially useful in formal gardens.

Thuja: ARBOR VITAE.

Evergreen trees of slender pyramidal habit with intricately branched limbs, in flat open sprays. Rapid growers; of regular formal habit. They are of special value as specimen trees. They withstand pruning and make good hedges.

Thuja *plicata* (T. *gigantea*, Nutt.) GIANT ARBOR VITAE or RED CEDAR. Native of Pacific Coast. Handsome ornamental tree. This far exceeds any other native in beauty and rapidity of growth.

Var. *pendula*. WEEPING ARBOR VITAE. One of the most beautiful evergreens to be found growing anywhere. Pyramidal in form, main stem straight and upright. Regular branches drooping somewhat downward. Clothed with frond-like branchlets of great length which droop gracefully toward the ground. Branch system begins at the very base of the tree. It is a tree whose superior beauty never fails to attract the observer.

Thuja *occidentalis*. AMERICAN ARBOR VITAE. A conical compact tree with short ascending branches and flat frond-like sprays. Valuable ornamental and hedge trees.

Var. *aurea*. GOLDEN ARBOR VITAE. Rapid grower, fine golden yellow foliage, perfectly hardy. Best Golden Arbor Vitae for northern plantings.

Var. *compacta*. COMPACT ARBOR VITAE. A dense dwarf tree or shrub with bright light green foliage. Very uniform in growth and attractive.

Var. *globosa*. GLOBE ARBOR VITAE. Forms a perfect symmetrical ball or globe without any trimming. Very useful form of plantings. Perfectly hardy. Rather slow grower.

Var. *pyramidalis*. PYRAMIDAL ARBOR VITAE. An unusually attractive variety. Columnar in habit, especially good for formal plantings. Can be planted in rows close together to form screen. The foliage is rather light green in color.

Var. *Siberica*. SIBERIAN ARBOR VITAE. A hardy genus for this country. Retains its color well into the Winter. Compact pyramidal growth.

Var. *lutea*. PEABODY'S GOLDEN ARBOR VITAE. Pyramidal in form, rather open habit. Terminal ends of the frond-like foliage is shaped beautifully, golden yellow. The tree is unusually attractive when loaded with fruit, which is blue gray in color, a very marked contrast with the golden yellow. Makes an especially attractive specimen tree and is excellent to use as an accent against a very green background.

Var. *Tom Thumb*. TOM THUMB ARBOR VITAE. A dwarf variety originated by an Eastern nurseryman. Very slow in growth and compact and symmetrical in form.

Tsuga: HEMLOCK.

Tsuga *heterophylla*. WESTERN HEMLOCK. A noble, graceful pyramidal tree with drooping horizontal branches and feathery tips. Thrives best in a rich soil, and is an attractive tree for specimen planting.

IN YOUR PLANS for improving your home grounds have you considered how much grace and beauty could be had by planting shrubbery or perennial borders along the sides of your property? Get your neighbor to co-operate and plant a mass of handsome flowering shrubs or plants around your place. Forward us a rough sketch of your place giving size of lot, size and location of house, outbuildings, walks, drives or other permanent features and our Landscape Department will suggest plans, plants and estimated cost. Why not now?

FLOWERING DECIDUOUS SHRUBS.

THIS CLASS OF ORNAMENTAL NURSERY STOCK furnishes a wide range of shrubs of both interest and beauty throughout the Spring and Summer months. Most of the plants listed are sufficiently hardy to succeed in the colder sections of the country, and the number is ample to satisfy all tastes and requirements.

Flowering deciduous shrubs usually constitute the major planting in every undertaking be it large or small. Many shrubs are suitable for planting singly, but as a rule they create a better effect if planted in groups, the number in each group depending upon the space available and their relation to the balance of the planting. This class of shrubbery is largely used to form the planting around the base of dwellings, screen objectionable objects, form division borders to take the place of unsightly fences, fill in nooks and corners, and generally tend to make a graceful border line for the lawn proper.

By a careful and intelligent selection of deciduous shrubs respecting their height when fully grown, character and shade of foliage and time of blooming, a most pleasing effect both as to general appearance and the enjoyment of flowers over an extended period can be obtained. Not only does an appropriate planting of deciduous shrubbery add to the visible improvement of property, but this fact increases the financial worth, so that the planting of trees and shrubs is not an expense but a profitable investment.

For your assistance in selecting shrubbery suitable for your particular place and taste, we have prepared a special table of these plants showing their blooming period in this section. In colder parts of the country where vegetation is later allowance should be made accordingly. This list you will find in the back part of this catalog under "Plants for Special Purposes."

We shall be glad at all times to render further assistance to interested parties. A pencil sketch of your property showing the size of your property, the location and size of your residence and other buildings as well as established walks, drives and other objects, will enable us to treat your problem intelligently.

ACER JAPONICA. See Deciduous Trees.

Azalea: AZALEA.

Azalea Mollis or (*Rhododendron sinense*.) A useful little shrub, seldom grows more than three feet in height. If planted in a sheltered position one may enjoy the flowers until they frost. This charming plant has large flowers, exquisite in color, which vary in color from rose through pink, buff and salmon; a delightful series which makes the shrub of great value.

Amelanchier: JUNE BERRY.

Amelanchier canadensis. JUNE BERRY. Medium-sized shrub producing white flowers, and is of added value because of the reddish-purple fruit. The plant is useful for mass effects.

Berberis: BARBERRIES.

There are deciduous and evergreen barberries, both groups providing valuable shrubs for ornamental purposes. They are of especial value because of their showy

Berberis: BARBERRIES, Continued.

fruit and rich Autumn colors. The two best deciduous kinds follow:

Thunbergii. THUNBERG'S BARBERRY This is one of the most important of the entire group. It develops into a dense bush with slender arching shoots. Its reddish-brown flowers are produced in great profusion. The berries are small but bright red in color. In the Autumn a rich green foliage changes to a glowing crimson before falling. Its maximum height is about four feet. Very hardy.

Var. atro Purpurea. PURPLE LEAVED BARBERRY. This variety has a deep colored purple foliage. It is sometimes said that the foliage is richer in rocky soil. It is especially effective when used in great masses. It is sometimes used as a hedge. The Thunbergii is also used for this purpose.

Buddleia: BUTTERFLY BUSH or SUMMER LILAC.

B. variabilis magnifica. Shrub to 15 feet; extremely rapid spreading growth; leaves are narrow, rather large; silvery beneath; flowers are lilac marked with yellow, borne profusely in dense spikes nearly a foot long; extremely fragrant; this plant is very satisfactory in that it blooms in August and September when few other shrubs are blooming.

B. veitchii. One of the most desirable Summer flowering shrubs, beginning to bloom in July and continuing until frost. The flowers are a pleasing shade of violet and are borne in cylindrical spikes which will attain a length of twelve to fifteen inches when well cultivated. It is a very attractive plant and should be in every yard.

Calycanthus: SWEET-SCENTED SHRUB.

Calycanthus floridus. SWEET-SCENTED SHRUB; ALLSPICE BUSH. This shrub reaches a height of 6 feet. Very compact, clothed with large dark green leaves. Flowers borne in August about two inches across, rather a chocolate purple color and very pleasantly scented. Of special value because of its late bloom.

Caragana: PEA TREE.

Caragana arborescens. PEA TREE. Native of Siberia and China. Grows to be a rather large shrub; foliage is delicate, deep green tint. Flowers are pea shaped produced in great profusion during the latter part of April; grows well in sandy soil.

Caryopteris: BLUE SPIRAEA.

Caryopteris incana. (Mastacanthus.) BLUE SPIRAEA. China. Shrub with moderately compact habit. Leaves are downy gray, flower bright blue produced in large clusters. Blooms throughout the entire Summer when few other shrubs are in flower.

Clethra: SWEET PEPPER BUSH.

Clethra alnifolia. SWEET PEPPER BUSH. Forms a rather upright shrub 4 to 5 feet high. Leaves about three inches long; flowers are produced in July and August in dense spikes, creamy white color. Sweet scented.

Colutea: BLADDER SENNA.

Colutea arborescens. BLADDER SENNA. These plants are remarkable for their large curiously inflated seed pods from which the popular name is derived. The shrub is large with pinnate leaves of numerous small leaflets. Has yellow pea-shaped flowers. This bush thrives especially well in poor, dry, sandy soil.

Cornus: DOGWOOD.

This is an extensive genus, comprising many attractive trees and shrubs. The shrubs produce small white flowers in numerous clusters.



AZALEA, Mollis. Description on page 58.

Cornus: **DOGWOOD**, *Continued.*

Cornus alba siberica. **SIBERIAN DOGWOOD**. Shrub reaching from 4 to 6 feet in height. Branches are bright red. Flowers creamy, berries light blue.

Cornus mas. **CORNELIAN CHERRY**. This variety, distinct from many of the other species, forms a very large shrub. Blooms in the early Spring. Blossoms yellow.

Cornus sanguinea. A native species. Of ornamental value because of its conspicuous blood red bark. Berries black.

Cornus stolonifera. **RED OSIER DOGWOOD**. Large shrub. Luxuriant green foliage. Branches usually red in Winter.

Corylus: FILBERT.

Corylus maxima purpurea. **PURPLE-LEAVED FILBERT**. A very conspicuous shrub with large round leaves. Dark purple in color in early Spring, which changes to light purple later. Of especial value when planted in large masses.

Cydonia: QUINCE.

Beautiful well-known shrubs, flowering freely in early Spring. Sometimes used as defensive hedges. Rather spreading in form. Flowers are produced before the leaves appear.

Cydonia Japonica. **SCARLET JAPAN QUINCE**. Has bright scarlet crimson flowers in great profusion. A very hardy shrub.

Var. alba. **BLUSH JAPAN QUINCE**. *Var.* of the scarlet with delicate white and blushed flowers.

Cydonia grandiflora rosea. This form differs in that it has large rosy pink flowers.

Cytisus: BROOM.

This group of plants is made up of shrubs producing pea-shaped flowers with clover-like leaves. In most instances the branches are green in color. Rather upright and dense in form. They are all suited to planting upon poor, rocky soil.

Cytisus albus. **PORTUGAL BROOM**. This shrub reaches a height of six feet and in May every branch is wreathed with small white pea-shaped blossoms. It is frequently called the Spanish Broom. This plant is very useful for interior decorations.

Cytisus scoparius. **SCOTCH BROOM**. This is a beautiful well-known shrub producing bright yellow pea-shaped flowers

for two months or more, from early May onward. It varies considerably in height depending upon the conditions under which it is growing. It is of especial value because of its bright green coloration of both the foliage and the branches. It is green the year round.

C. s. var. andreanus. This is a very beautiful variety of the Scotch Broom in which the side wings of the flower instead of being yellow are of a deep velvety brown to purple. It is similar to the parent plant with the above mentioned exception.

Deutzia: DEUTZIA.

These are all pretty free blooming shrubs that will do well in any ordinary garden soil that is not dried up during the Summer months. These plants are natives of Japan and are quite hardy. They produce luxuriant foliage and a profusion of attractive flowers, which places them among the most popular of the flowering shrubs. Bloom is produced generally during the month of June.

Deutzia scabra. var. flora-plena. This variety is rather upright in form, the bell-shaped flowers are produced in small bunches. They are frequently tinged with pink. Flowers double.

Var. alba. This variety is similar to the above except that the flowers are pure white.

Var. Pride of Rochester. This is one of the most attractive and best plants of the group. It excels the others in the size of flower and the profuseness of bloom. It also blooms from a week to ten days earlier than the other varieties. Flowers double.

Var. Watereri is a new variety with very large double white flowers borne in large loose racemes. It is a rapid grower.

D. gracilis. A little bush seldom more than two feet high, which produces a beautiful mass of white flowers borne as a rule toward the end of April. It is distinctly a dwarf.

D. hybrida Lemoinei. A cross between *D. gracilis* and *D. parviflora*. This plant has proved to be very popular. Its flowers are pure white, borne on stout branches which are of upright growth. Its habit is dwarf and it is a profuse bloomer.

D. abel carriere. This is a variety which produces bright rose carmen flowers; similar to the above in habit.

Diervilla: WEIGELA.

This genus of plants comes to us from Japan. It is composed of shrubs erect in habit while young and gradually spreading and drooping as they acquire age. The bloom is large bell or trumpet shape; of all shades and colors from pure white to red and produced during the months of June and July. They are useful for mass effect and will grow well in any ordinary garden soil. They are excellent plants for city homes to be used as specimen plants.

Diervilla hybrida, or *candida*. **WHITE FLOWERED WEIGELA.** This plant makes a vigorous growth, very erect. Becomes in time a large-sized shrub; flowers pure white and produced in great profusion in June. Plants continue to bloom throughout the Summer until late Autumn.

Var. Eva Rathke. This plant grows to a height of five feet. Similar in habit to the above. Its flowers, however, are more attractive being a brilliant crimson.

Var. rosea. This plant usually blooms in May; similar to the above except that its flowers are rose colored.

Var. nama folis variegata. **VARIEGATED LEAVED WEIGELA.** The flowers of this plant are similar to the above. The foliage, however, differs in that it is broader and is variegated with yellowish white border. Dwarf.

Var. Van Houtte. The flowers are clear carmen color; showy and handsome.

Elaeagnus: JAPAN OLEASTER.

Elaeagnus longipes. A small bush, very attractive because of its unusually silvery colored foliage, which is oval in shape, from one to two inches in length. In July the plants are covered with bright red edible berries, the flavor being pungent. The bush is very ornamental when laden with its attractive colored fruit.

EUONYMUS.

Euonymus europaeus. **STRAWBERRY or SPINDLE TREE or WAHOO.** This shrub produces interesting peculiarly shaped fruit of a rather reddish hue. The plant is very attractive in Autumn. Its foliage turns bright red.

EXOCHORDA.

Exochorda grandiflora. **PEARL BUSH.** This is a very beautiful white flowered

shrub forming a graceful specimen reaching a height of six feet or more. It blooms as a rule about the end of April and never fails to attract attention. The light wiry branches come so laden with bloom that they bend beneath their load. It is perfectly hardy. The bloom is very useful for cut flowers.

Forsythia; GOLDEN BELLS.

These are pretty shrubs of medium size, all natives of Japan and China. The flowers are drooping yellow and appear in the early Spring before the leaves. It is of especial value for this reason.

F. Fortuneii. Upright in growth; foliage deep green. Flowers bright yellow.

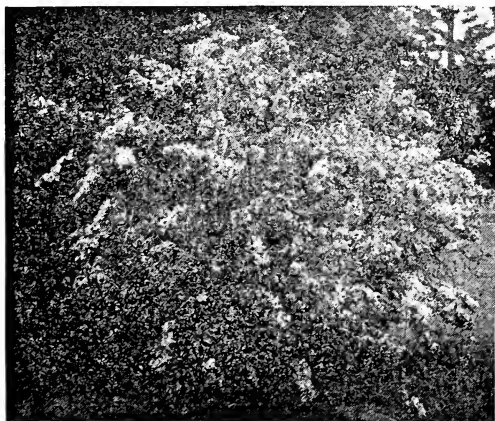
F. intermedia. Foliage glossy green, flowers bright golden; very hardy.

F. suspensa. Forms a loose growing plant and can be well trained to a wall. Flowers in March; rather weeping in habit. Should be pruned immediately after blooming; has a growth that is made later, will flower the following Spring.

F. viridissima. This is a more compact shrub than the one just mentioned. Is clothed with willow-like leaves; flowers are rather paler in hue than the others.

Hamamelis: WITCH HAZEL.

H. Virginica. A tall shrub producing yellow flowers late in the Autumn which are of especial value because of this reason. It is called witchhazel because of the remarkable resemblance that the leaves bear to those of the hazel.



WEIGELA, VARIEGATED.

Hibiscus althaea, or ROSE OF SHARON.

These shrubs are of particular value because of the fact that the flowering season is during August and September, a time at which few other shrubs bloom. They prefer a sunny spot and a fairly deep moist loam. They are both single and double variety. They are very easy to cultivate. The flowers are very similar to those of the rose, about two inches across and produced in the greatest of profusion.

H. fl. pl. alba. **DOUBLE WHITE ALTHAEA.** Flowers double, pure white.

Var. rosea. Produces white flowers tinged with pink.

Var. rubra. Flowers double, red in color.

Var. purpurea. Flowers double, purple.

Var. varigata. Foliage finely marked, is light yellow. Flowers double purple.

HYDRANGEA.

This is a noble group of shrubs with wonderful heads which make brilliant pictures in a garden. Upon the west side of the Cascades the plants are especially luxuriant during flowering season. Added to the fact that they are of great value because

of their especially attractive bloom, they have the added merit of blooming during August, in the late Summer, a time at which few other plants are to be found blooming. They do best if they are planted in a rather protected location. There are two types of bloom produced — panicalus which are frequently 15 inches in length, flat heads of umbles of the Japanese variety. The first type mentioned should be pruned severely in the early Spring as the bloom is produced upon a new wood. The second type should not be so pruned as the bloom is produced upon the wood of the preceding season.

H. arborescens grandiflora. **HILLS OF SNOW or AMERICAN HYDRANGEA.** Blooms are very large, pure white in color. It blooms as a rule a little earlier than others commencing in June and continuing until August or later. It is, therefore, of especial value in providing a continuous period of bloom in the flower garden. It is perfectly hardy.

Hydrangea Opuloides (H. Hortensia or H. Japonica. Var. Otaksa.) Dwarf variety. Makes vigorous growth; foliage rich large dark green. Is well known because of its large heads of flowers, which may be either pink or blue.



HYDRANGEAS (Paniculata) IN THE NURSERY.

This plant is more suitable for group planting than singly, its mass of large cone-shaped pinkish flowers creates a striking effect.

HYDRANGEA, Continued.

H. Hortensia. JAPANESE VARIETY. Dwarf in habit. Flowers produced in flat heads, which are blue in the center. Requires protection in the colder sections.

Var. Thomas Hogg. Foliage similar to the Otaksa. Flower heads very large, pure white. It is one of the hardiest Japanese varieties.

H. paniculata grandiflora. This is one of the most valuable hardy shrubs. It attains a height of 3 to 5 feet and is perfectly hardy in all parts of the country. The flowers are white, borne in immense panicles nearly a foot in length. It commences flowering in July and continues until November. The plant should be cut back every Spring at least one-half of last season's growth, as the flowers are borne on new wood and are much finer when the plant is treated in this way. An excellent shrub for cemetery planting.

Hypericum: ST. JOHN'S WORT.

H. Moserianum. This is a low spreading shrub which produces a continuous bloom from late June till Autumn. The flowers are rather golden yellow. They somewhat appear like single rows. They grow well in ordinary garden soil. Special mention should be made regarding the graceful form of the bush caused by its arching shoots.

Ligustrum: PRIVET.

The Privet is a well-known plant and deserves the attention given it as an ornamental. It is so nearly evergreen that it might be classed as such. Grows freely in all sizes, is very compact and regular in form. It can be sheared in any desired shape. It is perhaps the most popular used plant for hedge purposes.

L. ovalifolium. CALIFORNIA PRIVET. A variety which is very hardy, makes a vigorous growth. Has very attractive foliage, glossy green. This variety is used for hedges more than any other. Two years after planting it is frequently cut to the ground, after which it sends up shoots from the bottom and produces a very thick hedge from the very base. It is frequently evergreen. Can be kept to any desired size by proper shearing.

L. Vulgaris. COMMON or EUROPEAN PRIVET. (Frequently called the English.) This variety produces foliage which is rather long and narrow, rich green in color. It is considered by some a better plant than

the above for cold climates. Its habit is not nearly as evergreen. Produces white flowers, followed by purple berries.

Lonicera: BUSH HONEYSUCKLES.

As a class these are very popular shrubs producing attractive foliage, fragrant flowers and interesting bright colored fruits. They are erect and shrubby in habit. Very valuable either as specimen plants or to be planted in large masses. They thrive in almost any soil. For climbing varieties, see list found under Climbing Plants.

L. fragrantissima. FRAGRANT BUSH HONEYSUCKLE. A shrub rather inclined to be spreading with deep green foliage; unusually fragrant, small flowers which appear before the leaves. The foliage is nearly evergreen which renders it exceedingly valuable.

L. Marrowii. MOROSE HONEYSUCKLE. A very fine variety, frequently considered as the best of the bush honeysuckles because of its unusually attractive wine-colored berries. It also produces rich colored foliage and a mass of bloom.

L. Tartarica. TARTARIAN HONEYSUCKLE. Upright shrub producing great masses of pink flowers. Blooms very well in the Spring, and is later laden with attractive red berries.

Var. alba. WHITE TARTARIAN HONEYSUCKLE. In form and habit similar to the above. Differs in that it produces creamy white flowers, as do most of the bush honeysuckles. This plant blooms in May and June; on the west coast frequently much earlier.

Philadelphus: SYRINGA or MOCK ORANGE.

The Syringa is an invaluable shrub. Of vigorous habit, very hardy, with large, handsome foliage, and beautiful white flowers, produced in the greatest profusion at the blossoming season, it merits a prominent place in all collections of shrubbery. Most of the varieties, except those of dwarf habit, form large sized shrubs 12 to 15 feet high. They can of course be kept smaller by pruning. The dwarf sorts are such pretty, compact plants as to be very useful where small shrubs are desired. All of the varieties flower in June after the Weigela. By planting the late flowering

Philadelphus: SYRINGA, Continued.

sorts, the season may be considerably extended.

Ph. Coronarius. GARLAND SYRINGA. A well-known shrub with pure white, highly-scented flowers. One of the first to flower.

Var. flore pleno. DOUBLE-FLOWERED SYRINGA. A variety partially double, very fragrant flowers.

Ph. foliis aureis. GOLDEN-LEAVED SYRINGA. A very pretty plant of medium size, with golden yellow foliage. It keeps its color the entire season, and will be found valuable for creating pleasing and striking contrasts with purple-leaved shrubs.

Ph. Lemoinei. LEMOINE'S SYRINGA. A charming variety of upright growth; flowers small, yellowish-white, fragrant, completely covering the plant.

Prunus; PLUM and ALMOND.

P. Japonica flore albo pleno. DWARF DOUBLE WHITE - FLOWERED ALMOND. Produces beautiful double white flowers in May.

P. Japonica flore rubro pleno. DWARF DOUBLE RED-FLOWERED ALMOND. A beautiful small shrub, bearing in May, before the leaves appear, an abundance of small, double, rose-like flowers, closely set upon the twigs.

P. Pissardi. PURPLE-LEAVED PLUM. (See Trees.)

P. triloba. DOUBLE - FLOWERED PLUM. (See Trees.)

Ptelea: HOP TREE or SHRUBBY TREFOIL.

P. trifoliata. A large shrub or small tree of rapid growth and robust habit. Fruit winged and in clusters; flowers in June.

Var. aurea. GOLDEN - LEAVED HOP TREE. Beautiful glossy golden foliage, holds its color well.

Rhodotypos: WHITE KERRIA.

Rh. kerroides. From Japan. A very ornamental shrub of medium size, with handsome foliage, and large, single, white flowers in the latter part of May, succeeded by numerous small fruit.

Rhus: SUMACH.

R. aromatica. FRAGRANT SUMACH. A native variety, exhaling a strong odor. Flowers greenish-white; leaves lobed.

R. Cotinus. PURPLE FRINGE, or SMOKE TREE. From the south of Europe. A much desired shrub for its curious fringe or hair-like flowers that cover the whole surface of the plant in midsummer. It grows 10 to 12 feet high and spreads so as to require considerable space.

R. glabra. SMOOTH SUMACH. Very effective in Autumn with its crimson seed and foliage.

Var. laciniata. CUT-LEAVED SUMACH. A very striking plant, of moderate size, with deeply cut leaves, resembling fern leaves; dark green above and glaucous below, turning to a rich red in Autumn.

R. typhina. STAGHORN SUMACH. A large shrub or tree; brilliant foliage and scarlet fruit in Autumn.

Var. laciniata. CUT - LEAVED STAGHORN SUMACH. A picturesque form with handsome leaves and deeply cut leaflets.

Ribes: CURRANT.

The flowering currants are gay, beautiful shrubs in early Spring and of the easiest culture.

R. oureum. YELLOW-FLOWERED, or MISSOURI CURRANT. A native species with glabrous, shining leaves and yellow flowers.

R. sanguineum. CRIMSON-FLOWERED CURRANT. An American species with deep red flowers, produced in great abundance in early Spring.

Sambucus: ELDER.

These are showy, rapid growing, large shrubs, quite ornamental in flowers, fruit and foliage. They blossom in June. The plants should be kept in good shape by the frequent use of the pruning knife.

S. Canadensis. COMMON AMERICAN ELDER. Broad panicles of white flowers in June; reddish purple berries in Autumn. A well-known native shrub.

Var. acutiloba. CUT-LEAVED AMERICAN ELDER. A beautiful variety, with deeply and delicately cut dark green foliage; its hardiness, rapid growth, beauty and the ease with which it is transplanted make it valuable. We consider it one of the best cut-leaved shrubs in cultivation.

Var. aurea. GOLDEN ELDER. A handsome variety with golden yellow foliage. A valuable plant for enlivening shrubberies.

S. nigra. BLACK - BERRIED ELDER.

Sambucus: ELDER, Continued.

Native of Europe, of medium size, with purplish-black berries in September.

S. racemosa, syn. *pubens*. RED-BERRIED ELDER. Panicles of white flowers in Spring, followed by bright red berries.

Spiraea; MEADOW SWEET.

The Spiræas are all elegant, low shrubs of the easiest culture, and their blooming extends over a period of three months.

S. arguta. Of dwarf habit; flowers clear white. Very early flowering. Early May.

S. ariaefolia. WHITE-BEAM-LEAVED SPIRÆA. (See *Schizonotus discolor*.)

S. Anthony Waterer. Fine dwarf Spiræa bearing dark crimson flowers all Summer. One of the finest shrubs.

S. callosa. FORTUNE'S SPIRÆA. Has large panicles of deep rosy blossoms. Grows freely and blooms nearly all Summer; fine.

Var. *alba*. FORTUNE'S DWARF WHITE SPIRÆA. White flowering variety of dwarf, bushy, symmetrical form. Keeps in flower all Summer; a valuable small shrub.

S. prunifolia flore pleno. DOUBLE-FLOWERED PLUM-LEAVED SPIRÆA. A beautiful shrub from Japan with pure white flowers like white daisies; in May. Keeps in flower a long time and justly merits to be placed in the front rank among flowering shrubs.

S. Douglasii. Native to Western Washington and Oregon; grows to height of six feet. Produces beautiful pink to deep red spikes of flowers. It is very hardy and a graceful appearing shrub.

S. Thunbergii. THUNBERG'S SPIRÆA. Of dwarf habit and rounded, graceful form; branches slender, somewhat drooping; foliage narrow and yellowish-green; flowers small, white, appearing in early Spring, being one of the first Spiræas to flower. Esteemed on account of its neat, graceful habit.

S. Van Houttei. Without doubt the finest variety in the collection. At the flowering season in May and early in June the plant is covered with a mass of large, white flowers, presenting a beautiful appearance. Very hardy. One of the finest shrubs in the Catalogue.

Schizonotus discolor; OCEAN SPRAY.

A beautiful spreading shrub which produces panicles of flowers during the months

of July and August. The flowers range in colors from delicate pink to a creamy-yellow and a pure white. It is of special value because it blooms during the months when few other flowering plants are to be found.

Symphoricarpus: ST. PETER'S WORT, or WAXBERRY.

S. racemosus. SNOWBERRY. A well-known shrub with small pink flowers and large white berries that hang on the plant through part of the Winter.

S. vulgaris. RED-FRUITED or INDIAN CURRANT. CORAL BERRY. A shrub of very pretty habit. Foliage, flowers and fruit small; fruit purple; hangs all Winter.

Syringa: LILAC.

Well-known, beautiful shrubs, indispensable in every collection. They flower in May.

S. Josikaea. HUNGARIAN LILAC. A fine, distinct species, of tree-like growth, with dark shining leaves and purple flowers in June, after the other Lilacs have done flowering.

S. Persica. PERSIAN LILAC. From 4 to 6 feet high with small foliage and bright purple flowers.

SINGLE-FLOWERED SYRINGA VULGARIS

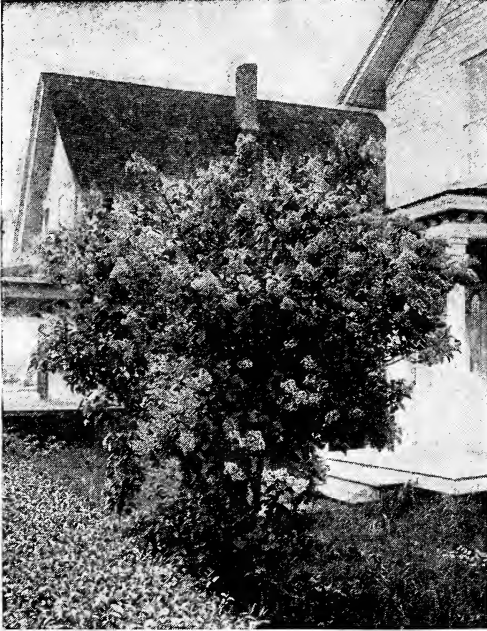
S. Vulgaris. COMMON LILAC. Bluish purple flowers. A standard variety; always good.

Var. *Charles X*. Strong rapid growing variety with large, shining leaves; trusses large, rather loose, reddish purple.

Var. *Ludwig Spaeth*. Panicle long; individual flowers large, single; dark purplish red; distinct, superb.



SPIRÆA VAN HOUTTEI.



PURPLE LILAC.

Syringa: LILAC, Continued.

DOUBLE-FLOWERED VARIETIES.

Var. *Belle de Nancy*. Very large, brilliant satiny rose; white towards center; very fine.

Var. *Madame Abel Chatney*. Large panicle; white; very fine.

Var. *President Grevy*. A beautiful blue; individual flowers very double and very large; the panicle is magnificent; one of the finest lilacs.

Senator *Volland*. Dwarf; large panicles of bright rose-colored flowers.

Tamarix: TAMARISK.

These are very beautiful shrubs with small leaves somewhat like those of the Juniper, and delicate small flowers in spikes. They are invaluable for planting by the seaside where scarcely anything else will grow.

T. *Africana*. Handsome foliage, upright habit; flowers in May.

Viburnum: ARROW ROOT.

The Viburnums are our most useful shrubs, being hardy, of good habit, bear-

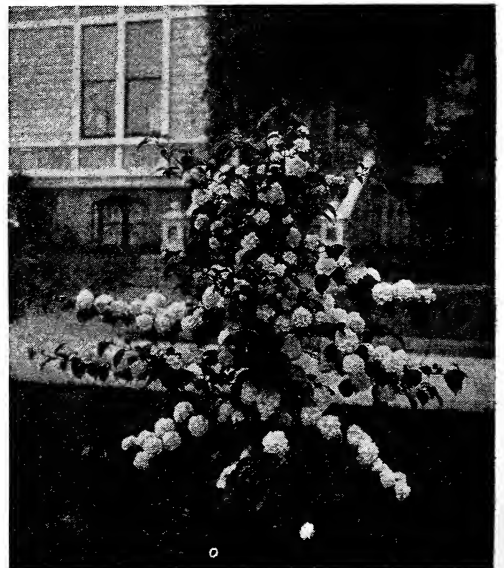
ing handsome flowers in Summer, followed with showy fruit.

V. *Opulus*, syn. HIGH or BUSH CRANBERRY. Both ornamental and useful. Its red berries, resembling cranberries, hang until destroyed by frost late in the Fall.

Var. *sterilis*. GUELDER ROSE. SNOWBALL TREE. A well-known, favorite shrub, of large size, with globular clusters of pure white, sterile flowers the latter part of May.

Var. *plicatum*. PLAITED-LEAVED VIBURNUM. JAPAN SNOWBALL. From north China. Of moderate growth; handsome plicated leaves, globular heads of pure white neutral flowers early in June. It surpasses the common Snowball in several respects. Its habit is better, foliage much handsomer, flowers whiter and more delicate. One of the most valuable flowering shrubs.

Our trees have one price, whether ordered by mail or order given to our traveling salesman. If our salesman calls on you, kindly give him your order. It will be as carefully handled as if sent direct to us by mail.



JAPANESE SNOWBALL.

BROAD-LEAVED EVERGREEN SHRUBS.

IN THIS DEPARTMENT of our catalog we list such plants as are distinguished from the Conifers, in that they have leaves similar to those of deciduous plants.

The plants listed here are all perfectly hardy on the west side of the Cascade Mountains; many of them are hardy in the eastern section, but not all. As a group they should be more generally planted about the homes in our coast towns, because they produce an interesting Winter effect.

ABELIA.

A. grandiflora. **ABELIA.** This is an attractive shrub growing to a height of six feet; rather spreading. It produces bell-shaped flowers in great profusion; they are small but very attractive. They range in color from pale pink to a rather deep pink. Flowers from late in June until well into Autumn. They are frequently found in bloom during the month of November. After losing their flowers they are still attractive because of their bright red sepals which are very conspicuous when contrasted with glossy, brightgreen foliage. The leaves of this plant are rather small and delicate. They range in size from one-half to one and one-half inches in length. The bush is very graceful.

ANDROMEDA.

Andromeda floribunda. **MT. FETTER-BUSH.** Very pretty evergreen plant. Dwarf compact habit, with luxuriant dark green foliage. Flowers are pure white, produced in great abundance in early Spring. They are small and produced in large clusters. Cultural methods are similar to that of the Rhododendron.

AUCUBA.

Aucuba Japonica. **JAPANESE LAUREL** This plant ranges in height from two to six feet. It has large, glossy dark-green leaves. The female plant produces berries about the size and color of cranberries. This shrub is excellent for use as a tubbed plant.

Azalea: AZALEA.

Azalea A. Hinodigiri. **EVERGREEN CRIMSON AZALEA.** This is perhaps the most attractive plant of the Azalea family. It is indeed the most conspicuous when in bloom. The flowers are produced in great profusion and are a brilliant crimson. The foliage is a deep glossy green in color and comparatively small. The shrub is of slow growth and rather dwarf in form.

A. indica. This is a small compact shrub, producing large attractive bell-shaped flowers in the early Spring, some of which are single, others double. These plants are very hardy. They flourish best in the shade and in a moist location and are almost certain to fail when exposed to the sun. Colors range from white to purple and all shades and tints of red.

Berberis: BARBERRY.

These are moderate sized shrubs, very free blooming. Flowers are bright yellow. Most of the evergreen species have prickly leaves.

B. buxifolia. **BOX - LEAVED BARBERRY.** This plant is rather compact in form producing attractive yellow flowers early in Spring. Its foliage, as indicated by the name, is similar to the box.

Var. b. nana. **DWARF BOX-LEAVED BARBERRY.** This plant is different from the above in that it is more compact, slow growth and a dwarf. Foliage is very similar.

B. darwini. **DARWIN'S BARBERRY.** This is perhaps the most attractive of all Barberries. Its foliage is deep glossy green in color and very delicate and attractive. The shrub grows to a height of four feet, produces many slender drooping branches. Many of the leaves turn bright red in the Fall and hold this tint throughout the Winter. The flowers are a golden yellow in color. The berries are a bright blue. This is one of the very best evergreen shrubs.

B. Neubertii. **NEUBERT'S BARBERRY** This barberry produces very large leaves, about the size of those found on Oregon Grape. Foliage turns attractive bronze to red in the Autumn and remains this way throughout the Winter. Form of bush is rather open. Reaches height of from four to five feet.

B. ilicifolia. **HOLLY - LEAVED BAR-**

Berberis: **BARBERRY**, *Continued.*

BERRY. This shrub is of more vigorous and rapid growth than *B. Darwini*; its leaves are larger, and are about the same size of those of the holly which it resembles. Loses part of its foliage during the Winter.

B. stenophylla. **NARROW - LEAVED BARBERRY.** This plant is rather upright, grows to a height of from four to five feet. Produces many slender and graceful stems or arching branches. The leaves are small and narrow, dark green above, silver beneath, spiny pointed. Flowers are golden yellow.

Buxus: BOX.

These are well-known shrubs of very compact habit. The flowers are inconspicuous. All plants belonging to this family are readily pruned into any shape.

Buxus nana. **DWARF BOX.** This is the plant commonly used for low hedges. It is very dense and can be pruned so as to maintain a height of a few inches. It is very useful in formal gardens where it is frequently seen as a border to flower beds.

B. sempervirens arborescens. **TREE BOX** This plant is usually developed on main stem. It is frequently seen pruned in various forms. It also is frequently found in formal gardens.

CAMELLIA.

Camellia Japonica. **JAPANESE CAMELLIA.** These are well-known shrubs growing in height to ten and twelve feet. They are among the first plants to bloom, producing flowers during the month of March. The flowers are so perfect as to appear artificial. They are very waxy as are also the large, broad, green leaves. These plants produce flowers in great profusion. Color of the bloom ranges from white to deep red.

CHAMAECYPARIS.

C. Retinospora obtusa breviamea. Evergreen. One of the most desirable retinospora; upright in growth; short horizontal limbs; rather pyramidal; branchlets crowded; foliage glossy green on both sides.

COTONEASTER.

Shrubs ranging in upright growth to spreading and trailing. Leaves comparatively small. Flowers small, very numerous, followed by attractive red berries. Very popular plant.

C. horizontalis. **HORIZONTAL COTON-**

EASTER. This is one of the best trailing shrubs in general use; the branches are low, almost upon the ground. Leaves are quite small, turning red during the Winter. Flowers are pinkish white, berries bright red. Blooms in great profusion, semi-deciduous.

Var. h. microphylla. Very densely branched shrub, practically of prostrate growth. Leaves glossy, dark green. Flowers white; berries larger than the preceding. Entirely evergreen.

C. Simonisii. **SHINING LEAF COTONEASTER.** This shrub is erect in form, growing to a height of from four to six feet. Foliage is larger than that of the two preceding varieties, shiny green above, rather gray beneath. Produces attractive berries in the greatest of profusion.

C. francheti. **FRANCHET'S COTONEASTER.** This is an upright growing shrub distinguished from the preceding principally by its arching branches, which give it a most graceful habit. The flowers are pink and the berries are red.

DAPHNE.

D. odora. **WHITE DAPHNE.** Small shrub four feet in height, rather slow of growth; flowers are creamy white, intensely fragrant and produced in great clusters at the ends of the branches. It blooms during the Winter and the very early Spring.

Var. o. marginata. **PINK DAPHNE.** In form and habit very similar to the above. It is distinguished from the other, however, in that the margin of the leaves are edged with creamy white and the flowers are pink.

Erica: HEATHER.

These are low growing shrubs, very small leaves and numerous tubular flowers.

Erica vulgaris. **SCOTCH HEATHER.** These are well-known shrubs, low growing and rather dense in habit. They produce tiny pink flowers in great abundance. They are excellent for massing and grow well in the shade.

Var. v. alba. **WHITE FLOWERED.** Very similar in habit to the above but produces white flowers.

ESCALLONIA.

These shrubs come to us from South America and are gaining rapidly in popularity. Their foliage is bright glossy green. Flowers, are white, pink or red. Rather small, but produced in great clusters.

E. rosea. Upright growing shrub. Leaves

ESCALLONIA, Continued.

are rough with resinous glands beneath. Flowers are pink in conspicuous terminal racemes.

E. philloppiana. Very similar to the above in form, being erect, but slightly spreading. Foliage is perhaps more dense. Flowers are small and are produced over an extended season.

EUONYMUS.

These shrubs are grown for their extremely beautiful foliage, which varies considerably and includes many interesting forms. In some sections they bloom and bear heavy groups of curiously formed showy, red and orange berries during the Fall and Winter.

E. japonica. JAPANESE EUONYMUS. Excellent upright shrub of moderate size, very compact growth. Foliage and bark is clear dark green.

Var. j. alba-marginata. SILVER MARGINED EUONYMUS. In form similar to the above; differs in that the leaves have

a very narrow margin of silvery white. Growth is very slow.

Var. j. alba-variegata. SILVER VARIEGATED EUONYMUS. An erect growing shrub. Branches light green, leaves white around the edge, changing to yellow as the season advances.

Var. j. aureo-marginata. GOLDEN MARGINED EUONYMUS. In form similar to the parent plant; differs in that the leaves are deep yellow on the edge.

Var. j. aureo-variegata. GOLDEN - VARIEGATED EUONYMUS. Similar to the above except that the yellow is distributed throughout the leaf.

E. vegetus. EVERGREEN BITTERSWEET. This plant is quite different from any of the above. Leaves are produced in pairs about one to two inches in length; rather oval in form, attractive bright green color. When trained as a shrub it forms a very compact bush. Produces quantities of beautiful attractive red berries.

Ilex: HOLLY.

This is a well-known family of large shrubs or small trees. They are too well

known to need description.

Ilex aquifolium. ENGLISH HOLLY. This variety attains a height of 40 feet, produces a leathery dark green prickly leaf; flowers are inconspicuous, followed by attractive red berries which remain on the plant throughout the Winter. Growth is rather slow.

Var. a. variegata. VARIEGATED ENGLISH HOLLY. Variegated of the above. In form very similar. The leaf differs, however, in that it is variegated with cardinal and yellow. Spines are frequently found upon the surface of the leaf, which adds to their attractiveness.

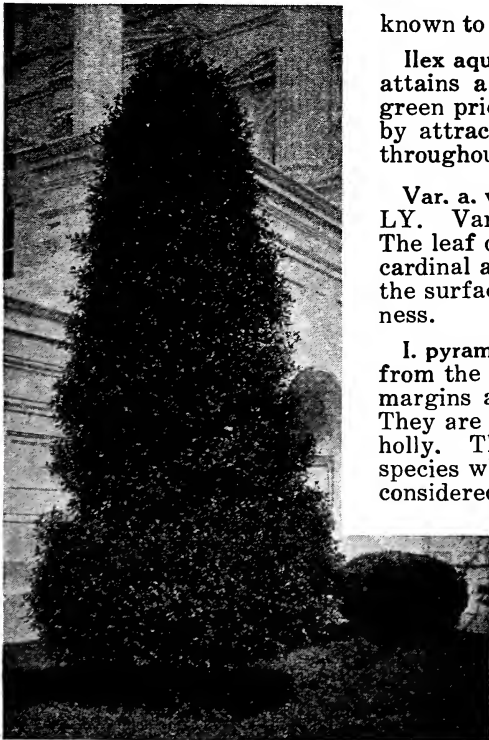
I. pyramidalis. DUTCH HOLLY. This holly differs from the other in that its leaves are less spiny. The margins are entire. The leaf is waxy bright green. They are larger than those produced upon the English holly. The berries are large and red. There is one species which produces yellow berries. This holly is considered by some superior to the English holly.

I. opaca. AMERICAN HOLLY. This holly is similar in form to the English, but differs in that its foliage is lighter in color and rather different in form. It is more open in growth.

JUNIPERA.

J. sabina (Savin Juniper). Evergreen dwarf spreading shrub with trailing branches; thrives in the poorest soil.

J. virginiana pfitzeriana. A new graceful variety; develops a large number of



The ever favorite English Holly, which all admire.

JUNIPERAS, Continued.

long slender tapering shoots, clothed with fine sage green foliage; most of the leaves minute and scale like.

J. chinensis procumbens (Creeping Japanese Juniper) a dense dwarf shrub with trailing branches and glossy glaucous foliage; a fine variety.

Laurus. LAUREL. (See *Prunus*.)

Ligustrum: PRIVET.

These shrubs make rapid growth. Leaves are rather small, attractive bright green. Would stand severe pruning.

L. ovalifolium. CALIFORNIA PRIVET. This variety is frequently found used as a hedge plant. It is, perhaps, the most popular of all plants that are used for this purpose. The leaves are bright green, medium size; flowers in June. Makes a rapid growth. Can be pruned into any form.

L. sinense. CHINESE PRIVET. This variety produces leaves which are narrower than those upon the above and somewhat smaller; dark green above, light green beneath. It is spreading in form and is best used as a specimen plant. It is not used for hedge purposes.

LONICERA.

L. nitida. Dainty evergreen bush honey-suckle to six feet in height; resembling Privet; leaves a glossy dark green; flowers small, fragrant, creamy white; fruit purple; very hardy.

MAHONIA.

These plants belong to a branch of the Barberry family. They differ in that they have pinnatic leaves. They are known as the Mahonia in the trade. Leaflets are large with prickly margins. Stems arise from the base of the plant and seldom branch. Flowers are always yellow.

M. aquifolium. OREGON GRAPE. This is our well-known native plant. Reaches a height of six feet under cultivation. Leaves are dark green, becoming coppery red or purple during the Winter. New growth is very glossy. Flowers are bright yellow followed by many attractive purple or dark blue berries.

M. japonica. JAPANESE MAHONIA. Leaves of this variety are much larger than those of the preceding. They are of a soft green shade, becoming marked with yellow and red if exposed to the sun.

Flowers are large, long erect racemes followed by large blue berries.

PRUNUS.

This is a very large and very diversified genus, including many of our common fruit trees and also many attractive trees and shrubs. The two best evergreen representatives are listed below:

Prunus laurocerasus. ENGLISH LAUREL. This a large shrub or tree, producing large light green foliage. Flowers are white in erect racemes followed by black cherry-like fruits. This plant is readily pruned into hedges and withstands severe pruning.

Kalmia latifolia. MT. LAUREL. Broad, glossy green, shining foliage; flowers in large and showy clusters of elegant shape and most beautifully colored, mostly pink and white. Few broad-leaved evergreens are as beautiful in foliage, and none can excel the beauty and delicate forms of its flowers. Requires about the same treatment as the rhododendron.

P. lusitanica. PORTUGAL LAUREL. This plant comes to us from Spain and Portugal; is easily distinguished from the English variety by its dark green sharp serrated leaves. Very compact in form; flowers are white in long slender racemes. It is one of the most attractive shrubs and is especially useful when planted in great masses.

Pyracantha (*Crataegus*): EVERGREEN HAWTHORN.

These are large shrubs belonging to the Hawthorn family. They are identical in fruit and flower, but are evergreen.

P. coccinea. BURNING BUSH. This plant develops into a large shrub; small ovate leaves; produces great quantities of small white flowers on flat cymes, followed by a mass of large orange-red berries in the early Fall.

Var. *c. lalandi*. This is a variety of the above which makes a stronger growth, produces longer shoots that can be trained against a wall if desired. Leaves are a little longer. Berries orange-yellow.

P. crenulata. CHINESE EVERGREEN HAWTHORN. This plant is distinguished from the preceding in that its growth is more compact, branches are slenderer, leaves are longer, narrow and glossy. New growth is very ruddy. Flowers are quite similar but the berries are bright clear red. It will thrive in considerable shade.

RHODODENDRON.

These are well-known, popular and very handsome shrubs. Flowers are large, individually, and collected into large heads at the ends of the branches surrounded by whorl or leaves. Colors range through the shades of red, purple and white. They do not succeed well in the full sun. They prefer rich moist soil. The usual colors are pink, lavender, red and purple. Besides the ordinary variety we have to offer two especially fine varieties which are given below.

R. PINK PEARL. This variety differs from the commoner sort in that its branching habit is more open; its foliage is very similar. It is of especial value because of its unusually fine delicate pink flowers, masses of which are produced in amazing profusion. It is by all means the best and most popular of all the rhododendrons. Besides its having better and more attractive flowers than any of the others, it has the added merit of retaining its bloom through a more extended period.

R. WHITE PEARL. This variety has all the excellent features of the above and differs only in respect to the color of its bloom, which is pure white. The two combine very successfully and make an unusual display.

SPARTIAN (BROOM.)

S. juneceum (Spanish Broom). Deciduous shrub to 12 feet; usually assumes a

globular form; branchlets are cylindrical, hollow, clear green almost devoid of leaves; flowers are large, bright yellow and fragrant; blooms almost continually; resistant to drought. (Scotch Broom, page 60.)

VERONICA.

These are shrubs of quite compact growth, rather slow growing, thrive best in shade but will be perfectly at home in the sun. Texture of their foliage is quite different from any other broad-leaved evergreens and they therefore add interest to any planting.

V. decussata. This plant is rather dwarf reaching a height of three feet; leaves are small and closely set together. Flowers are large, violet blue. It is frequently used as a hedge plant.

V. traversi. This is a small shrub, reaching a height of three feet; leaves are smaller than above; flowers pure white, produced in great profusion. Plant has a fine appearance.

VIBURNUM.

V. tinus. LAURUSTINUS. This is a very hardy evergreen plant which has dark foliage, rather large in size; grows in very compact form. Produces great masses of flowers and broad heads during the month of March or earlier. The buds are pink, but upon unfolding turn white. The fruit, which is rather inconspicuous, is of a peculiar metallic color.

HEDGES.

NOTHING COULD BE MORE BEAUTIFUL than a neatly trimmed hedge of Evergreens, and they are useful for boundary fences, screens, etc. We give below some of the best varieties for ornamental hedges, screens, wind-breaks or boundaries.

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For helpful selection hints see index for “Plants listed for Special Purposes”

HARDY CLIMBING VINES.

IT SEEMS UNNECESSARY to speak at length of the value of the climbing plants in our gardens and pleasure grounds. They are equally ornamental on the walls of the stable, the terraces of the mansion, and on the humblest cottage, over whose low roof a mantle of rose or clematis sheds such a transforming cloud of beauty. They grace the garden walls and take from stiff and hard lines their ugliness by fresh foliage, pretty flowers, and often pleasing fruit; and are invaluable for covering trellises.

Actinidia: SILVERY-SWEET VINE.

Hardy deciduous climber from Japan of remarkable beauty. The foliage on the ends of the flowering shoots is of a glistening silvery white color, giving the whole vine, from a little distance, the appearance of being covered with large white flowers blossoming among its bright green leaves. The effect is very marked and beautiful. The flowers, which appear in this latitude about the middle of June and last from two to three weeks, are creamy white with purple centers, having numerous stamens and bright yellow anthers; remarkably sweet, resembling the Lilly-of-the-Valley in fragrance.

AKEBIA.

A. quinata. A beautiful, perfectly hardy fast growing Japanese vine with magnificent foliage; produces flowers in large clusters of chocolate-purplish color, possessing a most delicious perfume. Unsurpassed for covering trellises and verandas, the foliage never being attacked by insects.

AMPELOPSIS.

A. quinquefolia. VIRGINIA CREEPER or AMERICAN IVY. Native vine of rapid growth, with large, luxuriant foliage, which in Autumn assumes the most gorgeous coloring. The blossoms, which are inconspicuous, are succeeded by handsome dark blue berries.

A. veitchii. JAPAN or BOSTON IVY. Beautiful, hardy climbing plant of Japanese origin. Leaves a little smaller and more ivy-like than the American. One of the finest climbers we have for covering walls, as it clings firmly to the smoothest surface, covering it smoothly with the over-lapping leaves, which form a perfect mass of foliage. The color is a fresh deep green in Summer, changing to the brightest shade of crimson and yellow in Autumn.

Aristolochia: DUTCHMAN'S PIPE.

Magnificent hardy native vine of rapid growth, with large heart-shaped leaves and brownish flowers, resembling in shape a

miniature pipe. Splendid for archways or verandas.

Clematis: VIRGIN'S BOWER.

Clematis plants of the improved sorts are exceedingly hardy, slender-branched, deciduous climbing shrubs of rapid growth and handsome foliage, which produce beautiful large flowers of various colors in great abundance and during a long period. In the several species and varieties of it the Clematis surpasses all other hardy climbers in its adaptation to many uses and locations. They do best in a rich soil in a sunny location.

Duchess of Edinburg. Without doubt the best of the pure double whites. Deliciously scented.

Henry. The finest of all white Clematises and should find a place in every collection. It is not only a vigorous grower but is a remarkably free and continuous bloomer from June to October. Flowers are large, creamy white, with reddish chocolate anthers.

Jackmani. This is perhaps the best known of the fine perpetual Clematises, and should have credit for the great popularity now attending this family of beautiful climbers. The plant is free in its form of growth, an abundant and successful bloomer, producing flowers from July to October. The flowers are large and of an intense violet-purple.

Jackmani alba. Strong vigorous grower, perfectly hardy and a prolific bloomer; fine large, pure white flowers.

Madam Edouard Andre. This is the nearest approach to a bright red Clematis, and has been called the Crimson Jackmani. The plant is a strong, vigorous grower and very free in bloom. Color a distinct crimson red; a very pleasing shade and entirely distinct from all other varieties.

Paniculata. SWEET-SCENTED JAPAN CLEMATIS. Japanese plant possessing

CLEMATIS, Continued.

unusually attractive merits. The vine is of rapid growth, quickly covering trellises and arbors with handsome, clean, glossy green foliage. The flowers are of medium size, pure white, borne in immense sheets and of a most delicious penetrating fragrance. Flowers appear in September at a season when few other vines are in blossom.

Ramona. Strong, rampant grower and a true perpetual bloomer; flowers appear on the last year's growth and on the new shoots, giving an abundance of blossoms all through the season; color deep, rich lavender.

CINNAMON VINE.

Fine hardy climber and well known in some parts of the country as Chinese Yam. The tubers grow very large and are edible like a sweet potato. The vine is a beautiful, rapid grower, producing sweet-scented flowers.

EUONYMUS VEGGEUS RADICUNS.

(Japanese Evergreen Bittersweet.)

Low, spreading evergreen shrub which can be used with good success as a climber reaching a height of 20 or 30 feet; hardy evergreen plant bearing great clusters of attractive berries; leaves are 1 to 2 inches in length, rather thick, dark green in color; broadly oval in shape; as a climber this plant is comparatively new and is far superior to English Ivy.

Hedera: IVY.

Evergreen Ivies often suffer in Winter if exposed to the sun, and should, therefore, be planted on the north side of a wall or building.

American, Japan, Boston. (See *Ampelopsis*.)

H. helix. ENGLISH IVY. The well-known old and popular variety with dark green, leathery leaves, usually with five lobes.

H. folia variegata. VARIEGATED ENGLISH IVY. With smaller leaves than the preceding, variegated with white.

H. Hibernica. IRISH IVY. Leaves a dark, shiny green; very close-growing variety.

Jasminum: JASMINE.

J. nudiflorum. YELLOW JASMINE, High twining shrub with dark green leaves and small fragrant flowers which

appear before the leaves early in Spring, or even on warm days in Winter.

J. officinale. COMMON JASMINE. Slender vine with finely divided pinnate leaves and numerous small, white, fragrant flowers in Summer; partly evergreen.

Lonicera: HONEYSUCKLE.

L. aurea reticulata. JAPAN GOLDEN-LEAVED. Handsome variety, having foliage beautifully netted or variegated with yellow. Flowers yellow; fragrant.

L. Belgica. MONTHLY FRAGRANT. Blossoms all Summer; flowers red and yellow; very sweet. Rapid grower.

L. Halliana. HALL'S JAPAN. Strong, vigorous evergreen variety, with pure white flowers, changing to yellow; very fragrant. Covered with flowers from June to Nov.

L. Japonica or L. sinensis. CHINESE TWINING. Well-known vine holding its foliage nearly all Winter. Blooms in July and September; very sweet.

L. sempervirens. Strong grower, and produces bright scarlet, inodorous flowers all Summer.

See also Bush Honeysuckles, page 63.

Lycium: CHINESE MATRIMONY VINE.

Neat, half-climbing plant, bearing small, light pink flowers in Summer, followed by berries which turn to a beautiful scarlet in the Fall, when it is very ornamental.



HARDY PERPETUAL CLEMATIS.

Pueraria: KUDZU VINÉ.

Magnificent climbing vine for all purposes, well established vines often growing 40 feet in a season; especially adapted to covering pergolas or to secure a dense shade. Leaves resemble those of the lima bean in shape and are dark green and woolly, often changing during the season to green with cream or yellow along the veins. Flowers rosy-purple, pea shaped and borne in long, handsome racemes.

Tecoma: TRUMPET VINE.

T. grandiflora. CHINESE TRUMPET VINE. Leaves thick and shining, and immense blossoms of gorgeous crimson.

T. radicans. COMMON TRUMPET VINE. Splendid climber; vigorous and hardy, with clusters of large, trumpet-shaped scarlet flowers in August.

WISTARIA.

W. sinensis. CHINESE PURPLE. Beautiful climber of rapid growth, and producing long, pendulous clusters of pale

blue flowers. It is very hardy and one of the most superb vines ever introduced.

W. sinensis alba. CHINESE WHITE. Variety of preceding with pure white flowers. Rather tender.

ORNAMENTAL GRASSES.**Gynerium: PAMPAS GRASS.**

Half-hardy perennial. Native of South America. Very beautiful. Roots require Winter protection in cold climates.

Eulalia. ZEBRA GRASS. One of the most striking and distinct plants. Unlike most plants of variegated foliage, the striping or marking is across the leaves instead of longitudinally, the leaves being striped every two or three inches by a band of yellow one-half inch wide.

G. elegans. Plumes silvery white, upon long stems; blooms early. The large plumes when dried make a splendid addition to a bouquet of dried grasses.

Do not put off ordering until planting time arrives. We can give you better service and better trees, at no additional expense if you will place your order with us as early in the season as possible.

BULBOUS AND TUBEROUS-ROOTED PLANTS.**AMARYLLIS.**

A beautiful class of plants with large, drooping, bell-shaped, lily-like flowers, varying in color from the richest crimson to pure white striped with crimson or scarlet.

CANNA.

Indian Shot Plant. Stately and highly ornamental plants for both flowers and foliage. They attain a height of two to five feet and may be grown singly or in masses. Leaves green or brownish red; flowers scarlet, crimson, yellow, cream, etc., variously marked.

New Large-flowering French and American. Not so tall as the old-fashioned sorts, but with flowers of great beauty; everywhere popular. These seedlings vary in color, ranging through all shades of yellow and orange to richest crimson, scarlet and vermillion. Some are plain and some spotted.

CROCUS.

A universal favorite and one of the earliest garden ornaments. Should be planted about two inches deep. Colors blue, white, yellow and striped.

DAHLIAS.

Through interest aroused by dahlia shows and dahlia societies, and by the introduction of a number of new varieties, both elegant and exquisite, the cultivation of the Dahlia is again being given the attention it deserves. There is nothing that, with the same amount of money invested, will give more show of stately and brilliant Autumn flowers than the Dahlia. It is especially fine for borders, and makes fine beds. No flowering plant produces a finer display for a continuous period. The introduction of the original cactus dahlia, Juarézi, founded a new race known as the Cactus varieties. Within a few years the new Pæony Flowered Dahlia has made it

DAHLIAS, Continued.

appearance. Its immense flowers and graceful forms are a great improvement over the old single varieties. They are valuable for cut flowers, and make a splendid show for decorative work in the garden. We have the following:

- Cactus Dahlias.
- Pæonia Flowered Dahlias.
- Decorative Dahlias.
- Show Dahlias.
- Pompon Dahlias.

GLADIOLUS.

The Gladiolus is the most attractive of all the Summer flowering bulbs and deserves a place in every garden, as it is sure to flower and do well with little care. They are the easiest thing to grow imaginable, but they do appreciate full sunshine. Set bulbs about four to six inches deep when early garden is made, and additional plantings two weeks apart will give a long period of bloom, from July to November. Cut when first flowers on the spike are opening and then place in water indoors; buds open to the end of the spike affording a beautiful decorative bouquet for ten days. No other flower is more lasting or more satisfactory in its rich coloring. We list the following:

America. Soft pink with lavender tints. Robust grower and splendid spike of flowers. We specially recommend this.

Attraction. Presents a most charming contrast with its deep crimson flowers and white throat.

Augusta. Pure white, throat delicately shaded with lavender. Splendid as a cut flower.

Baron Hulot. Rich velvety blue, greatly admired and a decided novelty.

Glory. Unique in having flowers with daintily ruffled petals. The color is a rich cream with mingled apricot and red markings in throat. Vigorous grower.

Klondyke. Primrose yellow, set off by a striking maroon blotch.

Mad. Monneret. Fine spikes of a delicate rose. Valuable as a late bloomer.

Mrs. Francis King. Beautiful light scarlet, with pencilings of a deeper shade. Flowers unusually large—individual blooms sometimes six inches in diameter. We recommend this one.

Pink Augusta. Clear pink, early blooming in the garden and excellent for florists forcing.

Princes. Brilliant crimson with white blotches on lower petals. Open flower of immense size. No finer gladiolus grown.

We also carry a good line of imported gladiolus both named and in general assortment.

HYACINTHS.

The most beautiful and fragrant of early Spring-flowering bulbs; much used for Winter forcing. Too well known to need description. Large assortment of colors and varieties.



CACTUS DAHLIA. These are as beautiful as roses and more easily grown.

IRIS.

The Iris thrives best if planted in a moist soil; if this cannot be had, should be plentifully supplied with water while growing and flowering.

Germanica. GERMAN IRIS. The true "Fleur de Lis," the national flower of France. They are perfectly hardy, thrive anywhere, grow and blossom luxuriantly, particularly if plentifully supplied with water or if planted in moist situations, as on banks of ponds, etc. Plants well established produce from 50 to 100 spikes of bloom, deliciously fragrant and fine for cutting. In beauty the flowers rival the finest orchids, colors ranging through richest yellows, intense purples, delicate blues, soft mauves, beautiful claret-reds, white, primrose and bronzes of every imaginable shade.

Kaempferi. JAPAN IRIS. Finest of all the Iris family. The flowers are of immense size, from 6 to 8 inches in diameter, and of the most beautiful and delicate shades. They are perfectly hardy, and flower in great profusion during June and July. A well-established plant gives a dozen or more flower-stalks two to three feet high, each stalk producing two to four enormous blossoms.

Narcissi: JONQUILS.

Pretty varieties of the Narcissus, having a very agreeable fragrance; adapted to either pots or out-door culture. The bulbs being small, six or eight may be put in a 6-inch pot.

Convallaria: LILLY-OF-THE-VALLEY.

The Lilly-of-the-Valley is as hardy as any plant can possibly be, and when planted in the open ground will increase rapidly. For the house we have what are called "pips"—young roots with flowering stems that will bloom in a few weeks after planting, and will flower well in baskets of damp moss, or potted. For the garden we can ship either in the Spring or Autumn.

Lilium: LILLIES.

No class of plants capable of being cultivated out-of-doors possesses so many charms; rich and varied in color, stately and handsome in habit, profuse in variety, and of delicious fragrance, they stand prominently out from all other hardy plants. They thrive best in a dry, rich weil-drained soil where water will not stand in Winter. After planting they re-

quire very little care, and should not be disturbed for several years; established plants blossom more freely than if taken up annually.

Auratum. GOLD-BAND LILY of JAPAN. Flowers very large, of a delicate ivory-white color, thickly dotted with rich chocolate-crimson spots, with a bright golden band through the center of each petal. The finest of all lillies.

Elegans atrosanguineum. Dark blood-red. Erect.

Harrisii. BERMUDA EASTER LILY. Flowers large, trumpet-shaped, pure waxy white, gracefully formed and delightfully fragrant. The ease with which it can be forced into flower in Winter has made it wonderfully popular as a Winter flower. Tens of thousands of it are grown every year for church decorations at Easter.

Longiflorum. Well-known beautiful variety with snow-white trumpet-shaped flowers that are very fragrant. It is quite hardy and blossoms freely in the open ground in June or July. Is also used largely for forcing for the Easter holidays, the flowers having more substance and lasting longer than the Bermuda lily.

Speciosum album. Very fragrant, large flowers; pure white with a green band running through the center of each petal. One of the best.

Speciosum rubrum. White, beautifully spotted red; flowers in August. This is one of the most useful of the Lily family, perfectly hardy and flowering well under all circumstances.

Tigrinum fl. pl. DOUBLE TIGER LILY. Bright orange-scarlet with dark spots; a strong growing showy variety and entirely hardy. Succeeds well everywhere.

NARCISSI.

We have a choice collection of these fragrant Winter-blooming plants.

Peony: PAEONIA.

Plant in deep, rich, well prepared soil, covering the buds but an inch or two. Do not expect too much the first year as they are a little show in establishing themselves but will make up in attractiveness later. They may be planted singly or in beds, or along borders; a large bed making a fine show, surpassing even the Rhododendron and Rose. It is the flower for the millions, coming into blossom early — May or June.

Herbaceous. This splendid class contains

Peony: PAEONIA, Continued.

the largest, most showy and attractive flowers in cultivation, almost rivaling the rose in color and blossom. They are of stately growth, very hardy and delightful when in blossom. The public is beginning to appreciate the many fine varieties of recent introduction, ranging from pure white through the different shades of pink, rose, variegated, purple, etc. They increase in beauty with age and may be planted in almost any situation. We recommend Fall planting. They succeed best in rich soil and will be benefited by a mulch of rotten manure during the Winter, which may be lightly spaded into the soil in the Spring. Many of them are very double and have a delicate and refreshing fragrance. They are easily cultivated and require but little protection. Blossoms from four to eight inches in diameter. Foliage rich, glossy, deep green color.

Adolph Rousseau. Very large; deep, brilliant pink. One of the best varieties and is a free bloomer.

Delicatissima. Late flowering variety of rare beauty. Full, double immense blossoms, delicate, clear pink, passing to blush white center. Very fragrant, blooms freely.

Edulis superba. Bright violet-rose, silvery reflex. Fragrant and early.

Felix Crouse. Very bright red; large ball-shaped flower.

Festiva maxima. Extra large, in clusters, fragrant, the finest early white. It is pure white except for a few flakes of crimson on some of the center petals. Full double flower, as near a perfect pæony as one could desire.

Marie Lemoine. (Calot.) Large sulphur white, creamy center; double, massive flowers; strong stems; one of the finest; very late.

Modeste Guerin. Deep cherry rose, bright and showy; very large, distinct and fine shaped; fragrant; one of the best.

Rubra triumphans. (Delache.) Bright carmine.

Also other choice named varieties.

Polyanthus: TUBEROSE.

These deliciously fragrant, white, wax-like plants should be in every garden. This valley is particularly adapted to their successful culture.

TIGRIDIA.

One of the most showy of all Summer bulbs, and blooms from midsummer until frost, growing three feet high, with large wide-open triangular blooms four to six inches across. The colors and markings are very brilliant and peculiarly odd and attractive, and clumps of the in the border have a most gorgeous effect. It is difficult to name a flower of such unique and exquisite beauty as a Tigridia, the superb



FIELD OF PÆONIAS IN THE NURSERY.

TIGRIDIA, Continued.

spotting being so distinctive and handsome. They are easily grown and always more than satisfactory.

TULIPS.

Owing to the late Spring frosts in the colder sections bedding plants cannot be safely planted in such localities before the

early Spring-flowering bulbs are through blossoming. Without these bulbs, for one or two months of beautiful Spring weather our garden would present a bare appearance. We know of nothing that for the money invested will give a more gorgeous show during early Spring, and there is nothing more easily grown than the Tulip. They thrive well in almost any soil. Should be planted in October and November.

HARDY PERENNIAL PLANTS.

THERE IS CERTAINLY no class of plants cultivated strictly for ornamental purposes that gives the amount of satisfaction and pleasure that is found in Hardy Perennials. It is not surprising, however, that they should be popular when you consider the wide range of varieties obtainable suitable to all conditions and changes in climate, altitude, etc., as well as the varying character of flowers with their myriad colors and fragrance.

Perennial plants have the advantage over many other classes in the fact that they do not require replacing each season, as when the roots are once established you will have your flower bed established and each year will bring you your flowers in their season.

Perennial plant orders are necessarily filled with clumps of roots of the plants ordered, as the plants themselves will perish with the first autumn frosts. Our plants are field grown and will have strong roots, which should give you the best possible results.

A great many of the plants here listed are most suitable and appropriate to use as border plantings in connection with shrubbery on the lawn, livening it up with bright colors and affording a pleasing effect in conjunction with the foliage and bloom of the taller growing shrubs.

All orders for perennial stock will be shipped either by Parcel Post or Express, depending upon the size of the shipment. Our prices include transportation charges.

Alyssum: MAD-WORT.

An indispensable plant for the rockery or border. Grows twelve inches high, producing in May masses of broad flat heads of bright yellow flowers.

Aquilegias: COLUMBINES.

One of the most elegant and beautiful of hardy plants, producing graceful spurred flowers on stems rising two feet or more above the foliage. Columbine should be planted where it is desired to lighten up a too formal planting. Their graceful and

generous blooms add charm and life to the planting. We have the following popular varieties:

Canadensis. AMERICAN. Bright red and yellow—one of the finest.

Chrysantha. GOLDEN. Bright yellow with long-spurred flowers.

Flabellata Nana Alba. DWARF. A dwarf growing pure white.

Skinneri. MEXICAN. Yellow with long orange-red spurs.

Bulgaris. EUROPEAN. Violet-blue; a strong vigorous grower.

*PERENNIAL PLANTS, Continued.***Arabis: ROCK CRESS.**

Alpina. One of the most desirable of the very early spring flowering plants. Is especially adapted for edging and rock garden but does equally well in the border, forming a dense carpet completely covered with pure white flowers. It is splendid for cutting and lasts a long time in bloom.

Bellis Perennis: ENGLISH DAISY.

Double flowering white and pink.

Campanula Medium: CANTERBURY BELLS.

Canterbury Bells are among the showiest and most effective old-fashioned flowering plants, blooming in late May and June. They are suitable for planting either in clumps of a few plants or in great masses, making a display with their dainty tones of rose-pink, blues and whites, a sight of unsurpassed beauty. They usually bloom for a period of from four to five weeks and this can be prolonged by pinching out the flowers as soon as they fade. We offer strong plants that will bloom the same season as planted in rose-pink, blue or white.

Campanulas: BELLFLOWER.

An indispensable hardy garden flower, showing much variety of form, some being of tall and imposing habit while others are dwarf, compact little plants, suitable for edging rockwork, etc. They like a good rich soil and will last much longer in bloom if planted in a half shady place. The taller growing varieties should be staked to prevent injury from high wind.

Carpatica. A pretty species growing in contact tuft not exceeding eight inches high. Flowers clear blue. Begins blooming in June, continuing until October. Suitable for border or rockery work.

Persicifolia. PEACH BELLS. Blue flowers during June and July. Attains a height of two feet.

Alba. A pure white form of the *Persicifolia* variety.

Pyramidalis. CHIMNEY BELLFLOWER. The most conspicuous of all Bellflowers, forming a perfect pyramid four to six feet high, crowded with large porcelain-blue flowers in August.

Cerastium: SNOW IN SUMMER.

Tomentosum. A desirable low growing plant with silvery foliage and white flowers

in June. Suitable for the rockery or for carpeting dry sunny spots, or for covering graves.

COREOPSIS

Lanceolata Grandiflora. A very popular hardy plant. Flowers a rich golden yellow, graceful in form and invaluable for cutting. Commences to bloom the latter part of June and continues throughout the entire Summer and Autumn. Succeeds everywhere. Two to three feet high.

Delphinium: HARDY LARKSPUR

Larkspurs begin to bloom about the middle of June. As soon as each crop of flowers is faded if the stalks are cut off close to the ground a new growth will be made and a new crop of flowers secured.

Belladonna. A free and continuous bloomer from the end of June until Autumn frosts. The flowers are of Turquoise blue and unequalled for delicacy and beauty.

Chinense. A pretty dwarf species with fine feathery foliage and intense Genetian-blue flowers in open panicles. This variety also comes in a white flowering species.

Formosum. The old favorite dark blue with white center. Three to four feet high. A vigorous tree flowering popular kind.

Gold Medal. The finest strain of mixed Hybrids on the market. The plants are of strong, vigorous habit with laage flowers on unusually long spikes. These are supplied in mixed colors only.

Digitalis: FOXGLOVE.

This is an old-fashioned, dignified and stately flower and is indispensable to a complete garden. The strong flowerstocks, which frequently grow four to six feet high, always give an appearance of strength and during the period of blooming dominate the whole garden. We offer them in white, purple, rose or mixed.

Gallardia: BLANKET FLOWER.

Grandiflora. A very hardy, showy plant growing about two feet high, beginning to flower in June and continuing throughout the entire season. Succeeds in any soil and prefers a sunny position. Flowers are of gorgeous coloring. The center is dark-red brown while the petals are marked with rings of brilliant crimson, orange and vermilion and often a combination of all in one flower.

Gypsophila: BABY BREATH.

This plant will thrive in any soil in a sunny position. Is an old-fashioned though beautiful plant, possessing a grace not found in any other perennial. Blooms during July and August and forms a symmetrical mass two to three feet in height and equally broad, of minute pure white flowers forming a beautiful gauze-like appearance.

Hibiscus: MALLOW.

A desirable border plant succeeding in any sunny position but doing best in damp places. Grows three to five feet high with large foliage and large showy flowers of delicate coloring, produced during the entire Summer. Can furnish plants of pink and white flowering species.

HOLYHOCKS.

Stately, majestic, hardy plants growing from six to eight feet high; essential to every complete garden. They also serve well when interplanted with shrubbery. The hollyhock requires well prepared soil enriched with manure and requires a liberal supply of water during the dry period. An occasional spraying with Bordeaux mixture applied early in the growing season is beneficial. We offer the best double-flowering plants in double white, double rose, double red, double yellow, maroon or mixed.

Newport Pink. A strong, vigorous growing variety producing colossal spikes of double pure pink flowers.

Lupinus Polyphyllus: LUPIN.

A hardy free growing plant highly desirable for the garden; blooms for three or four weeks, beginning the middle of May. Flowers produced in large spikes of clear blue or white. Splendid for decorating.

Lychnis: CAMPION.

An easy plant to grow, thriving in any soil, which combined with their brightness, has brought them into high favor with lovers of hardy plants. They are known by various names, such as *Campion*, *Jerusalem Cross*, *Lamp Flower*, *Maltese Cross*, *Ragged Robin*, etc. We furnish plants of the brilliant orange-scarlet flowering variety only. Period of blooming from May to July.

Myosotis: FORGET-ME-NOT.

The well-known hardy plant suitable for border purposes, producing flowers of intense sky-blue. Bright and attractive.

Pentstemon: BEARD TONGUE.

A most useful showy perennial either for border or rockery.

Sensation. A most beautiful species, bearing spikes of large *Gloxinia*-like flowers in a great variety of bright colors, including rose, cherry, crimson, purple, lilac, etc. The plants grow two feet high and bloom from early Summer till frost.

POPPIES.

Large Oriental. For a gorgeous display of rich and brilliant coloring nothing equals these plants during their period of blooming, which, in normal seasons, is during the first part of June. Their large flowers and brilliant coloring render them conspicuous in any position. They are easily cultivated, doing well in almost any kind of soil. After flowering in the Spring the plants die back, usually reappearing in early September or as soon as the weather gets cool. In cultivating the beds during this resting period care should be taken that the roots are not disturbed, otherwise the plants will be ruined.

Rudbeckia: CONE FLOWER.

Laciniata. *GOLDEN GLOW*. A distinct tall-growing, hardy perennial, from six to seven feet high. Foliage deeply cut, handsome bright green; flowers very double, rich golden yellow, two to three inches in diameter, borne on long, smooth stems, forming for the tall plant a solid head of bloom. Excellent for cutting.

Stokesia: CORNFLOWER ASTER.

A beautiful plant growing 18 inches high bearing its handsome lavender-blue cornflower-like blossoms, which measure from four to five inches across, from early in June until September. Its culture is easy, succeeding in any open sunny position. It can be used suitably either as a single plant or in beds in masses.

SWEET WILLIAM.

A well-known attractive, free-flowering hardy perennial, producing in early Summer a splendid effect in beds and borders with their rich and varied flowers. In assorted colors, velvety maroon, white, crimson, scarlet and pink.

Vinca: TUFTED PANSIES.

An excellent dwarf trailing plant that is used extensively for carpeting the ground under shrubs and trees or on graves where it is too shady for other plants to thrive. We have the green leaved also the golden variegated leaved varieties.

Violas: TUFTED PANSIES.

Similar to the familiarly known pansy but smaller flowers. Extensive bloomers covering nearly eight months in the year. Their bright attractive colors and floriferousness are making them indispensable for every garden. They come in shades of soft purple, rich golden yellow, violet with dark eyes and white.

SHASTA DAISIES.

Chrysanthemum leucanthemum hybridum.

A marvelous combination of size, grace, abundance and general effectiveness of flowers, which are borne on long, clean, stems; flowers showy white or cream colored, 4 to 5 inches across.

Alaska. The whole plant is gigantic, but compact and graceful. The combinations

of size, grace, glistening whiteness, abundance and general effectiveness of the flowers, which are borne on long, clean, strong stems, place it far ahead of all others of its class. With proper disbudding flowers are produced perpetually, though more abundantly at the usual blooming season.

California. In most respects similar to Alaska, but the buds and half-opened flowers are of a most pleasing clear, pale, lemon-yellow, with two rows of petals. When a day or two old these gradually change to pure white. The combination is exceedingly pleasing. The flowers average 4 to 5 inches across, and, with ordinary care, are produced perpetually.

Westralia. Distinguished by its branching habit. Buds and nearly opened flowers are of a pleasing cream color, semi-double, 3 to 4 inches across and are produced on fairly long stems in bewildering profusion.

SELECTED LIST FOR SPECIAL PURPOSES.

IT IS THE OBJECT of the following list to aid our patrons in the selection of plant material for special situations and special purposes. It will be understood that the suggestions are general and more detailed information will be given upon inquiry. We will be glad to help you in selecting plants for your particular problem.

STREET TREES.

Large Size.

<i>Scientific Name.</i>	<i>Common Name.</i>
Acer saccharinum	Sugar Maple
Acer pseudo-platanus	Sycamore Maple
Aesculus Hippocastanum	Horse Chestnut
Quercus Rubra	Red Oak
“ coccinea	Scarlet Oak
Platanus occidentalis	Sycamore, Basswd
Platanus Orientalis	Oriental plane tree
Ulmus Amaricano	American Elm
Ulmus campestris	English Elm
Tilia Americano	American Linden
Tilia Earopaea	European Linden
Liriodendron tulipifera	Tulip tree
Liquidambur styraciflua	Sweet Gum

Medium Sized.

Acer platanoides	Norway Maple
“ rubrum	Red Maple
Celtis occidentalis	Hackberry
Gleditsia occidentalis	Honey Locust
Robinia pseudacacia	Black Locust

Small Sized Trees.

Acer campestre	English Maple
Sorbus Americano	Mt. Ash, American
“ aucuparia	“ “ European

TREES WITH COLORED FOLIAGE.

Red Hues.

Acer Schweidleri	Schweidler's Mapl
“ rubra	Red Maple
Cornus Nuttallii	Native Dogwood
Quercus rubra	Red Oak
“ coccinea	Scarlet Oak
Liquidambar styraciflua	Sweet Gum

Purple Hues.

Fagus atropurpurea	Purple Beach
Prunus Pissardii	Purple-leaf plum

Variegated Hues.

Acer negundo aureum	Silver-lf box elder
Tilia argenta	Silver-lyd Linden

FLOWERING TREES.

May.

Almond	Flowering almond
Amelanchier alnifolia	June Berry
Cornus Nuttallii	Dogwood
Aesculus Hippocastanum	Horse Chestnut

June.

Crataegus	Thorn
Sorbus	Mt. Ash
Laburnum	Golden Chain
Robinia	Locust
Liriodendron	Tulip
Catalpa	Catalpa

Plants Listed for Special Purposes, Continued.

SMOKE-RESISTANT TREES.

Pinus austriaca (Austrian Pine), *Aesculus*, *Amelanchier*, *Betula* (Birch), *Crataegus* (Thorn), *Ilex* (Holly), *Laburnum* (Golden Chain), *Liriodendron*, *Platanus*.

TREES AND SHRUBS FOR SEASHORE AND EXPOSED SIGHTS.

Abies (Fir), *Cupressus* (Cypress), *Juniperus* (Juniper), *Pinus* (Pines), *Thuja* (*Arborvitæ*), *Ilex*, *Tamarix*, *Berberis* (Barberry), *Cytisus* (Broom), *Ribes* (Flowering Currants).

TREES AND SHRUBS FOR SWAMPY SOIL

Abies, *Chamæcyparis* (*Retinispora*), *Betula*, *Alnus* (Alder), *Corylus* (Filbert), *Populus* (Poplar), *Salix* (Willow), *Thuja*, *Viburnum*.

TREES and SHRUBS for SANDY, DRY SOIL

Amelanchier, *Betula*, *Crataegus*, *Ilex*, *Juniperus*, *Pinus*, *Prunus*, *Quercus*, *Sorbus*, *Tamarix*, *Berberis*, *Caragana*, *Cornus*, *Cytisus*, *Deutzia*, *Ligustrum*, *Philadelphus*, *Rhus* (Fringe).

TREES and SHRUBS for LIMESTONE SOIL

Amelanchier, *Berberis*, *Chamæcyparis*, *Cornus*, *Cotoneaster*, *Crataegus*, *Daphne*, *Fagus* (Beech), *Hibiscus*, *Hypericum*, *Juniperus*, *Ilex*, *Ligustrum*, *Pinus*, *Populus*, *Prunus*, *Ribes*, *Symphoricarpos*, *Viburnum*

DWARF SHRUBS.

Andromeda, *Berberis buxifolia nana*, *Cotoneaster horizontalis microphylla*, *Daphne*, *Lonicera nitida*, *Deutzia gra-*

cilis, *Picea pygmæa* (Pygma spruce), *Retinispora squarrosa*.

BLOOMING PERIOD OF SHRUBS.

March and April.

Daphne, *Camellia*, *Forsythia*, *Cydonia* (Japanese Quince.)

May.

Prunus, *Spiræa*, *Lilacs*, *Viburnum* (Snowball), *Mahonia* (Oregon Grape), *Lonicera* (Honeysuckle).

June.

Deutzia, *Spiræa*, *Viburnum* (Snowball), *Diervilla* (*Weigelia*), *Cornus* (Dogwood), *Rhododendron*, *Philadelphus* (*Syringa*).

July.

Spiræa, *Buddlia*, *Hydrangea*, *Schizonektus* (Ocean Spray).

August and September.

Hibiscus (*Althea*).

SHADE ENDURING SHRUBS.

Azalea, *Berberis*, *Buxus*, *Calycanthus*, *Cornus*, *Cotoneaster*, *Cytisus*, *Daphne*, *Euonymus*, *Hypericum*, *Ilex*, *Ligustrum*, *Lonicera*, *Philadelphus*, *Rhododendron*, *Symphoricarpos*, *Viburnum*.

SHRUBS WITH BRIGHT-COLORSD FRUIT

Berberis, *Chtoneaster*, *Crataegus*, *Elæagnus*, *Euonymus*, *Ilex*, *Lonicera*, *Pyracantha*, *Ribes*, *Sambucus*, *Symphoricarpos*, *Viburnum*, etc.

A certificate of inspection, testifying to the freedom of our stock from insect pests or diseases, accompanies every shipment of trees sent out to our customers.





Roses make a beautiful parking for the home.

ROSES

HP—Hybrid Perpetual or Hybrid Remontant. HT—Hybrid Tea or Hybrid China.

T—Tea. N—Noisette. Cl.—Climbing. Polly—Polyanthus.

Aglaia [Yellow Rambler].....	Cl-Polly	Dean Hole. Silvery-carmine.....	HT
Alfred Colomb. Carmine Crimson.....	HP	Dorothy Page Roberts. Copper-pink.....	HT
American eauty. Red.....	HP	Dorothy Perkins. Pink; Cl.....	Wich
Augustine Guinoiseau. White LaFrance	HT	Duchess de Brabant. Pink.....	T
Baby Rambler. Red.....	Poly	Duchess of Wellington. Coppery-saffron	
Balduin [Helen Gould]. Red.....	HT	yellow.....	HT
Baltimore Belle. White; Cl.....	Prairie	Earl of Warwick, soft salmon-pink.....	HT
Banksia. White; Cl.....	Banksia	Ed. Mawley. Deep velvety crimson.....	HT
Beauty Inconstante. Veriegated.....	T	Etoile de Lyon. Yellow.....	T
Beauty of Glazenwood. Cl. bronze-red.....	N	Euphrosyne [Pink Rambler].....	Polly
Belle Siebrecht, bright pink.....	HT	Fisher Holmes. Red.....	HP
Bessie Brown, creamy white.....	HT	Florence Pemberton, creamy white,	
Betty. Coppery-rose.....	HT	suffused pink.....	HT
Blue Rambler [Veilchenblau].....	Cl-Poly	Fortune's Yellow [Beauty of Glazen-	
Ben Silene. Salmon-rose.....	T	wood.] Bronze-red.....	Cl-N
Bride. White.....	T	Francisca Kruger. Coppery-yellow.....	T
Bridesmaid. Pink.....	T	Franz Deegan. Yellow.....	HT
Burbank. Pink.....	Bourbon	Frau Karl Druschki. White.....	HT
Caroline Goodrich. Red; [Cl. Gen. Jacq]	HT	Gen. Jacqueminot. Red.....	HP
Catherine Mermet. Pink.....	HT	Gen. Jacqueminot [Carline Goodrich] Cl.	HT
Chateau de Clos Vougeot, velvety blk.....	HT	Gen. MacArthur. Velvety-scarlet.....	HT
Cherokee. White; Cl.....		Geo. Dickson, velvety-black-scarlet.....	HT
Chromatella [Cloth of Gold]. Yellow.....	Cl-N	Geo. C. Waud, vermilion red-orange.....	HT
Cl. Kaiserin Augusta Victoria. White.....	HT	Glorie de Dijon. Salmon-orange; Cl.....	HT
Cl. Perle des Jardins. Yellow.....	T	Glorie de Lyonnaise. Yellow.....	HP
Cl. Wootton. Red.....	HT	Glorie de Margottin. Red.....	HP
Clio. Flesh-pink.....	HP	Glory of Mosses. Pink.....	Moss
Cloth of Gold [Chromatella]. Yellow.....	Cl-N	Golden Ophir. Salmon-yellow; Cl.....	N
Coquette des Alps. White.....	HN	Golden Sun [Soliel d'Or].....	HP
Countess of Gosford. Salmon-pink.....	HT	Gruss an Tepliz. Red.....	HT
Crested Moss. Pink.....	Moss	Harrison's Yellow.....	Austrian
Crimson Rambler. Cl.....	Poly	Harry Kirk. Deep sulphur yellow.....	HT

ROSES—Continued

Helen Gould [Balduin]. Red.....	HT
Hermosa. Pink.....	Bourbon
Hugh Dickson.. Brilliant crimson....	HP
J. B. Clark. Scarlet-maroon.....	HT
Jean Note. Chrome-yellow.....	HT
Jonkheer J. L. Mock. Bright red-salmon-pink.....	HT
Joseph Hill. Salmon-pink.....	HT
Jubilee. Red.....	HP
Juliet. Rosy-red.....	HB
Kaiserin Augusta Victoria. White.....	HT
Kaiserin Augusta Victoria. Cl.; white.....	HT
Killarney. Pink.....	HT
Killarney. White.....	HT
Lady Ashtown, silvery-pink.....	HT
Lady Battersea, cherry crimson.....	HT
Lady Hillingdon. Deep apricot yellow.....	HT
Lady Roberts, apricot yellow.....	HT
Lady Ursula, flesh pink.....	HT
La France. Pink.....	HT
La Marque. White; Climbing.....	N
Liberty. Red.....	HT
Lyon Rose. Red-salmon-chrome-yellow.....	Pernetiana
Mad. Abel Chatenay. Salmon-pink.....	HT
Mad. Alfred Carriere. White; Cl.....	HN
Mad. Caroline Testout. Pink.....	HT
Mad. Constant Soupert. Deep yellow-pink.....	T
Mad. de Watteville. White.....	T
Mad. Hoste. Ivory white, canary yellow.....	T
Mad. Leon Pain. Silvery pink-salmon.....	HT
Mad. Melanie Soupert. Saffron-yellow carmine pink.....	HT
Mad. Ravary. Deep yellow.....	HT
Magna Charta. Pink.....	HP
Maman Cochet. Pink.....	T
Maman Cochet (Priscilla.) White.....	T
Marechal Niel. Yellow; Cl.....	N
Marechal Niel. White.....	T
Marie Van Houtte. White.....	T
Marquise de Sinety, carmine-ocher.....	HT
Marshall P. Wilder. Red.....	HT
Meteor. Cl.; Dark red.....	HT
Midred Grant, silvery-white shaded peach.....	HT
Molly Sharmen-Crawford, snowy white.....	T
Mrs. Aaron Ward. Yellow-salmon.....	HT
Mrs. Arthur Robt. Waddell. Reddish-salmon.....	HT
Miss Cynthia Forde, deep rose pink.....	HT
Mrs. John Laing. Pink.....	HP
Mrs. Robert Garrett. Pink.....	HT
Mrs. Robt. Peary. K. A. Victoria. White Cl.....	HT
My Maryland. Intense pink.....	HT
Ophire. [Gold of Ohir.] Salmon-yellow Cl.....	N
Papa Gontier. Red.....	T
Paul Neyron. Deep rose pink.....	HP
Perle des Jardins. Yellow.....	T
Perle des Jardins. Yellow; Cl.....	T
Perpetual White Moss.....	Moss
Persian Yellow.....	Austrian
Pharisaer, Rosy flesh.....	T
Philadelphia Rambler. Red.....	Poly
Pink Rambler. [Euphrosyne.] Cl.....	Poly
Prince Camille de Rohan. Dark-red.....	HP
Prince de Bulgarie. Rosy flesh.....	HT
Priscilla. [White Maman Cochet].....	T
Queen of the Prairie. Rosy-red. Cl.....	Prairie
Rainbow. Striped.....	T
Rambler. Blue. [Veilchenblau]. Purplish-red. Cl.....	Poly
Rambler, Crimson. Cl.....	Poly
Rambler, Phila.....	Poly
Rambler, White. Cl.....	Poly
Rambler, Pink. Cl.....	Poly
Rambler, Yellow. Cl.....	Poly
Rayon d'Or, deep yellow.....	Pernetiana
Reine Karola de Saxe. Pearly-pink.....	HT
Reine Marie Henrietta. Red Cl.....	T
Reve d'Or. Apricot-yellow. Cl.....	N
Rhea Reid. Red.....	HT
Richmond. Red.....	HT
Safrano. Apricot-yellow.....	T
Salet. Pink.....	Moss
Soliel d'Or. Orange-yellow; reddish-gold.....	HP
Souvenir du President Carnot. Flesh.....	HT
Sunset. Yellow.....	T
Sunburst. Cadmium-yellow; Orange-center.....	HT
Thalia. [White Rambler.] Cl.....	Poly
Tree Roses.....	
Ulrich Brunner. Red.....	HP
Veilchenblau. [Blue Rambler.] Purple-red. Cl.....	Poly
White Banksia. Cl.....	Banksia
White Killarney.....	HT
White La France. [Aug. Guinoiseau].....	HT
White Mamam Cochet.....	T
White Rambler. Cl.....	Poly
Wm. Allen Richardson. Coppery-yel. Cl.....	N
Wm. Shean, deepest pink.....	HT
Winnie Davis, apricot pink.....	HT
Wootton. Red. Cl.....	HT
Yellow Rambler. [Aglaiia] Cl.....	Polly

WE FREQUENTLY have a number of roses from which the labels become detached, thus making it difficult during the rush of the shipping season, and when they are not in bloom, to accurately name them. Very often some of our choicest and most expensive varieties thus remain unsold. Any one desiring a collection of such unnamed roses can secure them at special low rates so long as the lot lasts. If interested write us.

Directions for Orchard Spraying.

(Adapted From Cir. Bul. 13, Oregon Agricultural Experiment Station.)

That spraying for insect pests and fungus diseases must be made a part of general orchard practice if one expects to succeed in this line of agriculture is rapidly being learned by all fruit growers in all parts of the world. It should be understood, however, that spraying is not a preventive or cure for everything. There are many diseases and insect pests of orchard crops which must be combated in some other way than by spraying, and there are still important troubles for which no definite remedy has as yet been devised.

It is not essential that the grower familiarize himself with a great number of sprays, but he should be familiar with and be able to prepare and apply those few standard remedies which, if properly used, will give the greatest possible efficiency with the least cost for materials and labor.

It is highly important that spraying for any pest may be made at just the proper time with just the proper spray. Each pest, whether a fungus or an insect has its own particular life history and particular time when it attacks plants. This life history determines the method of treatment, consequently every grower must study orchard conditions in his district and must be familiar with the pests which occur there in order that he may practice the proper method of control.

The proper spray applied out of season will not be effective, neither will the wrong spray applied at the right time for some particular pest be effective. It is useless to expect one spray with any substance to prove effective for all kinds of pests. In general, while a few remedies have more or less effect both against insects and fungus diseases, do not expect every fungicide to be of any use in the control of insect pests, nor every insecticide to be of value for the control of fungus diseases.

The information as to the proper time to spray and the proper sprays to use should be obtained from reliable sources, and the recommendations thus given should be the result of careful experimentation.

It is important that pure and fresh materials be used. It is better where it is possible for the grower to mix his own sprays than to buy ready made mixtures.

It is highly important that the spraying be carefully and thoroughly done. *Do not economize on spray.* A mixture should be very carefully made and in applying it every portion of the tree should be covered. With the possible exception of the calyx spray

for codling moth it is in general best to use a nozzle that will give a fine mist-like spray. High pressure of 200 pounds is in general preferable to a low pressure.

INSECTICIDES.

The term insecticide is applied to those substances which will prevent the attacks of, or destroy insects. Insects are defined as air breathing members of the animal kingdom, having three distinct divisions of the body, head, thorax, abdomen and with one pair of antennæ and three pairs of legs in the adult stage. Most insects are produced from eggs either in or outside the body of the female. Some few are produced by a budding process inside the parent.

All insects are developed in such a way that their mouth parts are modified for eating or sucking. This being true insecticides may then be divided into—

1. Contact insecticides for sucking insects
2. Food poisons for tissue eating insects.

The contact insecticides in common use are: Lime-sulphur. (See under Combination Sprays.

“Black Leaf-40,” a commercial spray made by the Kentucky Tobacco Products Co., Louisville, Ky., and when diluted 1 part to 800 parts of water makes a very efficient spray against plant lice, scale insects, etc.

Kerosene Emulsion. One of the oldest sprays, is always satisfactory if the materials used in making it are good and the emulsion is properly made. This is usually prepared as a stock solution and then diluted to the required strength for spraying. The necessary materials are as follows:

Whale oil soap.....	$\frac{1}{2}$ pound
Water.....	1 gallon
Kerosene.....	2 gallons

The soap should be dissolved in boiling water, and when thoroughly dissolved the containing vessel should be removed from the fire and the kerosene added. The mixture should then be thoroughly agitated until it is creamy white. This is best done by a hand pump, forcing the mixture thru the hose and back into the container. This then forms three gallons of stock solution which can be diluted to the required strength by adding given amounts of water. To get the amount for any given percentage divide the percentage into two hundred and then subtract three from the answer, and we have the amount of water necessary to add to each three gallons of stock solution for the per cent.

Pyrethrum is a powder made from the

flowers of the pyrethrum plant. It can be used either as a powder or as a spray, and can be secured at the drug store or from your insecticide dealer. Can be applied as a spray with water or as a dust.

Distillate Oil Emulsion is a spray which is used in combination with "Black Leaf-40" for destroying the pear thrips in California. It is also a good remedy for red spiders.

The *food poisons* for biting insects are usually arsenicals and are at the present time commonly used as the Arsenate of Lead, (neutral) non-acid and acid, and Arsenate of Zinc.

The Arsenates of Lead are made up both as a powder and as a paste. All Arsenates of Lead made by different firms throughout the country are made in one of two ways.

The *acid* or basic Arsenates of Lead is made with nitrate of lead as a base.

The (neutral) *non-acid* Arsenate of Lead is made with acetate of lead as a base.

The former is stronger in arsenic but at times is unsafe to use as it is liable to burn the foliage. The latter does not contain as high a percentage of arsenic but seldom if ever burns the foliage. It also appears to combine better with lime sulphur than does the acid arsenate of lead.

Arsenate of Zinc is comparatively new as an insecticide and if proven satisfactory will be equal to or better than the arsenate of lead. It stands in suspension better than do the arsenates of lead and is said to act quicker as a poison. There is some indication that alone and when combined with lime sulphur this arsenical will cause spray injury.

FUNGICIDES.

The term fungicides is applied to those substances which will prevent the growth of fungi on plants. The fungi are a group of plants of low order, many of them living as parasites on the higher or flowering plants including all our agricultural groups. These parasitic fungi are usually minute and the details of the form can be made out only by a microscopic examination. The grower sees merely the effect of the fungus upon the plant or the characters which make up the symptoms of the disease.

Fungi reproduces by means of small microscopic bodies known as spores, which generally speaking answer the purpose of seeds for the fungus plant. These spores may be disseminated by the wind, washed about by the rain, or carried about by birds and insects. Spraying for fungus diseases, in general, must be preventive rather than curative. One must cover the tree with some substance which will prevent the growth of the minute spores.

Bordeaux Mixture. Bordeaux mixture has

long been the principal spray used as a preventive of fungous diseases of plants, and while other sprays, notably the lime-sulphur mixtures, give promise of largely supplanting it for orchard purposes, it still remains one of the most important orchard fungicides.

Bordeaux for Winter use may be made as follows:

Copper sulphate, 6 pounds.

Quick lime, 6 pounds.

Water, 50 gallons.

This is known as the 6-6-50 formula. It should be used only upon dormant trees. Another formula frequently used is the 5-5-50 formula. When the trees are in leaf the following 4-4-50 formula is used on certain fruits:

Copper sulphate, 4 pounds.

Quick lime, 4 pounds.

Water, 50 gallons.

A weaker formula known as the 3-6-50 formula is sometimes used on plants of tender foliage.

It is of great importance that Bordeaux be properly made. The mixture *must be made fresh* each time it is used. The ingredients may be stored in stock solution indefinitely, however. Always use wooden or earthen vessels in preparing Bordeaux or the solution of blue stone.

When large quantities of Bordeaux mixture are required, it is most convenient to have stock solutions made up containing one pound per gallon of the respective ingredients. Take a fifty gallon barrel of water and suspend near the top a coarse sack containing fifty pounds of crystalized or granulated commercial copper sulphate. It will dissolve in a few hours. It is convenient to arrange this the night before the spraying is to be done. In another barrel place fifty pounds of lime freshly slaked. For this purpose choose clean stone lime of the best quality. Slaking should be done carefully. Water should be added a little at a time so that slaking will take place rapidly. The process should be watched carefully and the mixture stirred constantly while the slaking is going on, adding water as needed to prevent burning, as lime should never be allowed to become dry while slaking or it will burn, nor should it become entirely submerged with water. The mixing can be conveniently done with a hoe. When thoroughly slaked make up to fifty gallons with water.

If small quantities only of stock solution are needed any quantity can be made in the above mentioned proportions.

These stock solutions can be kept for an indefinite time if water is added to replace that lost by evaporation. They should be kept covered to prevent dilution by rains.

Made up in this way each gallon of stock solution represents one pound of ingredients. Each should be stirred very thoroughly before any is taken out.

In making up the mixture from these stock solutions both the copper sulphate and lime should be diluted before being mixed. Have two dilution barrels or tanks. If the 6-6-50 formula is used and the spray tank holds 100—take twelve gallons of copper sulphate stock solution and dilute to make fifty gallons in one barrel and take twelve gallons of the lime paste and dilute in the same manner in another barrel. The lime paste should be run through a fine strainer.

For convenience it is well to have a platform built high enough to permit the liquids to flow from the dilution tanks into the spray cart. Allow the two diluted solutions to run together through a twenty-mesh copper wire strainer into the spray tank, mix well and apply at once.

(It is always best to test the mixture before applying with potassium ferro-cyanide.) Buy ten cents worth of potassium ferro-cyanide at the druggists and dissolve in the least possible amount of water. Label the bottle poison. Take out a cupful of the well-stirred mixture and allow a drop or two of the potassium ferro-cyanide to drop into it. If the drop turns yellow or brown on striking the mixture it will be necessary to add more lime. Add lime till no discoloration is seen when tested in this way. If this precaution is not taken the spray may injure the foliage.

Use a good pump that gives strong constant pressure; have good nozzles that give a fine, mist-like spray and cover the tree thoroughly.

Always rinse the spray tank, hose and rod with water after using. Use only brass rods and connections as Bordeaux mixture will gradually attack iron.

Self-Boiled Lime-Sulphur. This mixture, introduced and perfected by Scott, of the Department of Agriculture, is especially desirable for use on peach foliage. The experience in most sections of the country has been that Bordeaux mixture and most other fungicides are unsafe to use on peach and other tender foliage. This fact has led to the perfection of the self-boiled lime-sulphur. This mixture, prepared and recommended for use on the peach foliage, is in effect a mechanical mixture of lime and sulphur with only a very small percentage of sulphides in solution. In Oregon this spray is especially recommended for use against brown rot and fruit spot of peach. The formula recommended is as follows:

Lime, 8 pounds.
Sulphur, 8 pounds.
Water, 50 gallons.

The preparation of the mixture as described by Scott in Bureau of Plant Industry, Bulletin No. 174, is as follows:

"The mixture used in our experiments during the past season was composed of 8 pounds of fresh stone lime and 8 pounds of sulphur (either flowers or flour may be used) to 50 gallons of water. The mixture can best be prepared in rather large quantities, say enough for 200 gallons at a time, making the formula 32 pounds of lime and 32 pounds of sulphur, to be cooked with a small quantity of water (8 or 10 gallons) and then diluted to 200 gallons.

"The lime should be placed in a barrel and enough water poured on to almost cover it. As soon as the lime begins to slake the sulphur should be added after first running it through a sieve to break up the lumps. The mixture should be constantly stirred and more water added as needed to form a thick paste at first and then gradually a thin paste. The lime will supply enough heat to boil the mixture several minutes. As soon as it is well slaked water should be added to cool the mixture and prevent further cooking. It is then ready to be strained into the spray tank, diluted and applied.

"The stage at which cold water should be poured on to stop the cooking varies with different limes. Some limes are so sluggish in slaking that it is difficult to obtain enough heat from them to cook the mixture at all, while other limes become intensely hot on slaking and care must be taken not to allow the boiling to proceed too far. If the mixture is allowed to remain hot fifteen to twenty minutes after the slaking is completed, the sulphur gradually goes into solution, combining with the lime to form sulphides, which are injurious to peach foliage. It is, therefore, very important, especially with hot lime, to cool the mixture quickly by adding a few buckets of water as soon as the lumps of lime have slaked down. The intense heat, violent boiling and constant stirring result in a uniform mixture of finely divided sulphur and lime, with only a very small percentage of the sulphur in solution. The mixture should be strained to take out the coarse particles of lime, but the sulphur should be carefully worked through the strainer.

"In applying the self-boiled lime-sulphur mixture, the spraying outfit should be equipped with a good agitator. The mixture settles to the bottom of the tank and unless kept thoroughly agitated cannot be evenly applied."

Iron Sulphide. This mixture is used primarily for mildew. When used as a dormant spray it should be combined with lime-sulphur and is prepared in the following manner:

In order to prepare 100 gallons of spray

put in the spray tank the usual amount of lime-sulphur for the winter strength; then add 15 quarts more. Partly fill the spray tank with water; add 15 pounds of iron sulphate dissolved in 10 or 15 gallons of water. This should be added slowly and with constant stirring. It will cause a black substance to be thrown down. Fill the spray tank to 100 gallons and apply the mixture to the trees. The tank should be equipped with a good agitator where this mixture is used.

If this mixture is to be used as a Summer spray proceed as follows:

Partly fill the barrel with water; dissolve in this 10 pounds of iron sulphate, then add, with constant stirring, 10 quarts of undiluted lime-sulphur. Fill this barrel with water, allow the black precipitate to settle and then pour off the discolored liquid. Fill with water and thoroughly stir the sediment, allow it to settle again and pour the liquid. Repeat this until the liquid is perfectly clear. Use the sediment thus prepared in 1000 gallons of spray and apply to the trees.

COMBINATION SPRAYS.

A combination spray may be defined as a spray that has both fungicidal and insecticidal values to a more or less degree.

During the past few years it has been conclusively demonstrated at this and other experimental stations that the lime-sulphur spray, which has long been known as the most satisfactory Winter spray for San Jose Scale, has fungicidal qualities nearly or quite equal to those of Bordeaux. It has also been conclusively demonstrated that it may be used in combination with arsenate of lead without detracting from the value of either; and that when so used it is at once an efficient contact insecticide food poison spray and fungicide.

It also has the advantage that when properly diluted it may be used either as a Winter or Summer spray.

As a Winter spray one application of lime-sulphur spray each year will do more for the neglected orchard than can be done in any other way by the same expenditure of cash and energy. It not only destroys San Jose Scale, but it also destroys the branch form of woolly-aphis, the eggs of the green aphid, the pear-leaf blister mite, the hibernating larvæ of the prune twig-miner, and probably the hibernating larvæ of the bud moth, together with many other insects which may chance to be wintering on the trees. It is also a good fungicide. If applied in Fall it is nearly or quite equal to Bordeaux as a preventive of apple tree anthracnose; applied to peach trees just before the buds open in Spring, it is a preventive of peach leaf curl.

As a Summer spray the results of the past few seasons work at the Oregon Experiment Station proves conclusively that when diluted it can be safely used upon the apple, pear, plum and prune, potato, celery and other hardy plants, and that it gives as good results in controlling apple scab as does Bordeaux, which has been the standard spray for this disease, and further that it is much less likely to produce the disastrous "spray injury" to fruit and foliage which is so common and often serious when Bordeaux is used.

Preparation of Lim-Sulphur.

The "stock solution" method of preparing lime-sulphur spray is now most generally used in this state. A number of brands of commercial solutions which have only to be diluted with water to be ready for use are now offered for sale, and careful experiments extending over several seasons have demonstrated that these sprays are fully equal to the old home-made lime-sulphur spray.

The chief fault to be found with these commercial preparations is that they cost too much. The retail price is \$7 to \$10 per barrel of 50 gallons. The lime and sulphur necessary to prepare 50 gallons of stock solution, which is equally as efficient, costs at present retail prices approximately \$3. It may be prepared as follows:

Sulphur (best finely ground) one sack, 110 pounds. Lime (best grade unslaked) 60 pounds. Water sufficient to make 50 gallons.

Slake the lime, mix the sulphur into a thin paste with a little water, add it to the lime, add sufficient water to make all told 50 gallons; bring it to a boil and boil vigorously for 30 to 35 minutes, stirring constantly. The sediment is then allowed to settle, after which the clear, amber-colored liquid is drawn off and may be stored in tanks for future use.

Every grower who expects to prepare his own spray by the stock solution method should provide himself with a Beaume's acid scale hydrometer. Such an instrument, which should not cost over \$1.00, furnishes a very simple and convenient method of testing the strength of the solution. Having thus determined the strength of any commercial or home-made stock solution, it may be diluted for Winter or Summer use according to the following table: *i. e.*, if stock solution tests 29 degrees, for Winter spray use one gallon to 9½ gallons of water; for Summer spray use one gallon to 29 gallons of water. If stock solution tests 31 degrees, for Winter use one gallon to 11 gallons of water, and for Summer spray one gallon to 31 gallons of water.

Table of Dilutions for Various Stock Solutions.

Stock Solution Baume Scale	Dilution Winter Strength	Dilution Summer Strength
32°	1-12	1-32
31°	1-11	1-31
30°	1-10	1-30
29°	1-9½	1-29
28°	1-9	1-28
27°	1-8½	1-27
26°	1-8	1-26
25°	1-7½	1-25
24°	1-7	1-24
23°	1-6½	1-23
22°	1-6	1-22

MIXED SPRAYS.

With the increasing number of important pests it has been necessary to make a careful and thorough study of orchard protection. The time of application of a spray for a fungus disease often coincides with the time of application for some one or more important insect pests. This has led to many experiments in the mixing of insecticides and fungicides to determine the practicability of using one application of mixed sprays in place of separate applications of a suitable fungicide and insecticide. Considerable success has followed from these experiments and the mixing of a fungicide and an insecticide in combined application is a common orchard practice of

considerable value to the fruit grower. Mixed sprays may also apply to insecticides.

The great difficulty in mixing sprays arises from the fact that more or less of a chemical change takes place in the mixing which may destroy the combative value of the sprays. The original substances may also be changed so as to liberate some material which will injure the foliage and fruit. (Such is apparently the case when acid arsenate of lead is mixed with lime sulphur; free arsenic is liberated and usually causes considerable injury.)

Sprays that can be usually mixed at the present time are:

Bordeaux mixture and Arsenate of Lead, Arsenite of Zinc or Paris Green.

Lime-sulphur and Arsenate of Lead or Arsenite of Zinc.

Lime-sulphur and tobacco sprays.

Arsenate of Lead or Arsenite of Zinc may also be added to the last mixture when desirable.

Iron Sulphate may be mixed with Arsenate of Lead and "Black Leaf-40" alone or together.

Other mixtures have been tried and some are recommended, but it is not yet advisable to recommend them for general use. *The fruit grower is cautioned against using spray mixtures which have not been thoroughly tested out.*

SPRAY CALENDAR FOR APPLES AND PEARS.

	What to Spray for	Condition of tree or relative time.	What to Use.	Remarks.
SPRING	Moss and Lichens. Scale Insects. Aphis. Pear Leaf Blister Mite. Red Spider.	Just as tips of leaves are emerging.	Lime-Sulphur 1 to 12 plus. Black Leaf-40, 1 to 900.	The time indicated is the best time to apply the clean-up spray as this will destroy more insect pests than if applied during the winter. No so-called dormant spray need be given where this method is used. Slight injury may occur to the tips of the first leaves, but this is not serious. Dilute the Lime-Sulphur and add Black-Leaf-40, 1 pint to each 110 of the diluted spray.
	Scab, 1st application.	When the blossom buds have separated in the cluster and show pink	Lime-Sulphur 1-30 or Bordeaux 5-5-50.	If leaf eating insects or green fruit worms are present add Arsenate of Lead (neutral) or non-acid 2 pounds to 50 gallons of diluted spray if a paste form, 1 pound to 50 gallons if powdered.
	Scab 2nd application and codling moth calyx spray Tent and other leaf eating caterpillars. Slugs on pears.	After petals fall and before calyx lobes closes.	Lime-Sulphur 1-30 plus Arsenate of Lead 2 to 50 paste or 1 to 50 powder, non-acid or neutrals.	If scab does not occur in a district Lime-Sulphur is not necessary. This spray should be applied with considerable force so as to get the poison into the inner calyx cup.
	Apple Powdery Mildew.	Apply one week after the petals fall.	Iron sulphide, 10-10-100. Combined with Lime-Sulphur	Prepare by adding 15 pounds of dissolved iron sulphate per 100 gallons of diluted Lime-Sulphur, add slowly while stirring. Black Leaf-40 should be added afterwards. Repeat this application at intervals during the summer if necessary.
	Bud Weevils	When the insects become abundant	Bands of some sticky substance (Tangle-foot, printer's ink, etc.	These insects cannot fly and if the bands are such that they cannot crawl over or under them, there is little danger of their getting into the trees. Bands of cloth should be put around the trees and the tangle-foot or ink placed on the bands.
	Apple tingis. Apple Leaf Hopper.		Black-Leaf-40, 1 to 800; whale oil soap 1 lb. to 100 gal. of spray.	
SUMMER	Scab, 3rd application.	Ten days after 2nd application.	Lime-Sulphur 1-30.	May be omitted if no rains after second spray. If rains continue in early June give 4th application 10 to 15 days after 3rd.
	Codling Moth, 2nd application.	East of Cascade Mts. 2 to 4 weeks after 1st application. West of Cascades about 6 weeks after 1st application.	Arsenate of Lead 2 pounds to 50 gallons of water if paste; 1 pound to 50 gallons of water if powder.	The codling moth apparently does not deposit its eggs until the evening temperatures reach 65° F. or above. The larvæ appear a week to 10 later and the spray should be applied before first ones hatch.
	Codling Moth, 3rd application.	Five weeks after 2nd application.		In Western Oregon and Washington make this application between Aug. 1 and Aug. 10.
FALL	Bud Moth. Anthracnose. Codling Moth.	1st to 15th of September.	Bordeaux mixture 5-5-50 and Arsenate of Lead 2 to 50 paste, or 1 to 50 powder.	This is the best time of year to kill the bud moth and many codling moth larvæ may also be destroyed. If anthracnose is present, it is advisable to use combination spray. Where anthracnose is SERIOUS the Bordeaux should not be omitted.
	Anthracnose	After fruit is picked.	Bordeaux mixture 6-6-50.	Where anthracnose is very severe two applications should be made 15 days apart.
WINTER				No spraying is necessary if spring applications are made as recommended above. Fence rows should be cleaned up and all dead wood and prunings should be burned.

SPRAY CALENDAR FOR STONE FRUITS.

	What to Spray for	Condition of tree or relative time.	What to Use.	Remarks.
SPRING	Peach Leaf Curl Scale Insects Peach Twig Miner Aphis Moss Lichens Red Spiders	As the buds are swelling in the spring.	Lime-Sulphur, 1 to 12 plus Black Leaf-40, 1 to 9000	If leaf curl, moss and lichens are the only troubles use Bordeaux 5-5-50. If curl has been serious in previous years, and insect pests are present use Bordeaux in February and lime-sulphur plus Black Leaf-40 as buds are swelling.
	California Peach Blight and fruit spot. Also attacks apricots and almonds.	About first week in May.	Self-boiled lime-sulphur, 8-8-50.	Repeat last week in May. If disease is especially serious make an application in the middle of May.
	Peach tree borer,	First of June.	Asphaltum	Ordinary paving asphaltum should be used and can be applied with a paint brush. Apply from base of tree to 12 or 14 inches up the trunk,
	Caterpillars, and Bud Moth. All fruits. Slugs on cherry.	As soon as they appear after the leaves are out.	Arsenate of Lead non-acid, 1 to 50 powdered, or 2 to 50 paste.	Not necessary to make this application if insects do not appear.
	Bud weevils (on prune grafts principally.	When they begin to appear.	Tree tangle-foot or some sticky substance.	These insects cannot fly, therefore any sticky substance placed on bands about the trunks should keep them out of the trees. Tree tangle-foot is probably the most efficient material to use. Bugs in trees when bands are put on can be shaken from tree by jarring
SUMMER	Brown Rot (Peach, Prune, Plum, Apricot, Cherry.	First application one month after petals fall; 2nd one month later; 3rd one month before ripening of fruit.	Self-boiled lime-sulphur, 8-8-50.	If spraying prunes, Bordeaux, 4-4-50 or lime-sulphur, 1-40 can be used with safety.
FALL	California Peach Blight and fruit spot.	Last week in October.	Bordeaux, 6-6-50.	This is the most important application for California Peach Blight. Fall spraying should become regular orchard practice in all sections where this disease occurs. After the disease is once under control fall spraying should be sufficient and the spring application for this disease may be dispensed with.

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Our Guarantee.

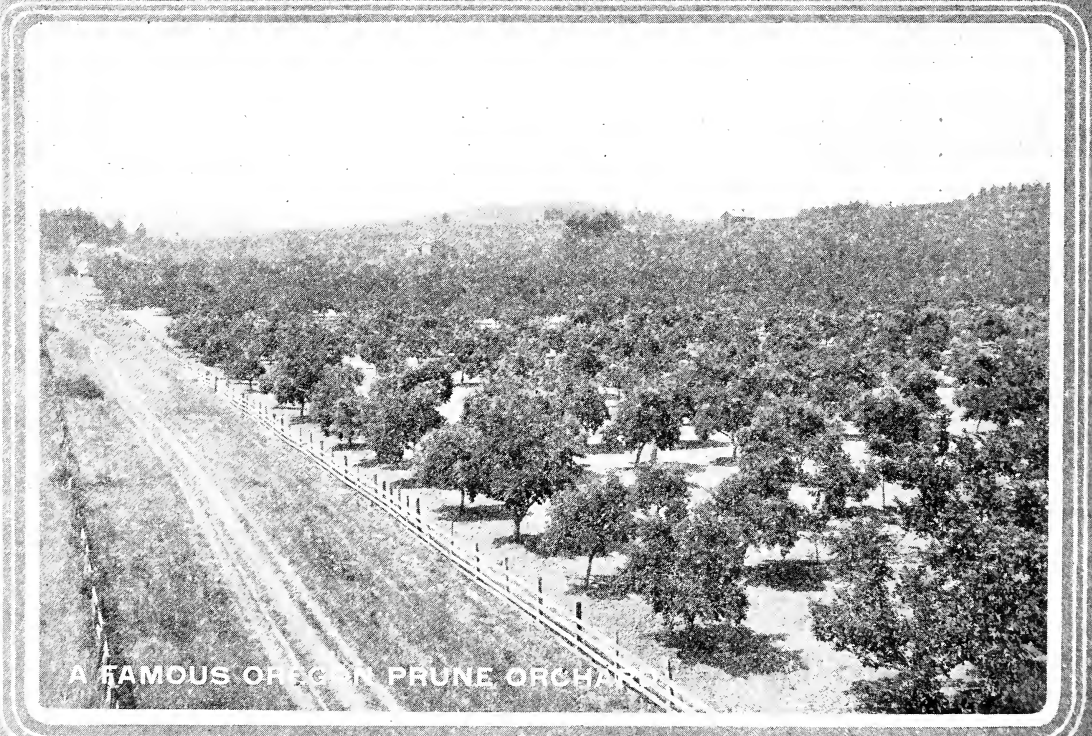
WE EXERCISE THE GREATEST CARE possible in all departments to keep our varieties true to name. However, with the greatest care and the closest checking, mistakes are liable to be made; but we are ever willing and ready to replace free of charge, on receipt of proper proof, stock that may prove otherwise, or refund the original amount paid, and all orders are accepted upon this basis.

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PACKING HOUSE, COVERING TWO ACRES



A FAMOUS ORCHARD PRUNE ORCHARD