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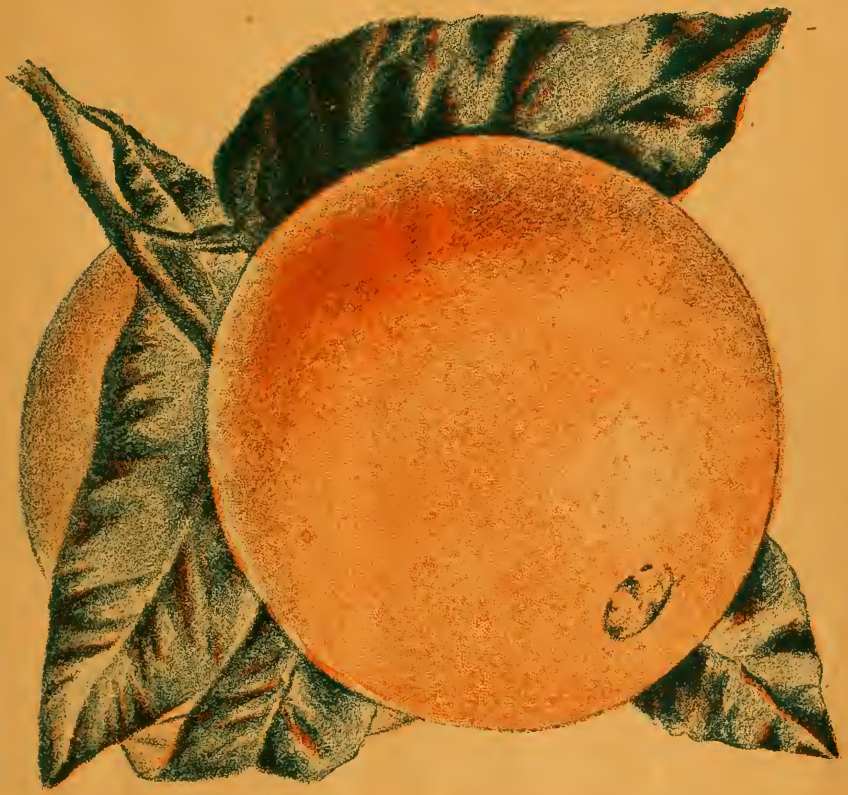

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YOUNG ORANGE ORCHARD IN NORTHERN CALIFORNIA.

THE ORANGE

IN

NORTHERN AND CENTRAL CALIFORNIA

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CITRUS fruit trees have been successfully grown in suitable situations in Northern California for nearly half a century. The famous orange tree of Bidwell's Bar, started from an Acapulco seed in Sacramento in 1855 and planted out in Butte county in 1859, which has been so generally made to stand sponsor for the demonstration of citrus conditions north of the Tehachapi mountains, is not entitled to all the distinction which has been heaped upon it. In the fifties there were other orange and lemon trees growing in widely separated northern localities. It was, even in early days, the proper thing to include citrus trees among ornamental dooryard plantings.

Why the North Delayed

This question naturally suggests itself: Why, if such early demonstration was had, were large commercial plantings of the orange at the north delayed until the last decade? Several good reasons can be adduced. In the first place a disposition toward wider planting did at one time arise but quickly subsided. In the later seventies when the general rush to fruit growing, which has given us our present vast extension of the interests, began, citrus fruits were not overlooked. There was a sharp demand for orange trees. Southern California nurseries had a large overstock of trees budded on China lemon roots which Southern California planters had learned to despise as forcing excessive growth of tree and coarse, large fruit. These soft monstrosities were sent north by carloads and sold to unwary planters, who thought they were getting a great deal for their money. Such trees were planted in all sorts of situations and their broad leaves made a fine display as soon as

planted. Then came the cold winter of 1878–79. The temperature in places reasonably situated was not very low—not lower than is frequently encountered in Southern California, and not low enough to injure well planted old trees anywhere in the State, though it did destroy some ill-placed ones and helped to define suitable situations for citrus culture. But the degree reached was fatal to those soft trees on a lemon foundation almost everywhere, and the disappointment of the new planters, who based calculations upon such trees, discouraged them from further efforts toward citrus culture for some time. It was not a logical conclusion.

Money in Deciduous Fruits

But there was another and more logical reason why the well suited lands in the central part of the State were not at that time given to citrus fruit culture. Citrus fruits require irrigation everywhere. Deciduous fruits, including the grape, do not require irrigation except in places of shallow soil or light rainfall. Without waiting for irrigation facilities then, hundreds of thousands of acres of deep valley loams were immediately available for the planting of deciduous fruits. The growers understood these fruits, while the orange to an English-speaking people was an unsolved problem. The long list of deciduous fruits had varieties to suit the tastes and ambitions of all planters and the opportunity for selling many different fruits and their different products seemed illimitable.

No citrus fruits had been shipped out of the State on a commercial scale, and no one knew if they could be profitably. The central and northern districts threw their full strength into the deciduous fruit interests and the result has justified the effort, for, at the present time, the annual shipments of deciduous orchard fruits, fresh, dried and canned, and the grape, both fresh, as raisins and as wine and brandy, have reached a total value of about $30,000,000—almost all of it from the regions of California north of the Tehachapi mountains. The engrossing requirements of this grandly successful undertaking gave northern growers, packers and capitalists no leisure to think seriously of citrus fruit planting; that was left for a decade and a half to the special attention of the Southern California people and they developed it splendidly for the settlement and upbuilding of their portion of the State—reaching a total value of product sold beyond State lines of about $8,000,000. Citrus fruits were neglected at the north because the people were too busy developing a greater fruit industry to which their conditions were superlatively suited.

During the last few years new interest has arisen in citrus fruit growing in Northern California, and all the scattered experiences of the last half century are becoming of inestimable value in guiding this planting aright. There are several important reasons why the north has now turned to the orange.

Now a Well Established Industry

First—Deciduous fruit production has reached large volumes, margins have become reduced to those which assert themselves in any well established and extensive industry, and some of the early glamour has gone out of it. It will henceforth proceed soberly, and consequently safely, to grand aggregates which no one can foresee, but it is readily demonstrable that, with the present rush of population to the more wintry districts of the Pacific Slope, the opening of Asiatic connections and the victories being attained each year in the distant East and in Europe, our production of deciduous fruits and their products will go steadily forward. Increased interest in citrus fruit planting in Northern California is in no sense a menace to the deciduous fruit industry. It is merely a new graft upon a very vigorous industrial stock.

Second—Owing to natural conditions, which will be briefly explained presently, orange growing can be pursued at the north without competition with the main crop in Southern California. The Northern California crop will be consumed before the bulk of the southern crop moves from the trees.

Early Fruit, Fine Flavor

Third—All California oranges have characteristics and qualities which are recognized as of distinctive excellence and, therefore, have a commercial advantage, which, under a wise system of protection against free entry of cheap tropical fruit, enables them to compensate the high-grade American labor which is employed in their growth, packing and marketing and leave a reasonable return to requite the growers' effort and investment. This being so, the production, so long as protection is continued, justifies extension of the effort to produce an American orange for Americans.

Fourth—Semi-tropical fruits are nature's demonstration of the existence in a locality of a climate which promotes health, comfort and a maximum of physical and intellectual attainment in mankind. Probably all that is urged against tropical climates as enervating and depressing of human standards is true, but not a word of it applies to an arid semi-

Proves Mild Climate

tropical climate, in which the blessing of dry air and freedom from the debilitating effect of temperature-extremes rejuvenate the old and weary and bring the young to that stature and vigor which all newcomers notice in the rising generation of Californians. Of the existtence of such conditions a well-grown orange of the California type is unimpeachable evidence. It has brought 100,000 people and $100,000,000 of capital to Southern California which otherwise would not have come.

Draws Desirable Settlers

Fifth—It is but a corollary of the foregoing that the successful and profitable production of citrus fruits is, par excellence, the motive force in promoting colony efforts and drawing into horticulture the class of people which constitute the most desirable element in the upbuilding of a great State. The splendid development of Southern California communities upon a horticultural basis points the way to even greater achievements in other parts of the State which are in some respects even better endowed by nature, and the citrus fruits become then the token, not alone of superior natural endowments, but of the type of manhood which can use them to the best advantage. None know this better than the Southern California people themselves, and it is a demonstration of the desirability both of the natural resources of Northern California in citrus lines, and of citrus fruit culture itself, that in all the newer citrus regions at the north there are to be found, among the leading planters and promoters, Southern Californians who have sold their early plantings at the South at high prices to newer comers and have started anew in the northern districts, where they find cheaper land, more abundant water supply and fruit which is marketed at an earlier date.

Why Northern California Grows Oranges

The claim has been made above that citrus culture conditions exist in suitable situations in California all the way from Shasta to San Diego county, and historical evidence has been cited to prove it. It is so surprising that practically the same climate should be found through a distance of between seven and eight degrees of latitude that many, even of those who have lived in California, do not appreciate the fact nor understand the explanation of it. If we should take the north and south distance of about 500 miles which separate Shasta and San Diego counties and lay it off on the Atlantic coast we would find Georgia at one end and New York at the other. Between these two localities on the Atlantic there is a vast

difference in climate; within the two points named in California there is so close a similarity that both meet the temperature requirements of the orange. Why is there such a difference on the two coasts?

First—Because, owing to ocean influences predominating over land influences, the west coast of continents in the northern hemisphere are warmer in winter than the east coasts. There is no citrus country between New York and Georgia; there is citrus country, in proper situations, all the way from Shasta to San Diego.

Second—California is not only blessed with benign ocean influences, but Northern California is additionally protected from low winter temperatures by the mountain barrier of the Sierra Nevada, extending southward from the multiplied masses of protecting elevations in the Shasta region, while Southern California enjoys the protection of the Sierra Madre and other uplifts on the north and east of her citrus region. Northern blizzards are, therefore, held back from entrance to California and are forced to confine themselves to their natural southerly and easterly direction over the interior parts of the Pacific Slope, while the great blizzards of the northwest traverse the Mississippi valley and, if they have sufficient impetus, extend to the gulf and carry destruction to semi-tropical growths even in Northern Florida. The ocean then bringing warmth and the high mountains defending against cold, combine their influences to give nearly the whole length of California semi-tropical winter temperatures. Latitude becomes a small factor in the California climates.

Third—Although this striking similarity does exist, there is another even more startling proposition involved and that is the influences exerted by the presence of the Coast Range as the western boundary of the great interior valley of the State and intervening between that great valley and the ocean. The several ridges of the Coast Range, with their inclosed small valleys, serve as a colossial wind-break against northwest winds, which might otherwise, now and again, bring a temperature too low for citrus fruits, where now they are safe from injury. The chief effect of these mountains is to protect the northern interior valleys and foothills from the raw winds of early springtime and to allow the sun, as he crosses each day higher in his course, to expend the increasing heat directly in promoting vernal verdure. The result is quick growth in all lines—early pasturage, early grain harvest and early fruit ripening. The valleys of Southern California, which have thus far been largely developed, have no high

Why Fruits Ripen Earlier at the North

range between them and the ocean. The influence of this opening of the valleys of Southern California is not so unfavorable as such an opening would be at the north, because ocean winds are gentler and warmer there and there is winter service rendered by this eastward trend of the Southern California mountains, as has been said, but the fact remains that the absence of high barriers against ocean influences retards the springtime and causes a slow development of summer conditions and late ripening of fruits, while the presence of high barriers at the north so hastens springtime and summer heat that early summer fruits in California are shipped from the North to the South—a thing which does not occur anywhere else in the northern hemisphere. This early marketing relieves the growers from much anxiety and costly frost-fighting because the fruit, which is always more susceptible to injury than the tree, is out of the way before the frost period, which usually begins about Christmas.

There is in Southern California, east of the mountains, a district which has thus far been but scantly developed, where protection from ocean influences tends to early ripening of fruits. The same is true of some parts of Arizona adjacent and small quantities of early fruits move westward and northward from that region. That region is not in view in this discussion, for too little has been accomplished in citrus lines to warrant conclusions.

Fourth—Still another feature of local topography must be mentioned as influencing citrus conditions north and south and explaining why winter temperature has fallen no lower at the north than at the south. At the north the snow fields of the high mountains are further from the valleys and mesas where citrus fruits are grown than they are at the south. The benches and low foothills of the Sacramento valley, for instance, are forty to fifty miles from the range to the east of them and there intervene countless ridges of high foothills and small valleys, and before the citrus plantations can be reached by the descending air currents they are considerably warmed by rustling over so much land which has been heated by the ample winter sunshine. From many of the southern citrus regions one looks almost directly upward and outward upon the grand snowclad mountains whose crests are but fifteen to twenty-five miles away. It is a good scenic effect—ripening oranges and dazzling snowfields in the same glance of the eye. It is not so grand as a pomological proposition.

Far From the Snows

Fifth—Another protecting influence for citrus fruit trees from low

temperatures in the latter part of December and January is the occurrence of land fog in the Sacramento and San Joaquin valleys. Sharp frosts come with clear dry air and are prevented by a veil of atmospheric moisture. The greater moisture of interior situations at the north during the months mentioned generates a frost-fending fog which largely takes the place of the artificial protection which Southern California growers produce by recourse to burning crude oil and evaporation from damp combustibles.

Rapid Growth

Although, as has been shown, Northern California fruit planters were late in taking up orange growing commercially, they have compensated for it by speed of accomplishment. The shipments of their fruit were eight times as large last year as they were five years before. The acreage of orchard has, of course, increased rapidly because early marketing experience has been very encouraging, and the reports of the Assessors to the State Board of Equalization show that there are now planted in the regions north of the Tehachapi 2,540,737 more orange trees than there were growing five years ago.

Promising Outlook

At the present time orange growing has a very promising outlook. Aside from the advantages which pertains to keeping ahead of the main Southern crop and thus helping to fill out the year at the East with California oranges, the general outlook for much larger consumption at the East and abroad, is very encouraging. The orange is passing from its old status as a luxury to its proper recognition as a staple winter fruit for dwellers in cold climates. For such use the agreeable acid and sprightly flavor of the California fruit especially commend it. The consumption of the fruit per capita, away from California, is still small and will be greatly increased when people know better its desirability and the reasonable prices at which it can be secured. This wider distribution is to be confidently expected and the rapid increase in population through the great west and north is each year giving California growers nearer markets of growing consumptive capacity. It will be of great advantage to the whole country as well as to California to have production steadily increased.

A Word of Caution

But while there is this favorable outlook and while citrus conditions do exist through such large areas of California, there is still danger of loss and disappointment through unwary individual investments and unwise locations of citrus colony enterprises. The tracts of land for orange plant-

ing even in a favorable citrus climate are limited in area, and every citrus climate has numerous places where local meterological conditions will prove destructive to the profit of the enterprise if not to the life of the trees. The orange is a hardy tree, judged within its temperature limits, but there is no money in a tree which is subjected to any kind of hardship. For this reason the selection of a good depth of strong, free loam should be made, for such is essential not only to good growth of the young tree, but to its support through the long productive life which the orange enjoys. Depth of good soil is not only a storehouse of plantfood, which will postpone the use of purchased fertilizers, but it is a reservoir of water so that irrigation can be applied in larger amounts at longer intervals. While it is quite possible to grow an orange tree and to secure good fruit on shallower soils if moisture conditions are kept just right by frequent use of water and fertilizers in just the right amounts, such conditions impose heavy burdens in their constant requirements of extra care and expenditure and these are handicaps of no small economic importance. The tree cannot live upon climate as a man may, because a tree cannot speculative; it must have a good foundation in the earth as well as a good outlook in the sky.

Conditions to Avoid

Growing orange trees on defective soils has brought disappointment and loss in Northern California as the same effort has in the South. In one respect the danger is perhaps greater. The ample supplies of irrigation water available have encouraged over irrigation where trees have been planted over hardpan and drainage is absent. Dying-back and yellow leaf have appeared in some groves and have been accounted for by digging to find the roots bedded in mud and slush. All plantings over clay subsoils should be guarded against this danger. Digging deep holes and filling them with good soil is setting a trap for the future failure of the tree unless the deep hole is properly drained by the nature of the subsoil or by artificial provision. On the other hand, planting over a gravelly subsoil is often disappointing because the water passes through the subsoil as through a sieve, and the tree shows distress although generous amounts are applied to the surface. Wide observation through the State teaches that such warnings are needed by the unwary.

There are also a few comments upon local modifications of climate, even in sections generally suited to orange culture, which should be made. Frosty places must be avoided. A few feet difference in

elevation may change profit to loss, but one must not therefore draw hasty conclusions that all small elevations are favorable. The experience of the last few years shows that nothing is, on the whole, more dangerous than the warm bottom land in a small elevated valley, which seems naturally protected on all sides. There are many such places which are far more treacherous than the uplands of the broad valleys which may be considerably lower. The benches around the sides of the small valley may be safe and the bottom of the same valley dangerous because there is no adequate outflow for cold air to the large valley below. Look out for small valleys which have divides of crumpled hills where they debouch into the main valley. Cold air can be dammed and held back; consequently the low land of a small valley may be worse than lower land in the main valley because in the latter there are air currents which prevent accumulation of cold air in particular places. These air movements make some plantings in the upper plains of the main valley safe though the whole region may seem to the eye rather flat and low, but of course broad sinks of the main valley may also be dangerous. Too great elevations are to be guarded against. Where one approaches the reach-down of mountain temperatures and loses the warming influences of the valley mesas, the danger line is at hand.

An ample water supply is essential. Small waterings which may bring satisfactory growth to a young tree are no measure of the needs of a bearing tree. The orange is using water all the year. Its crop requires nearly a year to reach maturity. Both in leaf growth and fruit growth it nearly doubles the activity of the deciduous tree and all the time it is pumping water with its roots and pouring forth water into the air through its exposed surfaces. No investment in orange planting can be profitable without assurance of adequate water supply.