

## THE DIVISION OF SUBTROPICAL HORTICULTURE AND THE AVOCADO INDUSTRY PLANS AND PROSPECTS

Prof. Robert W. Hodgson



**Mr. Rounds:** The program at this stop will consist of a talk by Professor Robert W. Hodgson, who has charge of the work here and will tell you of the plans for the future of this work. Mr. Hodgson.

**Prof. Hodgson:** Ladies and Gentlemen: It is a very real pleasure to welcome you to the Subtropical Horticulture tract of the University of California at Los Angeles. For us this is an historic occasion. This is the first meeting of fruit growers on this tract and it therefore marks an historical event. Some of us have for years cherished a dream of the development here in connection with the new branch of the great University of California, now dignified by the name, University of California at Los Angeles, of a School of Subtropical Horticulture. We are now beginning to see the fruition of this dream, in part at least. You honor us by your presence here today and we shall hope that in the years to come you will visit us frequently and that we will be able to show you much more than we can today.

But little of our proposed developments can be seen here today, for the reason that we have not yet moved down from Berkeley, and so short a time has elapsed since we took over this tract. A year ago last February, the Board of Regents announced its decision to eventually remove the work of the Division of Subtropical Horticulture, for seventeen years located at the College of Agriculture in Berkeley, where it is one of the subject matter divisions of the College of Agriculture, to the southern part of the state. That is as far as action was taken at that time. In October of last year, just a year ago, this tract, consisting of ten acres, was allocated to the Division of Subtropical Horticulture. On April 1 of this year, scarcely seven months ago, President Campbell approved the preliminary plans and made available certain funds for the initiation of work here, and on the 17th of April work was actually started. On the 14th of May the setting out of trees for our first planting was begun. Since it was completed, a few days later, we have done

very little except to care for the trees out at that time. Hence we have only made a beginning thus far. Immediately in front of you will be observed the University landscape nursery, which occupies a portion of our tract, and must remain until it can be moved. How soon that will be, we do not know, but we are hopeful it will not be very long. This nursery was established some four years ago to provide materials for landscaping the campus and has supplied most of the materials already planted.

Looking toward the main University building group, you have probably noticed our corn patch, and have wondered why we are growing it. It was planted, not for sweet corn or ensilage, but to provide suitable material for wrapping the trunks of our trees this winter. We don't propose to take any chances, as we have no exact information concerning the frost hazard and, of course, do not know what kind of winter to expect. The space now occupied by the corn patch is reserved as the future site of our orchard buildings.

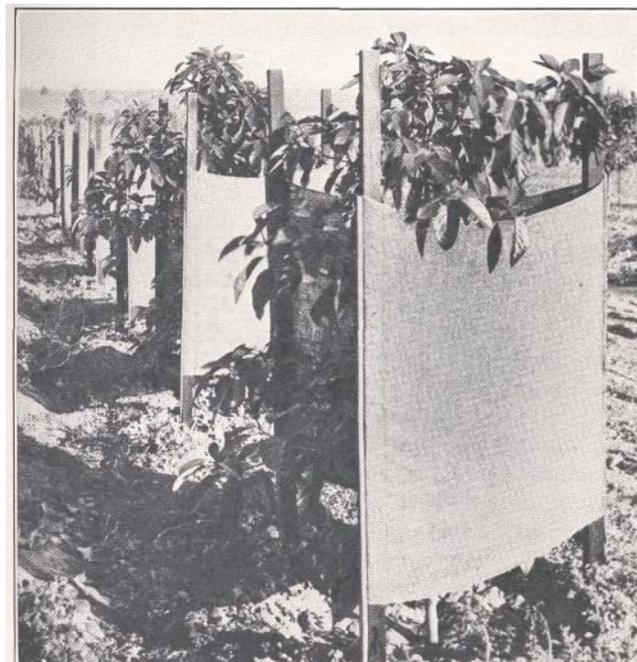
A small fund is available for further developments, and we hope this winter to construct the first of our orchard buildings. It will be what we term an Orchard House, and will be used as our headquarters until such time as the Subtropical Horticulture building provided for at the last session of the Legislature can be constructed. The location of this building has not yet been decided, and hence we do not know where it will be. We do know, however, that money was provided and that it will eventually be released for the construction of this building. We hope that the building will be conveniently located relatively close to our tract, and expect, of course, to see it an attractive building—one that will harmonize with the campus architecture in general and still provide us with what we need in the way of space and equipment.

The Orchard House referred to, which we hope to be ready to occupy next Spring, is expected to comprise the main structure in our orchard building unit and will serve, when we move to our permanent headquarters, as a field laboratory and head-house for our conservatory and greenhouse. We expect, also, to have several lath-houses. We are hoping and expecting to have here suitable facilities so that we may have here within a few years, as rapidly as can be brought about, a collection of tropical and subtropical fruit plants of economic importance second to none in the United States. We feel we have an unusual opportunity in this regard. This is a section of mild climatic conditions, as many of you know. You have seen, this afternoon, some evidences of how mild the winters are. We believe we can grow out-of-doors here as wide a range of economic subtropicals as can be grown anywhere in this country.

For the tropicals and tenderest subtropicals, we propose to construct a solarium twelve to fifteen feet high, with transparent sides and moveable glass roof which can be heated, if necessary, during a few cold winter nights by using some orchard heaters inside. In this structure we expect to grow such tender fruits as the mango, papaya, banana and certain other tropical fruits which, in our opinion, with partial protection we can grow virtually out-of-doors. And we expect in our greenhouse conservatory to have such tropical fruits as the breadfruit and others. So, eventually, we expect to have here as complete a collection of subtropical and tropical fruit plants as it is possible to maintain. Our new building will contain classrooms, laboratories, offices, and the other facilities we need for our work. We feel certain that adequate provision will be made to give us all the facilities needed for the efficient discharge of the duties of the Division of Subtropical Horticulture.

We had hoped to have more land than this, and were certainly not backward in asking for more. Considering the difficulties encountered, I think that we were fortunate to get as much as we have. With this tract of land efficiently utilized and the buildings mentioned, we believe that within the next two or three years the Division of Subtropical Horticulture should be well equipped to conduct its work.

The provision of these facilities will mark a new era in the work of this Division, which in the past has never had the opportunity to do those things we believe it should do. I see Dr. Coit in the back of the group. As many of you know, Dr. Coit was the original head of the Division of Subtropical Horticulture. It was my pleasure to enroll with him as a student and later to work with him as an associate in the Division, and still more recently in Farm Advisor work. His was the vision of which we are now witnessing the beginning of fruition. Mine has been the problem, as well as the pleasure, of assisting in bringing the vision into reality.



This tract is to be devoted primarily to purposes of instruction and hence the major part of our plantings will consist of citrus trees. The plantings of this Spring have been confined entirely to these fruits. We believe we have established here a collection of citrus trees which is unique in certain respects. I am personally very greatly interested in this collection for the reason that I cut the budwood for most of them myself and planted about half of them myself. When the budwood for these trees was cut, we had no funds available for their propagation, nor was land allocated to us on which to plant them. We were not even certain that we were to be moved to the South. We simply took a long chance and made a small down payment on their propagation. But things have a way of working themselves out happily, and by the time these trees were ready to plant, we had both land and facilities to take care of them.

There are now in this collection approximately one hundred varieties representing, in so

far as we have been able to get them, all of the principal commercial citrus fruit varieties of the world. We have them arranged by countries and seasons of ripening, primarily for teaching purposes. We have left room for later additions, since we expect to add varieties as opportunity permits. We have also a stock demonstration of sixteen species and varieties on five different stocks, which should ultimately become a very interesting planting. In this planting there are certain stock-scion combinations that, I think, have not been made before—at least I have never seen them. We have another collection of materials for teaching—what is known about citrus breeding and genetics—which includes all the principal hybrids, natural and artificial, and numerous other interesting trees that represent the results of the work done by Dr. Frost and others in studying citrus genetics. We also have a bud sport collection which includes representatives of all the different kinds of sports grouped according to their effects—foliage, fruit characters, and yield. Then we have a collection of all the citrus species of economic importance, as well as the near relatives, arranged in convenient order for class use.

But by no means least in importance are our blocks of trees of standard varieties which we can use for demonstration purpose. These trees will be available for whatever use or treatment we wish—even complete decapitation if desirable. They will comprise an experimental laboratory for us. I have never yet seen a college orchard where you could apply drastic treatments without someone raising an awful protest. We want some trees on which we can try anything—no matter how foolish it may appear without anyone being able to protest.

We also expect to have certain blocks of trees which will be used for demonstrating the effects of different kinds of cultural practices such as pruning, fertilization, irrigation and cultivation.

We feel that this planting is unusual in these respects. I am sure it is unique from the point of view of its having been developed primarily for use in teaching Citriculture.

Not the least interesting of the facts concerning this collection is the parentage of the trees. Every citrus tree in this orchard, with the exception of the stock collection and a few others, is on exactly the same stock, sweet orange seedlings grown from seed taken from one parent tree. And every tree of each variety, Lisbon lemon, Valencia orange, Washington navel or whatever the variety, is from but one parent tree. I think you will agree with us that from the point of view of knowing the exact and complete parentage of every tree in the orchard, we have a rather unique collection. In the years to come this may be of value in studying variability and stock-scion relations.

But you are avocado growers and I have been telling you about our citrus collections. You doubtless wonder what we expect to do with avocados and why we have planted so largely to citrus trees. We expect to have some avocado trees, but have not room for many. Our plantings consist mainly of citrus fruits because much more is known about these fruits than is known about other subtropical. Indeed, I think it safe to state that we know more, and can therefore demonstrate more of the responses of the citrus fruits to environmental and cultural influences than is the case with any other fruit tree grown, notwithstanding the fact that the apple and the peach have been studied in a scientific way longer and more extensively than the citrus tree. For subtropical horticultural instruction we have felt, therefore, that we could not do better than to put in a rather

complete collection of citrus plantings.

From here, none of these plantings of which I have been speaking can be seen. You may see them, however, if you wish, by walking out to them. When the nursery is removed, the citrus plantings will extend to what is now the west nursery boundary. On the north side of the tract, we expect to have a windbreak of avocados which we believe we will be able to plant next Spring. On the other three sides, as border rows, we expect to have walnuts interplanted with certain evergreen subtropical. On the east border we will have carob trees as fillers, on the south loquats, and on the west olives. The portion from here extending north will be devoted to figs, almonds, persimmons, and some temperate zone fruits (in this corner) ; above, there will be the minor subtropicals — cherimoya, pomegranate, and others.

Our planting plans provide for growing here, in the open, representative species and varieties of all the subtropical materials of economic importance or interest in California, or that have promise of developing into economic importance.

We expect to utilize the windbreak row of avocado trees for a variety collection. The trees will be topworked as rapidly as possible to the different varieties and this row will therefore serve a dual purpose. But we expect, in addition, to have a row or two of avocados running straight across the tract from north to south, consisting of pairs of three or four varieties so arranged that we can use them for differential treatments. These will be used primarily for experimental work, but also for teaching.

Now just a few words concerning the Division of Subtropical Horticulture in relation to the avocado industry. The avocado growers, individually and collectively through the Association and Calavo Growers, have always shown a keen interest in the Division of Subtropical Horticulture and have not been at all backward about asking for experimental work of one kind or another. It has been a source of embarrassment to us, and I have so stated on many occasions, that we have not been in a position to do the kind of work that has been most asked for. It is very important work. There is no horticultural industry in California which, in my opinion, more greatly needs investigational work at the present time, or is more likely to profit by certain types of investigational work, than is the avocado industry. Our locational handicap has been so great, however, that we have been unable to do very much; in fact, so little that I scarcely feel like mentioning it to you. About all we have been able to do is to preserve some semblance of contact with the industry by means of occasional field trips. This has permitted us to size up the industry, as a result of which we think we now appreciate the major problems aside from those of marketing, which are quite outside our province and we feel are in very good hands indeed.

As you know, some years ago we got out a bulletin written by Mr. Ryerson, always close to the Division of Subtropical Horticulture and regarded by both himself and us as an unofficial member of the Division. He was induced to prepare this bulletin. It proved to be very popular and it was necessary to reprint it a few years ago. More recently, owing to rapid advances and important changes, it has been necessary to revise and re-issue it. Something like forty thousand copies have been distributed to date and it is now again out of print. I am revising it at the present time.\*

Professor Condit's variety studies are known to all of you and represent a really

important contribution.

Aside from these, however, there are only two further and minor contributions we have made—miscellaneous observations on the economics of competing avocado sections, primarily Florida, which I have been able to make through the opportunity enjoyed of making several visits to that state and some recent work of one of our graduate students.