

WORK OF THE CALIFORNIA NURSERYMEN'S BUD SELECTION ASSOCIATION.

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Mr. President, Ladies and Gentlemen:

It may seem somewhat strange that a representative of a co-ordinate association interested in the development of the fruit industries of California should appear on the program of another organization to discuss the work and objects of the association he represents. However, as I proceed with my subject I believe you will agree that the California Nurserymen's Bud Selection Association may be of considerable assistance to your avocado association. It is solely with this object in view that I intend to take a few minutes of your time today in briefly outlining the proposed activities of our Association.

In order to secure the proper historical setting it will be necessary for me to refer very briefly to the investigations which the United States Department of Agriculture has been conducting since 1909 under the direction of Mr. A. D. Shamel on the improvement of citrus fruits through bud selection. While it has long been recognized that bud variations exist, until Mr. Shamel began his very comprehensive investigations with citrus fruits no one had any idea of the frequency with which these variations occur, or that by using proper care in the selection of bud wood the possibility of propagating these undesirable variations could be reduced to an almost negligible factor. The results of these investigations have appeared in Department bulletins and are now a matter of permanent record. Prominent citrus growers have stated that Mr. Shamel's investigations have already meant millions of dollars to the California citrus industry. This work has suggested similar lines of investigations which could be carried on with other fruits. Already considerable work has been done by Department investigators and by your Association in studying the question of bud variation within some of your standard avocado varieties. Similar work has been done in this state with olives, and to a limited extent with walnuts. In the east the Department of Agriculture has conducted bud selection investigations with apples and peaches in Connecticut, and in co-operation with the Michigan State Agricultural Experiment Station has for several years carried on detailed studies of bud variation in Northern Spy and Baldwin apples. In Florida and Alabama a considerable amount of performance record work has been done with citrus fruits. The work carried on in different parts of the country has shown that bud variation is a matter of frequent occurrence in all our fruit varieties, and is not confined to any particular class of fruits or to any particular locality.

A number of prominent deciduous fruit growers and nurserymen have long recognized the fact that there was just as great a need for the careful selection of bud wood in all deciduous varieties, but it was not until sometime last summer that Mr. William T. Kirkman, Jr., of Fresno, conceived the idea of forming an organization which would

furnish all the buds used by the different nurserymen who became members of this organization. With this plan in mind he conferred with other leading nurserymen and fruit growers in the state, and later with state and federal investigators. As a result of these various conferences the present organization known as the California Nurserymen's Bud Selection Association has been perfected. The primary purpose of the organization is to furnish buds of the leading standard fruit varieties grown in this state to the different commercial nursery firms who are members of the organization. In addition, however, the Association will furnish buds and scions to any fruit grower who desires to purchase them for use in top-working. To this extent the organization operates as a public service, and because of this feature has the hearty co-operation of the State University, the State Department of Agriculture, and the United States Department of Agriculture.

In the case of citrus fruits, the work started in 1909 revealed so many interesting features that by 1912 or 1913 a large number of citrus growers in this state were securing actual individual-tree performance records on every citrus tree which they owned. The California Fruit Growers Exchange, recognizing the great value to the citrus industry in having every tree in an orchard bearing a uniform and high-grade quality of fruit, in 1917 organized in the Supply Company of the Exchange, a division known as the Bud Supply Department. As a result of Mr. Shamel's investigations, and also because citrus growers for several years had been securing individual-tree performance records the Bud Supply Department of the California Fruit Growers Exchange right from the start was able to furnish buds from record trees of the ideal strains of the standard citrus varieties grown in this state. It was not necessary for the Bud Supply Department to carry on detailed investigations, but simply to utilize the facts which had already been established. In the case of the California Nurserymen's Bud Selection Association, while it is recognized that just as important variations exist in fruit varieties other than citrus, nevertheless as far as this state is concerned this has not been proven experimentally. It therefore remains for this Association, or some other agency, to carry on investigations similar to those which have been conducted with citrus fruits. The association therefore has set aside a fund of \$5000 a year for a period of three years, which will be turned over to the United States Department of Agriculture to be expended in deciduous fruit improvement investigations in California. While it is recognized that the results of these investigations may not be available for several years the directors of the Association believe that considerable work can be done on the question of elimination of varieties and also in better methods of selecting budwood than have been followed in the past. The commercial activities of the organization during the coming year will be directed along the line of: first, securing definite action on the elimination of varieties; second, selecting budwood from bearing trees in established plantations; and third, the starting of commercial individual-tree performance records on just as large a scale as can be handled. In the matter of elimination of varieties the work which has been done by your Association will be taken more or less as a model.

It is practically agreed by all California fruit growers that with every fruit there are now too many varieties listed, and that in every case if a few varieties could be selected and developed as representative California fruits it would simplify matters, not only from the nurserymen's standpoint, but also from the standpoint of the grower and shipper. With this end in view conferences have been arranged with the leading shippers, canners, and associations of fruit growers. It is hoped that as a result of these conferences, a

short list of varieties can be selected for each fruit which has any commercial importance in the state, and the work of the Association directed along the lines of securing the very best possible type of bud-wood within these varieties which are recommended by the different fruit interests.

During the first few years it will not be possible to cut buds from performance record trees, except in the case of avocados, olives, and walnuts. For the time being all the requests for citrus budwood will be referred to the Bud Supply Department of the California Fruit Growers Exchange. In the case of other fruits orchard surveys will be made and trees will be located which by their habit of growth, character, and production of fruit appear to be typical of the variety which it is desired to perpetuate. Commercial individual-tree performance records will be started on an extensive scale so that after two or three years buds will not only be cut from selected trees but from trees on which an actual record of the amount and quality of fruit which they have produced for a series of years has been secured. An accurate track will be kept of a portion at least of the progenies of these selected buds, and performance records will be kept on these second generation trees. Eventually all the budwood handled by the Association will be taken from these second generation selected trees.

This, in brief, outlines the purpose of the Association. The question you will naturally ask is, of what benefit is this association to me, an avocado grower? In addition to being an avocado grower you are no doubt interested in other fruits. You may have a few peach trees which you wish to top-work to another variety. The California Nurserymen's Bud Selection Association provides a channel through which you can obtain scions for top-working, selected in just as careful and painstaking a way as is possible.

The Association's work benefits you when you come to purchase nursery stock, if it is stock propagated from buds selected by the Association's staff. In the direct activities of your own avocado association we will be very glad to co-operate with you in establishing your own bud selection department, and if this department is established on a sound working basis so that it can do for the avocado interests what the Bud Supply Department of the California Fruit Growers Exchange is doing for the citrus industry we would then refer our requests for avocado budwood to your association. In addition we will be very glad to assist you in starting performance record work, for if the various fruit industries in the state can be induced to secure performance records on an extensive scale for the particular fruit in which they are interested, and if these records are made in a thorough, careful, painstaking way they will locate many trees which can be used as sources of budwood and thus reduce the actual amount of record work which the members of the staff of the California Nurserymen's Bud Selection Association will have to do.

In closing let me impress upon you that the California Nurserymen's Bud Selection Association is operated as a public service. It is hoped that you as members of the California Avocado Association, and also as individuals, will utilize this service.