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Report of the Variety Committee—1939

ORGANIZATION

The committee, during the past year, has operated in much the same manner as during the last several seasons. This group includes the Farm Advisors and the County Chairmen of the Avocado Departments in the producing counties, members of the Board of Directors of this Association, and representatives of the U.S.D.A., University of California and Calavo Growers. The formation of an enthusiastic and hard-working group in Santa Barbara County, headed by Mr. C. W. Bradbury and Mr. J. L. Scott, has given a new impetus to activities of the committee in that area. Their activities have been most encouraging and are already productive of good results.

PROJECTS

Complete file of segregated variety information. As a foundation for further research, the 1938 report stated the need for a complete file of segregated variety information. Shortly after the annual meeting at San Diego, Mr. M. B. Rounds volunteered to work out and establish such a file for the Association. This heavy task has been carried well forward and has already shown its value in this work.

Variety test plots. The 1938 report also stated that an agreement had been entered into by the Division of Subtropical Horticulture of the University of California and the Association, by which a series of variety test plots would be initiated and studied. These plots were to be established on the campus at Westwood and in different climatic conditions, through the cooperation of private individuals. The Variety Committee was to act as an intermediary between the University and the developer of promising seedlings or varieties—thus avoiding confusion and undue strain on the limited facilities of the University for such work.

Fourteen varieties—first test. Such plots have been established this spring, there being five in Santa Barbara County, two in Ventura County, two in Los Angeles County and one in San Diego County. Other areas, which may be interested, are invited to participate when budwood again becomes available—and providing they do not duplicate present tests. Fourteen varieties have been selected for this first test.

Coit	Hass	Juan	Mundo
Clifton	Hazzard	MacArthur	Pierce
Edranol	Hellen	MacPherson	Ryan
Henry's Select		Middleton	

These have been placed in the plots under identity number and will be given an

unprejudiced trial. Like so many horticultural experiments, this is a long-term project and growers should not expect annual reports on its progress for some time.

Oil tests of more important varieties. Since the first of the year, a series of oil tests running completely through the maturity period of many of the more important varieties, have been started to determine the relation of oil content to maturity. Some interesting results have been obtained and the study, carried on over a period of several seasons, is certain to have a bearing on maturity standards and picking practice.

New Variety Chart. A new chart (of varieties which have the interest of growers at this time) has been compiled and is to be released at this meeting. This gives essential information in compact form for the planter and nurseryman. There has been continued demand for such a chart.

Private study of rootstocks. A private study of rootstocks, now in its second year, is being conducted on a commercial scale. So far the results, in both years, seem to confirm a rather widely-held-prejudice in favor of Ganter or Ganter seedling rootstocks as being quicker to sprout, faster to size up to a point where budding is possible, and more even in the production of good trees. Some two dozen lots of seed have been tried in these experiments. There are undoubtedly other good stocks such as Topa-Topa, but few of them are consistently available.

Fieldwork. A considerable increase in field work has been accomplished both by local committees and by the Chairman and Mr. M. B. Rounds working together. This has resulted in a much more comprehensive study of the whole field. Many "speaking dates" have been kept and the growers placed in much closer touch with the situation as the work progressed. This year has again seen a considerable volume of foreign correspondence— a tribute to the position California holds in the world picture.

THE FUERTE SITUATION

With the largest crop of avocados in history now moving to market, 1939 finds the Fuerte variety still far out in the lead with some seventy to eighty percent of the total acreage and crop. Prom the standpoint of marketing agencies and consumers, the variety has little left to be desired. It has fine flavor and eating qualities, desirable size and attractive appearance, which is distinctive enough to be a trademark in itself, long maturity period, and the season with the least competition from avocados grown elsewhere. In some areas it produces consistent crops and is paying handsomely. Such growers and areas would seem to do well to stick to the Fuerte and increase their plantings from the best stock available.

In other areas, climatic or soil conditions make the variety a production-failure. In some such areas, where the climatic factor is not too severe, some hope may be had from topworking to better strains originating in the vicinity. In others, where the grower is determined to proceed with the production of avocados, the best solution would seem to be to turn to other varieties more suited to his conditions.

STRAINS OF THE FUERTE

Several so-called "strains" of the Fuerte have been developed, which seem to offer better bearing behavior in the areas where they have been tried.

It is too soon to know how much of a solution this may offer generally. The best known strain at present is the "Cole strain" developed by Mr. C. J. Daily at Camarillo. Now in its eighth year of progeny bearing, the performance has been consistently encouraging under Camarillo conditions, but it will take several more years to determine its value generally. Other well known strains are the "Burgess" at Brea, the "Carr" at Rivera, the **"Williams"** at Montebello, the 'MacDonald" at Fallbrook and several others. Outstanding trees, under difficult conditions, have been brought to the attention of the committee in a number of cases during the past year. Mr. • Jack Rock of Carpinteria has worked for ten years to develop a strain from two trees in his grove and now has them in the third generation with encouraging results. He has named his strain the "Fairbank."

Tree Records. The need of some kind of tree records becomes increasingly apparent for most of the steps forward, whether they be in thinning an over-planted grove, eliminating drone production, or determining the best trees to act as sources of scion wood, depend on such records. The committee feels that where an old grove is to be topworked to varieties then existing in the grove, the wisest course is to select the best producing tree in that grove as a source of scion wood rather than to import from record trees in some other area.

SUMMER VARIETIES

A distinct warning is again needed against becoming too enthusiastic in increasing the acreage of summer bearing varieties. There is a marked tendency in that direction at present. There is a widespread impression that summer fruits have, up to this point, brought the better prices per pound because of relatively low amount of acreage devoted to them. However, if this acreage is largely increased with consequent increase of production, so that any considerable volume has to be shipped east of the Rockies, the lowest prices yet imagined may be seen. It is impossible to compete at that time of the year with the Cuban fruit, which has practically no cost of production, and the heavy influx of Cuban fruit has already forced shipments of Florida fruit farther west—in serious competition with California ffUlt

SUNBLOTCH

The chairman and many members of the committee feel that the question of a campaign to eliminate trees affected with sun-blotch should have serious consideration. Generally they are low producers of poor fruit and constitute a menace by their existence, both to profits and to other trees about them.

STATUS OF OTHER VARIETIES IN COMMERCIAL PRODUCTION

With the exception of the Fuerte, none of the varieties now in heavy commercial production seems likely to be planted in new groves to any great extent. These varieties are Puebla, Nabal, Queen, Benik, Dickinson.

The reasons for this statement lie in the following facts: All of these varieties are being topworked in one district or another or in them all and they are not being grown by nurserymen for commercial planting, with rare exceptions.

PUEBLA is a flat failure on the coast and is showing a decadence of the tree after eight or nine years of growth, with a consequent poorer quality and size of fruit. It also produces in too much of the maturity period of the Fuerte, with which it has to compete.

NABAL is very tender to frost, very susceptible to tree breakage and runs to larger sizes than the market likes.

QUEEN **and BENIK** are good fruit, but too large in the case of the former, and both somewhat weak in type of growth and erratic in production.

DICKINSON has long been restricted to a narrow coastal belt of Ventura county and has too hard a shell for the average consumer to judge when it is ready for eating.

ANAHEIM is still being planted and topworked to, in the coastal districts, where it is a consistent, heavy bearer. The tree is most tender to frost, however, and with the large size of the fruit and its inability to stand market handling satisfactorily, the variety will probably be supplanted by others as soon as some of the newer, more satisfactory fruits have been tested long enough in these localities to demonstrate their superiority.

THIN-SKIN TYPES

The committee would greatly appreciate reports from any source concerning the suitability of any thin skin type fruit for rootstock use, as shown by usage over a period of years. Some such trees or varieties may, in a limited sense, have more value to the grower and the industry for such purposes than for eating.

TOPA-TOPA. A large, black, thin-skin fruit, maturing in September and October; of fine appearance, but only fair quality. Trees are vigorous and frost-resistant and fairly consistent in bearing habit. Does fairly well in all areas, but best in transitional and interior districts. Is used extensively as stock in nurseries.

DUKE—A green thin-skin, maturing in August, September and October, reasonably free from exterior defects and one of the most wind and frost resistant varieties. The quality of the fruit is good in the truly interior districts and brings excellent prices as a rule. It does poorly near the coast.

BENEDICT—A small black thin-skin fruit. Very frost resistant. Planting is largely

confined to the Oroville district.

GANTER and MEXICOLA—Very unsatisfactory for the market as fruit for eating, but used extensively for rootstocks in the nurseries and where the trees are producing consistently, the grower should consider the possibility of returns strictly from the seed standpoint.

EXPERIMENTAL VARIETIES

The planter or topworker should bear in mind that the following varieties have displayed a varying degree of promise in the areas where they originate, but in most cases have not as yet been thoroughly proven in other districts. As in the past twenty-five years of the industry's history, the individual growers will have to continue to gamble to a considerable extent on the behavior of any new variety for their location and at the risk of much time and money demonstrate performance for their own and the industry's benefit. There is no other way in which sound progress can be made, as the final determining factor with any variety is consumer-acceptance on a tonnage basis.

HASS—A seven ounce, black fruit with leathery skin and very small seed. Its small size, coupled with very high quality, makes it distinctive during its maturity season and should be a favorable sales factor—the trend being to small fruit. The tree is erect and vigorous but probably not as slender as originally thought to be. Oil content runs about 20%. Not as hardy as the Fuerte but it withstood temperatures around twenty-two degrees in 1937, with loss of foliage and one crop only. No other tree damage. Has again set heavy crop on parent tree. Rather heavy plantings are being made in La Habra Heights, where it originates and a thorough test over the rest of the country is being made by many growers.

EDRANOL—A late spring and summer fruit, green; somewhat like the Fuerte in appearance and size. 9-12 oz. Very popular at present and being planted extensively. The tree is vigorous, upright and the most slender of any promising variety. Grafts easily, but does not bud so well. Best suited to coastal and transitional areas. Mature in May and June at Vista and late into fall at Goleta. High oil content. Small seed and excellent quality. However, it has two faults, the seriousness of which cannot be estimated at present. There is a tendency to extreme and crooked necks and in some areas the surface of the fruit is affected with a brown woodiness.

HELLEN—A new fruit since the last report, but of very considerable promise, particularly for coastal areas. Originating on a city lot at Santa Monica, under adverse soil conditions, the variety has been producing on topworked trees for six years. A very vigorous grower and propagates with great ease. Makes a large tree; more compact, but apparently outgrows the Fuerte. Season from June to October. Fruit runs from 9-12 oz.—Green, varies from oval to slightly necked in shape. The skin is tough and leathery and peels easily (as a glove would). The seed runs consistently small and the eating qualities of the fruit are excellent. Oil content in October over 20%.

HENRY'S SELECT—The most promising thin-skin fruit (over a long period of observation). All data based on behavior at Escondido. Very hardy. Stood 19 degrees in 1937 with little or no tree damage and set a crop in the Fall of that year. Tree blooms late and matures crop early, so that it escapes the cold weather and most of the wind. Maturity season September to early November. Originating as a seedling on the property of Jesse L. Jones at Escondido, it has been patented by C. C. Henry. The fruit is deep maroon purple, smooth, glossy and obovoid in shape. Weighs 10 to 14 oz. The seed is small and inclined to be loose when mature. The oil content runs about 18% and the flavor is rated "excellent". The tree is vigorous, large, precocious, prolific and, apparently, consistent.

RYAN—A green fruit with leathery skin—is the most hardy of any summer-bearing variety. Compares favorably with the Fuerte in hardiness. The fruit runs from 10 to 14 oz. and generally has quite a large seed. Has been a very consistent bearer of moderate crops. The fruit is attractive in appearance, and opinion is still divided as to its eating qualities. There was considerable difficulty experienced during the past season with some lots of the fruit, which did not soften up properly. Oil content over 20%. The tree is easy to propagate. Season May to September at Whittier.

MacARTHUR—A bell-shaped, green fruit of moderate quality and vigorous growth characteristics—has been found to be reasonably frost-resistant, and consistent in bearing habits in the coastal areas of Santa Barbara and Ventura counties. Season there—August to November of second year from bloom. Oil content 14%. Fair flavor and attractive appearance. Being planted to some extent in those areas.

MILLIE C.—A black, thick-skinned fruit with summer season which has performed favorably on the coast in San Diego County. Runs 10-18 oz. Oil content about 20%. A number of trees are being topworked to it in those areas because of consistent production.

MIDDLETON—A green to black fruit of hybrid origin but more strongly thin-skin. Ripens in Fall and is of good quality at a season when fruit is not so plentiful. Tree rangy in habit of growth and very hardy. About 7 oz. in size with small seed.

LEUCADIA—Useful as a hardy thin-skin for home plantings along the coast, or for windbreaks. The fruit is an excellent black, of good size, but comes so late in the season that it is in direct competition with the Fuerte. For this reason, its commercial possibilities would seem to be limited.

MacPHERSON—This fruit has been under observation for some years and appears to

have considerable promise. Has not been propagated or released for propagation as yet, except in the University test plots. The fruit is practically identical in outside appearance with the Fuerte and comes in much the same season. On being cut, the flesh is seen to be a richer golden yellow than that of the Fuerte, with a distinctive layer of dark green immediately under the skin. The seed runs quite small. Eating qualities are excellent and it seems to keep well. Originating at Encinitas under difficult soil and climatic conditions, it has yet been a fairly vigorous tree and a consistent bearer. It may be of very great value as a contribution to some of the Fuerte problems when placed under advantageous growing conditions. It is a seedling of the Fuerte.

JUAN—Another tree as yet unpropagated except in test plots. Originated in Bel-Air district and probably suited to coastal and transitional areas. A green fruit of medium size, excellent quality and consistent bearing habits. Moderate cold resistance.

CLIFTON—A green, thin-skin of good quality and size. As yet unpropagated except in test plots. Originated at Glendora.

HAZZARD—A green Guatemalan of good quality and bearing habits but very tender to cold. Trees vigorous.

COIT—Probably a seedling of the Fuerte, and has considerable promise. Comes at the end of the Fuerte season and looks a great deal like the Fuerte. Is being tried over extensive territory. Trees vigorous.

PIERCE and **MUNDO**—Two seedlings of the Lyon, originating on the property of Dr. Horace Pierce at Santa Barbara. Fruits are rather large and their exteriors somewhat rough. Of excellent quality, they offer promise to help in the solution of the problems of coastal growers.

UNNAMED SEEDLING—Grown by Mr. Lodge of La Mesa, this tree is hardy and consistent in bearing habits, having a fruit coming in Winter and early Spring somewhat like the Fuerte in appearance, and remarkable for its freedom from discoloration after being cut (over a long period of time). Good flavor, quality and size. Quite compact in habit of growth.

OBJECTIVE OF COMMITTEE

The goal of the committee is to accumulate sufficient information and put varieties now studied through such general and thorough testing during the next four or five years that it will be possible at the end of that period to **reduce the number of varieties** being planted to four or five which will adequately cover the year, produce tonnage, and be satisfactory to producer and consumer alike.

The Chairman wishes to thank all those cooperators with the committee, whose

enthusiastic interest and help have made the work both pleasant and successful during the past year.

Respectfully submitted

CARTER BARRETT, Chairman Variety Committee

List of Committee Members

Carter Barrett, California Avocado Association Dr. J. Eliot Coit, California Avocado Association Prof. Robert W. Hodgson, University of California, L. A.

A.D. Shamel, U. S. Department of Agriculture C. S. Pomeroy, U. S. Department of Agriculture

B.C. Stephens, Calavo Growers of California M. B. Rounds, Farm Advisor, L. A. County

H. E. Wahlberg, Farm Advisor, Orange County V. F. Blanchard, Farm Advisor, Ventura County Jean C. Miller, Asst. Farm Advisor, San Diego County J. L. Scott, Asst. Farm Advisor, Santa Barbara County H. B. Griswold, Chairman, L. A. County Avocado Dept. H. E. Marsh, Chairman, Orange County Avocado Dept. A. J. Thille, Chairman, Ventura County Avocado Dept. A. G. Hazzard, Chairman, San Diego County Avocado Dept.

C.W. Bradbury, Chairman, Santa Barbara County Avocado Dept.