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Regional Oral History Office

California Wine Industry Oral History Project

Harold P. Olmo

PLANT GENETICS AND NEW GRAPE VARIETIES

With an Introduction by
James F. Guymon

An Interview Conducted by
Ruth Teiser

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Harold P. Olmo

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PREFACE

The California Wine Industry Oral History Series, a project of the Regional Oral History Office, was initiated in 1969, the year noted as the bicentenary of continuous wine making in this state. It was undertaken through the action and with the financing of the Wine Advisory Board, and under the direction of University of California faculty and staff advisors at Berkeley and Davis.

The purpose of the series is to record and preserve information on California grape growing and wine making that has existed only in the memories of wine men. In some cases their recollections go back to the early years of this century, before Prohibition. These recollections are of particular value because the Prohibition period saw the disruption of not only the industry itself but also the orderly recording and preservation of records of its activities. Little has been written about the industry from late in the last century until Repeal. There is a real paucity of information on the Prohibition years (1920-1933), although some wine making did continue under supervision of the Prohibition Department. The material in this series on that period, as well as the discussion of the remarkable development of the wine industry in subsequent years (as yet treated analytically in few writings) will be of aid to historians. Of particular value is the fact that frequently several individuals have discussed the same subjects and events or expressed opinions on the same ideas, each from his own point of view.

Research underlying the interviews has been conducted principally in the University libraries at Berkeley and Davis, the California State Library, and in the library of the Wine Institute, which has made its collection of in many cases unique materials readily available for the purpose.

Three master indices for the entire series are being prepared, one of general subjects, one of wines, one of grapes by variety. These will be available to researchers at the conclusion of the series in the Regional Oral History Office and at the library of the Wine Institute.

The Regional Oral History Office was established to tape record autobiographical interviews with persons who have contributed significantly to recent California history. The office is headed by Willa K. Baum and is under the administrative supervision of James D. Hart, the Director of The Bancroft Library.

Ruth Teiser
Project Director
California Wine Industry
Oral History Series

1 March 1971
Regional Oral History Office
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University of California, Berkeley

INTRODUCTION

It is indeed a pleasure to have been asked to write an introduction to the oral history memoir of Professor Harold P. Olmo in the California wine industry series, for his many contributions to a broad spectrum of viticulture have had a great impact on the California wine industry as well as grape growing throughout the world. In addition, the impact of his more than forty years of research in the Department of Viticulture at the University of California at Davis, particularly in regard to the breeding and development of improved varieties, will surely intensify in the future as more and more of his new varieties are named and released for commercial plantings. As can be inferred from his interview, twenty years or more are typically required for the hybridizing, selection of promising seedlings, fruit testing (initially of a single vine, then from ten-vine lots, later from trial blocks of 50 vines) and finally certification, naming and releasing of a new grape variety for commercial propagation.

An example is the variety, Carnelian, released in 1973, incidentally, at the same time Dr. Olmo received the prestigious Merit Award of the American Society of Enologists. (The name Carnelian, suggested by Philip Haring, editor of Wines and Vines, is also the name of a reddish variety of quartz which is a semi-precious stone, and of the famous jewel-like bay at Lake Tahoe.) This variety, a hybrid of Carignane, Cabernet Sauvignon, and Grenache parentage selected for high vigor and giving fruity fresh table wines in the hot San Joaquin Valley, produced its first fruit in 1954, an indication of the time required for its development.

Some 20 new varieties created by Professor Olmo have been released, some of the better known including Perlette, an important seedless table grape preferred in the desert areas of California, Ruby Cabernet and Emerald Riesling for table wines and Ruby Red for dessert wines. Several more varieties are soon to be released.

I first met "Jack," as he is best known among his colleagues and close friends, in the summer of 1939 when I joined the staff of what was then called the Division of Viticulture. I soon became aware of his already ambitious and extensive scope of grape research, being greatly impressed at the time by the thousands of seedlings already created and being selectively screened.

Harold Olmo was born and reared in San Francisco of Italian, German and Irish extraction. He attended U.C. Davis, receiving his B.S. degree in 1931, and became a research assistant in viticulture in 1931 while pursuing his studies for the Ph.D. in genetics at Berkeley, awarded in 1934. He was immediately hired by Professor Bioletti as a junior viticulturist at Davis in the Experiment Station of the then Division of Fruit Products and Viticulture, headquartered in Berkeley at that time. When Professor Bioletti retired in 1935, the Division was separated into the Division of Fruit Products at

Berkeley (later to become the Department of Food Science and Technology) with Professor W.V. Cruess as Chairman, and the Division of Viticulture at Davis (now the Department of Viticulture and Enology) with Professor A.J. Winkler as Chairman. Of course, Dr. Olmo remained at Davis, in effect succeeding Professor Bioletti as the ampelographic studies expert.

Dr. Olmo's ampelographic studies brought order out of a chaotic situation in the post-Repeal period when many misnamed and unidentified wine varieties existed in the commercial vineyards. His efforts included endless hours of field observations plus detailed laboratory studies of leaf patterns, grape cluster, berry and seed sizes and shapes.

In all, his research has been devoted to four major areas: grape breeding, cytogenic studies of the genus *Vitis*, ampelography, and various general viticultural projects including mechanical harvesting. He was among the first in California to suspect the prevalence of virus diseases in grape vines and he was largely responsible for initiating what has become the very valuable grape certification program for propagation of virus-free stock. He provided much of the impetus for establishing U.C.'s Kearney Horticultural Field Station at Reedley, Fresno County, where most of U.C.'s viticultural research pertinent to the Central Valley is now carried out.

Dr. Olmo is an inveterate world traveler. His research interests in grapes and viticulture, together with invited presentations at international congresses and symposiums and work abroad as a consultant for FAO (Food and Agriculture Organization of the United Nations) have provided him opportunities to travel to the far and often remote corners of this planet. Consequently, he is renowned nationally and internationally, as evidenced by this partial listing of honors and activities.

Collaborator with U.S. Department of Agriculture for collection of European grapes, 1938

Office of Inter-American Affairs and Ministry of Agriculture of Brazil, 1943-1945

Guggenheim Research Fellowship, Middle East, 1948

Fulbright Research Scholar, Western Australia, 1955

Wilder Medal of American Pomological Society, 1959

Invited papers and participation in: XI Congres International de la Vigne et du Vin, Tbilisi, 1962; XIII Congres International de la Vigne et du Vin, Argentina, 1971.

Conference on Mechanization of Viticulture, Montpellier, France, 1970

Laurate and Medal, Office International des Vignes et du Vin, 1965 for "Outstanding contributions to world viticulture"

Merit Award, American Society of Enologists, Coronado, California, 1973

Dr. Olmo has done research in France, Afghanistan, Iran, Yugoslavia, Australia, Mexico, Venezuela, and served as a consultant in Brazil, Mexico, Malta, Romania, Venezuela, Iran, and India, three of these as an FAO appointee. He has taught various courses in Pomology and Viticulture, and directed the research of many M.S. and Ph.D. students at Davis.

He and his wife, Helen, have warmly welcomed these students from many countries into their home, many of whom became near-members of the family with consequent enduring personal friendships.

Dr. Olmo is a rugged energetic person, fiercely independent in many respects, but equally open, friendly and congenial. He tends to live to the hilt, is completely dedicated to his work, but at the same time enjoys parties and social occasions to the fullest. Playing practical jokes to invoke hearty laughs runs in his veins. He likes to deflate the pompous and even at social wine tastings or large dinner parties often insists the wines be tasted blind.

If there is any flaw in Professor Olmo's career, it is perhaps that he has always been too busy, too keen on pursuing his research and consultations with domestic and foreign workers in viticulture, to commit as much of his findings and knowledge to the written word as is deserved. Therefore, I would consider that this oral history, covering such a broad range of subjects and activities as is indicated in the list of contents, is invaluable in delineating and preserving the contributions of Professor Olmo to the sciences of viticulture and the wine industry.

J.F. Guymon
Professor of Enology

10 April 1976
Department of Viticulture
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University of California at Davis

INTERVIEW HISTORY

The initial letter of invitation asking Professor H.P. Olmo to record his memoirs was sent to him on November 28, 1972, and his initial response was that because of other work he had undertaken, he could see "no possibility at the present time" of being able to undertake this project. He was, however, fortunately, prevailed upon to reconsider, and finally was able to schedule time to begin the interview the following spring. As indicated in the interview, Dr. Olmo did not wish to take University time for the project, so all interview sessions were held on week-ends.

An outline of suggested subjects for discussion was sent to him early in March. The first two interview sessions were held in Dr. Olmo's office in Wickson Hall on the Davis campus April 8 and April 29, 1973. The next two were held at the home of Catherine Harroun in San Francisco on May 20 and August 18, 1973. In between the last two, Dr. Olmo had reviewed the transcript of the first three. In this final section, there are additions to some of the subjects discussed earlier; others are reconsidered at greater length.

In spite of having difficulty in finding time for the tape-recording sessions, on each of the four occasions Dr. Olmo gave his attention fully to the matter in hand. He spoke with concentration and enthusiasm, as is evident in this final typescript. It is little changed from the original transcript.

The final section, like the others checked for obvious errors and carrying some marginal questions for clarification, was sent to him in February, 1974. He went over the whole transcript, and in July of 1975 he returned it, having made some corrections, a few additions, and clarified the points in question. A list of names of people mentioned was later sent to him for verification before the transcript was retyped in its present form.

Ruth Teiser
Interviewer-Editor

23 April 1976
Regional Oral History Office
486 The Bancroft Library
University of California at Berkeley

(Interview #1 - Davis, April 8, 1973)

EARLY INTEREST IN PLANTS

Teiser: May we begin with your personal background? You were born in San Francisco?

Olmo: That's right. San Francisco, in the Mission District. And I had a very early interest in plants, especially flowers. I grew a large flower garden right in the midst of the apartment houses on a couple of city lots. I grew flowers for sale to the local district florists.

Teiser: How old were you then?

Olmo: About twelve or thirteen.

Teiser: The Mission's said to be the best area in San Francisco to grow plants.

Olmo: Well, maybe not the best, but very good anyway. It gets quite a bit of sunshine.

I remember having a grape vine that didn't do very much. It grew very well but didn't have any fruit. It was too cool.

Teiser: Were you specifically interested in flowers then, or--

Olmo: Yes. Well, I was interested in gardens and plants, and I did have a little side business whereby I would take the lawnmower and go around and cut people's lawns and fix their gardens and this sort of thing. It was a way of making a little extra money.

Teiser: What schools did you go to?



Harold P. Olmo. Childhood photograph taken in the outer Mission, San Francisco.

Olmo: Fairmount Grammar School. At graduation I was class valedictorian, but my knees were shaking so much it was difficult to finish the speech. Then Mission High School. There were many fine teachers there who paid no attention to the time clock. A.H. Smith in Chemistry, a Berkeley graduate, Mrs. [Fernande] deGhetaldi in Biology, and Benjamin Weed in English were all good friends of mine and encouraged me at every turn. I graduated from Mission High School. Then I went to Berkeley.

Teiser: You were a basketball player?

Olmo: I was on the basketball team at Mission High School.

Teiser: How did you have time for that?

Olmo: Well, I liked it. For one reason my mother insisted I not go out for football. She considered it a little bit too dangerous, so I took the next thing out. Actually, I thought basketball was a much more strenuous sport than football, but she didn't seem to know that. [Laughter] So, it worked out very well. I remember a teammate, Nick Tejeda, who used to be prone to fainting on hard contact. As cruel as it seems, the team welcomed the time out.

Teiser: How did you decide to go to the University?

Olmo: Well, my oldest brother, he went to the University as a dentist. Neither my mother nor my father went through university. They went as far as high school. So, just by interest in plants and gardens - it sort of led me in this direction.

I think one of the important events was that my mother gave me a set of books of Luther Burbank's I guess seven volumes. And although they were mostly all ghost-written they were kind of in a very enthusiastic vein, and I think this gave me a lot of inspiration and interest. I read some sections so many times that I almost memorized them. Eventually I did even go up to Burbank's gardens and see some of his works, and met him. He was a very kind man, although a very troubled one, because at that time a lot of visitors were bothering him. I guess I was one of them. [Laughter] So, he really was too popular for a while, I guess.

Teiser: What do people now in your field think of the significance of his work?

Olmo: Well, they don't really consider that he contributed a great deal from the scientific standpoint, but his practical results were

Olmo: rather fantastic. I mean there are still plums--for example, a lot of important plum varieties were Burbank introductions. Later information showed that some of these were apparently imports from Japan. At least he did hybridize a lot of them and grew a great many seedlings.

Teiser: This is in spite of the fact that he had no great scientific basis for his work?

Olmo: That's right. He was just a very enthusiastic man, and had an extreme interest in plants and growing new things and seeing what happened. And it was pretty contagious. I know a lot of people who were made enthusiastic about the field by just talking with him.

Teiser: Do you think agriculture was made more receptive to work such as yours by his writings?

Olmo: Much more so. Yes, I think in the popular mind everybody, at least in my neighborhood, knew the name of Burbank and that he was involved in plant production. He was quite a famous man already, when he was living. And I think the people in California were already aware that some of his introductions had great value.

A lot of the publicity given to his work was with the Shasta daisy, which really wasn't of great importance. But, nonetheless, it was popularized throughout the country. Then, of course, he had any number of ghost writers that came in and wrote articles about him. He got pretty wide advertising.

Teiser: There was a period of hero worship.

Olmo: I think so, yes. I think, in a way, he was a hero. He was a very sincere man. He was very sincere in what he was doing for sure.

Teiser: Was the University's work in plant breeding and so forth known to you then, as a youngster in high school?

Olmo: No, not very much. I think, really, a family doctor sort of got me interested and told me that this plant breeding work actually was not done only on a practical basis at home, but Burbank was doing great things although he really wasn't scientifically trained for the field. That made me wonder a little bit about what could be done if a person had more basic training. So then I began to read university catalogues and inquired of people.

Olmo: My brother was in the University already in dental school.

Teiser: What is his name?

Olmo: Ray Olmo.

Teiser: I should ask your parents' names too.

Olmo: My dad's name was Frank Olmo. He was of Italian parentage.* And my mother's name was Bertha Hashagen, German. I think it was my father's interest in plants and animals that probably rubbed off on me somewhat. Because he did like animals and plants. I remember he had some prize roosters for a while, some chickens. He also liked to garden. My father had his own sheet metal shop and did chimney and metal work. He later became a building contractor and finally had a real estate office.

Then he had a number of friends, a number of Italians, who were ornamental nurserymen in San Francisco. There was an orchid grower, I remember, and a fern grower. When my father would go on work assignments near their greenhouses on Geneva Avenue, he would take me along just because he knew I was interested. So that sort of built up my interest more, to see these greenhouses and go inside, especially at Christmas time when all the poinsettias were blooming or at Easter when the Easter lilies were blooming, too.

So I sort of got my first interest in flowers, and I almost stayed there. Because I think if I were offered a job at the time I graduated I might have gone into flower breeding rather than fruits.

Teiser: But you knew it was going to be some kind of plant work, is that right?

Olmo: Right. Yes, I was pretty well set on that from the age of twelve.

*But born in the United States.

UNIVERSITY STUDENT YEARS

Olmo: I entered Berkeley right away with the idea that I was going to go into plant genetics and get as much information as I could.

Teiser: That's unusual, isn't it? Have you had many students who have made up their minds on their careers that early?

Olmo: Well, a few, at least. There are not as many nowadays as there were in those days. Of course, one of the things was that you would get into a certain groove because there weren't probably as many contacts or as many things of interest. TV wasn't known, and most everybody was a little poor at that time. So perhaps once you got into something you more or less stayed there rather than shifted around as much.

Plus the fact that after we got out of college the Depression was on, and even during college. Then you had your sight set foremost on what you were going to be doing in the future. So it was quite a different scene than we have at the present time.

Teiser: You worked with a Professor Roy Clausen as an undergraduate?

Olmo: That's right, yes.

Teiser: Can you characterize him?

Olmo: Oh, I can characterize him all right. He was a very quiet individual to begin with, but when you got to know him he had a real sense of humor. A very human sort of person. In fact, his first approach was so aloof that I think many students that would have studied under him did not do so because they were sort of afraid that he was a little bit too well informed, a little bit too exacting in his requirements. But after I knew him just the reverse was true. He was a very human sort of person, very personal.

And at the time there was a post graduate there by the name of Walter Lammerts, who later became a famous rose breeder, and Clausen had given Lammerts instructions to take me under his wing and do the training on techniques of slide making, growing plants, and so on. Of course, the subject then was tobacco, the cytogenetics of tobacco.

Dr. Walter E. Lammerts was the man who became a rose breeder. He's still living and is still active. He's retired. He lives

Olmo: down near Santa Cruz. We still get to visit and talk about plant breeding.

Teiser: Was the interest in tobacco because of a general scientific interest, or specifically on tobacco--?

Olmo: Because of general scientific interest. At that time it was a plant that was being much investigated. It was a good plant to work with. It was quite easy to propagate. And I think the University of California sort of grew up with the plant as well. They had a past history that went back to Professor William Setchell in Botany.

I think Professor Setchell, Clausen told me, was the first to grow tobacco up in the Botanic Garden.* And he became quite interested and began importing stocks from various places in the world. I remember that very distinctly because Setchell sat in as the Botany examiner on my Ph.D. examination, and I goofed badly. He asked me where the first tobacco came from that was introduced to the University for experimental work. I quickly spoke up and said that Professor Clausen had probably introduced it, but it was Professor Setchell! [Laughter] So he got quite a chuckle out of that, since he had introduced it via Japan, and not from its South American home. He was a wonderful man.

So tobacco really became a university plant from then on. Professor T.H. Goodspeed spent a lifetime on its cytogenetic role. Clausen, I believe, worked with Setchell for a while. Then he went into biochemistry and then came back into genetics. All of his work, or rather a good part of it, was scheduled around tobacco, although Clausen also had *Drosophila hydei* cultures that he worked a great deal on. He did a great deal of work on *Drosophila* and never published anything, or very little. But it used to be, I think, a very soothing thing to him. He would come in from the garden and be rather tired classifying tobacco plants, or from the greenhouse, and then as a sort of relaxation he would take the *Drosophila* cultures out of the cabinet that he had and counted his flies, etherizing them in a small bottle. I think this sort of gave him a little release from the usual routine.

But he had many interests in plant breeding. I remember he used to hybridize a few azaleas and we got quite interested in that together. He hybridized some of the native azaleas here in California. I remember he had some very nice salmon-colored ones. I don't think they ever were introduced, but he sort of had that as his own gardening hobby. I was delighted when he offered me a few seedlings to plant in San Francisco.

*Of the University of California, Berkeley.

Olmo: So, his whole ideas about improvement of plants and so on and their possible impact just sort of fitted in with mine, and I really got to like Clausen a great deal. He was very friendly, actually, with the students. I guess Lammerts and I were two of his favorites from the standpoint of just personal relationships. I always signed my name H.P. and he soon used the epithet "High Pockets." So, that was very inspiring in itself. He always epitomized the honesty and sincerity that I associated with the university.

It was an inspirational period in cytogenetics. I spent many hours with John Belling, who had a small office a floor above Clausen's in Hilgard Hall. He was a master in chromosome preparation. Most people never visited him and he lived almost as a recluse. Then [Cyril D.] Darlington, the English cytologist, visited, along with [J.B.S.] Haldane and many others. Clausen made every effort to bring the students in contact with them.

Teiser: You graduated, I see, with highest honors. Were you working a great deal too? Did you have to help...

Olmo: Yes I did. As I told you, the Depression was on then. In fact, I remember several times we didn't have quite enough money for a decent lunch, and we used to cut as many students do now, too. And during the first semester I was commuting from San Francisco, which made it even harder because of the fact that the commute, itself, cost money and then I would have to stay and have lunch on the campus.

But then I was very fortunate later on. I got a job up in the Grizzly Heights area of Berkeley. It was just then that the housing was going up, I remember that. The house was a new two-story one set up by itself, and I used to have to walk up this steep hill the last two blocks because that's where the streetcar ended. And these people were very kindly to me. They gave me a room and I had to clean the house and take care of the young baby. I think it was a three year old child, a girl, and I was the official babysitter and did the housecleaning, and did, of course, the garden work which I enjoyed more than anything. But they seemed to have somebody else come in sometimes for that, so I couldn't get to do as much as I liked. But it was a tide-over anyway. It gave me the room and also the dinner meal. Then usually I would go home to San Francisco on the weekends. So that was a very fortunate thing. In the winter it was not pleasant, as my upstairs room was seldom heated and I often studied with a blanket around my shoulders.

Olmo: I didn't finish my schooling at Berkeley. I came to Davis at the end of my sophomore year and entered here.

Teiser: I didn't realize that. And your degree came from Davis?

Olmo: Yes. But I think I had been here for a while, and then I went back to Berkeley when graduate work started. I went back for several semesters. So I sort of shuttled back and forth.

I remember taking my tobacco cultures up here to Davis. I grew a field of tobacco here, which is quite a strange plant for this area, and did a lot of my thesis work up here, and finished it.

WORKING WITH BIOLETTI

Olmo: At that time, too, I was also trying to hold down this job with what was then the Department of Viticulture and Fruit Products. In other words, [Frederic T.] Bioletti hired me as a research assistant and I came here to Davis. Bioletti was still in Berkeley, but he used to come up here during the week and I would be his sort of liaison man. If he wanted something done he would leave instructions with me.

I think that started my interest in grape varieties because Bioletti at that time was working on his ampelography, description of grape varieties, or methods of description. I cooperated with him, and he gave me a great deal of informational background on varieties of grapes, where they came from, because he had a lot of experience in foreign countries. He had been in South Africa and in North Africa, and was, of course, well acquainted with the grape growing countries in Europe. He spoke French and Italian quite fluently.

So he was really the man that guided my early career in viticulture here at Davis.

Teiser: What was he like?

Olmo: Well, he was a very short man, frail looking, with large glasses, but boiling over with energy. He told a very interesting story about how he was hired by Hilgard, more or less by error. Because Hilgard had advertised and made known that he wanted a young man

Olmo: that could speak fluent Italian and that was trained, if possible, in viticulture. And so, oddly enough Bioletti had an Italian name and so Hilgard designated a time for an interview and Bioletti came in and met with Hilgard. And, sure enough, Hilgard was very interested because he did have considerable viticulture experience. And he had traveled, of course, and had been trained in France and had taken some work in Italy.

But then Hilgard never once asked whether he knew Italian or not. And finally, at a later date, he asked Bioletti outright, "Don't you speak Italian?" And Bioletti says, "No, but I could certainly learn it. I speak French well enough and I think I could learn Italian in a short time." So Hilgard was a little disappointed but he kept Bioletti on. And Bioletti said that he lost no time in learning Italian.

The reason that Bioletti said that he wanted an Italian speaking person was at that time there were many Italian immigrants in grape growing, and Hilgard very frequently was called upon to speak at field meetings and district meetings, especially in Napa and Sonoma County and elsewhere where there are mostly Italian growers. Many of them, actually, did not know a great deal of English, and it used to embarrass Hilgard no end to have these people sometimes speak up in Italian and sort of fluster him. First of all, he didn't know what they were asking, and then he was very sharp and adroit in his comments.

Bioletti told me of cycling from the Berkeley campus to the Napa Valley to attend field meetings, and of his efforts to introduce long pruning according to the Guyot system of France. He had many anecdotes of his Berkeley experiences in the wine cellar. Several of his barrels of wine seemed to never require "topping" or filling. On investigation he found that students were occasionally making withdrawals and filling the void with rocks.

So he wanted somebody who could meet the public with him, and greet them, and he was thinking primarily of someone who could speak Italian with these people. But it didn't take Bioletti very long to speak some Italian, enough to get by.

Here at Davis, when I came here, our field superintendant was an Italian named Giovanni Barovetto. His son was in architecture here in town. The son still lives here. He is a lifelong chum of mine.

Olmo: And Mr. Barovetto Sr. was our vineyard foreman for many, many years. Of course, Professor Bioletti would visit this Italian family also, and sometimes we would visit together and we would have very nice Italian dinners. Mrs. Barovetto was an artist from the standpoint of making ravioli. It was just delicious, out of this world. And so Bioletti used to enjoy that. We would have homemade wine that Mr. Barovetto made in his own cellar. And these dinners were very frequently out of doors under the almond trees in the back yard, on Second and A Streets where they lived. It was a very nice, friendly community sort of thing. Above the house was a water tank supplied by a small pump in the basement.

Teiser: Do you speak Italian?

Olmo: A little. My name is Italian. My father could not speak Italian because he came to San Francisco when he was a very young boy, so I had no opportunity to learn the language from either of my parents.

Teiser: What you have said indicates that you are carrying on a direct line of work in the University that had just started when you came to Davis.

Olmo: That's right. The grape improvement program got started with the association between Professor [Ernest B.] Babcock, who was in genetics (he was one of my major professors), and Professor Bioletti. Professor Bioletti and Professor Babcock were very close friends. And, of course, they worked in the same building at that time. Professor Bioletti's office was in Hilgard Hall, and so was Professor Babcock's. So they had opportunity to meet and chat with one another. I think it was Professor Babcock who first, probably, suggested to Professor Bioletti that grapes could also be improved, that people were working on other plants and perhaps he should look into the possibility of grape improvement.*

Teiser: This was a program that was begun in 1929?

Olmo: That's right. By Mrs. Pearson, Professor Pearson. She was the wife of a vegetable crops instructor, Professor Oscar Pearson, who was a very fine gentleman. He left the university later and went into private work in New York. Oscar Pearson developed some

*For further recollections of Professor Bioletti, see pp. 17-22.

Olmo: of the first new canning tomatoes, I believe, on the campus.

His wife, Helen, was also a geneticist. She had her Ph.D. in genetics. So she was the first one to be hired to start the grape breeding program, although Bioletti did not like the idea of hiring a woman at that stage. He just felt that grapes were a man's field and that a woman would not be received very well in the field. Then one thing, I think, relieved him of the possibility of having to fire anyone, which he never liked to do. That was that Mrs. Pearson had a very miserable first summer here because she was out in the field doing crossing.

We had to emasculate the flowers with very fine forceps. It is tedious work. You have to be very steady, and you have to take this little cap off the flower. It's just a couple of millimeters wide. You use jewelers' forceps and operate on one flower at a time; these are often a thousand or more in a cluster. So it takes a long time to make these crosses and it's tedious work.

Well, getting back to the story, Mrs. Pearson was doing this work in the field, but at that time we had these black gnats that used to come down from the rice fields right about the time when the grapes were in blossom and work was going on in the field. And there was just no way to keep these gnats away from you, and they were very poisonous to some people. They would bite and raise a welt, and for some people it would almost make life unbearable. Most people would just get these and scratch. They would make red blotches. You would get a swelling, but that would be it. You would be miserable, and at that time we didn't really have any effective antidote at all for this bug.

So Mrs. Pearson just was attacked by these things no end, and it got so severe that she just had to discontinue. She just couldn't get the work done, and the swelling of her limbs got so bad that she was really miserable. This sort of discouraged her. Obviously it would. So she finally, I believe, left for another position back East. But she was a very pleasant woman, and for the first year, at least, I got a great deal of good from being with her, because she had experience as a plant breeder and was very talented.

Teiser: Where were you working at first?

Olmo: Right here in Davis.

Teiser: Where on the campus?

Olmo: Well, the first grape breeding plot was right about where the medical center is now. That is, that's where we planted our first block of seedlings. But the first vineyard that was here, (Professor [A.J.] Winkler probably recounted this better*) was over by Putah Creek near what was the first old irrigation tank. That would be down near where Mrak Hall is now located, a little east of that. It was on the banks of the old channel, and it was a rather small planting. Then we had a larger planting where the medical science building is now. So that our main vineyard was right in that area for a long time.

Teiser: The grape breeding program, has it continued pretty much the same way that it started?

Olmo: Yes. It still continues. But it has, I would say, expanded a great deal. In the first place, our initial objective was mostly to produce seedless table grapes. That was really our first charge, so to speak, to produce new varieties of seedless grapes because we only had the Thompson Seedless and it was felt that there was need for more varieties.

(Interruption)

Teiser: You were discussing the early objectives of the breeding program.

Olmo: Oh yes. The first objective, really, was to produce new seedless table grape varieties. Dr. Pearson did some pioneer work on the study of seedlessness. She published several papers on that. So that was really a beginning in the breeding of seedless varieties, although she did not obtain any seedless varieties herself because she just had the opportunity to plant out the first population, which I later took over.

We kept up in that field. In fact we're now in a project that is much larger than when we started. Of course, we did introduce a number of new seedless grape varieties. There will be many more coming out now in the next four or five years. There's a culmination of that beginning already.

*See Winkler, Albert J., Viticultural Research at U.C. Davis (1921-1971), an interview conducted by the Regional Oral History Office, Berkeley, and the Oral History Program, Davis, completed in 1973.

Olmo: And of course, we did put out the Perlette and Delight, I think that is all recorded, so we don't have to speak much about it. The Perlette has been quite successful. It's now grown in many grape growing countries of the world. It's the earliest maturing table grape that is seedless.

Teiser: It's never used for anything but table grapes? Never for raisins?

Olmo: It has been tried in some countries, and used in France and Algeria for raisins, but not here in California. It's more valuable as the earliest commercial variety, and so it's grown in the desert region where raisins are not as profitable.

Teiser: And Delight, is this used only for table grapes?

Olmo: Delight has not been as successful because of its appearance. It has some Muscat flavor in it, and apparently there's some type of linkage between the Muscat flavor and the appearance. Many Muscat grapes, although they taste very fine (people like the flavor) the appearance of the fruit is rather dull. And that's the reason, for example, why Muscat of Alexandria, which you used to find on markets in the old days and people enjoyed very much, has just disappeared as a fresh market grape. The reason being that nowadays, of course, people do not sample grapes by picking off berries at the stores. It's impolite to do such a thing. So you buy with the eye, and the Muscat grapes do not look attractive, and so their sales simply fell off very drastically.

So we had this problem with the Delight. Although it has some Muscat flavor, it's quite early. But its appearance, I would say, is quite unattractive. And of course, it met competition with the Perlette, which is a little bit earlier. So apparently one good grape took the lead over the other.

Then there's another black seedless one which not much has been recorded about because the bulletin is still in preparation. It was introduced I guess about 1958. It seemed to be quite a good grape, in the desert region, too, but for some reason they couldn't market it. They finally found out that people were not accustomed to a black seedless grape. They just assumed that if it were black it would have seeds. So apparently people were very reluctant to try it because they correlated seedlessness with white color. The Thompson Seedless was the only seedless grape that's ever been marketed here in the United States.

Teiser: What is the black grape's name?

Olmo: Beauty Seedless. Now it's being planted more widely in the desert region because they are having some success with it on the market. They are developing markets now in some areas where people realize that seedless grapes can be colors other than the white typical of Thompson Seedless.

Teiser: What does seedlessness do to wine?

Olmo: Well, we made the suggestion some years back that perhaps we should be breeding seedless grapes for some wine types. For example, for white wines the seeds are probably a detriment. They add tannin, phenols, these astringent materials, to the wine. These do assist, perhaps, in aging and maturing of wine, but most white wines are consumed very young without much aging. So we suggested at one time that perhaps we should try and produce seedless wine grapes. We are doing some of that now, although we have no varieties, really, that are too promising as yet. It's an interesting field, an interesting departure.

Teiser: Thompsons are being used.

Olmo: Well, Thompsons, of course, are our principal wine grape.

THE PRE-REPEAL YEARS

Teiser: When the program began, was there any anticipation that Repeal would come along? Did this have any relationship with the wine industry?

Olmo: Well, there was talk of the possibility, but it was not generally assumed that there might be Repeal. It was a slow process, as you remember; I guess it was a thing that occurred almost state by state. And they left the option, really, up to states, or even communities or counties.

I guess Prohibition is still with us in some areas. It came slowly, and in that way we rather developed slowly, too, our ideas about what Repeal might do.

Teiser: Were you working at all with the people who were making wine under Prohibition permits?

Olmo: Well, I do remember that the first assignment that I had from Professor Bioletti was to monitor some red wine fermentations. He was starting some research here at Davis in a small way on how to referment the stuck fermentations. In other words, when the fermentation stops he was interested to find out how much fermentations could be saved immediately so that they could be completed without spoilage. And I did several of those experiments for him, which he came up and followed periodically.

Teiser: Was that an industry problem at the time?

Olmo: I think it was something that he had just kept over in his mind somewhere from his previous work, and he decided that this was an important project. I think at that time he was well aware of the idea that if people were going to restart the wine industry, that they would be in a lot of trouble not having sufficient knowledge of how to make good fermentations and see it through. And he, perhaps, figured by himself that this would be a very important item and something should be done on it.

At the time, of course, the department was not looking at all toward wine making because I remember even in the early days Professor Winkler used to get a bottle of wine--say, some Italian visitors would leave him a bottle of homemade wine as a gift--and Dr. Winkler would invariably ask me if I would wish to have it, that he did not care for wine. So I would gladly take the bottle home because we did come from a family, or at least I came from a family where wine was usually on the table.

We had French neighbors in the Mission District, the Bouschet family, that made wine in the basement. So it was not a strange item to us at the time. Other Italian families had their cellars.

Teiser: Your family didn't make wine?

Olmo: No, we did not. We lived in a flat so that it was not possible.

Teiser: When did the interest in grapes and the wine industry start to come together? I think Repeal was in December of 1933, finally. You must have started working in the grape breeding program in '31, is that right?

Olmo: '31. That's right. But I remember at the time we started our program we had no idea about new wine grapes. No thought was really given to wine grape varieties at that time. However, the

Olmo: university had maintained a collection of wine grape varieties, because I remember Professor Bioletti was working with them on this ampelography. And he was also bringing in varieties. When he visited North Africa, a large collection of North African table grape varieties was sent to Davis. I was in charge of getting this group together and maintaining it.

Teiser: Do you remember Prohibition's effects?

Olmo: Well, I remember from what Professor Bioletti said that it was difficult for many growers who were really only concerned with small property and wine production, because they had no place to turn.

Teiser: The so-called shipping grapes, were you aware of them, the varieties planted during Prohibition to supply eastern markets?

Olmo: Oh yes. Well, actually, what happened was that there was considerable interest, I remember, in the department at that time as to how to graft over from wine grape varieties to table varieties or shipping varieties. There was a great deal of that work done, not too much of it very successful because when they did use old vines they had rather poor takes, and production was not up to what they expected. So there were a lot of failures at that time.

Many of the good wine grape varieties, of course, would not ship or graft to go over and were pulled out. But, actually, wine still kept in the picture because of the sacramental wine that was being produced, and also wine was being produced in small quantities for home use or to give away. So really it wasn't a shut-down completely. And then a lot of grapes were made into concentrate. You remember, they were made up into wine bricks and that sort of thing.

Teiser: Have you ever seen a wine brick?

Olmo: Yes, I have. [Laughs] You were asking about a wine brick. I can remember now how I happened to see my first wine brick. I told you before that Mr. Barovetto used to make wine in his cellar. And of course he did this even during Prohibition, which was perfectly legal--for your own use.

So I got the idea that I'd like to see what a wine brick looked like because I was interested in making a little wine for myself, at least to see how this feature operated. So

Olmo: Professor Bioletti brought me one, but I was very disappointed because it was small. It was, perhaps, the size of an ordinary building brick, but instead of being in a nice pressed dry form, it was a very gooey brown mess, and it wasn't really--it didn't even resemble a nice color of a red wine. It was a very dark brown color, and very sticky. And I remember it was wrapped up in a brown type paper and then on the outside of it was, also, a folded paper which had all of the instructions on what to do with this brick to make a wine, how to dilute it and so on and to add baker's yeast.

I remember trying to read the instructions but the paper, apparently, had been around this gooey material for quite a while and a lot of the brown material had diffused into the paper and made it illegible. So I could only pick out parts here and there, which was rather annoying. And that's all I remember. That's the first and the last wine brick I've ever seen. [Laughter]

Teiser: Did you try to make wine out of it?

Olmo: I did actually dissolve it up in warm water, but it seemed like it took a horribly long time. Then, the solution itself was not at all appetizing. I think I finally disposed of it before it had completed fermentation. [Laughter]

Teiser: Did you know where it had come from, who had made it?

Olmo: It was some San Francisco firm. I don't remember. I remember Professor Bioletti had told me that he had gotten it from San Francisco, or had several of them in his lab that he had gotten from San Francisco. So he thought that would be a fine present for me, which it was. I enjoyed getting it. [Laughter]

WORKING WITH BIOLETTI (CONTINUED)

Teiser: Was he humorous at all?

Olmo: He was very much so. But he was a very lovable sort of person. He was very kind and charitable, and did many, many charitable acts without anyone ever knowing about them. He preferred to do everything, really, as a part of his own personal interests. And he helped a good many people, financially and otherwise.

Teiser: Did he continue working on the campus after his official retirement?

Olmo: Yes, he did. Because I remember that when I came to the campus as a graduate student I had a room in the downstairs floor of South Hall. It was just removed not too many years ago, and it was, actually, the girls' dormitory for the whole campus, but since they didn't have the dormitory filled with girl students, they opened up the first floor to graduate men students. It was a very nice situation because the other dormitories were kind of noisy, and South Hall was considered the best dormitory from the standpoint of condition and so on. And we had a dormitory matron there, Mrs. Eddy.

But we graduate students then occupied the lower floor. And the other students kind of looked upon us as strange staying in a women's dormitory. Well, Mrs. Celeste Wright, she was then Celeste Turner, lived in the same dormitory at the same time that I was a graduate student. And most women who were stenographers or secretaries on the campus lived there as well. There were not only the women students, but they had the secretarial staff living there.

I remember Dean [Walter L.] Howard, who was then the director of the Agricultural Experiment Station, lived nearby, and his secretary and most of his female office staff stayed in South Hall. So it was a very friendly place, and I mention this now because Professor Bioletti, when he would come to Davis, would usually call me on the phone at South Hall and ask me to reserve a room. And they would reserve a room near mine in South Hall, which Professor Bioletti stayed in.

I remember him best because, although I liked to get up very early in the morning, and by that I mean six o'clock, Professor Bioletti used to like to get up about four-thirty in the morning. He would be ready to go about five o'clock, and he would like to work the vineyards. And this was just a few years before he retired. And so we would be ready to go just about daybreak in the summer period.

We would go out to the vineyard, or we would go on a trip to Napa Valley or Sonoma Valley or wherever he was going. He would always seem to want me to go along. Afterwards, little by little, I got to take over the driving because it used to make me very uneasy, and most other people more uneasy, because he got to be quite erratic in his driving, and I guess he had more than

Olmo: one difficulty with the university cars. So little by little-- although this is one sense of how proud he was; he didn't really like other people to take over his driving--but little by little he just sort of condescended that I should drive. So that was finally solved. So I did all the driving after that.

He used to have one very interesting idiosyncrasy. He liked to wear hats, or berets, or little beanies in the vineyards-- hats of every assortment. He always had a hat. He had practically snow white hair at the time, and, of course, he had rather large horn-rimmed glasses, and he was very short and very frail, but a very wiry man. He was very alert and very energetic.

So we would go out and invariably he would have his little hat. But wherever we would stop to have lunch or dinner he would never, for some reason, take his hat with him to the seat, but he would always hang it on the hat rack as he went in. And invariably we would leave without his hat, at least we did many times until I finally got to learn that we must always think about his hat. But I guess he lost more hats than any man on record. [Laughter] And of course there was no way of identifying the hats, but he would sometimes have me drive back great distances to look for a particular hat that was a favorite, but we usually never recovered it.

Teiser: [Laughs] You must have had a pretty good look at the state's vineyards then, if you traveled a good deal about?

Olmo: Yes, and he gave me a great deal of instruction on varieties. He liked to keep up a running conversation. He told me a great deal about varieties, what they were used for, and he gave me a great deal of historical background on these varieties, notes which I have written down over the years, and, of course, they have been very helpful now in more recent work in trying to identify some of these varieties that are misnamed or came in under incorrect names. Some of them, of course, we're still working on.

Teiser: Did you meet, then, a lot of grape growers and talk with them?

Olmo: Yes, I met many people through Professor Bioletti. He was really widely known. Many people that were then really old in the industry remembered him and were very friendly toward him.

[Edmund] Twight, who came back into the department to start the wine work, of course, came in under Bioletti's recommendation. They had been old friends, of course, in the department.

Teiser: Your travels with Professor Bioletti were part of the longstanding University program of staying close to the people who grow--

Olmo: That's right. Well, Professor Bioletti, of course, was very active in the field. I mean, he carried on many demonstrations. He told me about the University's Extension car. Before Prohibition they had a car that hooked onto trains, and the car was all set up so that the side of it could be opened up and then they could display the pruning materials and charts. And Professor Bioletti had some beautiful charts. Some of them are still in existence here. They're still preserved in our library.

He had cloth charts of various kinds, and the train would stop and leave the University car off on the siding, and then Bioletti would take out the Extension materials and they'd have a meeting of farmers right there. He did a great deal of this.

Even before that--he told me, "If you ever get tired of traveling, remember that I used to pedal up from the Berkeley campus up to St. Helena for a meeting." And that meant riding a bicycle. And he did this not once but many times. So I often thought about that, too. He was the type of person, though, that would have enjoyed that. He was active.

And he did have very good rapport with growers. He's probably the man that made a terrific impact on viticulture. And I think one can see the trend that Professor Winkler carried on. Professor Bioletti's early work was in many of the same fields that Professor Winkler later perfected and got into a more scientific vein. But Professor Bioletti introduced, for example, the long cane pruning to the state, which was really a new introduction. Because most people at that time, from what he told me, were all pruning to very short spurs, which, of course, they still do in some areas.

This, of course, really was the important factor that made the success of the Thompson Seedless grape, because the first man that brought it in to Yuba City, a fellow by the name of Thompson--that's how it got its name although actually it's a very old variety from the Middle East--but Mr. [William] Thompson brought it in from a nursery in New York. We have the history of this written up and it will be published some time.

Professor Bioletti told me that Thompson had this vineyard, and actually the largest vineyard area of the variety developed around Yuba City and Marysville, strangely enough. That was where

Olmo: the Thompson Seedless grape got started. But it wouldn't bear very much. It was a very unproductive variety. And the reason, Bioletti found out, is that they were pruning it like they pruned every other grape, very short to just a few buds, very short spurs.

So it was unproductive and didn't attract much attention. But then Bioletti got some plots started, and he had been over to France and knew the long type of pruning that was then becoming popular over there, the so-called Guyot system, named after the Frenchman that discovered it and popularized it*--to leave long canes with many buds on them so you would have more fruitful shoots. Professor Bioletti, as far as I know, was the first one to apply this to the Thompson Seedless. And, lo and behold, it just changed the picture of the variety overnight, because it became an extremely productive variety in contrast to what had been known before about it.

Then, of course, it moved south into the Fresno area and found its real home where it could be made into raisins. Then it created a terrific boom in the early '20s. The raisin boom was fantastic, just fantastic. Probably even more so than the wine boom right now.

And I think it was due more to Professor Bioletti demonstrating, by long pruning what this would do in increasing productivity.** The same system then spread to other varieties. Professor Winkler, of course, followed along in the same style and did much of the work on a more scientific basis and delved into it more deeply. But one can see there is certainly the background of Bioletti in forming the whole trend of work.

Then, of course, you probably have Bioletti's background, that he was also tremendously interested in olive culture. In fact, at the time I was first here he still had some olive trees on the campus. But those were the last ones that he had from his experimental work. I think we had pulled those out in 1929.

Teiser: Where were they on the campus?

*Jules Guyot

**For additional discussion of Thompson Seedless, see pp. 59-60.

Olmo: They were out here in back of the vineyard, in back of where the medical center is now, just south of that.

POST-REPEAL WORK ON GRAPE VARIETIES

Olmo: Now, I came into the department as mostly an assistant, as a liaison man for Professor Bioletti, who, of course, was in Berkeley and was carrying on this work here to a limited degree. But he sort of wanted to finish it up. So it was very interesting to me and, of course, set the pattern of what I was to know about varieties because he passed much of his information, which was very good, on to me. I kept making notes and also mental impressions on what his conclusions were as to the value of varieties, what you should look for, what you should not look for, and the difficulties with them and so on--what the history had been in Europe, and all of this material.

Then, of course, that training was to prove of considerable value because when Repeal came in and Professor [Edmund A.] Twight and [Maynard A.] Amerine started the wine work, why, neither Twight nor Amerine knew anything of grape varieties at all. In fact no one did, because the wine work had been long since dropped. Although we had a variety collection, no one knew wine varieties at all.

So then we had the immediate problem of identifying the sort of material that was being collected for wine making tests. I went on a good many of these trips with Twight and Dr. Amerine and other assistants. In fact, I think the first two or three years of my work here was mostly on the wine end. I remember then, at that time, we had no budget for wine work, or at least it was a very restricted budget, and you couldn't ask for work on wine at that time either. The old idea of Prohibition still hadn't disappeared.

So Professor Winkler was very reluctant to even mention the name of wine. And, as you know, we got the new laboratory over here by not merely putting forth the idea that we're going to do wine research, but rather keep it on a subdued scale for other things. But we felt sure that wine would come back to its own and it would have to be recognized, and this was going to be necessary.

Olmo: But Professor Twilight did a lot of that spade work, and later Professor Amerine. I think, as I said, the background that Bioletti gave me was invaluable because in many cases-- for example, we had Zinfandel collected over and over and over again. If it's grown in different districts it's hard to identify, so they would bring in samples. My desk would be cluttered with them, and usually the samples were just thrown in a bag with the name of the owner and the area where it came from. Then I would have to try and identify these things. Well, that gave me good training, too.

It also brought in another thing which I used rather consistently, and that is for specific identification of a given variety the seeds are, perhaps, the best thing of all to use. And once you get to know these seed characters and their variation with districts, they're very useful for a positive determination. Whereas very frequently the size of the berries or the color of the berries is not too valuable because of environmental effects.

Teiser: Have other people used this?

Olmo: Not a great deal. For one reason it would be difficult to describe. One could hardly picture them. That would be the best thing, but how would you describe these little things that you know as you do as a person? You can't very well just distinguish people that have black hair by saying they have black hair. But you know certain features from looking at that person, or the expression maybe. The grape seed has got some of those, you might say, indescribable characters that add up together.

Teiser: Can you keep enough samples to show people so that they can learn?

Olmo: Yes, we have lots of samples, thousands of samples.

Teiser: Could they learn by studying the samples?

Olmo: Yes, they could.

Teiser: Do they?

Olmo: Yes, they do. Some varieties that look much alike are easily separable once you know the seed characteristics.

Olmo: So a lot of the work then in the early years was identification of varieties, and this was very good training indeed. Then, of course, we found that some varieties were misnamed. We still have some of these to correct. Of course, they create difficulties, too, in the industry because people have been using the names on the basis that they were correct. So it makes problems in naming of not only the varieties, but the wines.

You can imagine--for example, we had a case where we corrected a variety recently when we were sure of it. Gamay Beaujolais, which we had for many years, was actually found to be a strain of Pinot noir. Well, this meant that many people who had had a Gamay Beaujolais label would have to change it, and they would also have to change the name of their variety. So it created some problems. But, fortunately, this was rather easy to correct because the Pinot noir is a more valuable variety from the standpoint of wine production than is the Gamay Beaujolais. So eventually the growers made the correction themselves, which is the way we had hoped it would happen. That is pretty well ironed out.

But we have other problems before us that are probably just as serious, so this takes a great deal of comparison. We must then compare the variety in the foreign region where it's grown and bring it in here and make the comparisons. Professor Bioletti always stressed that never, never make a change of a variety name unless it's been thoroughly compared, and compared for a long period of time; don't ever make snap judgments. And I think this is very true because changing the name is something that sometimes lasts a long time. In a year, it can be almost uneraseable.

Teiser: In '37 and '38 you and Professor Winkler wrote a series of articles in Wines and Vines on grape varieties. Was this in the same connection?

Olmo: Yes, it was. In other words, you had then many people after Prohibition entering the wine industry that knew very little about grape growing, let alone the wine varieties themselves. And so we thought it desirable to then publish in popular form a short description of some of these varieties so that they could be readily identified because they were varieties that were, at the time, rather important and were being planted. And growers would sometimes get wrong materials not knowing the varieties, or would have difficulty in identifying them. So we published this

Olmo: short series in Wines and Vines more or less for popular use.

Teiser: It still stands, doesn't it?

Olmo: I think it still is used, and the general information itself is quite reliable but not too detailed from the standpoint of history or anything, which we have now done more thoroughly. In the ampelography we're trying to do a more complete job.

Teiser: You were mentioning bringing in grape and vine specimens from other countries, and you started traveling fairly early in the game, didn't you? In Europe in '38?

Olmo: Yes. I think the first trip I took was to France, to Montpellier, and there I was mostly interested in studying, again, grape varieties, and particularly some of the wine grape varieties that we were doubtful about here. So I spent several months at Montpellier, attending lectures also, and studying French intensively. This was a very interesting sojourn.

I got to meet some people there that I have since been in contact with personally; Professor J. Branas, who is the most famous French viticulturist. I consider him a very good friend; he's just about reaching the age of retirement. So I was able to attend his lectures and other lectures that were given in the Department of Viticulture there. He gave me a very good background. He also showed me some of the wide differences that they have in contrast to California, differences in climate, differences in method and so on. Their variety collection was a very good one, so I studied many of their varieties and made notes on them.

MISNAMED VARIETIES

Olmo: This is the basis of some of the identifications we later were able to change here before, fortunately, the wine industry got well on its way. One of these varieties that has become, I guess, the most valuable white wine grape is one that we call French Colombard. That has an interesting history because it first came to me for identification as "Barbero" from Lodi. And I guess both Dr. Winkler and Dr. Amerine had collected it on several occasions. Of course, there was no such thing in the literature as "Barbero."

Olmo: Well, it happened to make a reasonably good white wine because of the high acidity, and it was a very heavy producing variety. The initial wine tests here indicated that it was fairly promising, especially in the hotter regions. So it was, more or less, imperative to find out what it was. We had no inkling in the early days. So then I think a good friend of the department's, a particular friend of Dr. Winkler (he has spoken about him many times, I'm sure), L. K. Marshall in Lodi, who also grew the variety decided that some name should be chosen for it. He decided to honor Professor Winkler, so he said, "Let's call it Winkler."

I was rather opposed to that because I felt it was a French variety, but I wasn't sure of its identification. So it became for a while Winkler. I believe there was a wine label printed as "Winkler."

Well, then I finally recognized from work in Napa Valley that it looked a great deal like one of the important varieties out of the Cognac region in France. So then on one of my trips I did stop in that area and looked at their Colombard, and I believed it did have the features of Colombard. I then imported the variety along with some others to California and made the comparisons here. Sure enough, it was identical.

But then we had another problem, that we had a variety misnamed already in the Napa Valley called Colombard. [Laughter] So the problem was solved, and I solved it, simply by saying that this is French Colombard. It's kept that name since.

Teiser: And the other just stayed Colombard?

Olmo: Yes. "Barbero" was dropped, and "Winkler" was dropped, and now it has become "French Colombard." And it is probably the variety now most widely planted for white wines in the San Joaquin Valley. It's a very, very popular variety. Of course, then, once its name was known and its origin was known, we traced its history back very definitely--how it got misnamed and so on. We have that pretty well on the way.

It was also called in the early days "West's White Prolific." A nurseryman in Stockton, an early day nurseryman named W.B. West, first introduced it. He didn't know what it was, so he put his own name on it. So that was another name we used to get it in on. We had all these confusions, that we now have straightened out. The historical concept of all that, I hope, will be written up as

Olmo: soon as we can get to the varieties. Probably in another year that will come out.

So we've been through this mill with quite a few varieties already. We've had a lot of varieties misnamed, or they were not identified and were misidentified when they came in. Fortunately, we caught quite a few of these before they got widely planted. But there are some used widely by the industry which are misnamed, which will have to be corrected, and that presents a headache.

We have traced down now a number of important varieties. We think we now are on the trail of the Mission, which was the first grape introduced by the padres, and also the Zinfandel. Now, for those two varieties no name change will ever be suggested, nor would it ever be approved because the names are typical. They are not really the names that they are known by in the countries where they originate, so there's no problem there. So that's a happy solution there, when you can find out historically--

Teiser: Do you actually think you've found the origin of the Mission?

Olmo: Yes.

Teiser: In Spain?

Olmo: We cannot let this information out because then the pressure builds up, and there are statements that we cannot make. The Zinfandel is the same way right now. But in a year or two, perhaps. [Laughs]

Teiser: These are great detective stories!

Olmo: They get to be fantastic stories. But they're very important ones from the standpoint of the industry. Once the French Colombard was recognized as being such, then it was immediately known as perhaps the best brandy grape of France. So this immediately puts it into another useful category. That's a big field there, as well.

Teiser: There's a psychological factor there, too?

Olmo: Yes.

Teiser: The old Colombard, what they were calling Colombard, did that also have another name?

Olmo: Yes. Well, this was also called Sauvignon vert, and this was probably a correct ancient name for the variety. But we changed that name, too, because that's another variety with a similar name that comes from the French region.

Teiser: It's the same as the Colombard?

Olmo: No, it is not. It's an entirely different variety. That's the reason why we had to call it French Colombard, otherwise we just would have called it Colombard, which was the correct name for it.

But there is a variety, already, in Napa County that's been known for almost a hundred years as Colombard, which we will change eventually, but we cannot do it yet. So you can see, you might say, the detective work involved. It takes a long time and a lot of patience.

Teiser: That's why, as I mentioned, we put this interview toward the end of the series, so that we could find out as much as possible about your latest discoveries. [Laughter]

IMPORTED AND NEW VARIETIES

Teiser: I have here that you attended the 5th International Congress of Wines and Vines in 1938.

Olmo: I could check on that. I have notes on all of my trips, diaries. Oh yes. I remember now. I believe it was at Lisbon, because I remember sharing a room with Professor Jules Ventre, who was then a leading authority on wine chemistry in France. He wrote a number of books.

Yes, and I visited, I believe, with some of the Portuguese workers while I was there. I think that's when I made arrangements to import some of our port wine varieties.

Teiser: I have here that Souzao and Touriga were imported then.

Olmo: That's right. I think that was the contact during 1938.

Teiser: What has happened to those two imports?

Olmo: Well, they've become very important varieties here in wine making,

Olmo: especially Souzao. But, in addition to those I imported, oh I guess, at least eight or ten other varieties, which have also been quite valuable.

Teiser: That weren't known here?

Olmo: That were not known here. If they were known we were not aware of them at all.

Teiser: Also for port or--?

Olmo: For port use, yes. Bastardo, I remember. Bastardo was one. I have the list here. It probably is published, or will be published by somebody.

Teiser: Do we make enough port in California to have that be a significant--?

Olmo: Oh, I should think so. It's very likely, anyway, that it has improved the quality a great deal.

Teiser: I believe Ficklin Vineyards was using...

Olmo: Ficklin used largely, I think, Tinta Madeira. This is rather a peculiar thing, too. It's another thing that we've been working on. Tinta Madeira, itself is now apparently an important wine variety. It is from the island Madeira, and that's how it gets its name. But that's rather strange that we've sort of adopted it for port wine use. I don't believe it's used in Portugal. [Laughter] It's probably a Madeira variety, for production of Madeira wine.

Teiser: I see that this certainly can upset some publicized statements.

Olmo: That's one reason why I don't particularly enjoy interviews where we have to be hurried; it's very dangerous to make a mistake.

Teiser: When you see the text of this you can take anything out that you want.

Olmo: Well, if I have the opportunity to go over the text it's quite all right.

Teiser: I found your first public suggestion that special varieties should be developed for California in a 1939 article of yours.* Had that idea been put forth before that?

Olmo: I don't believe so. We've always, I think, labored under the viewpoint that these varieties, especially wine varieties, are very old and they've been tried for a long time, so what's tried and true you adopt and you rest with them. I think this is a viewpoint still held by many of our wine growers.

In fact, at a recent meeting we even had several people say, from the standpoint of naming new varieties, that we should adopt French names because it gives more class to the wine. I mean, this tendency still exists. And, to me, this is certainly not the correct approach. We should try and develop our own unique products that may even be better than what we've had before, and this applies to grape varieties as well.

However, fortunately, just since I've been in the department the viewpoint, certainly, of many growers has changed considerably. When we first introduced varieties, for example Ruby Cabernet, it was difficult to get a grower to even try a vine or two of it. They just didn't want to accept the idea that you could produce new grape varieties of value, because the grape variety was something that was old, something tried, and they looked upon this as sort of an upstart type of promotion.

THE GRAPE CERTIFICATION PROGRAM

Olmo: This, by the way, is what got us into the whole question of grape certification in relation to diseases.** Because when the Ruby Cabernet was introduced the grower, then, would not really plant vines as such, but they would simply get one cutting from us or send in for one and graft it in their vineyard on maybe one or two of their vines only, to see what it would do. They wanted to be shown.

*"Breeding New Grape Varieties," Wine Review, 7 (4):8-10, 32. 1939

**Olmo, H.P., "A Proposed Program for the Introduction, Improvement and Certification of Healthy Grape Varieties," Wines and Vines, July 1951.

Olmo: The difficulty, however, was that invariably they did not use a good vine, one of the best vines in their vineyard, to graft the new variety to try it, but they would use the poorest vines that they had. Well, it so happened that the poorest vines they had were usually those that were carrying various diseases of one kind or another.

So immediately we were very disappointed and chagrined to find out that some of our varieties that looked so well here, when we would introduce them they would look perfectly horrible in the field. They wouldn't grow. They wouldn't produce, and the fruit was of poor quality. The Ruby Cabernet certainly followed that history. The first tests that were made in Napa County were very, very disappointing.

The vines did not mature the fruit well. They were not the vigorous vines that we know today, and so on. So this immediately made us aware that something was wrong, that many of these vines and vineyards that people had assumed were just weak because they were weak, were actually diseased vines, because when our new varieties were put on them we got these strange looking things from them. In other words, something that had transmitted up into the new variety pretty well wrecked it.

So this kept working in the back of our minds, and obviously it was necessary to do something. Then I even got more of a shock when I got over to France and when visiting vineyards noticed that there were big areas of vineyards dying out where some virus disease was not only killing the vines but it was spreading in the soil. The general term used was "infectious degeneration." The French were well aware of this, and there were circles enlarging like phylloxera used to do. But these were virus diseases that were spread some way in the soil, and the French view was that it was phylloxera that was causing it, that phylloxera was on the roots and it was transmitting virus and moving outward so the vines were getting the virus and dying out.

Well, this was later proven to be untrue. It was later found here to be nematodes that were carrying the virus--Dr. [William B.] Hewitt's and Dr. [Dewey J.] Raski's work. But at least I was very struck by these vineyards as to how sorry they looked and the fact that nothing was being done or could be done to stop the ravages of these various diseases.

So I remember appearing at the Santa Clara Wine Growers Association meeting, a meeting at which Mr. Ed* Mirassou was present, and I showed some slides of these French vineyards.

*Edmund Mirassou

Olmo: I believe there were only two or three people out of a hundred or more that paid much attention to my lecture that this business was serious; that it was in France, and they were living with it so long that they did not realize how serious the virus diseases were, especially these that were spreading in the soil and killing their vineyards. They were doing nothing about it. I said, "This situation is very serious in France. Furthermore, I've got a couple of pictures here that I've taken in the Almaden vineyard which are almost replicas of the French vineyards. the same coloring and the same effect all the way through."

But, strangely enough, only two or three people in that audience got disturbed, and one of them was Mr. Mirassou. And he, later, I think was instrumental, among others, in bringing it to the attention of Wine Advisory Board.

Mr. [D.C.] Turrentine was then the head of the technical committee--liaison. He was later made manager, but he was the technical committee chairman at that time. And I think it was largely Mr. Turrentine's efforts that got the industry more aware of this question of virus diseases, plus the need to do something about it. So I scouted around to try and find a method of preventing this type of thing occurring, and in a way it was really a very personal thing because I just didn't want to spend all this time producing new varieties and then seeing what was happening to them.

So I investigated all the previous types of certification for disease control that had been done. I remember spending some time with Mr. [Frank G.] Parsons in the Division of Agronomy. They were then introducing certified strains of wheat.

I had gotten in contact with Dr. Clausen, and then I also made a trip to the University Experiment Station at Riverside because they had been doing some work on the certification of citrus propagating stock. But in the case of these fruits the programs, apparently, had not been too successful. I was a little bit discouraged and thought that we might not be able to get anything moving either in this regard.

However, Mr. Turrentine gave us every support. Then, as a beginning point, we wanted to import some what we thought were improved strains of certain varieties from Europe, so we got a grant from the Wine Advisory Board to do this. Then, when we brought this material in, we placed it in a screened quarantined house to be indexed for virus diseases, and by that time Dr. Hewitt and Dr. [Austin C.] Goheen were pretty well along in their program.

Olmo: And so this material was still in quarantine, and almost invariably everything that was brought in was shown to have some virus of some kind or another. Which again indicated the importance of ridding the material of virus, if it had virus, before it was introduced to growers.

So this required building up a whole system as to how this could be done, and it later developed into Foundation Plant Materials Service by 1958. When the department finally decided to go ahead with the program, with the support of the Wine Institute we obtained--well, after working many years on sort of a limited budget the Wine Advisory Board offered more support. Dr. [Curtis J.] Alley was the first manager. He was brought in from private work back into the university to head up this certification program.

Then techniques and methods were worked out, of course, to first of all screen the materials for virus, which a plant pathologist did. Then, in cooperation, we provided selections of the best strains of these varieties, clonal work that we had done many years ago. (That's a little side story that has become quite important now in the industry.)

Dr. Alley did a very good job on this. Of course, he took over a department job, became a staff member about a year ago, and Mr. [Leon] Cory has taken over for him.*

This program had its ups and downs, but I believe it has served the industry very well, and I believe now every grower profits from it and realizes the importance of the whole project. But not only now from the standpoint of new varieties, which is the thing we had in mind when it began, but all varieties--because it was founded when we had so much virus disease without really knowing it. The economic damage was tremendous. A lot of these diseases, of course, were rather innocuous and they might cut yield or cut quality of the fruit without your really noticing it until you had the material clean. Then, of course, this new method of heat treatment to rid a variety of viruses has been very important, and that is the role of the pathologists. They have done great work.

Teiser: Was there resistance to this program other than apathy?

*See also pp. 85 and 156-157.

Olmo: There is, perhaps, some resistance yet, but it is in the case of having to go through certain procedures, which are probably time consuming in that way, or troublesome. For example, in the program we have the State Department of Agriculture. They have a system of certification. They keep track of nurseries, for example, that are propagating vines, and they've got to have these inspected. They've got to pay a certain fee. There are ramifications that add to details, bookkeeping, and methods that, to some growers, are not altogether a bonanza. But in the end they accept it and they know, really, that it is a good service and is worthwhile and pays off.

So I think we have a rather ready acceptance of it. And there's even talk in some circles about making it a requirement, that perhaps a state law could even make it necessary that all material would have to be certified in grape propagation. And I think some day we'll come to that, which would be the ideal situation. But we're not worried about that any more because the University is now patenting these new grape varieties, and that patent arrangement specifies that all grape material with a new variety must, in order to be patented and sold, be certified material only. So we have, then, accomplished our objective directly for any new varieties because any propagating material of a new variety will automatically be certified through this program. We think this is a big benefit to the industry.

So what was, in fact, an annoyance with the performance of these new varieties turned out, in a way, to be a blessing because, I think, it brought in this other program which is important in itself.

PROBLEMS OF INTRODUCING NEW VARIETIES

Teiser: The Ruby Cabernet was in the first group of new varieties that you brought out, wasn't it?

Olmo: The first group of wine varieties. The table varieties, I guess, came a little earlier with Perlette and Delight. Ruby Cabernet and Emerald Riesling, I think, were the first of the wine group.

Teiser: And Scarlet was about that same time?

Olmo: Scarlet was put out mostly for juice purposes. It hasn't really become too widespread, although it's grown, but not very widely. But now with the big spurt in the planting of wine grape varieties, why Ruby Cabernet has become very important.

Teiser: Was it and was the Emerald Riesling developed with the idea of making them adaptable to areas other than the best wine grape areas of the state?

Olmo: Well, they were released because of their rather wide adaptability from the standpoint of our results. In other words, we could take Ruby Cabernet and make very good wine from it in some of the coastal regions and in some of the valley regions. So it had a very wide range of adaptability, whereas one of the parent varieties, Cabernet Sauvignon, is not worth much in the warmer regions. It's mostly a coastal grape.

Now, any new variety has a problem, especially in wines. In table grapes this problem doesn't exist because people can try the grape quickly. You taste it, you see it, you make up your mind whether you like it or not. But introducing a new wine grape immediately sets up hurdles. They're not hurdles that are there because they're put there intentionally, but they're part of the nature of introducing a wine grape.

Let me explain what I mean by that. The Ruby Cabernet, according to a few growers, yet makes a good wine if not an excellent wine in the coastal region, in some areas. The first tests, however, like I told you, were very disastrous from the standpoint of virus. However, when it was introduced people made wine from it. The Napa Valley Cooperative Winery at St. Helena made the first commercial lot of Ruby Cabernet in the state.

Well, immediately, that wine which was perhaps only six months old was being compared with the Cabernet Sauvignon, which is the variety it resembles mostly from the standpoint of wine quality. But it was not being compared with the Cabernet Sauvignon made at the same time; it was being compared with the best aged Cabernet Sauvignons that were made in the Napa Valley. This, of course, is scientifically unsound to make such a comparison. If you're going to compare such varieties they should be compared from the same area, the wine should be of the same age, and so on. But this is what occurs.

Olmo: The other point is there are a very high number of choices. For example, Cabernet Sauvignon is made by many producers; some are excellent wines, some are mediocre wines perhaps, but you have a tremendous sample of wines from which to make a judgment. If you're going to compare with another variety, the essence is not to compare an average wine, but you compare often the best, don't you? I mean this is human nature. You compare the best.

So then you get, really, a very small sample to deal with of anything new in the way of wines, to compare with the best. So I think any new variety is laboring under a great disadvantage. We have even a hard time dispensing with that under our own tests psychologically. Names mean a great deal. People, when they're tasting, still want to know something about the background of the variety. And even in our new varieties, to say that it has a Cabernet background immediately increases the score. It's a psychological tendency to do that, especially if the taster is a good taster. He has this experience which motivates his scoring. It's very difficult to avoid.

It's a very interesting thing, a fascinating thing, this testing of new varieties. And, believe it or not, Ruby Cabernet is just now coming into its own. How long has it been out? The claims aren't so very different than we put out in 1948, and here it's 1973 and it's just now recognized as our best red wine in the whole San Joaquin Valley, generally accepted as such. But it's taken a long time.

This is changing now, because growers seem to rely very heavily upon what we say now about a variety, which they weren't willing to do before. And I think this is because we have tested the varieties quite thoroughly. We don't release a variety simply because it's promising and expect the grower to find out about it. We're trying to find out as much as we can in a limited time, and compare it with the other varieties they know. We give them this data and let them make the decisions. In that way they seem to rely a great deal upon us, in that most of the varieties we have introduced have been quite successful, and I think they more or less backed up the original information that they've gotten.

So now I think they're not only willing to take varieties, but they're almost pressing us to release a variety before we're ready to do so. It's advanced to a point where I think it's much more encouraging for a producer of new wine grape varieties to make progress now.

Olmo: I, frankly, am very surprised that I'm still alive and I'm still here to recognize that a wine grape variety has become important in my lifetime. Because I didn't anticipate, in the beginning, that that would be true at all. I never anticipated it. I was perfectly aware of the fact that I would have to consider my rewards in the future life from what I was doing. I was firmly convinced that would be the case. But, nonetheless, with my religion that's not too far-fetched. I'm satisfied. I would have been pleased with that outlook that I would have done something that would have been rewarded at some later time. So I felt convinced of that with wine grapes, but not with table grapes. Because table grapes you can say within a few years whether a variety is successful or not successful.

But from my early experience on the wine end I wasn't convinced that we would ever have any of our wine varieties generally accepted like we have now. I didn't expect it would be in that short a time, because we spend something like fifteen to twenty years in the production and testing of each variety. That's just before you get to the point where the public is going to decide whether they like it or not.

We've had to, I would say, plan ahead. What we're doing now is trying to look ahead to twenty years from now as to what may take place.

Teiser: So far you've guessed right.

Olmo: So far we have guessed right. I think, in general, we've been lucky. For one thing, we put our emphasis on--no, we guessed wrong in one respect, I think, and that is we put our emphasis on red table wines, and perhaps we should have put equal emphasis on red and white table wines. We felt we couldn't do both at the same time. Now we are doing both.

Teiser: That brings up the Emerald Riesling. Perhaps you don't have time now to tell the Emerald Riesling story. I imagine there is some similarity with the Ruby Cabernet.

Olmo: Yes, somewhat.

(Interview #2 - Davis, April 29, 1973)

Olmo: I think one significant thing took place in relation to variety testing. In the development of these new varieties we had the problem as to how to introduce them, but there was always the problem, first, of making sure that the variety would be commercially acceptable, that it would grow well and yield well, and that the consumer would adopt the product from the variety.

So I remember with the Ruby Cabernet we had first released it on trial to one grower, Sam LaFata, an Italian nurseryman in St. Helena. And he had the first few rows of this variety, and then we collected grapes and made wine samples. This gave us an opportunity to make a larger quantity of wine, and we were convinced then that it was quite good.

But then we immediately hit a snag in the industry. For one thing, the choice of the name was, more or less, not met with full accord by the growers in the Napa Valley because they feared that the naming of another Cabernet variety beside the premium Cabernet Sauvignon, which was the standard, would jeopardize their own plantings in a way that might be competitive. That's what they thought.

It was very interesting that some of the growers in the coast counties actually got together and were preparing to bring suit against the university for naming this variety--or wanting to name it--Ruby Cabernet. They thought it should have no connotation with Cabernet, even though the variety did have characteristics of the premium variety.

Well, this brought up the whole problem of naming, which is still a very, very ticklish procedure. We have to, now, clear it through the University attorney to the patent office

Olmo: and search trademark records and so on, to make sure that the name is not already used. We just had this problem again here in the last week or two, in deciding on a name for this new variety that's being released this year. We call it simply Selection 12, but now the name "Carnelian" has been adopted. Mr. [Philip] Hiaring, the editor of Wines and Vines magazine, suggested the name, I guess because he had visited Carnelian Bay at Lake Tahoe or something. But it did have a nice ring to it, and the name was suggested to the Wine Advisory Board and they accepted it in a public meeting. And then the name was finally put through the search, and lo and behold--we thought we had an original name, but the National Distilling Company had already trademarked the name in 1969. But they were just recently kind enough to relinquish the use of the name and transfer it to the University, so we're all right now.

But the problem of naming is a very difficult one, especially with these wine grape varieties.

Teiser: If you do use a name that is not generally associated with a previous grape, does that keep you from having conflicts?

Olmo: Not necessarily, because there are so many different wine brands and so many different names associated with wine types the world over that it's very difficult to find a good name. Some people suggest just compounding the names, but you don't come up with names that have very much appeal to them. They don't sound like anything, and they don't read like anything. People just don't accept them as well. We have given this thought, but relinquished it again and gone back to what names we thought might be Californian and be typical.

UNIVERSITY FIELD STATIONS

Olmo: Now coming back to the testing of Ruby Cabernet, Mr. LaFata, since he had this variety, then more or less had the distribution of it. That was another thing that created a problem; some people said that we were giving a monopoly to a nurseryman, because other people didn't have it. Yet we were very reluctant to distribute it generally because we didn't know whether we were ready to release it or not. But then when the time did come for release there were very few people that had the variety. There was some criticism leveled against the University that there was

Olmo: some favoritism shown, which, of course, was not the case. Anybody could have gotten cuttings, at least a few to start with.

Nonetheless, it made us think a great deal of the problem of testing these things. So then we came around to the viewpoint that, if possible, the experimental plots for the trials of these new varieties should be under University control. That meant having a proper place that the University would own and where the tests could be conducted.

At the time Professor Winkler took his leave of absence, I was then the acting head of the department for, I think, about a six month period. We had previously brought up this problem to Director [Paul F.] Sharp, the director of the Agricultural Experiment Station in Berkeley, that we needed a better area, first of all to test new varieties, that was more typical of the grape growing regions and that could still be under University control. I believe it was this approach that Professor Winkler and I took that actually resulted in the foundation of the Kearney Horticultural Field Station, which is now quite a large development.

I remember meeting three or four times with Director Sharp. I think his main reason for getting that station started was, actually, to satisfy our demands for a testing place for new varieties. It has now become our principal station for the whole Central Valley and the testing of both table varieties and wine varieties. So this has been very good because we're not dependent on individual growers who may change their property, or other things come up that make it very, very difficult to get an adequate test.

Teiser: What other stations are there? There's one in the Napa Valley...

Olmo: Yes. We actually have two stations there. We obtained first what we called the old Federal Station because it was a USDA station at the time. They had more or less abandoned it because they ran out of funds. The Napa Valley growers, I think with our encouragement, finally sponsored a bill in Congress to get that transfer. Then with their help we acquired a second piece of property about a mile south that we call the South Vineyard, that was purchased from the Stelling Estate.

Teiser: Which is the one referred to as the Oakville Station?

Olmo: Well, the original Oakville Station would be what we call now the old Federal Vineyard (where the foreman's residence and shops are located), to distinguish it from the newer acquisition to the south. I think that each occupies about twenty acres.

Now that, of course, was ideal for the testing of varieties for the coastal areas. The larger portion of the land is being used for testing of new wine grape varieties for the coastal areas.

Teiser: So you have stations here, in the Napa Valley and in the San Joaquin Valley.

Olmo: Yes, the Kearney Station in the San Joaquin Valley is near Parlier, right near Reedley.

Teiser: Does the University have a station on the west side of the San Joaquin somewhere?

Olmo: Yes, there is a west side station.

Teiser: Do you use it?

Olmo: No, we don't use it for any variety testing, largely because of expense. If we get scattered around too much we have difficulties paying our bills. Actually the station in the Fresno region will pretty adequately test for the west side, as well, as far as these new varieties are concerned. So we really haven't taken any of the new varieties to the west side station. although probably we could.

Teiser: To turn to the other side: some growers have done work on the development of new varieties. For instance, I know Antonio Perelli-Minetti has done some. Do you work with them?

Olmo: Yes, we have. We have kept in contact with these people and tried to help them as much as we could. Perelli-Minetti has released a wine grape variety that appears to be satisfactory,* but in general they tend to patent those varieties and keep them to themselves so the public doesn't really get an opportunity to use them.

Teiser: Are there many such in the state?

Olmo: No, very few. In fact I think Perelli-Minetti is the only one that has released a wine grape variety that has been patented.

*Named Perelli 101.

Teiser: Do patents run out in time?

Olmo: Seventeen years. It's just like a mechanical patent; you have seventeen years of protection.

Teiser: So eventually...

Olmo: They'll eventually run out and become public property.

Teiser: The same for the University patents?

Olmo: Right. It's the U.S. Patent Law, so whether it is with plants or with a mechanical invention, they both have it for seventeen years.

Teiser: Patents cannot be renewed?

Olmo: Patents cannot as far as I know, unless you come up with something new, and then that's another patent.*

I was just trying to recall--there is a gentleman at Ceres, Fay Triplett, who has done quite a bit of wine grape breeding work in the past few years. We have helped him a great deal. He has made some rather interesting new departures in using the California wild grapes to cross with some of the wine varieties. And we sort of assisted him with some of that in making collections of wild vines and so on.

NATIVE GRAPES, HYBRIDS AND DISEASE RESISTANCE

Teiser: What is the California wild grape?

Olmo: The native California grape grows in most of the stream beds and banks in the Sacramento Valley and San Joaquin Valley. It's called californica. It's the grape that the first explorers noticed growing here; it might have given them the idea to plant grapes in the same area.

Teiser: Is it disease-resistant and phylloxera-resistant?

*For additional discussion of new varieties developed by the University, see pp. 83-85.

Olmo: No, it's not phylloxera-resistant, and of course there was a good deal of discussion in the early days, and a long period of testing, to actually show that it was not phylloxera-resistant. Apparently it had some resistance, but in many areas it finally went down. Of course, [Eugene W.] Hilgard and [Charles A.] Wetmore and others tested these things, and some thought they were resistant, some thought they were not.

But there were a lot of wild California grapes grown from seed at that time, just planting seed. Then the vines were set out in the vineyard and then grafted, with the assumption that the root was resistant to phylloxera. But later tests showed that it was not. Both Wetmore and Hilgard had to abandon their claims that the species was resistant. Apparently they had a hard time convincing themselves that it was not because it did last quite well at first. But then apparently when the phylloxera built up it was not resistant at all.

Teiser: Does it have other qualities, though, that do recommend it, so that the grower in Ceres...

Olmo: It is quite resistant to powdery mildew, which is our worst fungus disease, so it's interesting that way. It's also extremely vigorous. It's a very vigorous grower in the valley lands. So it has some value. It has not, really, bad flowers. You can use it in hybridization and get a fairly good wine.

But we have not gone out into exploratory tests with the hybrids except with the species of the Southeast. That's the muscadine group, and that's a long-term project that we've been on for years and years. It's really basic research because the *rotundifolia*, or the muscadine, first of all had great interest for me here. In fact I started the first collection of the varieties here in the state. Most people had never seen that particular grape type before.

But it's an unusual grape in that we soon found out that it was resistant to practically every disease and insect that troubles our cultivated vines. The muscadine is the only species that we know of that has been brought directly into cultivation by the American colonists. They found the vine in Virginia, Carolina, or the states along the southeastern coast.

The wild vines had fruits that were big enough. The berries are almost as large as a fairly good table grape. They're only in clusters of three or four or five berries, though. However,

Olmo: the colonists did, actually, plant these and select out good types right from the wild. So it went right into cultivation and, of course, it went on into settlements in this country in the Southeast.

Well, we brought many of these varieties over the years into California. They didn't have much interest for anybody else. The flavor and the aroma is extremely strong. You can put two berries here on my desk, close the door, and when you come in in the morning you can smell the fruit as you enter the room. It's extremely aromatic. It's rather unpleasant because it's so powerful, but if it's diluted down it is an interesting flavor and aroma that you get from the fruit.

So, then, we used these vines--started to use them to cross them with vinifera. A man by the name of S.P. Wylie in the Civil War days had actually been trying to hybridize them in South Carolina with vinifera, but he claimed that the cross was unsuccessful unless it were made in one particular direction. This was an old publication, hidden away in an early journal, and unfortunately we spent two or three years of work making the cross in the opposite direction so that we had no success at all. We finally happened to make the cross in the other direction, using the vinifera as the female parent, and the cross works quite easily. It's a very strange thing.

Lo and behold, I think it was just a few months after we found this out the hard way that we discovered his paper, and there it was all set down for us! [Laughter] A good example of the necessity of searching the literature very, very thoroughly before you start out on some of these things.*

We had some other problems; we couldn't get seeded berries. Then we happened to change the particular varieties that we had used, and we happened to note in some of our field progenies that we did have a few vines that formed a few seeded berries, two or three of them. We were elated then, since it was more or less again an accident, because we just had ten or twelve vines, I suppose, of this particular hybrid.

Then it was evident that varieties that you choose made the difference. That is, they may be completely sterile, or

*See also pp. 115-121.

Olmo: they may be partially fertile. Once we had this key then we used these seeds, and we have since now backcrossed to the cultivated grape, and we now have cultivated grapes that are just as fertile as the standard varieties. Now we have the large program of introducing the resistance to these diseases and insects like phylloxera, nematode; these hybrids are even resistant to virus troubles that we have, which is rather unusual. So this muscadine or rotundifolia parent is rather a good contributor of all these things that we need in the way of resistance in the vinifera grape.

These materials are good enough now to be compared with our standard cultivated varieties. In fact we made wines out of some of the first ones a few years ago, and some of the wines rank with ordinary wines from the valley, even though they have this native species in them. In other words, we have now the quality of the cultivated vine, the production, along with this vigor and resistance. So now we must start intensive work to, say, select for phylloxera resistance in these progenies for nematode resistance, for resistance to powdery mildew, which we're doing now, and so far it looks extremely promising.

We have tested some of these varieties for resistance to Pierce's disease, for example, which is a very severe virus disease because it kills the vine and sterilizes the area for future grape growing. It's known as the old "Anaheim disease." When that area was cleaned out of vines, due to the ravages of the virus in the late 1880s, you could not replant a vine there. Even today, if you replant vinifera vines they live two or three years, the virus is introduced, and they are dead. So it's a very, very severe type of virus.

It makes the growing of the vinifera grape in the southern states impossible. Florida, Texas, and all those states have a large reservoir of this virus and these insects that transmit the virus. So this is one project that we started quite early, breeding for resistance to this Pierce's disease. Here again we haven't published anything on it, but we've done a long stage of work, feeling that some day the disease may get epidemic in other areas like it did in Southern California and wiped out the grape industry.

There was some feeling at that time, and there still is, that some areas like the North Coast might again have epidemics of this virus disease and clean them out. I'm sure that there are vineyards now where it's not too profitable to grow grapes up

Olmo: there, like near Spring Mountain certain areas of vineyard will not survive. This disease kills them out in a few years.

So we felt then, in building up this so-called reservoir of material, that if the necessity ever occurred that we could come in and use these in further breeding work more directly for a guarantee against the ravages of this virus.

By the way, it was just recently found to be a bacterial disease. It was reported from Florida. So that's another interesting thing: the virus is now a bacteria. But it's a peculiar type of bacteria. Pathologists say it is a rickettsia type. It must, of course, live in conjunction with living cells, otherwise it can't reproduce. So in a way, it still acts like a virus. It has to be transmitted through insects. It has to be in contact with living cells of the vine to reproduce.

So this Pierce's disease is one thing from the very beginning that we thought might be something to give attention, and we did. From 1935 we had a plot at the University of California at Los Angeles. Professor [Robert W.] Hodgson was very cooperative. We had about a quarter of an acre of land. I believe it was perhaps the most expensive piece of agriculture land in use because it was right at the corner of Sunset Boulevard and Veterans Avenue--you might say right on the Hollywood strip almost--and I guess the land was of tremendous value. There were very expensive homes all around us. But it was a fantastic place to study this Pierce's disease because you could put a vine in and within three years uniformly it would be dead. There were just so many vectors living on the ornamentals that people grew, and on the lawns, it was an ideal place.

In fact we had to, eventually, move out when construction took place around there, about eight years ago, and we lost our good testing place. Then we transferred down to the South Coast station at Irvine, feeling that since this was close to Anaheim that the virus would still be there. But for some strange reason there were no vectors there and we couldn't establish the disease. We spent a number of years growing vines, but could not get the disease, so we had no way of testing for it. We had to abandon that. Then we tried Riverside, as well, for several years in a cooperative. Again, we didn't have good luck there.

So the loss of that plot was, really, quite serious. We had to abandon our testing here, but we finally decided to send the material to Florida. We have Dr. John Mortensen over there

- Olmo: (he's a former Texan) and since their principal problem is the resistance to Pierce's disease we send our material over to him, and he tests it and then reports back to us. Then, of course, when he finds useful material he can use it in his own project as well to bring in the resistance.*
- Teiser: You brought the original muscadine grapes from a trip to Texas in 1951?
- Olmo: No. The varieties were actually brought in from Georgia, from the Georgia station and the Mississippi station and North Carolina.
- Teiser: But you collected...
- Olmo: These were wild. These were wild species that we collected in Texas on one trip. Then we made another trip into Mexico. But these were native species like our California grape, but different types and different species. We were interested there first of all, in seeing whether there were species in Mexico because none had been reported. All of our botanists, apparently, had discontinued their work at the border. That was as far as they studied the native grapes.
- We found out that there were a lot of native grapes in Mexico, some of which we think will be very useful for rootstock..
- Teiser: Have you done extensive research on those native grapes that you collected in Mexico and Texas?
- Olmo: Yes. We have work that is continuing on them. We're testing them for resistance to phylloxera, and resistance to nematodes, and some do seem to be very resistant and will probably be very useful.

*See also p. 119.

FRENCH HYBRIDIZERS' EXPERIMENTS

Teiser: Have grape hybridizers in France done some work on native American grapes crossed with European varieties?

Olmo: Well, they produced a whole series, literally hundreds of hybrids, that are crosses with our--in the beginning, crosses with our native American species, and some of the cultivated forms. And this came about because they did find out that to combat phylloxera the native American grapes were the only ones that were resistant. And they introduced many pounds of seeds of our native varieties particularly, from the Midwest. Mostly Missouri, Kansas, Ohio, Oklahoma, through there.

Then they selected out of these seedlings and cuttings (sometimes they had cuttings, most often seeds) types that would have resistance. And of course they got out a large number of them, and the best was, probably rupestris, a native species in Texas and Oklahoma. So then they grafted their cultivated varieties on these resistant roots, and that was the solution.

However, there were many of the French amateur wine growers that had the notion in their minds that grafting, after all, was expensive and meticulous, and it was not always successful, and it was, at least, a bother compared to the simple method of just rooting a vine from a cutting. So some of them got the idea that perhaps they should try and develop a grape that would have a resistant root, and at the same time have the desirable fruit quality, which seemed to be reasonable enough.

So then this led to the crossing of many of these American species with their wine varieties. However, unfortunately, I think they used many of the species which had many bad characters from the standpoint of wine. It's something they still suffer from. That is, they brought in bitter flavors, poor flavors, so that the wine quality of these hybrids was not good. And even the term "hybrid" to the Frenchmen denotes something of inferior wine quality from that standpoint.

However, they did find some rather interesting things--that these varieties were certainly of interest in other respects, even though they didn't actually obtain satisfactory resistance to phylloxera, and their idea that they would get a direct producing vine on its own roots was really not achieved as far as phylloxera was concerned. But the interesting thing occurred

Olmo: that they found quite another thing that was even more valuable to them in that these vines were quite resistant to mildew and the other fungus diseases that attacked their cultivated vines, and they were much healthier growths that required a lot less spraying. They had another characteristic which proved to be very valuable, and that is that after a frost, for example, they would regrow and produce quite a bit of crop, which wasn't true of the cultivated forms.

So they became valuable and were planted widely in certain areas of France, outside of the areas where they could grow the premium varieties successfully. So then a lot of the French acreage went into these hybrids. But the wine quality obviously was too poor, except in these regions where it was difficult to grow a good cultivated variety of vinifera.

These hybrids, of course, now the better ones have been selected out and they are now creating a lot of interest in, say, New York State and other states where the winters are too cold, for example, and the diseases are a problem when they try to grow vinifera grapes. But yet these hybrids have the cold resistance, some of them, and they have resistance to disease. So they are valuable to extend grape growing. But no one claims the wine quality of any of them is equal to the best vinifera.

Now, of course, the renewed interest is taking place because all of this work in the early days in France was done by pioneer. [Albert] Seibel was one of these, [Georges] Couderc was another. In fact, when I went over there I visited the establishments of these areas and met several of these breeders, and they were very very devoted and enthusiastic people, such men as Couderc and Seyve-Villard. And the amazing thing was that although they tried to enlist government support for their work many times, they never got any real help from the French government. A lot of them really didn't have the means to be doing this, but they were absorbed in it that they just kept on.

Yet they contributed an enormous amount to world viticulture because these French hybrids have gone into many countries of the world, like out here in the more difficult areas. This work, however, was not lost in that sense because now the work is being reoriented by the modern breeders in France to utilize better species to begin with, to try and repeat this process and get better wine quality. So to us it's interesting.

This is an interesting sidelight here: For example, if they had started the basic research on the *rotundifolia* which we started here knowing that it's resistant to all these things,

Olmo: they probably would have had something very, very good by now because certainly we have. We have the resistance and the quality. So I think there again it's a chance as to what they started with, unfortunately. But now they're doing it more methodically, and they are also now using some of our material, by the way.

They've recently imported some of our hybrids of this rotundifolia into Montpellier in the south of France, the principal viticultural school in France. Although it's very curious that the government even now is very averse to doing this work. They just assume that hybrid, period, is still a bad vine, and that even with changing the species that they're using and the approach, there is some opposition to these breeders even doing the work experimentally in France at the present time. And that's very strange to me. But you can understand it because of the fact that many people in France think that the introduction of these hybrid vines was very bad for the wine industry as a whole, because the quality of the wine was not improved and the production went way up.

They now, of course, have prohibited the planting of many of these hybrids because the growers obviously like them. They can grow them easily without spraying and it's less costly to produce. And, like I say, they produce at least drinkable wine. But the French government is averse, apparently, to going into these programs. So I think maybe we'll have to point the direction for them, and then there will be more of a willingness to change their ideas. Because I believe in the end that it's going to have to be the solution to compete with other grape growing countries with a lot much better growing conditions like California.*

You can't realize how much work it is to grow vineyards in Europe where they have summer rainfall, where they've got to spray with Bordeaux mixture maybe ten, twelve or fourteen times during the season. It's a very onerous work.

Teiser: When you go to different countries as an advisor--Malta, India, heaven knows where you've been--do you have to carry all of these possibilities in mind? Not only what you know from California, but what you know of France and Italy and all of the rest. Do you have to carry the whole world's successes in your mind?

Olmo: Yes. You more or less accumulate these experiences, and then you begin to add them together.

*See also pp. 120 and 153-154.

GRAPES IN VENEZUELA AND INDIA

Olmo: I was invited to review the possibility of growing grapes in Venezuela, which is really a tropical country. And the background there, from the standpoint of the Venezuelan government, was very interesting because the reason they asked for assistance was principally that they were growing grapes in parts of Venezuela, and Professor Winkler said in his book:* grape growing is not a successful venture in tropical countries; the vines are short-lived; they grow all year 'round; there's no low winter temperature to put them into a rest period, so the vine just exhausts itself-- which in general is true.

However, the Venezuelan government, getting such reports as these and reading such reports as these, could not square this with the idea that here were some Italian immigrants and Spanish immigrants growing grapes. And they were producing, and they were vines that were quite old. Some of them were on fairly large trunks. It's true that they were scattered plantings, but it looked as if grapes were growing. And this was rather a puzzle to the government, especially in view of the fact that these people, these immigrants especially, wanted assistance from the government to enlarge their plantings and to make wine and to try and market the fruit. They wanted assistance from the government loans to start vineyards and do trellissing and so on.

Well, the government would usually reply that you can't grow grapes, forget it. So I guess this action built up to the point where they decided that somebody ought to look at this thing and decide whether they can or they can't, and what the possibilities are. So I was invited down there to study it, and it was a very interesting situation. Here is where some past experience helps out.

First of all, we were not aware that there was in Venezuela a native grape vine growing under completely tropical conditions. And so I found this thing several times in the forest, and I kept asking about this vine. "Oh, it's a grape. Yes, it bears. It's all right to eat. It's not poisonous."

It has very, very small, tiny berries, and it seemed to go through a definite growth cycle right there in the tropics. It didn't seem to bother it that it wasn't chilled, and it was very

*Albert J. Winkler, General Viticulture, Berkeley and Los Angeles: University of California Press, 1962.

Olmo: resistant, of course, to diseases. It could be rained on. It rains frequently. High temperatures. And the fruit was passable.

But then the curious thing occurred. We went, finally, into certain districts where a given variety was known and very often they would use the word "criolla." Criolla simply means something in a way that is native, that is produced in the country.

So first of all it's rather strange to find them using the word "criolla," which meant that it was a vine that was native here. But they were not referring to the native vine. They were referring to vines that they had, and some were black fruited and some were white fruited, but some of them were of an enormous size. They had trunks six or eight inches through, and they apparently had been grown for twenty or thirty years.

Some were in patios, even trained up to second stories in the homes, and many of them were just loaded with fruit. They were not sprayed, and not really too well cared for. But these were the vines that the immigrants had. And when you asked them, "What's the name of that?" it simply had the name of the locality.

I remember one vine that we found. It was outside of Maracay, near the coast, that was a tremendous vine. It was growing up into the third story of a house. It was covering the patio on the second floor and still going up to the third--one vine, mind you. And it was just covered with grapes, just loaded with grapes. It was just beautiful. It must have been close to a ton of grapes on the vine, I'd say.

Well, I said, "Where does this come from?" And the Portuguese owner of the house said, "Well, it's a grape that we just discovered here. It's just known in this village." So he just called it "Villa Nueva," New Village. So the grape was named after the town, really.

This variety became known and other people got cuttings. It was being distributed. Then there was another one even more remarkable because it was even more vigorous, and this they called the "Criolla negra," the black criolla. And this was a small berried one. Lo and behold, I found out even a few people were making wine from this variety, producing wine and drinking it.

I got some of this. It did have a strange taste. I couldn't quite figure out for a while where these things came from. Are

Olmo: they importations that came in from Europe and eventually adapted themselves to the climate and forgot about the hazardous conditions and decided to grow and produce? Then I began to look at the leaves and the fruit more carefully, and then in the taste of the wine there was something a little suggestive about it. So I finally decided, "What is the possibility, perhaps, of in the hundreds of years that they've been introducing grapes into Venezuela..." and of course the Spaniards introduced them very early. They took these grapes with them. The Portuguese as well. And they still do it. They still introduce the varieties from Europe, hoping to grow them. But this has been going on for hundreds of years, and there still isn't really a vinifera variety that is grown successfully there. There are very few that last very long.

But these other grapes were certainly there a long time because they had big trunks, and people could remember them, and the names go way back. However, they don't go back so far that they correspond with the earliest introductions of the European grape.

Well, then piecing it together, the hypothesis I made was what could have happened was that when these people were settling in the early days they were clearing out the jungles. I mean, the land was practically all overgrown. You know how it is. Everything grows lush. And the first thing they do is they clear an area and they plant their corn or their other crops. Well, if they would do this, then they would put their grapes near the house somewhere. And, presumably, what did happen was that the introduced varieties that they brought in over the years--and usually it was Muscat because the Spaniards are very fond of Muscat grapes, and it's a common variety in Spain--then this was unquestionably introduced, and there is indications that this variety is, in part, responsible for some of these hybrids.

Now, what did happen, of course, is that these cultivated grapes apparently hybridized naturally with the wild vine in the jungle. And some of these seeds fell down somewhere near homes maybe, and these new vines came up and they were very vigorous, and they fruited, some of them, and the people simply propagated from there. So this Criolla negra is found practically all throughout Venezuela. You can find a vine here and there in practically every village. If you ask about it eventually you will find it. It's widely distributed.

Olmo: So then, in piecing all of this together one could say, "Well, here's a way to produce a resistant vine that will produce and will grow successfully in the tropics." It's to use the native vine and cross it with cultivated ones and start a project to produce new varieties, which we're doing now. In fact, the Venezuelan government now provides our university with money to do the programming, and we send them the plants. So all we do is the initial part of it and they do the rest. So it's a cooperative project, and we're already getting very interesting results, even in a few years.

We've taken these criolla vines of theirs and used those again to cross and bring in better quality. So now the Venezuelan government is rather enthused about their future in grape growing. Of course, another part of the project was to explore the country from a standpoint of where the better regions for commercial grape culture would be. This was part of the assignment. I had to travel widely through the whole of the country, except in very low regions in the tropics where it would be flooded over in the winter time, what winter there is during the rainy season.

So we picked out certain areas and recommended that trials be made in those particular areas. These tests now are going along quite well. The government is very enthusiastic about developing a grape industry.* And, of course, they do want a wine industry as well. There is also a cross interest from Seagram company, who manages Paul Masson, because they're interested in exploring. They have other interests down there and they manufacture rum and other materials, and they cooperate with the Venezuelan government as well. So they have a direct interest in it. They also are interested in the project and want to support it. It appears that it will be quite interesting.

Now the assignment in India was again under the United Nations FAO. But almost a similar problem came up. There the grape industry was expanding very rapidly, and they wanted, more or less, to know again where the best areas were for the possibilities for expansion of varieties that might be used, and so on.

So, I mean, each study in turn assists the other because for example, now we discovered in India that they were using a variety

*See also pp. 150-153.

Olmo: that was apparently located there perhaps again as a seedling, but it does not have any native grape in it from that area. It's a straight vinifera grape, a variety that has a large white berry that is grown very successfully over there as a table grape.

So now we've brought this variety from India called Aneb-e Shahi. We're running it through the certification program here, and then we're going to supply cuttings to Venezuela and any other tropical country that wants to use these varieties. So one project really helps another. What you learn from one area very often you can use in another.

WINE AND GRAPE PROBLEMS IN MALTA

Teiser: Why was Malta important enough to hold you for a number of months?

Olmo: Well, the Malta assignment was a very, very peculiar one because even in offering the job the FAO said--well, I think they described it very aptly by saying that it was a "can of worms, and we have offered the assignment to others and they were not willing to take it." But it did work in well because at that time our son Paul was in the army in Germany and it gave us a chance to visit once in a while with him. And actually when I went on the sabbatical I used the vacation for the family as well because I've never taken any vacations. I don't even yet. In other words, when I take a vacation it's on an assignment or sabbatical. So it gave us the opportunity to be together. And it was challenging because no one really knew what the situation was there.

Apparently what had happened was that there was a dissatisfaction between the growers and the winemakers. The situation was very, very complicated. The people there, I would say, are extremely intelligent. They are actually descendants of the Crusaders.

It's a remarkable population in the respect that the background takes in practically all nationalities. Of course, they were overrun with the Arab invasion for something like four hundred years, and of course, the people adopted a lot of the--in fact their language is mostly Arabic. They can understand

Olmo: and practically converse with an Arab. And yet they're extremely fluent in French and in English and Italian. They're fantastic linguists, fantastic.

When our youngest boy went to school there, he had five languages to study in one semester. So finally he just got so many cross currents that we had to ask the headmaster of the school to drop at least three of them. He just couldn't possibly handle five languages. But this is what the ordinary Maltese student ends up with. He learns Italian from the Italian television, which they have. It's close to Italy. So they learn Italian that way. It has been, of course, for a long time under the English empire, so they speak the King's English. And of course a lot of the early Crusaders were French, so they teach French and know French well. And then, of course, Arabic is really Maltese. Their native tongue is basically Arabic. So they have five languages.

You might say that they don't have much in the island. It's really an island of limestone rock, and there's a very severe shortage of water, so their vineyards were very small in extent. They were producing some wine. It was quite a valuable item in their production. But apparently the difficulty had to do with the friction that was arising between the growers and the wine producers.

When I arrived, of course, I got caught right in the middle because I had to make friends with everybody, so to speak, and I got to know quite a few of the principal wine producers and get a pretty good review of what they were doing. And I also had contacts with the growers. Apparently the growers were doing quite a good job. With the meager amount of soil they had and the water, they were producing a pretty good quantity of grapes of good quality.

But what had happened was that the wine producers were making attempts to import grapes from Sicily and other countries, and also using perhaps more than the legal tolerance of sugar in the production of wine, and they were forcing the price of the grapes down feeling that this would get more people to grow grapes if they would buy more of them at a cheaper price. They thought that this might expand the industry. What it was doing, of course, was just what you would expect. It was forcing the grower out of business. He just couldn't afford to grow grapes for the small price that they wanted to pay.

Olmo: But, nonetheless, these two camps were completely divided. It was such a difficult period that it actually got into the parliament, into their own discussion in parliament, which always got to be a bitter battle because the government was quite socialistic and regulated the price of grapes. One of the things that brought on the crisis was that two years previous to my arrival the government, through some of its agents, took over the purchase of grapes themselves from the growers to give them a good price, and made the wine. And this wine came into market competition with the private producers'. So you can see what that created.

The other problem was that the government jumped into this a little too quickly, without having trained personnel, and the wine was hardly very good. So they had difficulties in disposing of it. Again this was a problem as far as the government was concerned.

So, here was this "can of worms;" certainly, as they said, it was a difficult thing. Little by little, I guess, I saw lots of vineyards and I wrote reports on the varieties and made suggestions for grape and wine improvement, after I had had enough experience with their area and knew what their growing condition was. But I think in the end the contribution I made was hardly altogether scientific training. It ended up being a job, as sometimes is the case, in human relations.

Eventually what I did do was, perhaps for the first time, I actually got a couple of wine producers to sit down at the same table with a few growers. And I tell you they were stormy sessions! They each had their own viewpoint, and of course, they were direct opposites for so long that they couldn't even think of speaking to one another hardly. But little by little the barrier broke down, and the producers began to see the writing on the wall. In some ways I recommended that a certain amount of threat be used because the wine producers, if they were put on a certain legal limit in the use of sugar, it meant that they wouldn't be able to produce as much wine and they would have to get grapes somewhere, which would be expensive, unless they bought them from their own growers.

So I used this as a lever to get the wine producers to talk with the growers, and at the same time I told the growers that they had a just right to get a better price, and that it was expensive to produce grapes. All they wanted was a better price for their grapes, because they were pulling out vineyards instead

Olmo: of planting. And they were in this impasse, too, because they couldn't, for example, understand how these wine producers could keep producing wine without buying more grapes.

Well, eventually the two sides began to see that neither one was going to get anywhere, and that if the recommendations were made thusly to the government that they would be forced into line by law, which they could do quite easily in the government. The other thing was that the government was quite powerless to act on the situation because of the fact that they had no one, exactly no one, scientifically trained in grape growing or wine making. The wine producers were very technically qualified because they hired German personnel, French personnel, and so on that end they were very well fixed. But on the other hand, the government had no one to counter this. See, the expertise was coming from the outside. So the growers were pretty much left out of the picture entirely.

When the government, like I said, did try and enter in and produce wine it ended up a fiasco. So eventually, then, the two sides were speaking again, and I think I wrote up a preliminary set of wine law specifications, which I think was later adopted. In the end we obtained a student who came here, and he was trained in viticulture and wine making, and he is now their government expert. So the government has somebody that can advise them on these matters. And he has the background, certainly, to keep this thing straight.

But, anyway, I haven't heard much since I left. I presume that things have gone better. I've been told that by the FAO office. This was the assignment.

Teiser: Does Malta depend upon itself for its whole wine consumption?

Olmo: No. They import a great deal of wine, and this was another factor that the government had to control. This was part of the recommendations also--that instead of importing wine in bulk, which they often did, and then rebottle it, I had suggested they should perhaps only bring in bottled wine with definite labels on it so quality control could be regulated much better.

And the import taxes probably, I think, were raised so that the local industry could be protected, local growers could be protected.

Teiser: Do they bring wine in from Algeria?

- Olmo: Most anywhere, Greece, Algeria, Italy. They do consume quite a bit of wine. But it's a very small island. It's isolated. I think their future, in the end, really--and perhaps it could be very important in the near future--is as a stepping stone between the Arab countries and the European countries. Because really, they're the only bridge language-wise and custom-wise between the two continents.
- Teiser: Well, that does take a geneticist into a wider area! [Laughter]
- Olmo: Here again we did get some varieties. We have introduced a seedless variety that was found there that is interesting now and may be of some use to us.
- Teiser: Has it been named?
- Olmo: I named it. I just called it Maltese Seedless. It wasn't known. I just discovered it in one vineyard.
- Teiser: Is it a wine grape?
- Olmo: No, it's a table grape.
- Teiser: Is there a potential for a table grape like that in wine? If the demand for wine grapes were high enough, could you turn a grape like this into a wine grape, the way you do with Thompsons
- Olmo: I should think it could be possible, except most table grapes are very large and are fairly low in sugar, and likewise low in acid. So the high acidity, in particular, is more typical of the wine grape than the table grape. But, it's something that might be done, and could be done.
- Teiser: Brandy?
- Olmo: Yes, brandy. Because there are some varieties in Europe that are used both ways. The Palamino sherry grape that we have, for example, is used widely in Spain as a table grape. And it's a very good eating grape. For us, of course, it's slightly too small in berry size, but it's a very pleasant grape to eat.

So you do have some of these varieties that are practically in that category already. It's something that could be thought about in the future. For example, our main wine grape here is really a raisin grape, a table grape. Thompson Seedless produces most of our wine here in California from the standpoint of bulk.

Olmo: And it's a very ancient variety in the Middle East. It's probably from Persia-Iran.

Teiser: How did it get to California?

Olmo: Oh, the origin of it is fairly well documented. That's one variety that we know when it came in, and by whom it was brought in. It was brought in by a Mr. Thompson of Yuba City in the late 1880s.* He was a minister. This was written up by Professor Bioletti. He told me about it. I wrote it up somewhere again.

When I first came to work in the '30s I remember going up to Yuba City and there was still a vineyard, fairly good sized, ten acres or so, owned by Mr. Stabler, who had gotten his cuttings from Thompson. And there was another grower, too, I've forgotten his name. Of course, when the vine got into Fresno they had almost ideal growing weather to make raisins, and it spread very widely. But, it was only after the Muscat--the Muscat was really the first raisin grape to get widely planted. So, really then, the Thompson Seedless was a late-comer in the raisin industry. But then it soon took over because of its seedlessness.

TO AFGHANISTAN ON A GUGGENHEIM FELLOWSHIP

Teiser: Leon Adams' book, The Wines of America, has finally come out. Perhaps you've seen it. He tells briefly the story about you finding the original vinifera at the border of Persia and Afghanistan. I've seen other references to this discovery, too. Was that in '48?

Olmo: '48, yes.

Teiser: Did you set out on purpose to find it?

Olmo: Well, on that Guggenheim Fellowship I wrote, of course, a report to the Guggenheim Foundation, but, again--well, I don't think any of it has been published. I passed around copies of it. But it isn't, I don't think, in the bibliography, nor is it published. It's a fairly large volume detailing the trip that I took and what I had in mind and so on.

*See also pp. 20-21.

Olmo: The idea behind it, the application given for the fellowship, was to study the native fruits of the Middle East. I was interested in it at that time after reading the Vavilov* books on the centers of origin and so on, and so I was aware that Persia and Afghanistan and that area in the Middle East was probably the center of origin of a lot of our fruits, the apricot, the cherry. And, of course, I was most interested in the grape. The vinifera grape seems to come out of Middle Asia, at least most of these cultivated forms. So that was really the problem I was interested in--to see and collect these native materials.

First of all, it was a difficult area to get into at that time. Afghanistan was not really welcoming foreigners, let alone Americans. And there was tribal warfare going on on the border between Afghanistan and Pakistan. So, first of all, I didn't think I was going to be successful in undertaking the mission once I had it approved. [Laughs] But finally I did get a visa. After several months of persistence in the Afghan Embassy in Washington, I think through the help of the Guggenheim people, I finally got a visa. But then I had pretty difficult problems getting underway.

I certainly would say that Afghanistan at that time was the most primitive country that I've ever been in before or since. Because the roads were just not roads, and travel was difficult. But the big difficulty was food, getting food that was sanitary enough to consume. And then, like most travelers at that time in Afghanistan, you soon get diarrhea that is with you all the time and is practically constant, and it's very difficult on your system. You lose weight. But fortunately it wasn't the amoebic type of dysentery. Because of malaria in many parts of the country it was necessary to take--at that time the antidote was these chlorine pills, and they were horrible. You have to put them in the water, and it was like drinking chlorine all the time. That made you sick. But, it was necessary because there was lots of malaria, especially in the northeastern part of Afghanistan.

Well, the first problem, of course, was to get a means of getting around the country. That proved difficult. But, I appealed to the embassy when I finally got to Kabul. I went into Kabul, I remember, on an old broken down bus that ran from

*Nikolai Ivanovich Vavilov, Russian plant geneticist.

Olmo: Peshawar over the Kabul Pass into the capital of Kabul. It was an all-night, all-day trip. I remember making that trip. I just had assumed that they stopped and ate somewhere, but I actually had to eat for that day and night one cucumber, which an Afghan next to me had taken out of his bedroll. It was a beautiful cucumber. I remember the cucumber more than anything else in the whole state. [Laughs] A great big thing. I just peeled it and put salt on it and it tasted wonderful.

But, you know, we stopped and all we had was a drink of tea at this one little roadside adobe shack (chai khani). I had that glass of tea and a cucumber. But most of the passengers were Afghans with their dirty robes around them, and of course I didn't know a word of the language. So, I could see rough times ahead.

Well, I got to Kabul and then the obvious thing to do was to go to the American Embassy and, at least, report that I was there, which I did. But apparently most of the staff were new at that time and they didn't seem to know a great deal about the country. I asked them where to go to look for where they grew fruits and more or less outline where I should go, but I found out that they just didn't know where I should go, or how I could get there. Except they knew the general direction of the roads.

So I finally decided that I wasn't getting a great deal of help here, and I decided that I would try the British Embassy. There were several individuals there that were extremely helpful and knew a great deal about the country. One of them was an army officer who had been up in the northern section acting as a judge with the tribesmen. They would hold these courts up in the hills, and when there would be an infraction of the rules or a murder or something, then the British would have to go in--they spoke the language--and they would have to make the decision as to how justice was to be meted out. They were called upon to do this by tribesmen. And I sat in on some of these. It's very interesting, but this is a side picture.

Anyway, I did get a great deal of help from the British and they did give me a few maps and gave me a lot of suggestions, but again very, very hazy as to where we could look for these native fruits or even cultivated ones. They came into the markets, to the bazaars, and that's where I spent quite a bit of time at first.

Olmo: I would go into these old markets that had just an old sheet and boxes and stuff down these dusty streets with all these fruits just stacked in there, and everything under the sun. And this is where I'd see these fruits.

But to find out where they came from or how far away was a riddle. You couldn't really find out, so I spent about two weeks in Kabul and got very, very frustrated. (I should take out this whole report in my diary and reread this to freshen my thoughts on it.) But, anyway, I did make a few trips north of Kabul, and even in this high mountain zone they were growing fruits quite well, including grapes.

So I finally decided that I had to get some transportation. But then I soon found out that gasoline was rationed. You couldn't buy gasoline. So I finally had to just take time and eventually had to get a letter from the king, the Shah himself, just permitting me to buy gasoline. This letter was extremely valuable, and it introduced me to the local district mayors of each little village. So when I'd get to a village I could present this. At least I would get some help, because people respect the name of the king and they know when they see an official document, and they're very very careful not to overstep this.

So I did have this letter with me. One experience led to another. You could never venture out on the road without some spare gasoline and oil, and perferably a few parts for your car, like springs especially. The roads were terrible. They just broke spring after spring. And, of course, the springs would go out while you were there.

Well, first there was a problem of locating a car. But I did find that one of the American oil companies had a Chevrolet that was built very high off the ground, an especially built car. It was a very, very old dilapidated rundown car, but this was the only car I could locate for sale in Kabul. I did eventually buy it. I paid some exorbitant price for it, I think six hundred dollars. It was probably worth about two hundred.

But, anyway, I could see that it had some value because it had real strong springs and it was very high off the ground. A lot of the roads are sandy desert, especially in the northern part of the country. You just get bogged down in the ruts. It did have big extra large tires on it, so it looked like it was used for oil exploration by some of the American engineers, which

Olmo: it was, I guess, used for before. It did use a tremendous amount of oil. I used to have to pack cans of oil along.

So I started off on the northern border and then went along and came back and circled the country. But that northern trip was a very, very mean one because it crossed a lot of sandy desert country in which there were no well traveled roads, and I finally found out that in many cases you couldn't even find the road. You didn't know where the road was. You'd get out and see tracks going out in all directions. You wouldn't know whether to go down the center, or around the side, or where to go.

The other thing was water, of course, in the northern part.

Teiser: Were you traveling alone?

Olmo: Yes, I was traveling alone on this section. Afterwards I got more sense. And then I finally found out the thing to do. Despite these poor roads and the long distances between these villages there were old trucks that were making these voyages between villages with all the produce, sacked barley, fruits, everything that they could pack on there. They were always overloading them.

Often they would be sitting on the side of the road broken down rather than moving. But at least some of these got through. So the thing to do was, obviously, pay very strict attention to the way they went. There was nothing marked, no road signs, no distances, nothing. So the best thing to do was to wait until a truck came. Sometimes that was an hour. Sometimes it was a half a day. Sometimes it was two days. But you would wait until a truck came and then go right after the truck as far as you could follow until he stopped again. So that was the method in much of that northern desert region.

One of the very strangest things that happened was in one of these villages where I stopped to eat and stayed overnight. Usually I would just sleep in the car. There were no hotels or houses or anything that was liveable, so I would just sleep in the car. It was sort of a station wagon. I could just set back the seat, and I had an old mattress and I'd sleep on that. But in this one small village I got into, this individual came up to me and he saw this car, which was this Chevrolet station wagon. He certainly didn't look like an Afghan, and immediately he spoke English. And he was fairly well dressed. He'd just gotten off one of these trucks and gotten into this village, and of course

Olmo: he couldn't find anything to eat. So he was very surprised to see this car there and see me there.

I introduced myself and he introduced himself. He was with a Dutch company, Phillips Electric Company I believe, and he was actually a salesman that had been to Kabul and he was going over to Persia. He asked me if he could have a ride to Herat, next to the Persian border, which was a long way off. It was another two hundred miles. In that country two hundred miles is a lot of road.

And so I did have his companionship from there on down. But I tell you we had a bad time! It was a terribly bad road. We broke down many times. And the other thing that was disconcerting was that anything that was loose, that was capable of being removed from the car, would be removed.

Now, it was a very strange thing. It wasn't really outright stealing. I mean, it was just a curious thing, especially with the children, or even the grown-ups. They would come to the car and they would rub the side of it. A lot of them, of course, hadn't seen too many cars in some of these villages, so they would sort of rub it. Then the next thing they would do is to try and turn something or twist it so that, for example, side mirrors--I just didn't have any side mirrors left. And the other thing was that, although, I had about six extra gas caps to close the gas tank, I lost one after the other. And I couldn't even, as close as I watched when I stopped and when all these kids and people would crowd around this car (of course, they're just curious) the gas cap would disappear. You could bet it would disappear, but you couldn't see anybody taking it. You know very well that it was taken.

It wasn't only that. Even things like nuts or bolts, they would suddenly just try and turn them. Anything that would move would be gone.

And the windows. As hot as it would be, of course, you'd like to leave the window down. But if you left a crack in the window like that, the window would be broken in no time, or just lowered somewhere. How they ever did these things, I don't know. But they'd break it. Anything that was moveable.

And yet there was no maliciousness about it. It's a quirk. It's hooked up with their curiosity. They have this thing of removing something moving. Anything that moves has some glamour

Olmo: to them. And I don't know what they do with these things. I doubt that they have any use at all. What use could they have with a gas cap?

Well then, the first large town, which was Herat, that I got into, we welded practically everything on the car that could be moved. So I had a chain welded on the gas cap. I even had the headlights welded with two steel braces on each side. I had the front bumper welded. Anything that could possibly move was just sealed in place because the car was just being denuded as we were going along. It was really fantastic. I could well see that it wouldn't be long before the fenders would disappear, everything. Because they'd get under, over, everything. These kids are something! [Laughter] Yet very friendly. Just curious-

Well, I left my Dutch friend at Herat because I wanted to go back on the trip south. Then, I did realize, too, that although I could see lots of these fruits in the bazaars, when I hit some of these villages that there was no way to find out where they came from. I didn't know enough of the language. I couldn't pick up enough words to ask where this comes from or what is it and so on, the names. I was lost.

So I said, "Well, I could spend a lot of time and get nowhere." I finally got back to Kabul, and that was really just the first loop around the northern part of the country. I got back to Kabul and the embassy did tell me that there was an agricultural advisor, Mr. Young, who was very helpful to me later on, that was working with the Morrison-Knudsen Company out of Idaho.

Morrison-Knudsen at that time was building a dam near Kandahar for the Afghan government. And, of course, part of the contract was that they use only Afghan labor which was very difficult on them because the Afghans were not used to using machinery, and they were having, of course, lots of problems. But anyway the embassy advised that I should contact Morrison-Knudsen, which I did, and they were very helpful. In fact, when I was in that part of the country I'd stay in their barracks and they had, to me, food out of this world. They had it prepared and it was cooked, and it was imported, most of it. So I was very very happy to get back there when I could, just to stay a few days and eat well.

Well, there were lots and lots of things that came up. Morrison-Knudsen did help me out in recommending an Afghan that

Olmo: they had and they thought was a high caliber boy, that presumably knew the country quite well. He was very helpful. Of course, he knew the language. But a very strange thing happened. When I made a trip again into the central part of the country, up in the northern part on another road, he got to acting very strange.

I would leave him very often to drive the automobile because I'd get so tired. I'd usually drive, if I could, most of the night too, if the road was at all decent because you go so slowly. You can't go fast because the roads are all full of ruts and you've just got to creep along. Ten miles an hour is a good speed. So you'd get so tired, and it was so dusty. You'd get very dry. He did know how to drive a car (he probably drove a jeep for Morrison-Knudsen); at least he seemed to drive quite well. So I let him drive occasionally, especially at night when I was tired, and then I'd sleep in the seat.

RESCUE FROM A GORGE

Olmo: We almost had a disaster one night, and I correlated it with the fact that he wasn't sleepy but that he was worried over something, and I couldn't get through to him, or he didn't want to tell me what was worrying him. Well, anyway, this one night we were going along in the desert somewhere and I woke up with a start. My head cracked back and I felt like I was being blasted through the air, and we came down in a crash. Of course, it was pitch dark. And all of a sudden I heard water running.

He had come across this little gorge about twenty feet deep with a stream on the bottom, and he'd missed the bridge. Instead of going over the bridge he just went over the side of the gorge, and of course the car was going about fifteen or twenty miles so we just went out in space. And as the thing fell it completely turned over so that the wheels were sitting upright.

I took a lot of pictures of a lot of this. I used to give talks here. I had dozens and dozens of talks until I got so tired of giving talks--because these pictures were very interesting to people.

Well, the station wagon went over like this, completely upside down, and the doors had all opened. The attitude of these

Olmo: people was fantastic, and this is a good example of it. This chap was gone. Pretty soon I felt one of my legs in water. I had been thrown out the side of the car as it turned over, and I was sitting on part of the bank, almost wedged up the side of a rock, and my leg was in water. And I heard this chap yelling from down the stream a ways. I guess he had dumped into the water and went down a ways.

Just then it was about turning daybreak. It was about the first light coming out across the country, and I finally saw him come up more or less as a shadow. He came walking up the bank with one shoe in his hand. He wore old tattered tennis shoes. And he had this one shoe in his hand, and no shoe on either foot. He walks up to me, soaking wet, and of course, they're always pretty dirty, and he came up to me--and you know what his first statement was? "Where's my shoe?" [Laughter] The other shoe he was missing. No explanation. No fear. Nothing as to what happened.

Here he turned the car over, we're sitting at the bottom of the gorge. The car was sitting like this and there was water running through the top of the car by now. Everything was wet. "Where's my other shoe?" So he went off down the stream to look for his other shoe. [Laughter]

So I just sat down like this with my head in my hands, and I just couldn't comprehend this at all. Well, the sun came up. We were out in nowhere. I looked out this way. Nothing. I looked out the back. Nothing. The stream was, I don't know, it was a good twenty-five feet down. And, actually, it was a pool that we had dumped into, so it was really a very narrow stream. But we had happened, fortunately, to hit a pretty wide area with the car. But the car was wedged in. It had just flipped like this, and that thing was wedged in with the two bumpers and it was standing just a wee bit above the water. The water was actually going through the top.

So, "Where's my other shoe?"

So the sun soon came up and I told him, I said, "We have to get help. Will there be any trucks coming by?" "No, I don't think so. Not on this road, not too often." I said, "We'll wait."

The only nice thing about it was the water seemed to be drinkable. It was pretty good water, and most of it is not.

Olmo: Most of it is very salty. But this water seemed to be drinkable and it was all right. Well, then he said, "We not worry. We not worry." Well, I was worried! [Laughs]

Pretty soon I said, "What are we going to do?" He said, "We'll wait." I said, "We've got to do something." So pretty soon I started to walk out and look and see what was around. It was bare, pebbly, desert country, but there were mountains. But, Lord, they looked like they were fifteen miles away, way off in the distance. But pretty soon we saw a little wisp of smoke way out somewhere and he recognized that it must have been a nomad camp, with shepherds out in the desert. They have a few camels with them usually, that's about all. If they're in pretty good shape they have a few sheep.

But, anyway, he recognized that there were probably nomads down there. So I said, "Well, you'd better go out there and tell them we need help. Get somebody so we can get some word back to the village some way or get back to the village, because certainly we can't walk. Find out where we are."

He says, "No." He didn't want to go. Instead, he says, "I'll pray to Allah." So of course, he takes his shoes off and washes his feet in the stream and gets down on the ground, you know how they do it, and face toward Mecca. So I don't know. For ten minutes he was praying to Allah. We sat there in mid-afternoon. I said, "Look. You've got to go and see those nomads and talk to them." He was afraid.

So finally he went. I said, "I'll walk with you." So I went with him. But on another occasion I had been near those camps and it was very, very dangerous. They have dogs that are extremely vicious, especially to foreigners, and it's very, very dangerous to get near one of those nomads unless you're with another Afghan that knows how to call those dogs off, or yell to the people who own them.

Anyway, sure enough, we got close and the dogs came. I said, "I'm not going any further. You go ahead now." Well, he finally made friends with the dogs all right. There were two of them. So he went back and, sure enough, out comes a whole delegation of these nomads in their white, not very white, clothlike wraps and turbans wrapped around them. They came out, of course, more or less expressionless. Most of those people in the country, that's one strange thing that hits you, you never see a person laugh--at anything. Their face is always

Olmo: expressionless. And after a while that gets disturbing, too. But this group just stood there more or less blank.

I heard them talking this whole thing over at great length. Finally two or three of these men decided that they were going to come over and take a look, I guess, because they walked back with us. They looked at the car and they looked under the car and they looked on top of the car and they looked at the water and got themselves a drink. And so I said, "What do they say? Can they get us out of here? Can they find some trucks or something to get us out of here? Can we even get out?" I rather doubted that we could even get out of there because these banks were steep, and the car, of course, was turned over.

Well, then the three of them went back and they came back again with a whole group. Instead of being three of them there must have been a hundred of them. The whole camp, I guess, came out. I didn't know whether it was just out of curiosity or they were going to help.

I said to this chap, "What now?" He said, "Oh, they'll get the car out." I said, "What? They aren't going to get that car out!" He said, "Yes, they'll get it out."

I said, "How are they going to get it out?" Well, you know what they first tried to do? They first tried to get under that car, bodily, and lift it. It was ridiculous, but they almost did. [Laughs] They almost lifted it. They grunted and groaned and couldn't really move it, couldn't even turn it to try and get it upright. After their exertion they would get down on their knees and all start praying again. Then they'd get under for another turn. And this went three or four times.

I said, "Well, I'm afraid Allah can't make this work. I appreciate it and the fact that they need help, but they're not going to get it very soon. Maybe it's better to send these men into the village and get a truck."

"Too far. Too far." Nobody would go that far. That was the reply.

So these men looked and looked. They sat and they sat. They didn't seem to be worried. No expression. So then the question was what to do next. They were thinking about how to approach it. Well, the next thing that they did, they began to try and turn the car over. They decided that they weren't going to lift it straight up and turn it. They were just going to turn it.

Olmo: And this was really a fantastic operation. They were really successful in turning that car. I just didn't believe it could be done. But they went back to their camp and got a lot of ropes. They had very fine ropes. They're made out of camel hair, and they're very strong. They have lots of these ropes on their tents. When they set these tents up they pull these tents up with these guide ropes. They came in with dozens of these ropes, and they got these ropes tied in on the top of the car, on each side of the running boards, and they had that whole thing laced up with rope.

And they had one group under the car standing in the water pulling from one side, and they had these dozens of ropes that looked like an awning, more or less, they had so many ropes tied in the car. They got this whole group of men over on the top and they began pulling on one side, and the fellows on the other side began pulling the other side, and they began to move that car.

By golly, little by little they inched that thing over. Then they began digging on one side to free the front bumper. They began to free that slowly, and, of course, they turned that and they sent up a big roar. They changed complexion completely because they had accomplished it.

So then they quit again and they got down and thanked Allan. [Laughs] At least now the car was upright, but it couldn't go anywhere. The center of the car was still in the stream. Well, it was fantastic because for another two days they had those hundred men, more or less, working there.

You know what the next operation was? They'd go into counsels all the time. They'd take maybe a half an hour to decide what the next thing to do was going to be, and then they'd get into groups where they would disagree. One group would want to do another thing. And then finally they would decide.

The next thing they did was that they got rocks. They began floating down the stream with rocks, and they actually built a bridge about four feet high right under the car. So now the car was standing on a road, really.

And they diverted this water beautifully. They started at the bottom and they got three tremendous big boulders, which you couldn't ordinarily move, but they were fantastic the way they could manipulate these things with a couple of these camel ropes. They'd manipulate these big rocks and use the water,

Olmo: sort of, as a float. You couldn't possibly pick up the rocks, but they'd get these ropes around there and sort of guide it and float it in the water. They'd get these big rocks in the bottom and, of course, this would take the stream out.

Then they began building from both sides. They built what was essentially a road. Actually, they didn't have to build it complete with the car, but they did. They built the low part and began filling it in until they had practically a road.

So the car was now standing out of the water but on a rock bridge. But we still had this bank in front of us, so I didn't see much point in building a bridge under the car. I mean, it was still a good fifteen feet down there at least, the level of the plateau.

Well, the next operation was they brought in another crew and they had, of all things, just sharp sticks. That was all they had. And they began digging. They dug a road. [Laughs] In front of the car. And they used that dirt--as they shoved it down they got in under the car and kept pulling it down on this bridge. So they did two things. They eventually raised the bridge and the car each time. They had all these ropes and they'd pull one corner at a time and would raise it, little by little, pack in more rocks and more dirt. And little by little the car moved while the road was in progress. That was fantastic.

In three days we were out of there. None the worse for the car. I couldn't see anything that was completely damaged, except, of course, the fenders were crushed in in the front, but the bumpers were strong enough to hold. And in three days we were on the road.

I wanted to leave these people some money, but he said, "You can't do it. They'll be offended." I said, "Offended? But they can buy something." "They wouldn't buy it, even if you gave it to them. You'll offend them. Don't give them anything." I said, "Well, just give the leader" (the one who seemed to always take charge of these councils), "give him something." I was willing to give them plenty. I was so thankful for getting out of there.

So--we left. "Thank you" was all. All we said was, "Thanks be to Allah. Salome alekum." That's the way you greet everybody, and that's the way you say goodbye. So, "Salome alekum," and these people went off again.

Olmo: And here we were, we were on the road again. But, you know, it wasn't long after that when I got to the bottom of why this chap had acted the way he did. And that is, he was scared to death. He couldn't understand the language of these people completely, and I saw that he was getting into difficulties lots of times in explaining things to them. He was a little bit afraid of them, and perhaps they didn't quite trust him.

But, anyway, we kept going and I think we had gone another day's trip, perhaps, a hundred or a hundred and twenty miles, and we were getting, of course, farther away from Kabul all the time. I felt a lot better now that we were back on the road, and he seemed to do better, too, but he always kept asking questions, "When are we going to turn back?" I said, "No, we're going to go right on. We're going to go right on to Herat."

He said, "It's a long way." But he wasn't so much afraid of the long way. But here's another queer thing. We bedded in at night, and this morning I got up at sunrise--the sun usually wakes you up--and my friend was gone. He'd taken my blankets with him, and his blanket roll as well. He'd taken most of my food. Apparently he had done all this while I was sleeping.

And I never saw him again [laughs] until I got back to Kandahar months later. I asked Morrison-Knudsen, and this chap came out and he met me. No apologies. He greeted me like a long lost uncle. He didn't mention that he'd taken anything. It was just a normal day to him.

But this is very usual over there. They don't see things in the ethical ways we do. For example, the question of honesty. They don't consider honesty in the same way we do. Nor do they consider taking something if they think they need it. Nothing sinful about it.

Teiser: But they would be offended to be paid for their work!

Olmo: Yet, these nomads would be offended if you paid them. It's a very very strange situation. And there were quite a few experiences like this that were interesting.

PLANT HUNTING IN AFGHANISTAN AND PERSIA

Olmo: But in fact unfortunately a lot of this country that we traversed was desert. There were no trees, until you came to these villages that had water. And, of course, they were often getting their water through these qanats, underground channels that they dig by hand, and they just mound them out like gophers. They go in and make a channel, to the water down underneath in this desert country, and they bring this water into the villages. They have these deep wells that they just dig, dig, dig until they get water.

These villages, they would have things growing around them. And that was another problem. I could see these fruit trees, but they were all inside a walled living compound where they had their houses and their gardens and so on. So when you'd get to a village you'd see these things, fruit trees or grape vines, but there would be no way to get in to see them.

So I'd have to take this letter that I had for gasoline. I would try and find a majordomo of the village, the mayor, and get this letter to him and that would be the introduction. Then, of course, as long as this chap was with me he could interpret. When I was by myself I had a difficult time.

Occasionally some of the elders of the village, some of the better educated ones, could speak some French, and I knew French, and very often French was helpful, more so than English. Practically no one knew English out in these villages. Occasionally there would be an elder that knew a little English. So then I could get along quite well. And they were very hospitable, very hospitable.

They'd give you tea. You'd sit down and they'd offer you food. Of course, when they had the family meal you'd never see a woman. I never saw a woman in the house or a compound or inside of the home at all. They never appear to greet guests or anything. The woman is always in the kitchen somewhere. And at that time she was always in purdah, veil.

And you know that there are women in the house doing the cooking, doing the serving and everything, but they will never appear in the sight of a visitor. Even in the village the woman will disappear. They will just hide and never appear in public.

Olmo: It was a very peculiar thing because if you happened to be riding a horse or something, and you'd look back through a village you'd see all these little heads with the white purdah peeking over the edge of the walls. You could see them sticking above the walls. They didn't realize that you could see them, but they were looking at you as you were leaving. All these little parapets and so on. They'd be looking over the side, curious. Their curiosity is fantastic.

Teiser: Did anyone understand the kind of search that you were making? Did they have any concept of it at all?

Olmo: Some of the village elders did. They could follow things. They were very helpful because they'd know where these fruits were, even had names for them, and that was useful. However, the big difficulty I got into was in selecting and preserving the material. Where I could get seeds it was good. I collected seeds and I used to then spend time when I came to a stream, wash them out and dry them and bag them.

But many of the fruits I wanted, I wanted cuttings of them, especially grapes. And so I had a box fixed up in Kabul. I finally found sphagnum moss, and got moss in this box and had it lined with tin so I could keep the material moist. And I figured if I could get back to, say, Teheran in Persia, there was an air service there that I could air mail the stuff back to the United States.

Well, unfortunately, the time intervals were just too great. The stuff would be in the sphagnum moss so long that I had it growing in many cases, and I would lose it. I couldn't preserve it long enough. I had no refrigeration. And so I lost a tremendous amount of undoubtedly valuable material.

I did, however, get a lot of seeds, and I did get a few grape cuttings in Persia when I was close enough to Teheran, within two or three days of Teheran usually, to bring the material in and get it sent off. And I did get some grape varieties which have proved very valuable to us. Many of the table grapes are excellent varieties. They have very, very firm berries, crisp berries that are very desirable from the standpoint of our commercial needs. We've used a number of these to get new varieties, and they've been very, very good varieties.

Olmo: However, the surface over there was just scratched because I traveled several thousand miles over desert, not really in areas where the fruit was being grown. I could return, or I could help somebody else go back into areas which would be much more profitable. For example, in the northeastern part near Tabriz, in Persia--well, that would be north and west of Teheran--is an extremely fertile area from the standpoint of fruit varieties and even native species. It's just a tremendously old area and planted with many many different species of things.

Of course, they plant most things just from seeds, so there's a tremendous variation. And literally, for example, any variety or any type of species you want to mention. Almonds, for example. In the northwestern part of Iran there are villages there that have literally millions of almond trees. They're just planted all over the place. They'll cover whole valleys. And every tree is different from every other tree. It's a fantastic amount of variation. And somebody could go over there just about find all of the variation that you'd want to find.

I did bring back quite a few collections of almonds. But undoubtedly there's a wealth of material just in that section of Iran. Now it's much more of a productive area than, say, down in the southern desert areas where you do find some almonds. But, nothing like that area.

Well, this is something, at that time, no one knew. No one could tell you where these things had grown or how they're grown.

Pomegranates, for example. I heard many many times that they have a seedless pomegranate, so I made several trips in Afghanistan to find this seedless pomegranate, but it was a will-of-the-wisp. Every time I got close to it somebody would say, "Oh, yes. We have seedless pomegranates." So we went out to see seedless pomegranates, where they were. Then pretty soon they would say, "No. This is not the seedless pomegranate. That's over in the village so-and-so." So you'd go over there and you'd get the same story again. But unquestionably there is a seedless pomegranate--I think. [Laughter] Which may be valuable. From the description, it is a valuable variety. And it's thought a great deal of, but apparently it's never really been found over there, as far as we're concerned.

Now, other things were very interesting. They had apricots, for example, extremely high in sugar. They were called "shakar," meaning sugar drop. They were extremely sweet. They would just

Olmo: dry, almost naturally, on the tree. They could certainly be used to bring in that extremely high sugar content. And in many cases, for example, they had apricots that they grew more for the kernels than they did for the fruit. Of course they would get the stones out, crack those, and they were eaten like you would eat the almond. And they'd press them out in a mortar and simply squeeze the oil out. They had these little-- well, it looked like one of these old fashioned aladdin lamps, almost exactly. And they used that for a light.

Teiser: Where was that?

Olmo: That's in northern India, close to the Tibetan border. There's villages way up there in the mountains.

Teiser: What was the story of the original vinifera? Were you making an effort to find it, or did you happen to find it?

Olmo: Well, I think many people that have seen the plants in the Middle East have seen wild vinifera. They were described up in the Caucasian region, Caspian region by Vavilov and some of the other Russian plant explorers. However, I went looking for the wild vinifera, but really didn't find any until I was traveling in northern Persia. This was up near, well, on the route to the southern shore of the Caspian Sea.

Vinifera, of course, is not very cold resistant so it was rather remarkable that this species would be native in that area. But I think the reason is that the moderating influence of the Caspian Sea, which is quite warm, keeps the winter temperatures from going so low.

But I was traveling through this small town. It was quite isolated, and there was this stream, and I did happen to look up on some of the rocky ledges and I saw what looked like wild grapes. And sure enough, they were. I climbed up there and got seeds. We introduced some of these here. They do have all the qualities of the cultivated wine grapes, except the berries are small. And they do make a reasonable wine directly, which is typical of a lot of wine grapes.

Now, interestingly enough, we have now used these in various ways, these wild ones, to bring in some of the characters that I think perhaps were lost in cultivation. It's a very interesting thing that we've used some of these wild grapes now to cross with our standard wine grape varieties. And we have

Olmo: obtained wines that have scored very high because of the fact, I think, that they have brought in flavoring materials from the wild grape, which were lost perhaps in the course of domestication. So they're going to be very useful that way.

The other interesting thing is that, of course, the wild vine exists in the two different sexual types of flowers, the male vine and the female vine, whereas most of our cultivated varieties have both sexes on the same flower. In the native vine--one way of distinguishing the native vine is that the vine either has fruit, which is female, or it is male and just produces pollen. So there's a fruitful vine and a non-fruitful vine.

And, of course, we got seeds of these wild forms and we've grown many vines up here in Davis. We think they might be useful in a number of respects. One is, for example, that we have some idea now that the cultivated forms of grapes, which have the perfect flower and are hence self-fruitful, that these have arisen from the male type, not the female or fruitful form. Because of the fact that the cluster, the blossom cluster of the male form as you'll find it in the wild is large, like our large clustered grapes, which are the cultivated forms, whereas the female type in the wild is a very small cluster. So it appears that the male cluster has changed over. And we have some breeding evidence of that now from our studies that the wild male vine occasionally produces some berries. The flowers seem to be occasionally fertile, so these male vines that ordinarily produce nothing but flowers in abundance occasionally produce berries.

We've been able now to select to get these male forms more and more fertile until we think we can arrive at a completely fertile type of flower, which would prove experimentally, perhaps, that the hermaphroditical perfect flowering form is to be derived from the male type because of the fact that the characters of the flower cluster in the cultivated forms are very similar to the male flowering forms that occur in nature.

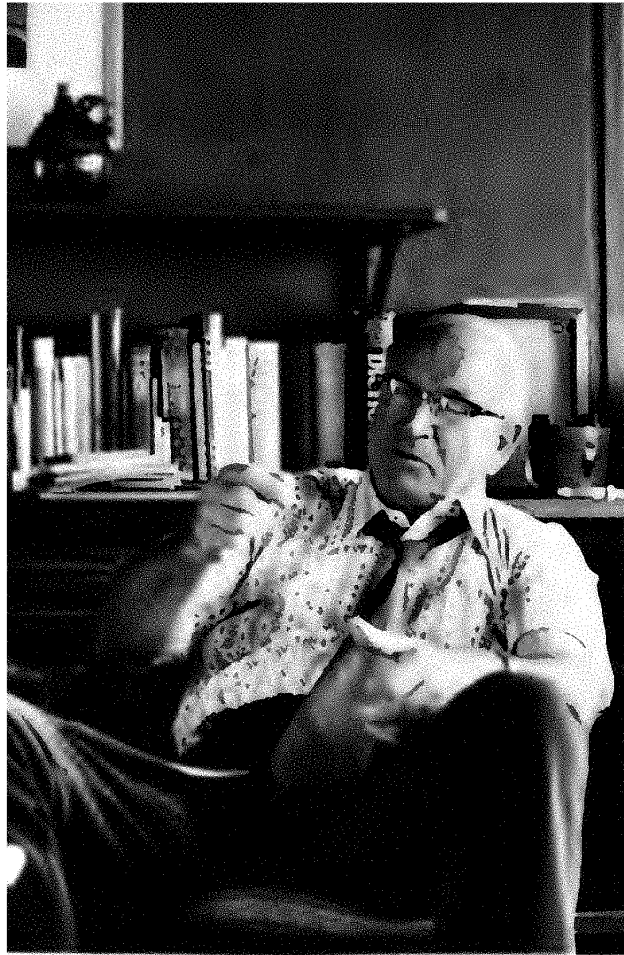
So these wild vines have some practical interest, and, of course, we are interested in the early history of how these varieties developed and how they got distributed and the origin of vinifera as a whole. It's very evident, though, from studies with this wild grape, that this is very closely allied to a wine grape type. Small black berries. The growth characteristics look very much like many of our wine grapes. However, this is such a far cry from the other grapes you find over there that

Olmo: have very large berries like Thompson Seedless type, which are very large white berries. They seem to have very thin leaves and different characteristics, in general, than these wild type vinifera.

So we're now questioning the fact that all of these cultivated forms have indeed come from one species. It's very likely they have not, that there are other species somewhere, either still present somewhere over there in the Middle East, or perhaps that have grown extinct and have given rise to other types of varieties. In other words, vinifera is a very complex group of native things perhaps, rather than one single type.

There are more and more evidences accumulating that this is the case. Now we would like to do further work, for example, in the southern part of the Middle East. The reason behind that is that many of these table grape types are not very cold resistant, which means perhaps the sub-species that entered into their origin must have come from a more southern latitude.

So I think I've talked about enough, for today.



o during interview of 20 May 1973.

Photograph by Catherine Harroun



H.P. Olmo (right) discusses wine made from the Carmine grape, sampled at Coast Counties Grape Day, Oakville, 28 August 1975.

Photograph by Ruth Teiser

(Interview #3 - San Francisco, May 20, 1973)

UNIVERSITY STUDENTS AND PROGRAMS

Teiser: Your work with advanced students is particularly interesting, I should think, because of their future work in genetics.

Olmo: At the present time I have four students working toward their doctorate in genetics. Most of the students I take get their Ph.D. in genetics, although I'm also on the plant physiology group, so they could take their Ph.D. in plant physiology if they want.

But the interest is mainly in the genetics of the vine, and most of the students have been trained in the major field of genetics. I think one of my first students got his Ph.D. degree in genetics in 1939. That was Dr. Thomas E. Randal. He was a student in Vegetable Crops and had some difficulty in getting a satisfactory project for research, so he was a little discouraged and appealed to me as a member of the genetics group at the time if I could line up a problem for him.

So he came into our department really from Vegetable Crops. He completed work on triploidy in the European grape and did a good thesis. And then later, interestingly enough, he went back into vegetable work after he got his degree. Then, I believe, he became the head of one of the vegetable research stations in Washington State. He was the first one, as I remember, to reach the Ph.D. And since that time I think I've had sixteen others that have been completed. Some of them, I think, have been very successful.

Dr. [Spencer W.] Brown, a professor in the genetics division at Berkeley, took his Ph.D. on some wild blackberry material that I had available. We made collecting trips throughout the

H.P. Olmo and Chumlin Chang in front of the Carnegie Library, Riverside, California, 1931.



Graduate students with Olmo at his home in Davis, Fall, 1952. Left to right: R.B. Tyree, H.P. Olmo, David Armstrong, Deran Markarian, L.A. Sider, T.S. Mallah, Albert Koyama. Paul Olmo in front.

Constanta, Rumania, September 26, 1965. Professors of Viticulture, left to right: Prof. Daris, Greece; Prof. Lallata, Italy; Prof. Teodorescu, Rumania; Prof. Olmo; Prof. Constantinescu, Bulgaria; Prof. Avramov, Yugoslavia.



Olmo: whole Pacific Coast region to get them, and brought the material to Davis. This was part of his thesis, the evolution and origin of the Pacific blackberries. I'd always been interested in blackberries as a boy, and carried this interest through research simply for the reason that the grape vine takes so long to come into fruiting from seed. Three or four years are necessary.

In the beginning we didn't have enough material for a student to take the Ph.D. There wasn't sufficient breeding material for research. But after a while we got populations established and many different crosses made, so then we had sufficient material to train students in grape material as well. But the blackberry material was much more favorable because you could grow them in a small space. You can fruit them in a matter of months, and very wide hybrids are possible.

So some of my students were trained in the early days with blackberry material, and it proved very favorable. Dr. Brown became quite a world authority on the genetics of scale insects particularly the coccid insects, scales of various kinds. Then I believe, he went on a leave in Trinidad and got more advanced work there. He just kept moving up in his field. He has been very successful.

But I think that a lot of the early interest that Dr. Brown showed was, perhaps, engendered on these collecting trips. He got that into his veins, sort of. When he got interested in scale insects, then he started making trips around the world and collecting in various parts of the world, and amassed a lot of information.

Teiser: When you have graduate students do you often go on collecting trips with them?

Olmo: It depends on the project. In many cases we do work on natural populations because we are interested in the evolution and basic origin of these things. Many of the collecting trips we've been on have had this in mind, to get material that could be used for basic work.*

Teiser: This brings to mind--you were more or less the successor to Professor Bioletti; do you have someone who is going to carry on in your general field in the future?

*For further discussion of students, see pp. 85-86 and 96.

Olmo: No, I'm a little bit discouraged that more hasn't been said about a replacement or a follow-up man, because we really haven't had anyone in that position, and I don't know what is contemplated at the present time. It would make me very sad to feel that the work would stop.

One of my first students in my course in fruit breeding continued on as my assistant, Mr. Albert Koyama. His cooperation and faithfulness continues to be a source of inspiration.

Teiser: Perhaps people think that your retirement isn't going to make much difference in the work that you do?

Olmo: Well, I don't know. But, in general, I think that it was much better, let's say, in the old days. Of course, we could reminisce a lot and maybe it's not too important. As we get older we don't look at things the same way as when we were young. But I think the situation was more favorable when I came up because I did have Professor Bioletti as sort of a tutor for my instruction. He took me on trips and introduced me to many growers and told me much about the past history of himself, and of the department and many, many people.

Teiser: I should think right now, when the wine and grape industries are finding your work of such great significance, that there would be a great deal of impetus to see that other people continued it into the distant future?

Olmo: Well, of course, it isn't a generally accepted thing, as yet, for everyone. Some people always fear the new. In other words, they like to live with traditional things and traditional names. It's surprising that so many important people in the wine industry will even, for example, suggest that we use a French name for a new variety. In other words, they're not willing to say that we have something as good, and maybe improved. They want to keep going back to what really amounts to advertising another area.

So it isn't really a general overwhelming acceptance, but I think it is getting to be that. I mean, it's very easy now to have a new variety accepted.

NEW VARIETIES IN USE

Teiser: Considering the excitement about your latest varieties...

Olmo: Yes. They say now there are orders in for about a half a million plants. Most of these people who have ordered have never seen it.

Teiser: That's Carnelian?

Olmo: Yes.

Teiser: You have another coming out, too?

Olmo: We have a whole series of new varieties now that have been tested. We're waiting on the pathologist and--

Teiser: I thought there were to be two introduced at the same time, Carnelian and one other?

Olmo: We had hopes of introducing a second one, a Number 5, but we found some winter injury to that vine. Perhaps it overproduced in one year. So we're still watching it. If it does perform well again this year we'll probably put it out. It's ready to farm.

But we do have a list of other varieties that have been tested. We've been at it a long time, but I think just now we're at a point where we will have a whole series of varieties to come out.

Teiser: We were talking to a Napa Valley winemaker the other day, and I asked, by-the-by, if any of your work had resulted in varieties for the coastal valleys. And he said yes, kind of by chance.

Olmo: Well, I don't think they would be chance discoveries. I think he's thinking of selection as a thing of chance, which it is in part, but nonetheless you've got to plan and make the crosses and grow the new hybrids and do the selecting. So I think what he means there might be quite different from what we're trying to interpret.

Actually, we did release the Ruby Cabernet up there and try it. But most people think it's not as good as Cabernet Sauvignon, and remember, I told you before that there was some

Olmo: opposition to the use of the word "Cabernet" in a new variety. However, Ruby Cabernet is still grown in the coastal areas, and can still be considered successful.

A newer one that we haven't published on yet is Flora, which makes the Gewürtztraminer type of wine. It is particularly valuable because it has a much better yield than Gewürtztraminer, and the wine doesn't have a bitter taste. Gewürtztraminer is a Muscat type variety really, very aromatic. It makes an aromatic wine, but it has the difficulty that there is a bitter taste, so the wine must be made slightly sweet.

Now, with Flora this bitter taste has been selected against, so we have a variety that has the aromatic qualities of Gewürtztraminer without this bitter taste. It's been received quite well.

Teiser: Is that in the coastal valleys?

Olmo: Yes, coastal areas.

Teiser: Not for the Central Valley?

Olmo: Well, it can be grown in the Central Valley as well. They're planting it even in Bakersfield now. But it is probably best adapted to the coastal regions.

Teiser: The Emerald Riesling, was that intended to be both coastal valleys and Central Valley?

Olmo: It was tested in both the coastal areas and the Central Valley but it has come to be more important in the Central Valley because of the high acidity. The acidity is probably too high in the coastal areas.

Teiser: So that and the Ruby Cabernet, have been, I suppose, the greatest aid to the Central Valley people?

Olmo: Well, right now I wouldn't say that. Another variety introduced later that we didn't think would have much prominence has gone ahead of both, I guess, in popularity from the standpoint of acreage in recent plantings. That's the Rubired. Two of them were put out at the same time, Rubired and Royalty, and they were put out principally to add color. And it so happens in this wine boom period that there was an extreme shortage of grapes to make red table wine.

Olmo: So these color varieties apparently came out at a very opportune moment. They have been selling at very high prices. They have a very very high yield, and are very resistant vines.

The Rubired particularly is more vigorous. I think over three thousand acres have been planted this last year, which is probably the leading wine grape to be planted now. So it's sort of marched up ahead of the Ruby Cabernet.

Teiser: Rubired would be a nice name for a varietal wine. I don't suppose it's being used...

Olmo: Royalty is being used as a varietal wine. It makes a port type wine. They use it in blending. But the Rubired is mostly a color variety. Of course, then they concentrate the material as well. It's sold for wine making in other ways, it's used for other purposes. The color, of course, is useful because it's a natural color.

UNIVERSITY STUDENTS AND PROGRAMS, CONTINUED

Teiser: We strayed from your--you were talking about your graduate students. Are there others of significance whom you--

Olmo: Well, in my own department we have two that are viticulturists That is Dr. Lloyd A. Lider and Dr. C.J. Alley. Dr. Alley started in and came back to the university after being in private work in peach breeding with Grant Merrill at Red Bluff. He was brought back to the University when the grape certification program was started. It was renamed in 1958 the Foundation Plant Materials Service to include other fruits as well. So he was brought back and invited to head up that new program. Since he had some experience in the commercial field, we thought it would be a good place, and he did a remarkably good job.

He changed positions about a year ago because he wished to be directly involved with viticultural research, and now he's a staff member.

The present manager of the Foundation Plant Materials is named Mr. [Leon] Cory. He's from plant pathology. And then, of course, Dr. Lider entered the department. He was working with Mr. Harry E. Jacob at the time, who was responsible for the

Olmo: rootstock work; he died, I think, at the age of forty-five from cancer, a very untimely death. He was a big, strong man, and very ambitious and very--well, you could almost say athletic. It came as a shock to everyone. Cancer killed him in a very few months.

He had done quite a bit of field work with rootstocks, and at the time Lloyd A. Lider was a student at Davis, and so Mr. Jacob needed a helping hand during the summer, so Mr. Lider got interested in grape work that way. He began working with Mr. Jacob.

Then he took his Ph.D. and he came over and started to work on breeding rootstocks for nematode resistance.

Many of the students that we have had for Ph.D. in genetics that took grape breeding projects were foreign students. They have, I think, obtained good positions in their home countries. Besides the Ph.D. students we've had an equal number, or even more, that took Masters' degrees. And many of the foreign students that come in do take Masters rather than stay on with the more difficult search for a Ph.D.

One of them, Dr. Davidis, is leading the Viticulture Department now at the university in Athens in Greece. You'll remember his first name quite readily, Ulysses: Ulysses Davidis. So he's taken over an important position. Then, I guess, we've had students from many of the major grape growing countries, from France, from Italy. We've had quite a few students from Italy.

Then, in addition to these foreign students that took Masters in viticulture and horticulture, we've also had many visiting scholars in our laboratory, which has been helpful. In fact, one is coming from Italy on a NATO fellowship this next year, and we've had others occasionally. And it's a very good type of, sort of, cross-fertilization with the students there in the laboratory.

We had Dr. Alan Antcliff, who is probably the leading viticulturist in Australia, spend six months with us a few years ago working on mechanical harvest. We were trying to get new methods and approaches for mechanical harvesting of the grape. So we've had a stream of visitors. In fact, this is a very continuing problem, you might say, as to how to adequately handle and give enough hospitality to these visiting people that come in.

Olmo: We've had a good many Australians, growers and professional people.

Of course, our foreign student office helps in some of it. The visitors office helps. But they really like to come to the department, and this creates the problem. So I think a good deal of my time in the past few years in the summer has been spent with visitors. I think that is necessary and part of the job, particularly French visitors, since I'm the only one in the department, probably, that speaks French fluently enough to receive these visitors. So I get quite a few of them. I enjoy it because I have had such nice treatment from the other side that you just can't feel that it's a duty, really. I enjoy doing it. For some years the foreign visitors office sent many Brazilian visitors also, since I was the only staff member who could speak and understand Portuguese.

Teiser: Now that you have so many people that you know in various parts of the world, do you ever undertake joint projects, or is that not possible?

Olmo: No, it is possible. And we do that sort of thing. We have a project now in Venezuela with a former student. We are making new grape hybrids here because we have a large collection of species and varieties, and very frequently they'll send us pollen and we'll make the crosses, grow the plants, and send them to Venezuela. There's nothing official about it. It isn't written up anywhere. But we do cooperate, and this happens with other countries.

France, for example--there are several researchers in France that have been visitors. And they're taking a wide interest, or a very intense interest in these hybrids that we produce between the southern muscadine grape and the vinifera grape. And our interest in that goes back to, I guess, my early years in the department.

When I came to the department I was a little flabbergasted at the lack of orderliness in keeping collections of materials and so on, and really having, say, vineyard blocks that were well outlined and were done on a more or less geometric pattern.

I remember during my years as a graduate student at Davis, when I was working as a research assistant, two of my best friends at the time on the staff were Dr. William Mersman, he was in mathematics, and Dr. Willard Berggren, who was a good friend of his in physics. They, of course, knew about surveying

Olmo: so I talked them into [laughs] starting a Sunday project and coming out to the vineyard. They would borrow some surveying instruments from the department. So we then began to put lines up for vineyard blocks and make corner markers of pipe that would be set in concrete so there would be more or less permanent markers for the blocks that we could locate.

So I think this was the first time we actually outlined vineyard blocks, and we began using a logical system of calling the whole block "A" or "B" after a capitalized letter. Then, within the block we numbered the rows in a certain directional way. Then the vines within the rows. So it was a complete pattern, and it was systematized for the first time.

This proved to be very desirable because I think ever since then our vineyard foremen and others have used a similar pattern, and we always know that vine numbers, for example, are counted from west to east simply because we started it that way. And the row numbers always number from north to south because we started the early block that way. That was carried over in the relocation of new vineyards and has carried on to our new plantings.

We had a general idea that we had to have a better understanding of where these varieties were coming from, where the materials were coming from, because of the fact that we were very aware that we had so many varieties that were evidently misnamed or names had been lost or misplaced, or the variety brought in was not properly identified. So, as I told you before, this was a considerable headache in the early beginnings of the vine collection, where we were not aware what the varieties were. Whether we were getting duplicates in many cases, or whether there were varieties misnamed.

So at the same time I set up for the first time a catalogue so that every new species or vine that was introduced was catalogued, and we were soon introducing many useful varieties from the different grape growing countries. So I used a catalogue in which the first two numbers of the introduction number were simply the year. In other words, fifty-two in front of the number would have indicated the variety which was introduced in 1952. And then 5201 would have been the first vine that was made and introduced at Davis during 1952, and it would go on to 5202, et cetera.

Olmo: This book, then, was started--I think that was, perhaps, the second year that I was there. It's been kept up ever since. We do now have, at least, a systematic way to know where everything has come from. We can locate it. So I think after I leave people will at least know, of the materials I brought in, where they were from, where they were collected and so on. It's rather incredible to me that it didn't exist, because that was one of my problems, that much of this material came from growers to begin with, into the department. It was never recorded where they were gotten, who brought them in, and so on. So this was part of our early confusion.

Now, little by little, we're learning more about foreign varieties. These travels introduce you to a lot of new varieties. There are collections in many of these countries where you can study their varieties, and occasionally one can recognize one of our varieties over there. So, little by little, we're getting our naming corrected.

However, we've been very lax in publishing on this material because one has to be extremely careful, and has to have all information correct. You don't do much good if you are not really giving an adequate description and don't know that the variety is equivalent to some others that you might find. So we usually bring in the variety right to the location, to Davis, and compare them side by side. This is almost a must because sometimes you can't believe what you see. Some varieties are very close together, but yet they're very different.

AMPELOGRAPHIES

Teiser: Is there any international registry of grape varieties?

Olmo: Yes. There has been a start a few years ago in getting what they call an international ampelography. It's a very short, concise, descriptive summary. This can be followed reasonably well, and we usually do, more or less, follow that same outline in our own California work here. But we like to include a lot of other things that, say, have to do with local experience, and also the history and background, where we can get it. Sometimes in going through the old literature we'll actually locate these varieties, and also, perhaps, find out why they were incorrectly named to begin with.

Teiser: Your own ampelography that you've been working on for many years will include how many varieties?

Olmo: Well, we first put out the Chardonnay, and then we have now ready two manuscripts, one on Cabernet Sauvignon and one on Palomino. Then for the next several years we've got probably about eighteen per year scheduled, and we hope to keep to that. Much of the work, of course, has already been done. It's now a question of getting all this file material together and making sensible whole out of it; perhaps the total will reach one hundred varieties.

But in many cases little items can be annoying, and these corrections take quite a while because we have to correspond in many cases with people in foreign countries to verify some of the things that we think are true, but in some cases are not. We are doubtful about them.

Teiser: Is there a problem in finding a photograph of a perfect example or a typical example?

Olmo: Well, we started many years ago in building up a file of five by seven inch color Kodachromes that we took in the laboratory. We used to take the clusters and hang them with a string in a chamber so that they wouldn't get rubbed and disturbed, and then we brought them back to Davis and set them up under a constant lighting set-up. These were satisfactory, but we found out that they were unnatural in the sense that we were putting a leaf down, or a cluster down just on a stand and it didn't look like a vineyard scene. But from the standpoint of our identification it was probably all right.

But little by little we got a reaction from the public in general that a more natural vineyard picture would be better. These have been hard to obtain because of the fact that things are not just where you want them. There are leaves in the way, or there are canes in the way, or the fruit is full of dust. Or--like last year we couldn't find a single location in the Napa Valley where we could take photographs (we spent several days) because these little grape leaf hoppers were very abundant in the Napa Valley last year, much more abundant than for many years. No one really knows why.

But they puncture the leaf. They feed on the back side of the leaf, and they leave little white markings which show up beautifully in any picture taken of the vines. So immediately if you published such a photograph somebody abroad would indicate

Olmo: that speckling of the leaf would be a property of the variety, or at least they'd want to know an explanation as to why it was there.

So, rather than do that we tried to wait until we could get a good set of circumstances, and this has delayed us a good deal. But it is possible to do. In a good season we can take as many as ten or fifteen photographs. However, we figure just going into an area where the variety is grown, very often it takes up to two to three hours to find an adequate set-up that the photographer is happy with and that I'm happy with. Because he has the lighting to consider, the time of day, and the depth of focus and all this, but I'm just looking at the varieties. I want the variety set up there so I can pick out the parts that identify it.

IMPROVEMENT WITHIN GRAPE VARIETIES

Teiser: In 1947 you published a paper on improvement within varieties.* Was that an original concept, or a revolutionary concept?

Olmo: Well, I think it was a concept that was new to California in this respect. Professor Bioletti had done some early work on this type of thing where he had set up a plot at the old Kearney station in Fresno, which the department used for some of its experimental work in grapes. And what he did do was he took the yield records, first of all, on a block of Muscat vines. Then he took cuttings from the high yielding vines and the low yielding vines. When they were put in a common planting his results showed that there were no significant differences whatever. So this experiment was probably well conceived and well done, and this was the first adequate experiment to try and demonstrate whether differences existed within varieties.

Offhand you would assume that since grapes--cultivated varieties--are grown by cuttings, by simply parts of the original parent plant, there wouldn't be very much variation to be expected. The plant would be reproduced more or less indefinitely. This was certainly the current attitude.

*"Improvement Within Grape Varieties," Grape Grower, December 1947.

Olmo: Well, this was a negative sort of belief. But, however, in Germany there was some work being conducted on a limited scale with the white Riesling that I was introduced to when I was on one of my trips there. I thought they really had some significant differences between selections within the variety Riesling, although they were not too marked. But I was convinced they were real.

Well, in talking this over with Professor Bioletti he more or less tended to dismiss the idea, since he thought his experiment was conclusive enough, which I think it was. But it kept entering into the back of my mind. The more vines that I looked at the more I became convinced that there were great differences in some of these vines.

The Zinfandel, for example, and Chardonnay, were good examples. I used to see Zinfandel with different leaf types, certainly differences in fruit clusters. Some clusters tended to be tight on certain vines, others were loose and poorly set. Then, even differences in berry size.

Of course, at that time one might assume that it could be virus diseases. But we didn't know much about virus diseases on vines at that time, so not too much entered my mind about viruses, although I was aware after putting out the first new variety that such things certainly could be transmitted by grafting. So, seeing these didn't, of course, jibe particularly with what Bioletti had demonstrated, what was being taught at Davis at that time was that nothing could be gained by selecting within a given variety.

Well, I kept questioning and being very doubtful about the thing. So finally I did start to select in vines. And I decided that perhaps the best place to go would be to some of the very old vineyard plantings, the oldest blocks that we knew about.

We didn't have the land nor the help available at Davis to try out a lot of these selections. So I finally decided that one way to do it would be to cooperate with growers. And here Mr. Louis P. Martini entered the picture very early and was very cooperative, because he was more inclined to the same view that I was, that there were considerable differences between vines of a variety.

So then I worked out a method where we went out to these old vineyards and made a map of the block, the row and vine numbers and so on, and then we would examine the vine during the

Olmo: period of fruiting. We'd just make a walk through the vineyard to see if we could actually recognize differences between these vines, and in some cases we were able to.

So then the next step was to mark these vines permanently and we used a metal label, drove nails into the trunk so that we could have that identification on that vine. We simply just began numbering. And one of the first varieties we worked with was the Cabernet Sauvignon. So we numbered, say, selection one, two, and three and so on, each individual vine.

The way we got the results without too much difficulty at first was to then take buds, take canes, from these individual vines and bundle them up with the number. Then I would go-- I knew several people who were doing budding, that were budding growers' vines in the field. In other words, the practice at that time was to plant out the resistant stock vine in the field. Then they would collect buds more or less at random from their vineyard of a variety and insert the single bud in this stock vine. Then later in the spring they came along and cut off the top of the stock vine so the only bud to make the trunk and the body of the vine was going to be the one that has been inserted from the fruiting variety.

I saw an opportunity here, since I knew some of these budders. One of them--I remember him well--at first did not quite understand what I was trying to do, and couldn't comprehend just why these bundles of buds should be kept separate. He was an Italian chap, Joe Ghiorso, and he was doing many vineyards in the Napa Valley at that time. He knew vineyards. He would come in and do the budding on contract, so much per day or so much per vine.

So I found out it was quite useful to keep in contact with him. Then when he would be budding a vineyard with Cabernet Sauvignon I would immediately rush up and get some buds of those selections, bundle them up with the number, again with an aluminum label on it, and I would take them to Mr. Ghiorso and stay there with him. And here there would be a block of the selections and we would put the buds in order, one after another. Maybe he would have ten or twenty lines, then, that I was sure were descended from a single vine in the original vineyard.

The original vineyard we used for selection was Charles Kunde's vineyard, near Sonoma. It's actually a very old vineyard,

Olmo: one of the oldest in the Sonoma Valley. It's called Wildwood Vineyard now, but it goes back to a very early settler there, in fact Bioletti's step father-in-law, J.H. Drummond. He was a pioneer in the introduction of many varieties and also in vineyard practices. Drummond was one of the early pioneers there, then the Kundes took the vineyard over. I think it changed hands two or three times. But, anyway, the planting certainly did go back to, perhaps, the 1890s or so. The vines were real low, very big vines. So these were the basis of those selections.

One of the vineyards that did this first work was the Larkmead Vineyard of the Salmina family. It's now Hanns Kornell's cellar, on Larkmead Lane in Napa County. That block, I believe, is still there. We budded it in August 1939.

Then after we got these vines in position in the vineyard we had to find out whether the performance was the same or not. So then we had the chore of getting in and harvesting these vines just before the pickers would get to the fruit. This proved to be quite a difficult chore because the grower, then, didn't want to be bothered having to wait for the job to be completed. He didn't like that idea, also, of us coming in there taking the time to pick all the fruit from one vine separately, another vine separately, and weigh them vine by vine, which we did and had been doing with about a hundred vines on each plot.

However, it worked reasonably well, and certainly Louis Martini was one of the most cooperative. He used to give us a call and we'd get over there in a matter of hours and get our fruit out and harvest it before his crew would come in. But most growers would be too harried or too busy or not, perhaps, interested enough, and they would sometimes harvest and we would lose our records for a year.

But after a few years of records and just working with these vines, one could even stand at the end of each block and look down the rows and know that the selections were different. In some cases the leaves would redden slightly earlier in the fall, and in some cases the canes would tend to arch over and others not. There were differences that were evident to even an inexperienced person. Once you had enough replications from this original vine you could see differences that you couldn't see before.

Olmo: Well, then, of course, we found out that there were differences, and we began then, more than ever, to question the concept pretty generally held after Bioletti's work that a variety was a uniform variety. Then the growers began to be very interested themselves, because there was a considerable increase in the propagation of these premium varieties at the time. They themselves, looking at these plots, finally determined very quickly which types they wanted to propagate.

Then our second headache began because in some cases before we had completed our long-term records growers would come in and get budwood off our selected rows, and the budwood was taken before harvest. They'd get the buds off, and in this operation they removed some fruit as well, and they'd also take canes off the vine, which, during the time when in full leaf, rather decreases their vigor.

So the growers were just a little bit ahead of us in some cases and found the best vines. Then, of course, this ruined our data because if they took much budwood from the vine then the vine didn't grow as well and didn't fruit as well the next year. Likewise, we didn't have the fruit to record properly.

So, however, despite all these things it did, at least, focus in the grower's mind that, after all, varieties did have these so-called subtypes in them, and it would certainly pay to select material. And we stressed the importance of this more and more.

Then a little later the virus picture began to develop more and more. I mentioned to you that when we put out the Ruby Cabernet we had very bad results in Napa Valley, merely due to the fact that the selection was grafted on the poorest vines, which had usually a virus disease. And all of this brought on the concept of the certification for grape vines, which now, of course, is a well adopted and well financed program, the Foundation Plant Materials Service.

Just this program alone makes me happy enough. That one contribution, I think, did a great deal for the state's industry. I don't think they'll probably ever realize how much. No one will because there's no way to measure some of these things, except that we know we have perhaps the healthiest and best vineyards in the world from the standpoint of our varieties.

UNIVERSITY-INDUSTRY RELATIONSHIPS

Olmo: I'd like to go back to this point of students. I think that is a very important thing. In other words, if you can sort of get information over, or at least be enthusiastic enough about it to interest students, then I think there's a much better opportunity that the ideas, the concepts, will be carried on to completion.

For example, two of my students at that time who helped a great deal on the actual field labor in this clonal work were Mr. C.J. Alley and Mr. Lider. They had to make the records, they had to collect, they had to watch. I think, then, that they got the concept pretty thoroughly from the actual work that they performed. This, then, goes back to the fact that Dr. Alley was the logical person to come in and head this new program many years later, after he had gone out into private work.

But then he was enlisted by the University and headed it up. I think a lot of the success of the program is certainly due to the way that he managed it because he had the background and understood the material really before he got into it. You mentioned, "Well, is this work going to be carried on?" Well, frankly I don't know. The materials, though, will be available and certainly from that standpoint it won't be dropped.

Teiser: Someone, and I don't remember who it was, suggested that perhaps the direction or the orientation of the Department of Viticulture and Enology might be changing now.

Olmo: I think definitely one change has occurred that is not for the good of the University or future research. I think what we're probably seeing is less contact with industry as we get more and more involved in basic research. I think that we tend to lose contact with industry members. I think at least under the present conditions of poor financial backing from federal and state sources that this industry contact is extremely important.

I feel that, for example, our administration is more or less out of contact with the industry compared with the way it used to be in the old days. Like I would, for example, be out with growers or others, and if you mentioned, say, the Dean of the College of Agriculture, Mr. Claude B. Hutchison, very

Olmo: frequently Dean Hutchison would have appeared before these people. Some of them at least would have known him. If you had mentioned him they probably would recall him. But certainly this is no longer true. I'm quite sure that I could take a random list of fifty grape growers and ask them who the Dean of the College of Agriculture is, who the administrator is, and whether they had ever seen him or heard him or even read of anything he had said--I would almost be certain that no one would have heard of him.

I think this works to the disadvantage of the University. I think we're getting farther and farther apart from the reality of the times, as to what's needed and what we should be doing for the industry, and what we're expected to do and so on. And in the same way this lack of contact with industry, you might say, results in little interest from the outside and less support financially.

Now, you don't have to really put a dollar sign on it. I like to consider that Mr. Martini, for example, has been a very cooperative and a very good friend of mine largely because I had this concept of clonal selection, and because he could see it in the same way, and we more or less worked together. There's no dollar sign connected with it. He didn't contribute dollars, but he did contribute interest. He did contribute his vineyards, he did contribute fruit, which no one will ever know about. But from my own standpoint this is the type of alliance that I like to see in research and industry. He's pretty familiar with what's come out of that, what's been done, and he could tell people. He'll carry it on, and he'll spread the gospel further.

So, I mean, it isn't entirely a matter of budget. It's a question of working together. Now, in many cases he also has been severe with me because he thinks I use, sometimes perhaps, poor judgment. He wouldn't like to see anything else now named Cabernet because he wants Cabernet Sauvignon maintained as the best Cabernet variety. And he's pretty firm that no one will ever do any better. Well, I disagree heartily. I don't see any reason why, and I think we do have a variety that is better right now. I think time will bear me out. But I'm willing to wait. I've waited in many cases. As they say, time will tell.

Let the variety go through its paces and eventually the truth is out. So we disagree firmly, but nonetheless this doesn't prevent our cooperation and our disagreements from coming to the surface; that's the way it should be.

Teiser: It seems to me that those people whom we have talked to (of course we have been talking mainly to the leaders in the industry) are very pleased to be identified with any of you at the University, and pleased with what work you do. All of them seemed to be enthusiastic.

Olmo: Well, of course, one really doesn't know: would they, if they had the occasion to speak frankly, not be enthusiastic? I mean, it's rather hard to record negative reactions. [Laughs]

Teiser: I don't think that we've often asked directly. These things have usually come up indirectly, volunteered.

Olmo: Well, you see, the thing is that you're probably sampling the people that have worked closely with the University. But many others--I was just saying that this was one of our difficulties in that we are losing contact with industry members, with even the important people, and I think the numbers that do know about the work at the University is reducing by a great margin.

Teiser: What about contact with the Wine Institute and the Wine Advisory Board? That is an industry channel.

Olmo: Well, I think it's been a very important feature certainly in the history of our department. Without their support and encouragement I don't think we really could have done as much. Like this certification program, for example. I mentioned that Turrentine seized the idea and was very definitely the leader in the whole industry in carrying it through. I'm sure he didn't meet with universal acceptance at all. In fact the idea did not meet with universal acceptance.

And so the industry leadership is certainly an important item.

Teiser: That relationship has not fallen off--or has it?

Olmo: Well, I don't know. Sometimes it's difficult to understand. In certain cases, for example, in looking over the annual budget of the Wine Advisory Board--for example, several million dollars given for advertising each year, which they really don't know how much good it's doing the industry. (They assume it does good. It's a very difficult matter to check.) But, if you consider the outlays for various things, and then consider how much they actually give to the University for research, let's put it plainly, it's peanuts. And, of course I've talked just

Olmo: this way with them many times, so I'm not holding anything back.

Many of them do agree with this. It's probably a very, very minimum support. If you compare the budgets of other large industrial firms, for example, other large industries, certainly their research budget is much, much greater than our wine industry. But let's admit that things are changing for the better. We're certainly doing better than we were at the outset.

I'm a little disturbed again that since the wine industry now is so financially stable and really in a--you might say--a golden epoch, this is certainly the time they should be supporting our research, perhaps much better than they are. And I made this suggestion just recently in the meetings. The wine industry now, during it's golden age we might say, should set up a foundation for the University, not where we would have to go and consider an annual budget of so many thousands of dollars. Why don't they take some of their surplus, or a little of it, and put it into a foundation fund? That could serve more or less permanently as a source of support for University research.

Well, I haven't gotten the idea across. And not being a department chairman perhaps one shouldn't do this anyway, but I think such a view should be brought to their attention and perhaps if it were brought to their leadership it might be adopted. But, here again is the problem of our administrators not really being acquainted with the industry members. I think this is part of it.

I think it's an ever more serious problem. I think the University certainly has to give a lot of consideration to this business of more or less going off by itself and forgetting about the people that we're serving.

RESEARCH ON MECHANIZING GRAPE HARVESTING

Teiser: Perhaps this ties in with your researches on the mechanization of harvesting?

Olmo: Right.

Teiser: Maybe you would tell about the origin of that.

Olmo: Well, it was in 1952 that the first attempts at mechanical harvesting were made at Davis. In other words, this was the first attempt, perhaps, in the world to mechanically remove grapes from the vine. The idea was formulated by a young engineer at Davis, Dr. Lloyd H. Lamouria, who was interested in it and teamed up with Dr. Winkler to try and evolve a method of mechanical grape harvesting.

The idea at that time was to have a cutter bar. You know, you take a long, well, let's say head shears. Head shears work on a similar principle that they were thinking about: a cutting blade, one moving back and forth on the other. So, this was mounted on a tractor and the idea was to cut the grapes from the vine. In other words, the idea being that if you cut the stem the cluster would fall and then the cluster could fall into a conveyor and be delivered into the gondola, or truck, to take the wine grapes to the winery.

The idea was basically quite good. Dr. Winkler was very enthusiastic about it, so it was his interest to more or less try and train the vine in a position that would allow the machine to work satisfactorily. And so he developed a type of trellis where the canes were trained horizontally and the fruit would then hang below the trellis. The concept, then, was to have the cutter bar right in under the trellis and cut the fruit. Then it would fall onto a conveyor and be delivered.

So they set up some experimental rows at Davis. The tests seemed to be at least very encouraging. So then they attempted to take some of the results to the field. Well, one of the problems that occurred at that time was that, first of all, Dr. Winkler was very meticulous at training a vine and he's an expert at it, so he spent a great deal of time positioning the fruit. He would take the shoots and remove a lot of them and tie down others. Actually, when the fruit was ready to harvest the operation was very nicely done.

Olmo: But he didn't realize, of course, or we didn't realize, how much time he was spending to get the fruit in position. In other words, the labor involved to position all the clusters so that the cutter bar would sweep under it and get most of it was uneconomical. It just took too much time.

So then Dr. Winkler encouraged me to think about perhaps changing the varieties. So, since I was working more or less with Dr. Winkler on it, he said, "Well, Jack," (he always calls me Jack) "perhaps we could get varieties that have longer stems. This would get over one of the problems, because if you had a stem that long instead of some that have practically no stems, we wouldn't have to cut through the clusters and it would get us more working distance. Do you think it can be done?"

I said, "Yes, I think it could be done. It would be a fairly long program, but it is certainly possible." So I had a graduate student at the time, a Mr. Nasser, a Lebanese boy, and a very brilliant chap, to work on the quantitative genetics of the stem length. And in that work we took measurements of stem lengths of many varieties and found that there was a tremendous difference. Then we did set up a breeding project to actually lengthen the stem of a new variety. And we had a large project, and this was supported by the Wine Advisory Board.

Some growers certainly looked upon the project as sort of some degree of fantasy. They thought it was rather far-fetched to think about getting longer stems on grape varieties. But anyway it was supported and we went ahead with it. But of course, little by little then this method of mechanical harvesting was not working out too well. It was more or less abandoned because it wasn't economically feasible.

But we still had the project going on to get longer stemmed varieties, especially of wine grapes. Well, then Professor Winkler reached the retirement age and he was about ready to leave. He suggested at that time to the chairman of the department (the new chairman, I believe, was Dr. James Cook) and so Dr. Winkler said, "Well, you'd better let Jack take over the mechanical harvesting because he's in the whole thing now in the breeding end and had better go ahead with it."

So at that time another engineer came on the picture, Mr. H.E. Studer, whom I've been working with for many years now. And so then about that same time the New York people used

Olmo: another approach. They began to think about shaking the vine to remove the fruit. And Mr. Studer actually had been working in New York State, at Cornell University, on this principle for Concord grapes and it was becoming successful. So he came to California, and with his knowledge we were able to go ahead with the idea of various types of shaking to remove the berry.

We set up experimental rows at Davis and other vineyards, and it seemed to work reasonably well. Then we got into a new approach. Instead of engaging the wire and shaking it, as the machines were then doing, we thought of a type of action where we would just simply hit the wire, rap the wire. And we got this idea from simply taking a stick or a baseball bat and putting grapes hanging on a wire and just hitting the wire. And, sure enough, the grapes would usually fall right in the given area there.

So we used this principle, which a commercial company later took over, the Upright people.* They called it the vertical impactor method. Then we had to develop a type of trellis that would accommodate this type of harvesting reaction, so we came up with a trellis that had two side wires, so the machine could go over the row. Then the impactors would come up from either side and hitting this wire carrying the grapes, would dislodge them.

It worked quite well. We decided that we should probably concentrate on Thompson Seedless because it's half of our total acreage. We figured that the mechanical harvest would first have to be solved for the Thompson Seedless. So we concentrated on the Thompson Seedless. The method was quite interesting, and it was successful.

One of the difficulties, however, the method proved to be difficult in that some fruit that was held around the center of the vine, instead of being out on the wires, would have to be removed beforehand. So we used to remove the flowers in the center of the vine so that the harvest could be complete. Because there was a certain percentage of fruit around the center there that we could not get out by machine.

So the method is used. One grower down at Kingsburg has, since the beginning, kept enlarging his operation so now he has

*Of Wallace J.S. Johnson. See p. 106

Olmo: perhaps around three hundred and fifty or four hundred acres of Thompson Seedless where he uses this type of machine. It works very well. It has the advantage that the vine is not damaged at all because you're just hitting the wires.

After the vineyard is harvested you can't even tell that a harvester has been through there. However, in the meantime, the New York principle got a wider adaptation when they adopted a beating type of mechanism, long rods or fingers that came out and beat the vine on the side. In the beginning this was a very rough operation because it practically broke the trellis and broke the vines as well. It just banged against them from either side.

But the principle seemed to be quite good because all of the fruit could be knocked off the vine. There was very little left, really, outside of the scene of action just using a regular trellis. It appealed to growers because they didn't have to do anything to their vineyards to get them ready for harvest. Although there was a lot of damage to the vine, a lot of leaves were removed, it was a method that they could jump into right away. We were surprised that they did go into it so quickly.

I think at the present time there's a little backing off. They realize, perhaps, damage is a little too great.

Teiser: Which system did the Gallos* develop?

Olmo: The Gallos did some work on their own which they developed, and I think it was an original idea with the people that they had hired to work on it. It was a suction system whereby they had usually two hoses that went into a large suction tank, and the large rubber hose (it was around four or five inches in diameter) would have to be held up to the fruit. Then the fruit would simply be sucked off the vine by this strong suction.

I remember seeing the machine several times experimentally. For one thing it sounded like a banshee. It just made a tremendous roar. It almost was deafening. It was something like a jet plane when it got started. But, aside from this, it seemed to do the job, except that they ran into one difficulty that they hadn't anticipated, and that is that the suction needed to actually get the fruit off of the vine, to suck it in, was so great that at the same time it sucked in leaves. The pressure

*E. & J. Gallo Winery

Olmo: was such that when the leaves were sucked in they were also, more or less, disintegrated, broken into pieces, along with the fruit.

So the early wines made from that type of mechanical harvest were described as tasting like tea. In other words, the green leaf material getting into the wine in the wine making process gave sort of a green tea taste to the wine. So it was more or less dismissed, or they tried to find other methods to eliminate these leaf fragments. But they were not successful and haven't been to this day.

It was their own patent. They took patents on the process.

Now the Germans, in the meantime, have developed a similar machine, a smaller one. There they have attempted to defoliate the vines beforehand, take the leaves off the vine first, then take the fruit off. But this has not been too successful either because of the fact that in the end it's really not mechanized completely because you have to have an operator holding this hose, directing it to the fruit and so on. It gets pretty tiresome.

Teiser: One of the people in our office asked me if I had come upon the fact that Wallace J.S. Johnson of Berkeley had developed a grape harvester. Do you know about that?

Olmo: Well, he took over the original university patent on this impactor and developed that. Now that is being used. The Australians seem to like that approach better than this one we've gotten in here, which is the eastern type. But now Mr. Johnson has also developed a new machine which also uses a beater principle.

The beater principle has certain difficulties with varieties that are soft berried and are juiced very easily. For example, Grenache is one of our common varieties but this principle of mechanical harvest for Grenache has not been satisfactory because when the clusters are hit the juice runs out. Instead of the berries dropping off, they just juice. So the losses of material are very high. You don't get much fruit harvested.

There is still room for a lot of improvement, or we must have to change our varieties. In other words, we're in the business of breeding varieties now for mechanical harvest, but we've switched from the long-stemmed approach over to a cluster

Olmo: that can be easily agitated, where the berries will part from the stems very quickly and easily, with very little pressure.

Teiser: Has there been any attempt to move the crushing closer to the harvesting?

Olmo: Yes, this came up. In fact, many years ago I remember that I made this suggestion at a meeting, and I guess it almost brought the place down in a roar. It was still in Winkler's period when he was working, so it must have been around '52 or '53. I made the suggestion that it was kind of, one might say, doing chores that could be done better in another way, that eventually wine grape harvest would have to consider processing the fruit right in the field--that it was kind of silly to crush the fruit or knock it off the vine and then pack it away to another area to again crush it and clean it up. That it would be a lot better to leave this refuse that comes in the harvest of fruit in the field where it belongs, and to take the material that you want to process into the plant; not have to take everything into the plant, which meant cluster, stems and all this material that goes along with the harvest, to the plant and then take the seeds, the stems, and so on back to the field again or back to the compost pile. So it needn't be a double operation. But this was a little bit too far out for most of the audience. And I thought from the way they laughed that I was a little too far out, too.

But it is coming in fact. I mean, it is coming quicker than we expected. Especially now with this new type of mechanical harvest where they are crushing the fruit, really, almost in the harvest. So another thing now will probably develop. At least certainly people are thinking about mechanical harvest, and that is, with these varieties where there is a great loss of juice, perhaps one can get some type of delivery system or a catching system that will catch the juice as well so that the losses will be reduced.

However, one has the difficulty in determining the relative importance of these losses. Because, for example, as you know, tomato harvest, in the field is almost completely mechanized now. But undoubtedly if you step into the tomato field after the machine has passed over, certainly you can see as much good fruit left on the ground as there is being sent to the factory. So, in other words, the growers have accommodated themselves to a loss, simply feeling that hand labor would be even worse from the standpoint of economics.

Olmo: So then we come to the picture of how much of a loss will grape growers be willing to undergo to have mechanical harvest? I would say that this is a very difficult question to answer. It would undoubtedly be different with different people, with different situations, with the demand for labor, and so on. At the present time there seems to be a satisfactory supply of labor.

Now, certainly one thing that was unexpected--at least it was to me--was the fact that if our progress had gone along normally and machine harvest had increased as much as we anticipated, improvements would have been rapidly made by this time. As a matter of fact, some statistics I gathered last year showed that the harvest mechanically last year was even somewhat less than the year before. And this is certainly an unusual trend.

The reason in part is that some of the larger companies that were formerly using machines had to agree with the labor unions that they would not use the machines if they wished to obtain labor for pruning and other vineyard operations. And, of course, they had to sign this in their contracts. So then the machines were sold or left idle in their barns or storage. So the actual harvest, acre-wise, went down. This is rather interesting that we have these social forces coming in that you don't anticipate, and that programs may be really stymied by these changes in momentum that occur.

NEW VARIETIES AND MARKETS

Olmo: I think the developer of new varieties sort of has to have a crystal ball. You have to spend a great deal of time trying to see what might happen, what the demands might be.

For example, I think we did use a little crystal ball in coming to the idea of producing varieties for color because we had seen in the field and worked enough with large producers to know that color varieties were needed, and we did then come in at a time that was very opportune, that our supply of red table wine without those color varieties might have been in a very, very low supply, very, very poor condition.

Teiser: Way back in '54 you made another of these suggestions which either was original or very advanced, I think, of the winery

Teiser: making contracts with the grower.* Was that a bombshell when you made it?

Olmo: Well, it wasn't exactly received too well, I would say that. Of course, the history on the marketing end is interesting. I mean, you can understand what does occur. For example, very definitely the cooperatives that existed and multiplied during a certain period of the wine industry were brought about by necessity. In other words, when prices got low, growers began to think of in some way best utilizing their fruit, so they moved into a cooperative winery effort. We still have some cooperatives.

I could tell you many specific examples of growers who joined cooperatives and were very happy to have a place to put their fruit, and then they would take their share of their profits from the cooperative. Many of them didn't do too well actually, but it was a way of at least staying alive. Then, you see, what happens is as soon as the conditions get better the prices improve. And of course in the cooperative you're tied to more or less of a mean market price with a certain percentage of profit. Then the grower is immediately faced with offers of higher prices for his fruit. And yet he is obliged usually to deliver to the cooperative.

Well, if somebody comes along and offers you a hundred dollars more per ton, then the cooperative doesn't seem too interesting. So, in turn, many growers just leave the cooperative, which again is very hard on the cooperative if it is to survive. Or they use certain subterfuges by giving the cooperative some fruit but not all of the fruit, and so on. So they have variations on this theme.

But the grower still remains very, very independent, or tries to. I think he's had such long experiences of getting into these periods of depression, you might say, and how to survive. They've figured it out the easiest way, and that's what's involved.

Now, one of the things that appealed to me in the beginning was that the wineries themselves really had no schedule of fruit deliveries. It simply was a free market, so they had

*In "Our Principal Wine Grape Varieties, Present and Future," American Journal of Enology, 5 (3), 1954.

Olmo: agents out here that were buying up grapes as cheap as they could get them. In other words, they were particularly interested in a normal supply. They could get enough so there was no big problem, so it was really a process of just beating down the price to the minimum. And there was really no grower organization to set a price, so it was a very unsatisfactory condition. The result was that the growers and the producers were really in two very, very separate camps, always contradictory really, in a way.

Well, some of the smaller wineries at least eventually, and with better business, found out that their supplies of really good grapes were limited. Then they were forced to pay high prices. Some, at least, were using the idea that, "Well, I'll give you the best price obtainable, or after I sell the wine I will give you a certain added percentage on these profits."

Well, this was certainly a help to the grower. But in some cases there was really nothing written down. When demands increased, why certainly some wineries including the big ones, the Gallos, did finally decide to put in contracts of several years at least. But these two schools of thought--now some want a contract for a few years, but others think that they should be still playing the free market.

I think in general some set rules are to be promulgated. I mean, I think as an industry our complete freedom has not at some times been too good because it results in these very big upswings and, contrary to them, very big downswings.

Whereas in some countries (Australia is one of them) the growers meet with the government and determine the price of grapes each year by variety, as to the quality base and so on. So there is a set price. Well at least the grower feels that it is done in a bargaining way and that they're not being taken advantage of. At least if you're paying so much for the grapes here, that's going to be true in the country all over.

It cuts down this haggling and I think these difficulties between grower and producer, because it is set. Now I think a similar thing can be done here, but we're probably not to that stage of social development I would say.

Teiser: We have some precedent in peaches, tomatoes--aren't their contract prices set by bargaining?

Olmo: Yes. And sugar beets. If you grow sugar beets you know pretty much what your price is. It's on your contract. I think this should be developed in grapes. It's one of the biggest weaknesses in our industry. It could be an excellent answer.

I think the important thing about our grape industry is that we're really unique. I mean, California has the best climate. We'll always be growing the major proportion of these good wine grapes, or any grapes as far as that goes. Most of the best ones can be grown here. We have the conditions. So we're really not in competition, you might say, with New York or Michigan. Whereas if you're talking about cotton, or sugar beets, or alfalfa, there's very little possibility that you could get some kind of gentleman's agreement on price because there are too many areas involved. There are too many people involved, and too many ideas involved. But in grapes we have that opportunity, and yet we don't seem to seize it.

Teiser: I should think that for a small grower whose finances are marginal it would be hard to replant to recommended new varieties, especially in good times when he can sell whatever grapes he has.

Olmo: That's right. This is a difficulty, certainly, in the acceptance of getting a new variety out. For example, I have made this point very plain, and I do all the time, especially to, as you say, a small grower. Because in many cases he's not financially able to take a risk. I tell him that even though we test the variety as thoroughly as we can, that there's always a risk in something new. And if he's a small grower and doesn't have finances I do not really tell him to go into a new variety. I tell him that from my experience there are certain difficulties.

One is that unless you have a large volume of fruit no winery is going to be able to keep the fruit separate and get an adequate test of wine quality. So he will be selling at run-of-the-mill prices, his fruit will go in with other ordinary fruit, and he will have to be satisfied with that until there is more knowledge of what the variety is going to do on the market.

However, it's interesting to note that some small growers, even though you give them this warning, have done very well. For example, I've had small growers tell me, "Well, gee, I wish that when that Rubired came out I had planted my ten acres, and I'd be a rich man today." And he might well be.

Olmo: However, I think these precautions are necessary, and I do not, by any means, recommend this thing on that basis, even though our tests are about as complete as we can make them, because there is that possibility. The other thing is that just in the natural course of events, even if you have a better variety, tradition has got to be satisfied. It's a new thing. It takes time to compare them. And, as I've said before, people are comparing the best wine that has probably been made and aged, and where quality is generally recognized--somebody is going to take that particular sample out of many hundreds of thousands of possible combinations--and he wants to compare your new variety directly with that. Well, anybody can see that's not a reasonable type of estimate, that you're stacking up the chances against the new variety being judged fairly. And we have this problem.

 But eventually the test will be made. It takes a while, but that time is shortening down all the time. And maybe this is more of a danger to us than before. People are pretty well satisfied with the new things that came out. They plant them much more quickly than they used to.

Teiser: Who have been the main people who have planted your new varieties? Large growers?

Olmo: No, I think, oddly enough, it's been mostly small growers. I think that Flora is a good example. Although we've had the variety up at the Oakville Station and people have seen it, most of the larger growers have not planted it, but smaller growers have and they've been quite well satisfied with it. And they, in turn, have sold to the wineries.

 Of course now the wineries are accepting it as quite a good variety, so I think they will be planting it. After the small grower more or less demonstrates its value the word spreads around and then the larger companies will get into it. Like, I think, one of the biggest plantings of Flora is down at Paul Masson now, on the coast. They have quite a few acres of it.

NEW WINES AND CONSUMERS' TASTES

Teiser: We have interviewed Mr. Otto Meyer,* and he gave a list of the grapes that they had at the Pinnacles vineyard.

Olmo: Was Flora amongst them?

Teiser: Yes. And there were some others of yours. He gave us a report, and Professor Amerine told too, of that luncheon at their Masson winery near Soledad in recognition of the University work.**

Olmo: Yes, it was a very nice action.

Teiser: Masson is interesting in relation to new varieties because they have made up some names for the new wines--

Olmo: I think you have an interesting example there. Otto Meyer is a firm believer, I think, in that fact that the grape can be improved. He's rather one of the unique persons that way. And he said, "Even though you have a new variety, there's a problem of advertising, of making it known, and you just can't take a new wine type and say, 'Here it is.' Even though it's very good, it'll be ages before people accept it."

So he took as an example the Emerald Riesling, which he put out. He said, "Unless we've got advertising behind it, unless we get it distributed, unless we get into volume, it will never get anywhere." I think all due credit has got to go to Paul Masson for getting this variety accepted.

Now they did it in a very logical way, however, They were convinced on their own that the variety had value because they did make some of it on a small scale, and they put it in in a tasting competition at the State Fair, where people could come in and taste a series of wines. This was put in as an unknown, and the people, the average public, seemed to like it a great deal. It got a very high score. So on the basis of this they were convinced that it was worth promoting.

*Otto E. Meyer, California Premium Wines and Brandies, a Regional Oral History Office interview completed in 1973.

**Maynard A. Amerine, The University of California and the State's Wine Industry, a Regional Oral History Office interview completed in 1971.

Olmo: They decided that they would try and make a new label, and since they were advertising they were going to have a new name. So they came out with the name "Emerald Dry," I guess a trademark. But on the back label they say, "This is the wine of the Emerald Riesling grape." But, you see, in that sense they were advertising the Emerald Riesling grape, and they were at the same time maintaining a name that was theirs. Emerald Dry was their name, although it's the Emerald Riesling grape.

And they were very successful. I think, perhaps, that dollar-wise, considering that the grape is a cheap one to grow and has a very high yield, they probably make more profit on a bottle of Emerald Dry than they do on any other wine they produce. I'm quite sure this is so. Because you can produce ten tons without much difficulty, whereas if you compare it with the white Riesling maybe two tons would be a good yield. So, really, they could sell it quite a bit cheaper.

But, nonetheless, they have spent money in promoting it. I think it's been a good item with them. Now this is, of course, what we need and what we like to see--that a company will think enough of a new variety from preliminary tests to really embark on a wide-scale distribution program. This helps, I think, the whole industry.

So once it's demonstrated to be good then the small grower is going to sell his Emerald Riesling at a premium price over average retail, I'm sure.

Teiser: These years I suppose everyone is assuming that the trend to more dry wines will continue. Do you assume that dry table wines are going to be, into the future, the ones that are popular?

Olmo: I think for any large wine growing country that the dry wines are really the stable production. They come certainly more in the category of being a food supplement than really a beverage. So I think in the end that's where the big consumption will be.

Teiser: What about the pop wines? Is there any need to develop grapes for them?

Olmo: Well, this is an interesting question. I guess I've got to be classed as a purist. I don't see a great future for pop wines. I think they're a temporary phenomenon to satisfy a taste at a

Olmo: given time. I think actually that's pretty well demonstrated by some of the young people that we know that within recent years have started to drink wine. They start very often with the pop wines, and, of course, price is a factor.

But once they get to enjoy pop wines they also get to be more critical of wine quality, and they keep demanding drier and drier wines. Of course, I have an example in my own household. My wife never drank wine until after we were married. Then she got used to wine and started on rather sweet type wine, rosé's, and now I can't keep my budget down because she likes good dry wines! [Laughter]

We usually have wine twice a day. Regularly we have wine with lunch and with dinner. Our children are the same way. They've grown up in the family with wine and they all like and appreciate wine. And, of course, this goes back to our family life in San Francisco where we had wine. Even during Prohibition, by the way, we had wine because we had friends in the neighborhood who made wine.

Teiser: Are there places you've been where sweeter wines are the standard wines?

Olmo: Yes, there's a peculiar situation that exists in the Eastern European countries, and in Asiatic countries as well. This fact first came up, and was very striking to me, during the World Viticultural and Enology Congress of the International Office of Wines and Vines that was held in Moscow. There the country had before all of these foreign visitors what they apparently thought were their best wines, what they thought were very typical wines and very good wines. And it was really shocking to the delegation, especially the French and the Germans, that the wines served, say, with the meal were invariably sweet. The wines that they would serve at table would be more likely to be sweet than dry--in other words, unpleasant really to take with food.

This kept repeating in every section of the country that we went to where they would put on luncheons and banquets with very nice arrangements--these wines, the best wines would be brought in and invariably they were sweet wines. This so enraged one of the German delegates that he packed up and went home. He said, "These people do not know what good wine is. I've had enough of it." [Laughter] This is very very amusing.

Olmo: And the French were astounded, too. The French, of course, are more diplomatic, and they just lived through it. But they were very unhappy.

Teiser: Would the Eastern Europeans in a similar situation say, "Oh, this terrible wine that the French and Germans have! They don't know what good wine is!"?

Olmo: Yes, they might well do the same thing. Yes, because I don't quite understand--well, I do, too. I think historically it's simple. In the Middle East and in the Asiatic countries the climate is quite hot, warm. And the grapes, also, are grown in areas that are also hot and arid, very dry--almost desert climates in most of the good grape growing areas. So what happens? Well, first of all, the grapes usually get very high in sugar. Then they ferment them to make wine. Refrigeration is a very recent thing to them, so they had to make their wines without refrigeration. Well, it happens that they have so much sugar that they can't really ferment all of the sugar out of the wine, and if they did, since they cannot keep the wine cool, it would probably spoil. It would probably go into vinegar.

So I think just by a mere matter of evolution the wine, in order to keep very long, had high sugar in it, and high alcohol at the same time, which is protective. The wine won't spoil very easily, not nearly as easily as well made dry wine. So since they were in this category, that was all the wine they got to drink, and they got to like it. Because this same thing is true even in Romania, Bulgaria. It's just recently really that they're making dry wines, and these they're making for export, because they know that most of the Europeans don't like their sweet wines. There's very little market for them.

Teiser: Have Mexican wines traced a similar course?

Olmo: I think most of the hot country wines do. Either that or they shift over into a very highly alcoholic wine, which again is a question of preservation. For example, in Spain it's a custom to drink sherry sometimes even during the meal. These sherries, however, are not sweet; they're dry, but they're very alcoholic. So there they got accustomed to using highly alcoholic wines with their food simply because, again, the very hot climate did not auger very well for the production of a really dry wine without sugar. There's a keeping problem, in storage. So I think it's understandable from that respect.

PROGRESS WITH ROTUNDIFOLIA HYBRIDS

Teiser: You were mentioning hybrids earlier--

Olmo: Well, we were talking about, I think, a type of research that will probably take many many years to realize. But when I came into the department I remember we had a single vine of this rotundifolia species, which comes from the southeastern states, Alabama, Mississippi, Georgia, the hot, humid, rainy summer climatic zone of our country. This is a native vine there.

It always interested me because I believe it's the only example that we can point to, at least in recent historic times, where people coming into an area have brought into cultivation a wild grape immediately, and used it for their own purposes. So the so-called Scuppernong, which is a word that we know pretty well, Scuppernong relates usually to this type of grape. Probably the original one was one vine, but Scuppernong now means the white fruit of the forms of the species in general.

Now this vine is a tremendous vine in that it's very resistant and immune to lots of diseases and insects that most grapes get. In other words, it's a native grape growing under very severe climatic conditions from the standpoint of cultivated vinifera varieties.

Well, the early settlers there simply went out, cleared the ground, and when a good vine was present there in the trees it was left and the fruit was used. They used it for concentrated sugar. They made wine out of it, poor wine, strong wine, but nonetheless it was useful, nothing toxic about it. Another interesting thing about it was it has a very large berry for a wild grape. Most of our wild grapes have got little teeny berries, whereas this species has large berries. It's just a very interesting vine.

One thing about it, when the fruit is mature they just drop off the stems by themselves. They drop to the ground. So it would be, perhaps, or is the perfect grape for mechanical harvest because all they do now is spread a canvas under the vine on the ground, shake the vine and the berries all fall down-- nice and clean, no leaves, and no damage to the vine. A nice job.

Olmo: So it made us think about a system for moving this characteristic into the cultivated grape. It would be nice to do for a wine grape, or maybe even for a table grape. Well, when I got to Davis there was one vine represented, and it happened to be a male vine. It just had flowers but never set any fruit.

This grew on to what we used to call the tray shed, where we used to keep the trays. Two by three foot wooden trays, which we use for raisin making were kept in this shed. It was near our regular field house, where the Medical Center now is, the north end of Bioletti Way. This vine was growing right on the corner, the only vine around there that would cover the side of the shed there. It was there for years. So we finally decided, "Well, it might be interesting to cross this vine with our cultivated grape, and see if we could actually make the cross."

And for several years I had students and myself making crosses with this one particular vine. We were successful finally in getting hybrids. The hybrids were very vigorous, and we planted out a whole block of them. I remember Professor Bioletti, at the time, was very hesitant about using any wild material because he just felt that it was regressing by going back to wild species since many of the characters were primitive, and it would be better to stay with cultivated forms, which we usually did.

So I guess there was a little discomfort. At least Professor Winkler was undoubtedly disturbed a little bit when we planted out about a thousand of these vines. I was disappointed too. I probably never should have done it, I realized later. We had a beautiful vineyard, and these vines were vigorous and just as clean and free of disease as could be, and they flowered, but we could never find a berry. They were completely sterile. We did find a few small berries, but when we opened them there were no seeds inside. They just formed. So this was as far as we could go.

However, we were impressed with the tremendous vigor and health of the vines so we decided that we might then use them for rootstocks for other varieties. So we selected out some of these vines and grafted the *vinifera* upon it. And sure enough the *vinifera* grew--the cultivated grape grew very well on this root. We still have some plots that are many years old now, thirty years or more, the vines are excellent.

So we at least demonstrated that this root was very resistant and was a good stock. But it was not as easy to

Olmo: propagate as some of the others. It hasn't been put into general use, but there is still interest in this as a rootstock.

Well, aside from that we did spend a number of years beforehand trying to make the cross by then importing these rotundifolia varieties that had female flowers that wouldn't form fruit. And then we tried the vinifera pollen and those with the cross didn't succeed in any way at all. In fact, we spent two years on that before knowing that it wouldn't succeed.

Then we happened to find an old reference in the literature that a man in Carolina (Wylie)* had done this way back in the 1860s, just before the Civil War. He had done this very thing. He got the idea that this rotundifolia was tremendously vigorous, fruitful, and so on, and that the bunch grape that he had (probably something like Concord) was not disease resistant. And he got the idea that they should be crossed together.

He actually did get some vinifera pollen from California and tried to make these crosses. But he said then in very, very clear terms that he'd been trying no end to cross this native Scuppernong grape with vinifera (with the cultivated wine grape) but that he couldn't make the cross work. But when he finally used vinifera as the female plant and used the male rotundifolia, the cross would work. It's a very interesting thing. It's still an interesting thing in the literature. The cross will only succeed between the two species in one direction. We don't really understand fully why, but it is so.

And if we had come across this little item that was hidden away in an early report, we could have saved ourselves a lot of wasted effort because he had it all there. It was all set and all done. We had missed it.

Well, then we put more attention on reversing the cross and, like he was, we were successful and got a lot of plants. But then we ran into the same difficulty he did: the plants were sterile. It was a vigorous plant and disease resistant, but no fruit.

In the meantime there were several amateurs--a man by the name of Dunstan, and another one by the name of Farrer**--that we were in correspondence with. Just amateurs. One of them was a doctor. The other was, I think, a professor of French at

*See p. 44.

**R.T. Dunstan and R.L. Farrer.

Olmo: a small college in Greensboro County. And they continued to work with some of this material that they had gotten from North Carolina which had kept a couple of these vines, or several of them. So they began to work. And some of them did report getting a few seeds and being able to grow plants.

So it looked as if we could get by the barrier some way. We imported some of these plants of Farrer's and Dunstan's, but we're not impressed with them. Most of them are still very highly sterile, although they thought they were quite fertile. Also the fruit quality was very poor, so they were disappointing to us.

We then got the idea that we'd use the traditional method of getting over the sterility barrier by doubling the chromosome number of these hybrids. So we did considerable work on that. An Indian student by the name of G.I. Patel was active in the program. Finally we doubled the chromosome number but, lo and behold, we did not get very good fertility. According to the genetics books you should get a fertile plant from doubling the chromosome number of that combination, but we never did. We got plants that were quite sterile, and again unlike the textbook, they were not very large. We expected that we would get very large berries when that doubling was done.

But we grew many plants and were disappointed in the results. In the meantime, quite by accident--it certainly was by accident--we had used, instead of the usual varieties, a female variety from one of our wine grape crosses. This was just a number, F2-35. And we used rotundifolia pollen on that and, of course, we were expecting to repeat the same old process that was repeated many times before. Grow the vines, they're beautiful, and they're sterile. So that's that.

But when I think we grew something like twelve or fourteen vines out of this one exceptional group. They looked just like hybrid vines should. But one day we noticed that several vines had fruit on them. Not many fruits, but a few berries. But even a few berries to us were something, because we had grown this other block of some thousand vines for years without recovering any seed.

So, lo and behold, here we had a fruitful hybrid, and we jealously guarded those seeds, planted them, then we repeated the process of the cross and got more vines of these types. Then we began backcrossing them to the vinifera grape, the idea being, of course, to try to introduce this resistance to all of these troubles into the cultivated vine.

Olmo: This process was successful, so from the earliest days this project now is to the point where we have a few of these hybrids from which we have made wines that have been classified, tasted wine, and have made wines of average quality. They score with things like, perhaps, Chenin blanc or other common wine grapes. Not the premiums, but fairly good wine grapes.

So now we're at a point which is really interesting because we have very fruitful, productive vines. We now have the big job of testing all of these new hybrids for resistance to various things. We started one line of investigation, the resistance to powdery mildew, which is our principle fungus disease here. We have obtained vines that are practically completely resistant that are also very good vines to grow. So we've gotten one thing out already.

Now, of course, all of these other things come up. For example, downy mildew, which is a disease of our grape growing areas where they get summer rains. Downy mildew forms and the leaves become brown. They fall from the vine so that your fruit doesn't ripen. Worldwide it's perhaps the most important disease of all in reducing crop, and this is the principal reason why you see vines in European countries kind of blue because they're covered with copper sulfate used in the spray to control this downy mildew. And it's a very laborious thing, because the spraying has to be repeated practically after every rain. In many cases they spray fourteen, fifteen, sixteen times during the summer. It still is the most expensive method of control. It has to be done. It's the only way to avoid it.

So you see, now we have available for people in all of these other areas a source of resistance to these various things, if they want to use them. France has just recently taken some of our hybrids, and they're interested in this very thing. They're trying to get resistance to this downy mildew. We don't have downy mildew in California naturally, so there's no way that we could test for it. So we gladly give these stocks to them.

Another interesting project we're carrying out in cooperation with--I forget, we're cooperating with so many places--but one cooperative project we have on now is with the state of Florida, with Dr. John Mortensen who is working on a particular virus disease, Pierce's disease, which prevents grape growing in Florida and many of the southeastern states.* Well, it so happens that

*See also pp. 45-47.

Olmo: the native vine there, as you might expect, is rotundifolia, again our Scuppernong. It is resistant to this virus. It grows and the virus doesn't bother it.

Cultivated grapes may be killed in two or three years with this Pierce's disease; it's the old so-called "Anaheim disease." Now we send Dr. Mortensen our selections and he plants them out there where he gets an immediate test for the resistance to the virus because the virus is widespread there. So he has found several of our selections do carry resistance to Pierce's disease.

Now he will use those to produce other vines that may be resistant for and will open up grape growing, perhaps, in the whole Southeast--of types like our vinifera.

Teiser: I want to just make sure I understand this: these are all vines which will grow on their own rootstocks, but are they the ones that are called "direct producers?"

Olmo: That name is usually given to the French hybrids that were produced with the idea that they were going to get resistant vines. The idea was there that the vine would fruit and also have roots resistant to phylloxera. Now, this is another project that is possible here now because rotundifolia is immune to phylloxera. Phylloxera won't grow on that vine. The F-1 hybrid, we get some vines that are immune, some are resistant, and so on. So now we do have the possibility of bringing in resistance to phylloxera, so we may obtain the direct producer that the French for centuries have tried to get.

However, they never really succeeded because none of their hybrids of any quality at all are completely resistant to phylloxera. So the quest has never been completely successful, and perhaps because they didn't have a good source or resistance.

Now we think the rotundifolia, from what we've seen, can give this source of resistance.

Teiser: Then you're achieving some success after how many years?

Olmo: The idea certainly blossomed when I first reached Davis and saw this one rotundifolia vine.

Now, another thing that struck me as strange is why, for example, do we have to show students this one vine? We have no fruit of it, we know nothing about it. This is the only

Olmo: example of the whole grape industry of the Southeast.

So then I began importing a lot of their varieties, and we have a nice collection, one of the best perhaps in the country. The students are familiar with them and they are using them for wine tests and other things. But they are really just beautiful vines because even the leaf hoppers that I mentioned don't seem to bother them. They don't like them. Yet the fruit has been used since the period of early colonization of the southeastern states, so certainly there's nothing toxic about it. It's been used many, many centuries. So it seems to be an almost ideal candidate.

And everything, perhaps, that we tested for, it has resistance or immunity for it.

Teiser: Is this an example of bringing together basic research with industry demands?

Olmo: No, actually, until just recently, all of these years of work were never reported upon, except in just basic research articles that students did over the years. But we were looking forward to the time when they may have some practical use. And I think we just now are embarking on that period. Of course, the material now will be, I believe, in very wide use the world around.

The Russians have repeatedly asked for material. And I think it's pretty well known or at least realized now the importance of these hybrids, to have them available with fertility. That's very important. It's taken a long time to bridge that gap to get a fertile hybrid with the characteristics of the rotundifolia.

UNIVERSITY RESEARCH: CONTINUITY AND DISCONTINUITY

Teiser: I suppose your suggestion for a foundation to subsidize research would allow you more easily to undertake such very long range projects?

Olmo: To do that without having to report on the real reason why we're doing it. I mean, I don't think a project like that in the beginning would be apt to get support. It's just too remote and too long range.

Olmo: But I can see that we could probably get support for it now. For example, there are areas in the state where Pierce's disease is serious indeed, even in Napa County. There are certain areas where grape growing is not successful now because Pierce's disease virus has built up, and there's no way to combat it. I mean, the vine dies and if you replant you're going to get it again.

The innoculum is in there, I guess, indefinitely, so the only way to combat that is to bring in a resistant plant. This, I think, we're now in a position to do. We're getting to the point where we have good enough wine quality to bring in such plants. So it has a tremendously wide spectrum of interest right now.

Teiser: Could you today start a project like that the way you did in the '20s?

Olmo: Let's be frank. The way I did it in the '20s was just as a side issue, and I think you would have difficulties.

I think this, again, reflects the interest of students. Without the students to do a lot of the basic research, that are well enough trained to do the cytogenic work which is necessary to understand what is going on (why we're failing and how we might change our approach) I don't think it would be possible to complete. And so I must make it very plain that really a lot of the work that I talk about and others talk about is really a contribution from these students, and the growers that were interested and convinced and so on.

What little we do is simply try and make the contacts and keep the enthusiasm. I think that's important. This is why I think the training of students is very, very important. It is to me. I mean, without students having been trained I think a lot of these materials would have been dropped long ago. A lot of the interest would have dropped long ago.

Teiser: Do you have many students in the industry in California, too, now?

Olmo: Yes, there have been many, many students.

Teiser: Do you keep in contact with them?

Olmo: Oh yes, it keeps going all the time. For example, I'm just trying to quickly recall what happened maybe in the office

Olmo: yesterday. Here's an example. Marko Zaninovich is a very capable table grape grower. He's located in Delano. His father was an immigrant, a Yugoslav, and also a very good table grape grower. Marko came to Davis as a student. He was an outstanding student. He became the valedictorian for the graduation at Davis, and practically had a straight A record in his college work. He is a very talented man.

Well, he called on the telephone yesterday and he is attempting to spray pollen in water on his vines. He grows a particular grape called Almeria. It comes from Spain originally. It's a very late maturing variety that has excellent quality. It will store in cold storage the best of any grape.

Well, anyway, he has a block of this variety which has never fruited very well. It's one of these unusual varieties that has only female flowers, so it's got to be cross-pollinated. It's one of the few cases in grapes where cross-pollination has to be done. So now he's going back to some of his work at Davis, and he called to find out if pollen could be put in the spray tank, mixed up, and sprayed on the flowers while they are in bloom.

I said, yes, this had been done in Australia with this variety, that I would look up the information. So I did, and the crux of it was that you can mix this pollen up in the water, but if it's left more than an hour or so the pollen grains burst so that you wouldn't get any effect. It would just spoil the pollen.

But if you can get it on within a short time after you mix it up in a spray tank and just spray it on the flowers it's a very nice way to pollinate. And you get good clusters. Of course, his difficulty down there has been that he doesn't get a good set because he relies upon the wind to bring pollen.

So I told him another thing. I said, "If you wanted to be really inquisitive about things and do some experiments, why don't you do something that I suggested to Di Giorgio* many years ago, where they had a big acreage of Almeria that was surrounded by Thompson Seedless." I said, "Watch and see how the wind is blowing because wind will carry grape pollen, but only if it's stirred up into the wind."

"So," I said, "try this that was successful. It was a suggestion of ours to Mr. Di Giorgio that he watch the direction of the wind so that the wind would bring the pollen over his arbors."

*Joseph Di Giorgio

Olmo: They grow this grape on overhead arbors because the clusters then hang free and the pollen can get on them. I said, 'Hire a helicopter for an hour from the Stockton airport or somewhere. You can do that. Take the helicopter and run it over the vineyard block next to your block that needs pollinating. Then the helicopter will blow the pollen from the vines that are blooming, and the pollen getting up in the air the wind will carry it and do all your work for you.'

He said, "Gosh, I've never heard of that!" I said, "Well, it's a suggestion, like many others, that we never put down in print. No one else has heard of it either except Mr. Di Giorgio, but it is effective, and not too expensive."

So I guess he might be doing that today, if the wind direction is right. [Laughs]

Teiser: Has there been as much tradition for higher studies in grape growing and wine making as in other branches of agriculture?

Olmo: I think there is. I think from the standpoint of agriculture, that grapes and wine were certainly the first department established with much in the way of graduate studies in the early days. But then of course we had the interruption. I don't fully understand in the historical context, for example, why Professor Hilgard said that this was the last year that grape and wine research was going to be done. "We feel that enough has been done for the industry, and this is it." I guess that was 1892, somewhere in there, when the university just dropped it. And I don't know that I've ever seen an explanation for that.

I think there was an explanation for it. Perhaps it was that he was very honest about it in that, since he came to the university and started much of the grape and wine work, and this did occupy a major part of his time, in fact he was not actually too interested in that because he was a soils man and a chemist, and that was his first love. And the industry was always pressing him without giving him too much money. So I think he arrived at a time where he was tired of giving in to viticulture and enology. That is what I think.

But I don't know of anything or anybody that has pinpointed just why that is.

Then, of course, Bioletti picked up the loose ends and started up again. Then you had Prohibition, which knocked the

lmo: pins out again. The University simply dropped all of the wine work, then had to revive it again. And the fruit technology, being at Berkeley, took over the remaking of the wine industry before Davis got back into it.

(Interview #4 - San Francisco, August 18, 1973)

WORK IN BRAZIL

Teiser: Your earliest work in Brazil was May 29, 1943, to July 1, 1945. [reading] "On leave and employed by Office of Inter-American Affairs and the Brazilian Ministry of Agriculture as part of a war program in agriculture."

What was the situation in Brazil at that time vis a vis World War II?

Olmo: Well, it was the beginning of the war. I think the actual intention was to really learn something of Brazilian agriculture. Apparently our State Department was not too aware of the whole agricultural set-up in Brazil. I think perhaps where the war interest came in was that at that time Brazil was a staging area. The bulge of Brazil comes out closest to North Africa. And if you'll recall, Rommel was having pretty good success in his invasion of North Africa. In fact he was having too much success. And I think the long-term view was perhaps that even though they were shuttling thousands of troops through the staging area up in the Amazon, that they thought it might become really a major effort, that we'd have to go into it very much heavier to stop Rommel.

So I think it was looking ahead maybe. They wanted somebody to be working with the Brazilian Ministry of Agriculture, to be familiar with them so things could be found out and could be done for the Brazilians as well. I mean, my instructions were to help the Brazilians in setting up teaching for agricultural students and setting up work on grapes and so on. But I think this was only part of it. Their most important thing was, I think, to have the confidence of the Brazilians and show them we were interested in what they were doing and trying to help them. This was where the coordinated service came in.

Olmo: There was a group, actually, sent down in different fields. And I was one that was in agriculture. I think there were three or four in agriculture.

Teiser: Where were your headquarters?

Olmo: Mostly at Campinas in São Paulo state. For a while in Rio, and then we moved to the agricultural experiment station at Campinas. So we spent most of our time at Campinas. But we were in contact with the embassy, and then the agricultural attache was located in Sao Paulo, and we did quite a good deal of work with him, mostly in getting surveys of their production and what crops they were interested in, and what they were producing, and so on.

Teiser: You were not there with an interest in grapes particularly, but in all fruits?

Olmo: In most all fruits, yes, because they, the Americans, were very interested in what actually was there at the time, because they had this big movement of troops and obviously it wouldn't have made sense, say, to send in canned pineapple when they produced most of the pineapple up in the Amazon region. I think it was questions like this that they weren't aware of, and they wanted to get a clearer picture of the whole setup.

But the Brazilians were very cordial, very hospitable people to work with. My career was almost cut short, because a few weeks after we arrived, one of our trips was north of Rio de Janeiro. We went in an embassy station wagon that had seats along both sides, and we were going to see a sugar mill, the first one I had ever seen, and a large one, which was at a little town by the name of Campos, an overnight train ride.

So we went in this station wagon and we were just coming through the town. The driver was driving, I guess, forty, forty-five miles an hour, pretty fast for a cobblestone street-- something like we have here in parts of San Francisco, these round cobblestones. But coming in the other direction was an ambulance going full speed without its siren going, and so he hit us right about mid-section and spun our station wagon around and just catapulted everybody out the back like clay pigeons. I remember one of the girls was thrown against the wall, and I believe she died. And there were several others injured. I was thrown out on my side, and the force of this ejection was so great that I remember it just wore the whole side of my shoe off, just going along the gravel. And I landed on this side.

Olmo: I have an old wallet, and when I had landed on this side, why it just rubbed the wallet right off--took the leather, just ground it right down. I can't really understand how a thing like that could happen.

Well, I was luckier than several of them. I skidded on my side and didn't break any bones. But the treatment then was effective. There was no hospital there; it was a little small sugar mill town. So they took us in and just sat us on a plain wooden bench, and I guess they used some of the alcohol they produced in the mill. They just simply rubbed out the gravel and then they applied this alcohol. That was the treatment. It was a very effective way to put you out of pain for a while. [Laughter]

Then of course one of the concerns was the question of infection from these wounds, so immediately they began to think of these shots that were needed, and so forth.

Teiser: Tetanus and such?

Olmo: Yes. They didn't have any of those. We went back to Rio, but it was a painful ride on that train, that little humpy-dumpy train. We were stretched out in that, and this banging and stopping and lurching went on all night long.

So when I went back to Rio I spent about two months in bed, and I was very disturbed for a while, because I was losing the feeling in my legs, especially this left leg was getting numb and I was really getting scared. But the doctor said, "Well, the nerves will eventually knit up, if you take it slow and easy." It took several months before I was walking again.

So that was a little interlude. And then I think one of the things that is particularly evident here--that the Brazilians, once you know them personally, are very sympathetic. I remember they used to come to the house, and the men especially, even, would bring flowers. It's kind of strange to us, but this was the way they were showing sympathy, and they would come and visit. I made a lot of friends just during that interval.

So then we moved into Campinas, and that was an opportunity to really get into agriculture. I did get one worker there, a middle-aged man, a Mr. Santos Neto, and I got him interested in improving grape varieties too, because many of the varieties were not adapted to their tropical type climate there--they had many diseases and so on. So I worked with him and showed him

Olmo: what I could while I was there and in and out, and he took on real well, and he's carried that work on all these years and he's now produced some very good varieties.

Teiser: Are these wine or table grapes?

Olmo: Mostly the table grapes. He wasn't too much interested in wine.

Teiser: Does Brazil produce much wine?

Olmo: They produce quite a bit of wine in the south, yes.

Teiser: For their own consumption?

Olmo: In the southern state of Rio Grande del Sul there's quite a consumption. Most are American varieties. They grow a lot of Concord and Isabella, because these American varieties seem to be very resistant to the diseases. And the vinifera is short-lived; it lives a few years and sort of goes under.

Teiser: On the whole, what was the result of your several years' work then there, do you feel?

Olmo: Well, I think one thing that carried on was this grape improvement work, because he used the suggestion that I made, that instead of just crossing these vinifera varieties that were susceptible to these diseases, that he should use some of the tropical grapes, which he didn't know anything about.

So he began to import species from Florida and Puerto Rico, Jamaica and so on, and that's what he's been using. He's been very successful in getting adapted varieties.

Teiser: Did you see him again this last trip last month?

Olmo: Yes, I did; I stopped and saw him. He's in his eighties, I guess, now. But he was hale and hearty, very happy to see me. We spent half a day together.

Teiser: He's still working now?

Olmo: Still active. He's been retired for quite a long time, but he still has this project going.

Teiser: Is that a state-sponsored project?

Olmo: Yes, São Paulo state.

Olmo: It was an interesting opportunity because we got to travel a lot. In other words, I'd go with the agricultural attaché, or I'd go out with other Brazilians in different areas, so I saw a good deal of the country. I perhaps know more about Brazil than I do about the United States, as a matter of fact.

So that was part of this opportunity last month. National Distillers were interested in the possibility of starting a wine industry down there, so I was down making a survey for them. I just did it on vacation time. But it was an interesting challenge.

Teiser: You speak Portuguese?

Olmo: Yes, I speak Portuguese quite well. That's my best foreign language, I guess. My wife speaks it also. She learned the kitchen type, I learned the professional type.

Teiser: So you get along?

Olmo: Well, they were very sincere about the fact that we should learn Portuguese, because the embassy wanted us to be able to work with the agricultural people in Brazil and they felt that would be the best way to do it. So in general, we usually purposely got into areas where there were no other Americans, and we were more or less forced to speak the language. That's one good way to learn.

Teiser: Yes. I see that you returned to the Davis campus from August, 1944 to February, 1945 to work full time at the University without compensation.

Olmo: Yes. There's a little story about that. First of all, the director of the Experiment Station then was Claude Hutchison, who was the dean of the College of Agriculture at Berkeley, and of course, approval had to be given for these foreign trips. This was at a time when, thinking back, not many people traveled to foreign countries. This was pretty early in the stage of when people went into foreign countries to do any study or any work. And I hadn't been on the staff too long.

Dean Hutchison, when he lived in Davis, lived in what later became the Faculty Club, but the house was right next door to my wife's home. In other words, she was born and raised in a house that was right on the campus really, so Dean Hutchison knew the family. So he knew me indirectly in this way, that I had married Miss Helen Miller.

Olmo: So when I went in to him about this leave, and with the letter from the coordinator's office and the State Department, he just sat back in his chair with a very bewildered look and said, "My God, man, you're not crazy!" I didn't know what the trouble was, why he would feel that way about it. He said, "You're going to Brazil with a one-year-old child, with your wife? There's nothing but alligators down there!" That's the way he described it.

I said, "Have you been there?" He said, "No, I've never been there, but from I've read and from what I know it's not a very good place to go." I said, "Well, it's under government auspices, and I presume they'll keep things all right and it'll be safe enough for my family."

He said, "Well, I'll think about this real hard. I personally do not like to give you permission." And he dismissed it. I had to come back a second time. And then when I wrote the State Department and said the dean was reluctant to give me leave for a year (it was a year at that time), they apparently didn't think that was the right type of response. So they in turn, I guess, wrote to Dean Hutchison saying that they thought it was a necessary and important mission as far as they were concerned, and they would like to have his support--more or less in that vein. So he was sort of tied then. When I went back again, why he was still unhappy about it, but he gave me the leave for a year. Well, that was fine; we got along quite well.

Then the mission down there thought things were going along so well and I was needed probably more than ever, so they wrote back to the University to the dean, requesting the leave be extended the second year, which he did do. But he wrote an addendum to that: "What's going to happen to your work? This is one way of probably putting more responsibility on you. What's going to happen to your long-term project if you stay away that long?"

And that's where this interim came in. I told him that I would try to get back during the important period of the grape breeding project so that I could take care of it, and that I would have permission to leave and do this without compensation from the University, which I did.

So I came back for this period--four months or five months. I did, however, bring my family home; my wife and child came back.

Teiser: They hadn't been eaten by alligators?

Olmo: They hadn't been eaten by alligators.

We got back, and then another extension was made. Actually, I had to go back during part of a third year. So I returned and finished up.

Teiser: But you were working in Brazil to bring the project to completion?

Olmo: Yes.

Teiser: What were the other principal products you worked with besides grapes?

Olmo: Well, peaches; we had a program for peaches.* And I later had some students that came to the University. And this is one way, of course, that a visit like that is productive that one doesn't think about: you do very frequently attract students to come to the University. And then liaison, really, is set up for major cooperation in agriculture.

Teiser: Have you had cooperative projects between Davis and Brazil?

Olmo: Yes, not in a sense of material or exchange of finance or anything, but certainly in exchange of ideas and people, information. We've had several students. One in peach breeding, Orlando Reggitaro, was with me, and one in viticulture. And they're still really coming in from those first contacts.

I think this is the point about foreign travel that really isn't mentioned, but I think it's perhaps the most important of all, this building of coordination between efforts and making friendships and so on. It sets up a pattern.

Teiser: That's what they say about these international conferences, of which you have attended many.

Olmo: Well, some of these international wine conferences do occur every two or three years, so eventually you get to meet most of the people and get to know them quite well, because the delegates from these other countries are usually chosen by

*For additional recollections of work in Brazil, see pp. 162-164.

Olmo: the countries so it's more or less stabilized.

We're invited to the meetings of the International Office of Wines and Vines only as observers because we cannot join the organization because of the difficulty of using names that we're not supposed to. In other words, one of their provisions if we joined this international group would be to desist from using the words "champagne" and "burgundy" and things like this, which the French feel are their own.

Teiser: Still, that organization has given you a medal.

Olmo: Yes, but you usually attend these meetings solely as observers. In other words, their delegates can really take official action; they may vote on projects and so on, which of course the American representatives cannot do. We go simply at the invitation of the United States State Department or the foreign agricultural service simply as observers.

Teiser: This is the one most important international wine organization?

Olmo: It is by far. In grapes and wine it is a large organization, it's an old one; it's always been shepherded by the French. In fact, they use French as their official language at the meetings. It is by far the most active and perhaps the best structured organization.

REGISTER OF NEW FRUIT AND NUT VARIETIES

Teiser: Let me skip over to the Register of New Fruit and Nut Varieties. You started working on that early, did you not, with Professor R.M. Brooks?

Olmo: Yes. We had the idea that there was really no one organization that was really listing or getting the correct naming of new varieties as they came out. In fact, there was a lot of misinformation because no organization or group of people was definitely interested in compiling information.

Dr. Brooks and I were friends of long standing. I was best man at his marriage in Berkeley. He was more of a technical botanist and taxonomist, but he was also interested in fruit variety improvement. So we began to talk this matter over together and decided that we might start something in the

Olmo: way of a questionnaire card that could be sent out to cooperators to get the information, usually at the time a variety was introduced. We got a good response. We solicited many fruit growers and professional people in the universities. They were all in favor of it, so we started out in a modest sort of way and have kept it going.

We just published the second edition of the Register, which took in everything from 1920. We went back to a starting date of 1920 as far as the varieties were concerned. We first published an annual list, and then this is revised and compiled into a book about every twenty years.

Teiser: [reading] The first list was published in the American Society of Horticultural Science Proceedings, 1944. That is the first I see in your bibliography.

Olmo: Is that List One?

Teiser: Yes.

Olmo: It's been an annual list, published by that society.

Teiser: The first edition of the book was 1950--U.C. Press. The second's 1972?

Olmo: That's right.

Teiser: So this is a continuing job that you've worked on?

Olmo: Yes, it is. We have a file and keep working on it now and then.

Teiser: And Professor Brooks died--

Olmo: Professor Brooks died of a heart attack in '66.

Teiser: You've been carrying it on since?

Olmo: Yes, I've kept it going.

Teiser: And are continuing?

Olmo: Yes.

Teiser: Are you going to bring out another edition soon?

Olmo: Oh, not for a while.

Teiser: Is anyone working on it with you?

Olmo: A secretary, Mrs. Evelyn Zielesch, does a lot of the filing and compiling.

Teiser: I was wondering if any of the younger men on the faculty had taken it up.

Olmo: No. It's set up so that it can continue without too much difficulty. The one thing we did do in setting up is that we made use of the cooperation of a horticulturist in practically every state, and some in Canada, so that we had very good coverage. In other words it was up to them to find out about new varieties and fill out these cards, and sometimes they would check them for us, so we had a sort of a going correspondence all the time between these people and it worked out well. We have a list of maybe sixty or seventy cooperating. So it would carry on very easily that way. Somebody else could give an address. It would be a question of moving all the files; the files are getting pretty voluminous.

CELLAR PRACTICES, FIELD PRACTICES AND ECONOMICS

Teiser: Back to grapes per se: I'll ask you now about this 1949 statement that you wrote. In a paper* you indicated that at that time you felt that cellar practices in wine making were not likely to improve, that mechanization had not improved the quality at that time, and so the way to the improvement of wine lay through the improvement of varieties of grapes. Would you say that today about cellar practices?

Olmo: I think I would. I think in essence what has happened is that we are really refining rather old discoveries and old practices. For example, the use of cold in fermentation. Many of the white wines are fermented at fairly low temperatures, but this was the ordinary thing in many of the European countries where the fall and the winter is naturally cold anyway. Once workers in these warmer grape producing countries were aware of that, then the obvious thing to do was to bring in refrigeration. What makes it possible is the technical know-how about refrigeration, when it comes right down to it. So you apply that to

*#46, Bibliography: Appendix

Olmo: wine making, which, of course, does improve your quality. But compared, perhaps, to the finest wines that have been made traditionally that way, our quality is no better; it's as good.

I think a very interesting statement was made by one of the leading French biochemists, Peynaud, in a book that was just recently published.* He was mentioning the Bordeaux wines, the best wines of Bordeaux. And he made a very similar statement to that I had made many years before, and that is that they have developed techniques in Bordeaux of handling these wines better and serving them better, getting a better fermentation and so on. But he concluded with the fact that in his lifetime he was quite sure that the best wines produced today are not as good as those produced before. And the reason he stated was that despite these advances in the technology, that the raw material was not of the same quality as it used to be. He saw the changes there as being due to the use of varieties that bear more fruit but the quality is poorer; they do not ripen as well. He mentioned that the botrytis, this gray mold, now seems to start growing on the grapes in the Bordeaux area much earlier than it used to, even before the grapes are getting ripe. It causes a lot of damage and lowers the quality. He said before this was not so much the case because the vines didn't grow as big or as vigorously.

So he sees all these practices out in the vineyard as really being the ones that have made the big changes, which technology hasn't been able to correct, and he doubts whether it will. So he goes back to the vineyard, really, as being the place to correct these things. He thinks that we're probably overfertilizing the vines, trying to produce too heavy a charge of fruit on them; they're not ripening as well as they used to for this reason. And he said, too, that they're also changing varieties, getting heavier yielding varieties of poorer quality. So he brings all these factors together.

And in essence this is what I was thinking about, that basically, unless you have the quality in the raw material, all of the manipulation that you can do is not really going to improve it. Now, can you take the poor grape and make an excellent wine out of it, even with all the technology we know of?

*In J. Ribereau-Gayon and E. Peynaud, Sciences et Techniques de la Vigne, Vol. 2, Dunod, Paris, 1971.

Teiser: Were you implying that a parallel situation has existed in the United States in the quality--?

Olmo: Well, I see it coming more to the fore. And maybe part of it's due to the fact that I was in an office with Mr. Twight, a Frenchman who started most of the wine work over again in the University. And I didn't quite understand--he was annoyed very frequently by the fact that the industry was mechanizing too much, mechanizing to the stage where everything was handled uniformly so that the variety differences were beginning to disappear. And I can understand very well his point of view now. I feel the same way. I feel, for example, that with many of our white wines, despite the fact that our varieties are very different, that the technology is such, the cold fermentation, the way it's filtered, the way it's handled, that the refinement of the wine has given us a mediocrity. They're good wines but they're pretty much alike.

So despite these great differences in variety, we're actually making those too uniform. We're not really getting the quality from the variety.

Teiser: Have we cut off the lower end meanwhile, the poorest of the wines?

Olmo: Oh, that's for sure. I think that's where certainly technology has made its big advances, in the ordinary wine. I think it's a pretty well accepted statement that our ordinary-quality wines, the vin ordinaire of other countries, are some of the best in the world for the price. I mean they are cheap, they're well made, they're sound; you never get a spoiled wine any more like you used to. Soon after Prohibition it was very common that you'd buy a bottle of wine and then you'd pour it on the salad because you couldn't drink it. I think a lot of people had that experience.

So from that standpoint technology has certainly improved the industry. But I think from the standpoint of these very fine wines, perhaps not too much.

Teiser: Something that I keep thinking about, and I believe we touched upon this a little bit--as I remember, people used to think that the finest wines came from grapes grown on hilly, rocky, unproductive-looking ground that was good maybe only for grazing and grapes. And I was thinking of that in connection with the present planting of grapes on richer agricultural land, bottom

Teiser: land, because of mechanization, because you've developed varieties that will do well in many areas, and so forth. What's the implication of this in relation to the world's use of its arable land? (This is maybe too big a question.)

Olmo: Well, I think it's mostly one of economics. But I think it's a pretty general opinion, and it is accepted by most, that the grape vine should not be too vigorous to produce the best wine. It's got to be a vine that's only growing weakly or moderately, so that to get a very abundant growth is negatively correlated with quality. Now, why this is so I don't think anybody's too certain, except that it is true certainly that the grapes, I believe, on hillsides where they get less moisture, perhaps, they do ripen earlier, the berries are smaller, the fruit is more exposed. I think all these accessory things add up to better quality. And I think most winemakers and grape growers are aware of this. But the question is now who's willing to trot behind a horse and plough going up a steep hillside? This is about the only way you can cultivate the soil.

I think maybe that in a few hillside vineyards in Napa County there may be an occasional horse used, but it's just about disappeared. It would be something everybody would stop and take a picture of if it were to go on now. But this was the general way of cultivating vineyards not too long ago.

Now, it might be interesting if, for example, cultivation could be excluded. Maybe these herbicides could be applied to the soil or some mulch so that you wouldn't have to cultivate. Then hillsides may become important. But then you immediately come up to the question of mechanical harvest. Are we going to pick our grapes by hand all the time or are we going to be doing it by machine?

Well, it appears that if we follow every other sequence of agriculture, we're going to mechanize more and more. So this means, again, that we have to stay in the more or less rolling or flat lands. But I'd still stay on the slopes regardless. In other words, I'd choose a slope that was as steep as I could work mechanically, let's put it that way, where you could get a tractor and implements up and down.

I think if you had a small vineyard and you just wanted to produce enough wine for you and your friends, if you wanted the best wine, you better go on the hills. But it's work, a lot of work.

Teiser: With fine wines at fine prices now, I wonder if it couldn't be made to pay in certain instances.

Olmo: I think it could be except for one thing: I think there's a very important lag between the making of a fine wine and the selling of it. Let's assume that you're going to have a good location on the hillside and your production is maybe just a few tons. Let's admit you have a fine wine and presumably you can get a very high price for it. It might be worthwhile just to make a moderate living and do most of your own work in the vineyard and the winery. I think that is possible. A lot of the young people are trying to do this very thing. But one problem that seems to arise there, and it's arising now all the time, and that is to get recognition for the wine. In other words, you may have a fine wine, but who knows about it? There's a certain amount of publicity, tasting, marketing that's necessary before you're ever known on the market. And this tight period is the one where you really suffer because you have no income to amount to anything.

There is this period that you have to take to develop your vineyard and your wines. For your vineyard say four years, five years, and then on top of that you've got maybe three years of your wine making. So really, you're in it eight or ten years before you have a product to show to anyone. And this is quite an investment.

Teiser: I'd like to return to a subject that perhaps ties in with this. In 1954 in a paper* you suggested that one way to solve the problem of growing fine varieties, and the economic difficulties of the grower with fine varieties, was for winemakers to give contracts to growers, with established prices. Was that unusual, do you recall?

Olmo: Well, I think it was used in a very minor way, but not generally by the larger companies, I don't believe, because they felt that grapes would always be available, that there was bargaining that could be done, they were in a better position if they left the price and the contract open. And I think it was a very difficult period sometimes for growers because they were really at the mercy of the bargaining area, but it happened also to the wine people that the prices were sometimes held too high. But it always seemed to me that at least if you're producing a very

*#72, Bibliography, Appendix

Olmo: fine wine, that your supply of raw materials should be regulated. I mean, you should have some guarantee of it. And it seemed to me the only way you could guarantee a flow of your raw material year after year was to contract for it, make some agreement that you would pay so much, perhaps tie this to a cost-of-living adjustment or something. But you at least had the guarantee that you had these grapes.

Teiser: Do you recall Lewis S. Rosenstiel of Schenley having made contracts with growers?

Olmo: No, I don't remember that, but there were several companies that tried the contract route. But then of course the larger companies weren't using it so it was difficult, I think, to make much of a dent in the whole picture.

Teiser: But now--

Olmo: I think it's a pretty general phenomenon now. And of course, they are more or less forced into it with the shortage of supply; you just have to have a guarantee. And it was the larger companies that really got into it quick because their supply had to be large, had to be certain.

Teiser: Well, it seemed to me that perhaps you were making a prophetic suggestion.

USES OF THE CABERNET STRAIN

Teiser: At that time, 1954, I think you made a suggestion about one variety (I think you were discussing a number of varieties); this was Carignane. You suggested that it did not make a good varietal wine at that time, but that it could be a good varietal wine if the grapes were improved. Has that been done?

Olmo: Well, I was thinking then mostly that it is a variety that from the grower's standpoint is quite ideal. It grows upright, it's an easy vine to train, very nice vine to handle, the fruit is practically always very sound, it ripens well, yields very well. So the grower would probably pick that as his favorite variety, not considering other things. But the wine-maker, of course, finds certain defects with it. But in general, it's really perhaps one of the best over-all varieties for bulk

Olmo: wine in the whole world. It's really an amazing variety, and that's why we have brought it into a lot of our breeding work.

Teiser: How do you improve it?

Olmo: Well, you try to look for some other variety that furnishes the features, perhaps, that it lacks. It certainly has enough yield; it has a very good growth habit; it's quite resistant to many diseases and insects. So then what do you want to do? Well, you want to improve mostly the wine quality. The wine of the Carignane is somewhat bitter, and it doesn't have much flavor. The color is not too stable; it tends to brown on aging, so it's not a wine that can be aged very long.

So remove the bitterness, get some flavor, get better color. One of the things that you could bring in would be Cabernet, and that's one of the first combinations we made. That produced a Ruby Cabernet. Ruby Cabernet was a combination of Carignane and Cabernet Sauvignon. So we do have the Cabernet flavor in the Ruby Cabernet and we have greater yield than the Cabernet Sauvignon. We have a yield comparable almost to the Carignane. We have a very vigorous vine, which again comes from the Carignane, a very nice color, very good acidity. So it combines those properties.

In essence that's what you do in breeding new varieties. It's a very simple matter really. Except that if you have five or ten thousand varieties, you begin to wonder, "Have I chosen the right one to add these things, or should it have been another one?" This was one of the things that was perplexing at first in a program like this, that you had so many different varieties that you could use as parents. It was quite impossible to use very many of them because it was just expensive to grow plants, and you had to do a lot of the work by hand, so that the selection of the parent varieties was very important.

Now, in our work we soon found out that in order to perhaps reach any conclusion or produce anything worthwhile, we had to more or less limit our endeavors to one group of varieties, and in that essence, we more or less stayed with the Carignane, the Cabernet Sauvignon, the Grenache--more or less standard varieties--but we kept the Cabernet line. The Cabernet is something we keep going back to all the time, Cabernet Sauvignon, reasoning that from past history, this has always been the best quality red wine that we've produced in California. I mean,

Olmo: no one, I think, doubts that. So it was obviously a natural thing to do, pick the variety that does best here and try and improve on that, or at least to extend its culture.

Now, we had the problem in the coastal areas of a longer wine tradition, and we anticipate there will be a much longer lag in accepting new varieties, say, in Napa County or Sonoma County when they have these premium varieties already. Because many people feel that Cabernet Sauvignon's the top and there's no point in trying to test anything new because it's not going to be an improvement. And so there's a tradition there, and a lot of people, again, are also tied with French names. They seem to think that if a wine is a good wine, it's almost got to carry a designation that indicates it's of French origin. Well, that might have been true many, many years ago, but I think we're in a position now where we can develop our own distinct wines that we can compare with any in the world. But we expect that there'll be a lag in the acceptance of these new varieties.

Now, in the Central Valley, where dry wine making, anyway, is more or less coming to the fore and technology now is developed, these varieties are taken up very quickly. In fact, I think many people are buying this new Cernelian* this year. I'm sure most of them have never even seen that grape variety, although they could have seen it. But I'm sure they've never seen the variety, nor have they tasted any of the wine. But they just feel that from our description, from our results that it should be promising, so they're willing to take that risk.

Teiser: Well, that speaks pretty well for your reputation at Davis and the work you've done yourself, doesn't it?

Olmo: Well, I think we use a system of trial along with the standard varieties that is not used by most stations that are producing new varieties. In many cases they have a variety that's promising and then simply assume that it's up to the grower to actually test it out. And this of course has happened principally with peaches, for example, in California. There's just so many new varieties released every year that growers hardly pay attention to a new variety any more; they just assume, "Well, it's another new variety." They've found out by trial and error that many of the new varieties are nowhere near as

*Developed by making a Carignane-Cabernet Sauvignon cross with Grenache.

Olmo: good as the standard that they had. So it's been a very slow process of acceptance in recent years. What you hate to think about is that a really good new variety could appear and it might not be adopted very quickly, and that would be a shame I think.

So on these grapes I think we've gone one stage further than most of the university people. We have set up these regional trials, where we put in the standard varieties, and then the new ones have to be compared against them. We get the data, then, on yield, we bring the grapes back to Davis and make the wine. And I told you before how the wine judging is done; we use a University panel and a Wine Advisory Board panel. So we certainly try to do it as thoroughly as possible, as thoroughly as our backing would allow.

EXPANDED GRAPE PLANTINGS AND WORLD TRADE

Teiser: This is a contrary thought, but as more people in the Central Valley put land into grapes, is there going to be a swing back some time? Is somebody going to say, "Look, we need more solid foods; some of this land should go into potatoes or soybeans or grain"?

Olmo: Well, I don't think so because a lot of your staple crops, your cereals and so on, can be grown over a much wider area, say, than your grapes. It's one reason why we have a very good situation in viticulture, in grape growing and wine making in California, that the climate is really the determining factor. It's such that you can probably grow better quality grapes than many other crops. In other words, the Southern states can grow cotton but they cannot grow grapes. The Eastern Seaboard can grow tobacco, the Southeast can grow tobacco or sweet potatoes. We could certainly grow them and do grow them in California, but probably the quality difference between one region here and another region, say, the Midwest and California in corn is not very great. It's not significant enough to shift production. Whereas with grapes you're just not going to grow them very successfully in Iowa or Nebraska. I think the grape is ideally situated here. In other words, our climate is very close to the climate where the vine originated, the middle part of Asia--Afghanistan, Iran, the Trans-Caspian region. All that area has got a climate very similar to California--very dry, hot summer, a cool winter with all your rainfall in the winter period.

Teiser: Are we going to start exporting wines pretty soon? I mean, in significant quantities?

Olmo: Well, I think that will come. In fact, this is one key that I think will limit or perhaps control overproduction. I can see that at the present rate of planting, California will overproduce. In other words, we'll have more than we'll be able to market on our own national scene. However I think this is one key that augurs well for the future, that we certainly can produce the ordinary type wines in quantity at a cheaper price than many countries can. And this is, after all, the big bulk of wine that's drunk in the world. So in a sense, then, we have a safety valve, and that foreign market I'm sure will develop. And after all, it's a very reasonable thing that it should because most of the trade is obviously on a give-and-take basis. There's really no reason why, for example, we should import French wines, which we do in quantity, and they in turn not import at least some of ours. In other words, just on an exchange basis, you can see that will have to come some time.

Teiser: Didn't France import a great quantity of Algerian wines for blending, at one time?

Olmo: Oh yes, in fact their main source of common wines for years and years was Algeria.

Teiser: Would we be able to fill that demand in any way?

Olmo: We could fill that demand, but I think it's being filled and will be filled very quickly by the other members in the Common Market, especially Italy. Yugoslavia is not in the Common Market but they, likewise, have produced a lot of bulk wines. Greece is an associate member and they've produced a lot of bulk wines. So there are quite a few members in the Common Market that can fill this gap, plus the fact that in the south of France now there's tremendous expansion, much the same picture as we have in California, that plantings of varieties in the south of France are increasing tremendously, and also in Southern Italy too, and really take care of this bulk wine market. So there is competition, but even in the face of that, our technology, our costs of production is still such that we can compete. In other words, despite low labor costs of their own, we're in a pretty good competitive position qualitywise.

However, there is still a lot of wine entering France from Algeria. It isn't cut off entirely. But it has been cut down tremendously.

Teiser: What happens to Algerian wine?

Olmo: Well, they're selling quite a bit of it to Russia, actually; they're selling to the eastern bloc. And some of it, I think, is on a barter system, in trade for something else, machinery or other things they might need. But now the Algerian government is very interested in exploring other ways. They're very interested, for example, in starting a raisin industry. I've been contacted several times on that. They would like to shift emphasis over, say, to production of raisins because they do have a good climate for that.

NATIVE VINES OF MEXICO AND OTHER MYSTERIES

Teiser: This list of conferences and other activities of yours--could you just glance over it and comment on those that you feel are to be commented upon that we haven't discussed?

Olmo: Well, I see one here, 1961. We made a collecting trip into Mexico for native grapevines. In the beginning we had no idea that there were even native grapevines in Mexico because all the standard botanical works that had to do with grapevines seemed to stop at the Mexican border, and that was the end of it. And we finally got a grant from the USDA to start a collecting expedition, to actually try and locate grapes and to collect seeds and to bring them back and distribute them. We did this, and we ran into many interesting experiences.

For one thing, the grapes were rather isolated. We had to look for canyons where there were running streams, and sometimes we got to fairly high altitudes. [Interruption]

I had two graduate students with me at the time and my principal technician, Mr. Albert Koyama. We went down about as far as Mexico City, went down the west coast and came back the east coast. And we were rather amazed--

Teiser: Not Baja California?

Olmo: No, we didn't get into Baja, although I think there are a few wild grapes in Baja, but we haven't done that area. We did find quite a few grapevines that were of interest and we were principally interested in perhaps their use as resistant

Olmo: rootstocks for phylloxera or a nematode, because in many cases they were growing in desert areas or close to desert areas. We found out some rather interesting things. When we made this collection we prepared herbarium sheets on everything we collected in the field. We weren't able to identify a lot of these things; a lot of these groups seemed to be so different from what we knew that we couldn't really put a name on them. So we decided, "Well, let's send them to the taxonomist at the Department of Agriculture in Washington."

We sent a sample of each to a botanist there. It was very interesting that they too had the difficulty that they couldn't identify any of them. And so this meant to us that we were certainly dealing with a lot of new material, and we believed, perhaps, that some of them certainly are new species, so we had to describe them and work them up for the first time.

But another interesting thing occurred, that when we grew the seeds out from these collections, we found out the vines were very variable, very different one from the other, and that was rather unusual. Because with other wild grapes we had collected, they were quite uniform actually, compared to the cultivated ones, which was a surprise to us. But it seems to indicate that the species are very much mixed up, or at least, sorting out in the Mexican area compared to the sites in the United States. And I feel that maybe this is sort of a thinning our process, that down there you have a big bulk of material that's inter-breeding, whereas when you got up more into the northern zones, the areas are becoming more isolated where these wild grapes are found, so they're a more inbreeding population, so they're more uniform.

But anyway, it opened up a whole wealth of new material which we're working on now. We're just starting work on the resistance to various diseases and insects that these might have.

We've found another interesting thing, that the idea of using wild vines as stocks is apparently not very new in Mexico, because in one commercial area we found out that they were actually digging wild vines out of thickets and bringing them into the vineyards and grafting their cultivated varieties on them. They realized, I guess, for centuries that these wild vines had a great deal more vigor and apparently were resistant to something we don't know yet until our tests are complete. But apparently they were using this method long before, I guess,

Olmo: we ever did in California or even in France.

Teiser: The Mission grape, as I remember, was brought into California through Mexico. Is it extant there now?

Olmo: Well, the Mission grape is quite a mystery because--well, offhand, it should be a thing that's very easy to run down, but in practice it hasn't proven that way. The Mission type is quite easy to recognize, and the same type of vine--[interruption]

You find out that the Mission was brought in by these early missionaries, mostly Jesuits to begin with, in most all the countries in South America. In fact, the introduction there long preceded ours into California, because ours came by way of Mexico. So with the landing of Columbus, the variety probably came in. But it was also introduced into South America by explorers after that, before it actually got it into Mexico and California.

But anyway, regardless of where you go in South America--Argentina, Peru or Chile, any of the grape growing areas--you can find a Mission-type of vine, which usually has a local name, which indicates that it's been there a long, long time, perhaps was the first of all to come in and be cultivated.

Now the riddle is (and I have been working with these religious orders for some time to see if I could get somebody really interested enough to track down just where these padres came from) where did they start out, where did they get their provisions? Well now we're getting the root at least tied down pretty well. It's a question of tracking back several areas that look like they're most promising. One is the Canary Islands, and it's one place we haven't worked much in, and they do grow grapes there. The Canary Islands was a port of call on the way, and the padres did get materials there. Out here at Mission Dolores along the street you have the palm tree that comes from the Canary Islands, and it was brought in by the padres.

Teiser: Has anyone looked in the records at the Vatican? I understand there are some of the early--

Olmo: Well, there would be some. But I think the archives of some of these orders are very good, they're very complete. But it's mostly a question of getting somebody who can lead you to the type of information you're after. We've done it sporadically

Olmo: by correspondence. Well, we have a route, more or less. Now I think it'll be up to us. They can't help us with the grapes as such; they don't know the grapes. It'll be up to us to probably go back over those routes and see if we can find these things.

It may be in the Madeira Islands or the Canary Islands, not the Azores because the grape culture in the Azores is fairly recent compared to the exploration elsewhere.

Other varieties are in the same category. We have other varieties that came in and it's a question of trying to run them down and trace them back. Zinfandel is one of these.

Teiser: I understand we're on the verge of a great disclosure.

Olmo: We're getting close to it.

The only thing is, we don't like to be too rapid on these because [Agoston] Haraszthy for one is very definite on where he got the Zinfandel--that he brought it in and his family grew it and so on. So we're rather reluctant to say that is wrong before we have actually checked out all the facts concerning the case, because he may be right. We hope he is right.

And some of these varieties, of course, leapfrog from country to country. For example, if we happen to find it in Italy, it doesn't mean that it originated in Italy; it might have come from Yugoslavia. Many of the Yugoslav varieties were taken into Italy. In turn, Yugoslavia might have gotten them from Hungary, so there is a thread of evidence that Haraszthy may be right. But we'll have to just go back to his home town and spend enough time searching back.

Teiser: Is Mexico growing any significant number of varieties that we've developed here?

Olmo: Oh yes, they're growing a lot of the Ruby Cabernet; they like it very well. They're also growing Emerald Riesling. Rubired there's a great deal of. They take on varieties very quickly.

WINES FROM NEW VARIETIES IN WORLD TRADE

Teiser: When these new varieties are used in varietal wines--for instance, will France accept the name "Emerald Riesling"?

Olmo: They will accept it. In fact, I think Masson has already exported it to Switzerland.

Teiser: So any new variety can be exported under its own name?

Olmo: Yes, providing it doesn't copy exactly, perhaps, something they have. Of course, there's another situation there that's to our benefit, and that is, that we weren't the first to adopt variety names by any means, but the fact that we did when the French were not using variety names is a help, because most of the variety names in France are confined to very few regions like Alsace. They have long used variety names, much longer than we have. But in general, though, the chateau wines, for example, go out under a chateau name, and they don't really have a variety name on them. Like Chateau Mouton Rothschild or Chateau Lafitte. There's no indication really of the variety.

So on that score we're in a good position to use variety names. However, we're not in a good position if other countries should copy the same thing, and that's likely. We produce Cabernet Sauvignon but South Africa's probably also going to produce Cabernet Sauvignon, and other countries will too. If they use the varietal label, then you see, our competition from the standpoint of varietal label increases. So there are problems each way.

Teiser: Is it a good idea, then, to have made-up names like "Baroque" for instance?

Olmo: I think it is. I think our own typical names would advertise our product better; if it's good it would be a good thing.

NATIVES AND HYBRIDS IN VENEZUELA

Teiser: Are there other of your foreign travels we haven't discussed that you feel we should?

Olmo: In '67 in Venezuela, did I tell you about that?

Teiser: In part only.*

Olmo: In 1967 I spent several weeks in Venezuela for the government there. A rather interesting situation existed at the time I was called in, and that was that the Venezuelan government, apparently, has supported agricultural research and development very well. They're one of the few Latin American countries that have plenty of resources. Their oil fields have been productive, they have a good balance of trade, so they're in a position to, let's say, support agricultural development. One of the problems that they had come up against was grape culture. They were getting more and more demands from people in different areas of the country asking for subsidies to develop vineyards.

Well, several of the academic people in the department of agriculture had gotten what literature was available. Dr. [A.J.] Winkler's book** states pretty clearly that you just cannot grow the vinifera wine grape very well in the tropics; it dies out, it doesn't make a product of any quality, the disease problem is severe--which is quite true, but nonetheless.... So these academicians were reading these and other statements similar to that which would accord with it and decided, "Well, these people are just mistaken; they're just not growing any grapes; they just can't grow grapes here." But nonetheless, these reports came back, and people began to see grapevines growing and producing under what are certainly tropical conditions.

This got to be quite an insistent thing as far as the government was concerned. So they finally decided, "Well, what is going on here anyway? We read in one place you can't grow grapevines and here these Italian immigrants principally, some Spanish, are growing some grapevines, and this doesn't seem to square."

*Pp. 51-54.

**General Viticulture, op. cit.

Olmo: So I went down there to look at the situation, and it was very surprising. There were some particular villages where occasionally you would see a tremendous vine, even going up to the second and third story of the home, and they had these big decks like your deck here; it would be covered over with a vine just loaded with grapes. I was perplexed myself because I've never seen vinifera grapes grow that way in the tropics and I just got a little curious to how these vines could grow so well and be resistant; they're not sprayed, they're not dusted or anything. One man actually was harvesting close to a ton of grapes off one of his vines. There was no question he was getting grapes. Of course, this is what had puzzled these government people.

Well, I got very curious. And these vines in many respects had very distinct differences from vinifera: they didn't seem to have the same taste, the skin seemed to be rather thick, they were juicy. It looked as if they could have made wine. Some people were making wine from them that wasn't too bad.

So then I began to try and put this picture together. I read a little bit about the history and found out that as in most of the Spanish countries of the New World, people when they came in and settled kept importing the vinifera grape from their homeland by the dozens of varieties, year after year. But none of these really had gotten established, so the story in Venezuela was just like it was in the other tropical countries--the vinifera vine didn't get established. But yet there were these other vines.

So then I began to think of some experiences we had from the Caribbean area--Haiti and Santa Domingo. Occasionally we used to get grapes sent in for identification; people would pick a cluster of grapes out somewhere in the wild and then send these in, and they were never anything like we knew. But we were convinced there that what was happening was that they had a native grape and that the native grape was crossing with these introduced ones, that the introduced ones lived just long enough to hybridize with the wild grapes out in the jungle.

So then I began to ask, "Is there a wild grape here in this country?" And the answer usually was "No." But then I met a man who said, "Why sure, they're all over in this area." I said, "Well, can I see them?" Oh yes, he'd take me on a trip to see them. So sure enough, they had a wild grape in

Olmo: their jungle there. We weren't aware of this; we weren't aware that they went into the tropics. We were aware that it could be found in Southern Florida, Haiti, Santo Domingo; but we weren't aware it went clear down into the tropics.

So once we found this we put two and two together. In fact we're using this now to help out their government. We're making a lot of crosses between their wild grape and our cultivated ones to try and get a vinifera type that will be resistant.

But what had happened there was that apparently in the hundreds of years that they were introducing vines, very often the Muscat was introduced. So apparently these few vines that they were able to keep going for a number of years crossed with the stuff in the jungle, the "Criolla." And these vines, I guess, came up spontaneously. Some alert person then came in, took the vine, and moved it over to his home. So we have a race, really, of these varieties, three or four of them that are very outstanding that they call simply Criolla. This, by the way, is interesting, because it's the same name you find in Argentina for the Mission grape, since the Mission grape was the first one introduced into Latin America. In Argentina, at least, it's called Criolla, which means it's something that's developed as a native hybrid.

This was really a new type of grape so far as we were concerned. The Venezuelan government now knows that the growers do have a point and they're going to go ahead and support a program of improvement. We do just a little bit here; since we have the varieties, we make the crosses here and send them the seeds or the young vines, and then they're going to fruit them out, select types for their own area down there. In the meantime they've sent a student up, a student was here for a few years, who is trained in how to select and produce new varieties. So it's been a very nice project.

Teiser: Is Davis a kind of center for the American continents' grape development programs now?

Olmo: Oh yes, I think without doubt the center is at Davis, yes. And of course now New York is developing quite a large grape breeding project to get cold resistance and better quality into their wines.

Teiser: I presume we don't work with them especially, do we?

Olmo: We do, we sometimes trade material and ideas and notes; to that extent we do. We trade varieties. But usually their problems are very distinct from ours; we can't help them directly. Like cold resistance in the winter, we don't worry about that but they certainly do.

VINE BREEDING IN EUROPEAN COUNTRIES

Teiser: Are there other aspects--?

Olmo: I think one attitude has changed: in the early days, I remember when I was studying in France at Montpellier, the general consensus was that really trying to cross varieties together to produce new varieties was not very profitable. In fact, they had no such program. It's difficult to understand why they would have that attitude; in other crops they certainly improved varieties by crossing different varieties and strains. I think that came about largely because the French breeders got into producing these hybrids with the American grapes, and in general, they just happened to be unfortunate in choosing some of our poorer species from the standpoint of fruit quality, wine quality. So they started producing these hybrids which were vigorous and fruitful, but the wine quality was low. So all of the grape breeders in France really had no or very little government support; they were doing it just as a hobby, as an effort they liked and so on, without really any government support or even encouragement.

So this went on and on, and there were quite a few of these breeders in France that did this, but very few of the varieties ever got planted anywhere. Now the situation is such that the ones that did get planted were mostly valuable, not because of the phylloxera resistance that they hoped to bring in from the American vine, because they lost that in the crossing--they were valuable because they, for example, would give you a good crop after a frost and they were also much more resistant to diseases of the fruit and the foliage than their own varieties. So they got to be planted especially in the south and the southwest where conditions were rather poor for the best vinifera varieties.

But what it did do, I think, was that it more or less turned the academicians, the professional people who could put in a program of their own away from the idea of improving

Olmo: varieties, because most of these varieties were of such poor wine quality that they could see no point in going on. And more yet, the varieties that they had produced by simply crossing varieties, which they did very early--Henri and Louis Bouschet produced some of the first standard grape varieties--these varieties, although they are improvements in certain respects, did not have very good wine quality.

So really, they had no evidence that they could improve the vine very much. But now I might say that they've completely turned around in their viewpoint; right now they probably have a much larger program than we have, and it's doing pretty much the same thing that we have been doing now. So at least it's encouraging to see that their point of view has changed.*

Teiser: In other countries in Europe is it the same?

Olmo: Yes, it is. Now in Germany they've been doing vine breeding work for a long time. Professor B. Husfeld, he just died about two years ago, but he was in charge of the vine breeding work long before the war. I remember visiting, even before the war in Europe, when he was working at Müncheberg outside of Berlin. And I remember, he had an interesting experience later: when the Russians invaded the country during the war, why he simply got permission from the government to move out ahead of time, and he even dismantled the greenhouses and moved them out over to the West (Pfalz) which was a smart move because he did save everything, saved a lot of his cultures as well. He built up quite an institute there, near the city of Landau, just devoted to vine improvement, the Institut für Rebenzüchtung at Geilweilerhof.

There were certain difficulties in these European countries, however, because they have a traditionally established variety list. For example, for an appellation wine, you can't use any variety even if it's a new one; you've got to stick with a certain established variety or varieties. So you can see what this does. It limits your new variety to a region that really hasn't the best conditions to grow grapes from the standpoint of quality. It would be much like their telling me that, for example, if you have a new variety you cannot test it or plant it in Napa County, because the Cabernet Sauvignon is the recommended variety there and no other variety can be used. And

*See also pp. 48-50.

Olmo: the law is just that strict in France. So you see, the breeders have certain curtailments that are really difficult.

Teiser: In Italy they have a number of government stations, don't they?

Olmo: They do, but they've never gone into breeding as such on a large scale. Again, it's been an amateur effort, although a good one from the standpoint of table grapes. There's a Professor Alberto Pirovano in Italy; he worked right outside of Rome, and he produced a number of good table varieties. One of these we introduced into California, the Italia, which is a good commercial variety now; it's a large muscat.

Teiser: That's where that came from!

Olmo: Yes, I brought that in from Pirovano's station. It's been the only one of his really that's been important here. He's introduced many others but they haven't been too satisfactory. But that one has been worth all the effort; it's a good variety.

Teiser: You've mentioned Yugoslavia. Does it have a breeding program?

Olmo: They have one now but it's rather recent compared to the others. In fact, many of the countries in the Eastern Bloc have good programs. Rumania has a very large program with an extensive staff.

Teiser: Will there ever be a world congress of grape breeding experts?

Olmo: Well, there is right now, in a couple of weeks. There's a first International Congress on Grape Breeding that will take place at Geilweilerhof (that's near Landau) at the end of the month, the 25th through the 30th, I think.

Teiser: Are you going?

Olmo: I'm going and I'm taking Helen. I wish I could stay an extra week, because the cost of the fare is just about double if you go for five days. If you go fourteen days or more, your fare is just about half.

Landau is in the Pfalz, the wooded, hilly vineyard area; it's beautiful territory. And that of course is Husfeld's old station, where he moved his stuff after the war. And he set that station up there and it has developed since then. Now Husfeld has died, of course, and there is another man in charge,

Olmo: Dr. [Gerhardt] Alleweldt, who was originally a Canadian, German by adoption. He speaks English quite well, been in contact with many of the English-speaking workers.

So now they're having an international congress--

Teiser: Is that significant that there should be one?

Olmo: Yes. It will be an interesting one because most all countries are represented. Russia has a number of people coming and the Eastern block is well represented. We have three people who'll be going: myself, Dr. [W. Mark] Kliever and Dr. Lider from our department. This represents really the most people that have ever come from our group to attend the meeting. So I think that's very nice.

And then there'll be another international symposium in Mexico at the end of October. So there's just lots and lots of meetings, lots of activity.

Teiser: On grape--?

Olmo: On grape development in general.

PORTUGUESE PORT VARIETIES

Teiser: Are there other international activities that should be mentioned?

Olmo: Well, many of the trips I made to these countries were with the view of obtaining varieties or studying varieties, especially obtaining them and introducing them into California. In 1938, I collected a large number of varieties from Montpellier. I went to Portugal in 1939 to get their important varieties. I arranged a large collection of German varieties which were sent by Professor Moog* in 1939. In 1951 I went for the California Wine Institute to study varieties in northern France and Italy. In fact, that started almost with the beginning of this certification program.** In other words, we actually started the idea of taking these varieties and indexing them and so on.

They had to be held in quarantine when they were brought in. We built the first little quarantine house for grapes on

*Herman Moog

**See pp. 30-34.

Olmo: the Davis campus to take care of this importation--just a little place half the size of this room,* but all screened. So these varieties had to be held there. Now these were varieties that were later to become important. They were selections of Pinot that were obtained in Switzerland, they were selections of varieties from North Italy that we did not have, and several sherry varieties. And these have since, of course, been certified and they're now used in the industry.

I think the Portuguese introductions were made earlier than that, but again, I selected those out and we brought in a series of varieties, of which some are now common port wine varieties; Souzao, I believe, were brought in and a large group of other port varieties. Tinta Madeira we imported, but I think it was already here; I'm pretty sure it was, but perhaps not known. I remember it was my first taste of obtaining publicity and not wanting it, because when the varieties arrived, a reporter got the story into the newspaper and said all of these new varieties have been brought in to Davis from Portugal for port wine production, and if you wanted any of them you should write to Dr. Olmo! Well, of course, I said no such thing, but about three weeks after that Dr. Winkler's office was just piled up with letters, you know, because they were going to get them free too--they gave the impression that these varieties were just going to be distributed free. Well, they weren't even ready for distribution because we only had one or two cuttings of each. But for a long time we were just answering correspondence, and that certainly was a good lesson, that you have to be very, very cautious about getting free publicity when you don't want it.

I think one of the early people to take that collection was [Antonio] Perelli-Minetti. You asked about him. Old Mr. Perelli-Minetti took some of those collections after several years and started them in at Delano, and I think from those plantings there've been a lot of others. He wasn't the only one but one of the first, I think, to try them.

*The room in which the interview was held is about 18' x 18'.

CALIFORNIA HISTORY

Teiser: When we initially wrote you about the interview, you said you were carrying on work on a county-by-county history of wine and grapes in California and also a history of fruit growing in California.

Olmo: Well, I was always quite interested in the history of grapes and wine, especially in California. I got into it more or less, I think, intensively when the Folsom Dam was to be built, because I found out that the construction site would erase several dozens of old wineries and vineyard sites from the early days that were still there--at least there were traces of them. The wineries, in many cases, were still there, the structures. And some parts of the vineyards were, but a lot of them were abandoned. There used to be a very intensive grape and wine industry in those foothill areas, and the Folsom Dam was going to take out quite a few of them.

So through one of the government people who was working on the historical end of the project up there--they were doing things like relocating cemeteries and things like that--I got pulled into it. He said, "Well, you should do something on this because once the water covers it up, goodbye."

So I had a lady that was helping me a little bit, Mrs. Hazel Hendrickson. She was the wife of Dr. Arthur H. Hendrickson in Pomology, and she was very methodical and careful on her facts. She did much like you're doing right now; she used to go out and interview. We didn't have tape recorders at that time, but she did take shorthand quite well.

She took many notes from these pioneers up in that area in shorthand, and we also took a lot of photos of these old wineries and the properties and so on. So we have a very good history of most of El Dorado County, where Folsom Dam is located. So that just led from one county to the next, and we decided the only way we could do the whole history was to do county by county. So we have a file actually by county, which has persons first and the history as far as we could get it. We went into these personal interviews quite frequently, wrote them up and then filed them. And then eventually, we get this all filtered down in the variety file, because in essence this is what we're trying to do--trying to find out the history of these varieties and their use over the years. So in the end we'd always come down to interest in varieties. But along the

Olmo: route it was interesting to meet a lot of these people and talk with them and get information.

Since that time we've tried to keep up some interviewing and also records in practically all the counties, and we have done quite a bit of library research, but there's a lot more to do. We've kept a pretty big file, two big steel cases, on this history work. I hope when I retire to get in and put it together.

Some very interesting things happened in the course of that. There was a very prominent grape grower in the early days called Nickerson. His farm was in Doty's Ravine, which is just below Folsom Dam on one of those slopes. I think his original property now has been more or less erased. But we were tracing back the history on him because he was one of the most important early pioneers in that whole area. And they had an extensive vineyard and orchard, and so on.

Well, one interesting thing happened in tracing down Nickerson's history. We did find out that one of Nickerson's granddaughters was still alive, and we located her up in the little lumber town of Camino, in El Dorado County there. Her husband was apparently a lumberman. It was rather a run-down little house, and she was of course very apprehensive about telling me anything about her grandfather. She was suspicious to begin with. But eventually I assured her that I was just interested in getting some of the history if she could tell me anything about it, if she had any books or notes or anything from her grandfather's time.

And a very peculiar thing happened. She said, "I don't remember having anything at all of his, but last week I did notice something out in the yard. One of the children was playing and there was a little pot out there and it had some writing on it, and she said it had something to do with Granddad, but I don't really know what it was." I said, "Well, do you mind--do you know where it was in the yard?"

It was a pretty fallen down place. We stepped out the back door, and here was a little boy just as dirty as can be (I guess about five or six years old) scooping mud out of a hole, and sure enough, he had this little round bowl. And I said, "Well, can I look at that?" And of course he wasn't willing to part with it; it was a plaything. But then she took it from him, took it in the house and washed it off. Well,

Olmo: you know what it was, it was a silver bowl that had been given to Mr. Nickerson in 1858 as the first prize for an exhibition of grapes at the state fair. It had one leg gone from it, a little dent in the other side, but polished all up it was beautiful. You could read all the writing on the award and everything. So I asked her if I could have it, and she said, "Why certainly." I said, "I want to keep it and give it eventually to the University, because it's quite a prized thing."

Well, she was delighted. I told her, "Can you think of anything else?" And she said, "No I can't. That's the only thing I've ever thought about in relation to my grandfather." That was quite a coincidence.

Then many others happened, which made me realize that I should do more in the history, because time moves along. I had that experience with Blowers; Blowers was an early day grape grower at Woodland. In fact, he did start much of the raisin industry. He had many other firsts, like dehydrators; he built dehydrators. He had a pumping system for irrigation water and so on. So he was quite a pioneer. Well, his property actually is pretty much where the Woodland fairgrounds are today. And some of those old olive trees certainly go back a long time. He was important in the table grape industry. He was the first one, say, to introduce the Emperor grape, and he made it a commercial variety. Well, the story is interesting. There, just by happenstance again, I located again, the granddaughter of Mr. Blowers, she lived in Woodland. And again, she was reluctant to even speak about her grandfather. But finally she took me over to the house; she was trying to move everything out of it in haste. It was abandoned, and the furniture was stacked up ready to move out, but everything was covered with spider webs and dust and hadn't been opened for weeks and weeks.

She took me in, and I was just shocked. I said, "Doesn't anybody stay here? Isn't this dangerous to leave this house for vandals to get in?" She said, "Well there's nothing here of importance." So I said, "Well do you mind if I look around a little bit?" I said, "Did your grandfather ever have any books or leave anything around?" So sure enough, she does down to a first floor cellar, opens an old rickety door that was falling off the hinges. And here in big stacks is a lot of books and pamphlets, and all this stuff. Well, I got frankly a practically complete file of these early bulletins from the University and the Viticultural Commission. Some were stained

Olmo: up but they're in good condition. I got a whole set of Bancroft's History of California, leather-covered. They were just covered with dust, but actually they were beautiful.

I got the impression that she might need some money. I think it was around '35, and I wasn't too rich; I'd just been married and I was short of pennies, but I told her, "I would at least like to have the Bancroft set and take all those other papers, and I think I could get \$40 for you, but I'll have to pay you in two installments." Well she thought that was all right. She said, "As long as it gets out of here; no one's going to do anything with it." I said, "No, I'd rather pay for it, because I do know the Bancroft books are at least worth that and maybe more if you took them out and sold them on the open market." So she said, "No, I'm not interested in them. If you want to take them, take them." So we went up with a truck, and I loaded I don't know how many boxes of all these books and circulars. And I even have some old journals of Blower's in his own handwriting, his day-by-day sales. And we've got them there at the department at Davis.

This was a very good example of timing, because I think about three months later the house burned to the ground.

Teiser: You are also doing some work for the American Pomological Society?

Olmo: Yes. It's going to be on the history of fruit growing in California, but mostly in relation to the University and the Experiment Station. It's a large assignment. There are so many people involved. I never realized that we had so many people in agriculture, but mostly on the fruit growing end. It has to take into account Riverside and these other experiment stations as well, so it's a long, drawn-out thing, but I've been at it for about a year now. They're going to be impatient with me pretty soon, I think. But the sooner they put pressure on me, the better.

Teiser: Is it to be part of a series?

Olmo: I think it will be a general history of pomology in the United States and Canada. It's a regional book, state by state. I'm sure they've asked other people to do the California section but they haven't had very much luck. And they got me at a bad time, I guess, and I just said, yes, I would try. I've got about

Olmo: two-thirds of it done now, but it's taken lots and lots of time, a tremendous amount.

Teiser: I suppose there's no one that's really as well acquainted with it as you.

Olmo: Well, I was rather lucky.

RESEARCH ON CITRUS DISEASE

Olmo: I didn't tell you this--but as a student, I spent a summer and a semester at Riverside in citrus, so I did have a little background in the citrus end of it.

That was another little duty I did. At the time I was in Brazil there was a disease sweeping through the thousands of acres of citrus and killing off the orchards. They call it "tristeza"--sadness. And it was sadness, because you'd look at these orchards and they were just sort of dwindling away. They'd sort of turn gray and then lose production and then just die like little sticks. At the time I knew Professor [Howard S.] Fawcett, who was a world famous citrus pathologist at Riverside. He was already old when I knew him. He must have been up in his seventies, very nice old gentleman. He heard that I was going to Brazil, and he called me up on the phone and said, "By the way, would you please take a day and come down here and look at some trees with me?" He said, "I've been reading about this tristeza disease in Brazil, and I don't think we have anything like that, but sometimes I wonder if there is a resemblance." Well, I said I'd be glad to.

So I took a day off, and he took me to some orchards, one of them I think near Corona--several of them in that area. I took pretty good notes on these trees and looked at them and got all the information from him that I could. There were these areas of trees that were dying out, orange trees, beautiful groves, and they'd just sort of get weak and quit growing and die.

So when I got to Brazil I got ahold of one of the citrus men, Sylvio Moreira, there and tried to get information on this, and he took me on many field trips. And at that time the cause of this trouble was not known. In fact they had asked a specialist to come in from Florida, a Dr. Arthur F. Camp, a citrus

Olmo: authority. He came in and studied it over, and I did assist him a little bit. And he came to the conclusion that it was nutritional. It was just that the tree wasn't getting the right type of nutrition, lacking this element or that. That was his report, which didn't seem very logical to me.

So then when I came back to California (remember I came for that several months)* I again saw Dr. Fawcett. By that time I had some pretty good pictures, all the evidence I could get on the disease down there. And then I returned to look at the trees again with Dr. Fawcett, and I came to the conclusion there that it is just about the same thing, and it's very likely that it's some kind of a virus trouble.

Well, he was not willing to accept that. He was just apparently scared to death to even think of having tristeza in California, so much so that after I returned he said, "Well, don't write this thing up. Don't mention it, because it's liable to cause alarm and we're not sure of it." And I said, "Well, that's true."

Well, when I got back to Brazil it began to worry me a little bit, because I just felt, "If this thing is causing so much damage here, and it might be the same thing as we have in California, why shouldn't we be more alarmed about it?" So then I got ahold of Dr. Moreira, and I worked with him on it to try and get some more information. We finally got our backs together and just put out a couple-of-page article on the correspondence between tristeza and the "quick decline," as they were calling it in California. So we just compiled all observations, and they seemed to correspond in every respect. And that's where we left it. We said, "Well, if the disease has been this important in Brazil, where it took out thousands of acres of orchard (it was really a calamity) then perhaps it ought to be called to the attention of somebody else."

So the Citrograph was all for publishing it, but before it was published there was some objection to it in University circles. And I don't wish to mention names because it could happen to anybody; I would probably do the same thing if I were in the same position. But nonetheless, after some months at least, it was published, with a little revision here and there which didn't mean much. But it did set the stage for a really large-scale endeavor, especially on the part of the U.S. Department of Agriculture, because immediately they looked into a

*See p. 131.

Olmo: similar situation in Florida and they sent down, I think, three specialists in virus diseases to Brazil, and then the work was stepped up very, very considerably in California.

So I think this little note did spark a lot of action.

Teiser: It was proved to be the same?

Olmo: Yes, it turned out to be exactly the same. So our prognostications were correct. Of course, one thing about it was that here I was not a citrus specialist by any means, I was a grape man, but nonetheless I just thought that we were quite certain about it, and I had worked with citrus, you see, at the station, and I did know something about diseases. In having the opportunity of looking at the things in both areas, which no one else had done, plus the backing of Moreira, I felt quite certain that we should do something about it, should put something out. But there was this delay, and I had a few unhappy moments for a while. But it went through quite well. That was my only real foray into citriculture. But at least my training in that period at Riverside did do some good. [Laughter]

CONSULTING WORK AND A.S.E. AWARD

Teiser: Are you doing any consulting work that you want to discuss now at all--other than for the government?

Olmo: Yes, I do quite a bit of consulting work, but not as much as I could do. I do not like the rule that we can do consulting on University time; I think there is some permission to do it a day or two days a month. I've never done it; I really don't think it's correct. I think it may lead to abuses. So what I do is that first of all, I will not be a consultant for any firm on a yearly basis, because they more or less will demand time of you at any interval, and I just don't like that interfering with University duty. What I do tell them is that I'd gladly serve as a consultant if they take one day, and it has to be a Saturday or a Sunday or a vacation period, and then I'll spend a day and go over problems or discuss things, and so on, and then keep it on a straight fee basis. And that's the way I do it. I've built up the fee so very high now they don't bother me too much. [Laughter]

Teiser: We should put on the record that when we set up this series of interviews, you said that you would not take University time for interviews, but do them on weekends. So that's what you've done.

Do you have some comment on the recent merit award you've been given by the American Society of Enologists?

Olmo: Well, I think it's probably just in recognition of these new grape varieties that are now coming out. And I think perhaps there'll be much better ones now coming through. I think it simply just reflects back to the fact that we have worked with a lot of people and we do have a lot of friends in the industry. That's what it means more than anything. I think so.

Teiser: Well, I don't know. The list of previous award winners would indicate that those are all people of solid endeavor, and all quite different.

Olmo: Well, I think it's nice that since I'm mostly working on varieties and am more of a viticulturist than a wine man, that they think it's important enough--at least these new varieties are important from the standpoint of the wine industry. And that's pleasant enough.

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H. P. OLMO

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