

Leo McCloskey

He was born in San Juan, Puerto Rico in 1949, the son of an Army Air Corps officer, but he grew up in San Francisco and came to the Santa Clara Valley in 1958, where he graduated from Cupertino High School. *Leo McCloskey (LMcC:)* is today one of the younger historical characters in the story of the wine of the Santa Cruz Mountains. He went on to college at Oregon State University, where he got his B.S. in 1971, and, after going to work for Ridge Vineyards, received his M.S. at San Jose State University in 1974. Two years later he was the winemaker at Felton-Empire and in 1984 received his PhD from the University of California (Santa Cruz) in Chemical Ecology. He is also a lecturer there in wine chemistry for "An Analytic View of Wine and Wine Chemistry," (Chemistry 80d). He is currently working on a book for winemakers on "how the aroma, flavor and pigment chemistry of wine are linked to the sensory and economic value of wine." He has been working as a consultant (McCloskey, Arrhenius & Co.) for wine producers for many years and includes among his clients today some of the most prestigious names in the California and European wine world. His laboratory is in Santa Cruz where these interviews took place.

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CS: How did you get started in wine, professionally speaking?

LMcC: I was a graduate from Oregon State University, the summer of 1971, and I went to work in July for the San Jose Parks and Recreation Department. Then I started looking for a job as a biologist. I looked at Syntex and was offered a job there as a biologist in a research group working on Naproxyn, which is a heart drug. One the the people involved there was Carl Djerassi. But three days after that job offer from Syntex I ended up at Ridge Vineyards.

Working at Ridge

CS: He was part of the new partnership at Ridge since 1967.

LMcC: Right, and Carl was a person with deep pockets, providing Ridge with sources of money at that time, which I didn't know anything about, since I was a twenty-one year old. I went to work there after being interviewed by Dave Bennion. I want to insert here that Hew Crane and Charlie Rosen were there and I am sure they had something to say about my hiring. That was a Thursday and I went to work on Friday.

CS: What did Bennion do to get you to take that job, for what was then a sort of a seat-of-your-pants operation, instead of working for Syntex?

LMcC: He offered me a job, straight out, within two or three days of our interview. I was looking for an alternative type of job that was a bit different than a research job in a drug company like Syntex. But at that time I had no intention of being in the wine business. Then the wine operation was just at the lower winery on 17100 Montebello Road and they were painting wine barrels with mildicide, I recall. That was an anti-fungal sort of varnish. So I met all of them, the Cranes and the Rosens, and their children. These people were just hanging around the barn at 17100 and having a great time during the vintage. It was October of 1971. These were alternative people. These were adults who were looking at people younger than themselves and saying, "I'll go back and do that." They wanted to

do something with that 1960s-ethos. This was a little later and they probably hadn't taken part in the summer of love. I can remember their "make wine not war" stickers responding to the Vietnam thing.

CS: I was really attracted by those McCarthy stickers I saw up there in 1967-68. I took it for granted that wine people were very conservative politically.

LMcC: Here you saw people who were professionals melding their professional ethos with that of the sixties.

CS: So you liked that, the job with them under those conditions.

LMcC: It was the job but also the feeling that you were going to be a cog on a wheel. It was completely open-ended, and that was what interested me. This was going to become something. You couldn't miss it. This man, Dave Bennion, he had so much energy, he was on fire. He was an entrepreneur, in that he was absolutely not afraid of taking a risk.

CS: What was your background relating to wine itself that would hook you to this kind of thing.

LMcC: I think it was an accident. I happened to walk in the door at the right time. Ridge was expanding, along with the whole wine industry in California.

CS: Were you a wine drinker?

LMcC: I was a person who was drinking such things as Sebastiani Mountain wines as a college student from 1968-1971. These were wines, mostly varietals, that were good wine. I'm not sure whether Sebastiani was real wine then, but I was drinking it.

CS: Hell yes, so was I.

LMcC: Another reason for working at Ridge was that I was close to home. I graduated from Cupertino High School, and Ridge was on the hill above Cupertino.

CS: What did you do there at first?

LMcC: For about the first 90 days I worked at 17100, the lower winery, painting wine barrels with a mildicide. By December I had started developing a laboratory for Ridge in my mind and I presented this idea to Dave Bennion and then later in about February of 1972 to Paul Draper, who was working at the 18100 upper winery.

CS: How did you get to that?

LMcC: Bennion knew that that was what I was interested in, namely the technical side of winemaking. He personally introduced me around the American Society of enologist annual meeting of 1972, in Monterey. He saw me as someone who eventually could provide some technical expertise. My fantasy is that he wanted to provide Paul Draper at the 18100 winery with expertise. At first it was really very basic. I didn't have a degree in enology; as such, I didn't know anything about wine chemical compounds. But I did know about the fermentation process and the biochemistry of yeast fermentation, because I was a biologist.

The first by-product I had to watch out for was the formation of acetic acid. But more important was monitoring the malo-lactic fermentation. Paul Draper was the person who introduced systematic malo-lactic fermentation at Ridge Vineyards. So I developed a paper chromatography

technique to monitor the malo-lactic fermentations. The Ridge wines were not all going through malo-lactic.

CS: How about *Brettanomyces*?

LMcC: There probably was some of that there then in 1971, but no one really knew that much about it at that time. That term didn't arise in California until about 1974-75. Robert Mondavi Winery went public with the fact that they had it in a big way. It was coming in from Lodi on grapes or wine that they were crushing and bringing over to Napa. But I don't think that we were heavily infected in 1971. *Brettanomyces* infections were a part of winemaking by the late 1970s. I clearly recall pointing this out to Paul Draper with the 1979 York Creek Zinfandel which had become a problem for the sales staff.

CS: I can recall that they had some Lodi wines in 1969. Do you remember Fox Road vineyard? I recall that there was a problem.

LMcC: I recall two things with those wines. First, I remember somebody driving into the driveway at Ridge, with three bottles of Fox Road Zinfandel. It was amber colored, like an old rosé. And this wine was fizzy in the bottle. He uncorked it in the parking lot. And remember Dave Bennion saying that this wine was fine. And he meant it. That kind of problem just wasn't all that important to the small wine industry in the California of 1971. Second, memory tells me that Paul Draper began to add to the winemaking philosophy at Ridge. He was the person who wanted to stop making the Lodi Zinfandels. He begins to refine the basics that were introduced by Dave Bennion.

CS: Dave was truly tolerant. And he wasn't trying to kid anyone.

LMcC: The big effort at that point was to bring single-vineyard wine to the consumer. That was the "holy grail" then and Paul Draper focused on refining the source of grapes in an effort to improve the bottle ageing potential of the wines.

CS: So there were problems. It wasn't just the idea that "we need a lab man."

LMcC: No, not problems. I give them a lot of credit. I would say they all anticipated that there could be problems if they did not develop quality control concepts for premium winemaking. The good thing was that at least 70% of the Ridge wine had completed their malo-lactic. Most wines were stable and just fine.

CS: You were coming in with the 1968 wines. The Cab was really excellent.

LMcC: Truly excellent. I don't really think that Ridge, at that time, was having micro-biologically problems on a large scale. I think that things were in pretty good shape.

CS: About the time that you went to work there I started hearing rumors about bacteriological problems and connected your coming with an attempt to head off and correct a potential disaster. See, I'm getting this picture of a guy who's been brought in to solve some serious problems.

LMcC: No. That wasn't it at all. I didn't hear any of that. I'm practically still a student. It wasn't so bad, but they couldn't go forward using the techniques they had been using. They were increasing production and they were having the classic problems of scaling up. They were having to manufacture a commodity now. This was no longer a product made almost on a home winemaking scale. It had to have a solid degree of stability.

CS: Yes, and when I looked at my charts of their gallonage production there is an almost exponential rise in production now.

LMcC: They wanted quality assurance and quality control.

CS: Considering what you were coming from, there is obviously an educational process taking place for Leo McCloskey.

LMcC: A huge learning process. But it is interesting that the technical state-of-the-art in 1971 is still that today. There still is no winemaking text written by a winemaker, or from a winemaker's point of view, or a winemaker's experience about California wine production. But back then there was, and still is, the University of California's *Journal of Viticulture and Enology*, published at Davis. You can read articles in this journal and gain a good sense of what wine chemistry is, facts about fermentation, what is known, and you can find out quality-control techniques. But it is quality-control for the primary chemistry of wine. It is the kind of chemistry that Pasteur was working with from 1835-1865. Alcohol levels, malo-lactic, the basic chemical events in the production of wine had been known for a hundred years. But in 1971 was not a text and there were very few articles about winemaking techniques such as were being used at Ridge. This included sur lie, fining, barrel ageing with white wine, and Ridge's submerged cap fermentation for reds.

CS: I know about Bennion's little submerged cap device back then, but sur lie?

LMcC: Dave was combining a regimen of benign neglect for whites with some special techniques for reds. They weren't doing a methodical sur lie, such as Dick Graff was doing at Chalone or Mt. Eden. David Bruce had tried it also. At Ridge most of the whites were fermented in what they called their "pickle tanks" and then they racked it into barrels after about ten days of fermentation. As yet they hadn't really done barrel fermentation with sur lie. They really don't get into what we are calling a sur lie regime until 1984 when Paul introduced the technique for the first time.

But going back to my education, in 1972 I read six straight years of the ASE Journal and I read *Technology of Wine Making* (Amerine, Berg and Cruess). This helped me to bring these quality assurance and control techniques into play for Ridge.

CS: How about the culture of wine? A minute ago you and I were talking about a certain fifth growth of Pauillac, but I doubt if Leo McCloskey out of OSU in 1971 would know anything about that sort of thing.

LMcC: I got a powerful sense of wine tasting at Ridge from Paul Draper and Dave Bennion. There were some winemaking skills to be developed there. There was very little modeling going on; there was a lot of tasting.

CS: But they did bring in those barrels from France of the 1966 and 1967 vintages to bottle here. You couldn't escape comparisons.

LMcC: They were tasting those French wines and hoping they could make wine as good, but there was no work on modeling French techniques yet. As yet they had not gone to a Bordeaux chateau to see what exactly they did to get that effect. There was no one at Ridge who had had any hands on experience in France. I did not provide French techniques.

I read Schoonmaker and Lichine. But right then I remember going down to Cupertino and going up and down looking for German 1971 wines. I loved them. I came to think that German wines were normally like those '71s.

CS: You just happened to pick one of the great years of the century. Many of them are still very good.

LMcC: So that 1971 German wine was my first powerful experience with really fine wines. It was just then that the French wines were going way up in value. They got beyond my pocket book.

CS: You're absolutely correct. When I bought my 1970 Bordeaux futures I paid far less than half of what people were having to pay in 1972-73 when they started to arrive.

LMcC: We'd have such Bordeaux wines now and then at Ridge at the parties up there. And the harvest party dinners. But not a whole lot. Ridge was really a California wine operation. Charlie Rosen and Hew Crane were not into French wine yet.¹

CS: Dick Foster was, but he doesn't really come onto the scene until after 1967. Charlie Rosen told me that Dick was the only one of them who really knew anything about European wines at first.

You started work at school again almost right away.

Academic Matters

LMcC: I enrolled at San Jose State in 1972 and started working on my masters. My thesis was on the development of an enzymatic technique to determine alcohol in wine and on a technique relating to malo-lactic bacteria.

CS: You didn't happen to know Lanny Replogle there².

LMcC: He was my major professor. He was my thesis advisor.

CS: We both went to Hayward High School at the same time.

LMcC: He got part of his interest in wine from having me as a student. He and I wrote a paper on the enzymatic analysis of alcohol, my first publication, for the ASE Journal. That was in 1973, I think.

For me that was one of my career roles. When I left Oregon State I was first thinking of doing a PhD up there in the area of the history of science. I remember my advisor saying that one of the things I should do was to publish a paper soon. So by the end of 1972 I had done everything I needed to do to put this paper together.

CS: It is extremely rare for anyone from SJSU to have a paper in the ASE Journal. You and Lanny may be the only ones ever.

LMcC: Another person there who helped me was Leon Yengoyan. I went back in 1979 and worked with him on high-performance liquid chromatography. He is a biochemist there. Then we published a paper together that went into the University's 100th anniversary symposium publication. That was in 1980. Then I went back to school at the University at Santa Cruz.

But those Ridge years were years of building the laboratory there that did the quality control work. That is really what I did there from 1971 to 1974. We equipped the Ridge lab to be the leader in enzymatic analysis for wine in North America.

¹ See Ridge interviews I and II.

² Replogle recently retired as a professor of chemistry at SJSU. In 1980 he and his wife, Fran, founded Fenestra Winery in the Livermore Valley. See *Wines & Vines* 12/1/80; *Oakland Tribune* 7/28/89.

CS: Is this where you're getting into this flavor analysis.

LMcC: No. I'm not even thinking about flavor yet. We were still re-inventing the wheel.

The first step in Ridge's development had to be the quality assurance techniques for primary chemistry. That was the first four year program. We moved our malo-lactic determination from paper chromatography to an enzymatic assay. That was with the spectrophotometer. We were in the vanguard in that area.

At this time I am having people coming down to see what we're doing. Lisa Van der Water came down from the Wine Lab. And Marty Bannister from Vinquiry. But they had yet to start their companies at that time. They are actually at Ridge Vineyards and Santa Cruz and learning how to do these things. Lisa actually worked once or twice in the lab at Ridge.

We used to have some pretty wild meetings in the evenings back then at Hew Crane's and Charlie Rosen's houses. I had never met anyone in my life who actually wanted to stay up until two in the morning to talk about such things as buying a piece of equipment like this. They were going to purchase it anyway, but they wanted to talk about it. It gave everyone a great excuse to mull over all kinds of things. I think that this kind of meeting was the sort of thing that was driving Ridge back in those days. The equipment we were talking about didn't amount to more than a few thousands dollars, but such things always involved close, personal scrutiny. They really wanted to understand things.

CS: And they do have a little bit more money now with all the new partners.

LMcC: I think that we were the only winery on the West Coast with a phase-contrast microscope. We can feel it too. We know it. At least I can recall a lot of pride regarding our science. We were the first winery under 10,000 cases to have a spectrophotometer. In 1976 we put in for a patent. It was a patent for the enzymatic analysis of acetic acid in wines, and for ethyl acetate. And this ended up being tested at the VA hospital in Mountain View. They wanted to see if they could use this in relation to their kidney dialysis unit; somehow acetic acid is important there. There was a Dutch scientist, Carl Vreeman, who worked there, and he and I worked together on this at the VA hospital. I gave the patent rights to Ridge and we tried to sell this patent and we almost sold it to this corporation in Germany. When they learned that we had used their own chemicals to develop this patent, which they would now have to buy. . . . Well, eventually they got around it and developed their own patent using a different series of tests.

CS: But did this have anything to do with Ridge?

LMcC: Originally yes. Everything we developed had to have something to do with something we were trying to do at Ridge. For example, in this case of U. S. Patent acetic acid levels at Ridge were probably routinely above .08%. And the legal limit was .12%. So we were always crowding that number. Ridge wines would often be right at the legal limit. So there was a very strong reason at Ridge to monitor the level of acetic acid in these wines. If there was a micro-biological organism on the loose in that winery, this was something that had to be controlled. And if it couldn't be controlled, they had to have a good test. Remember, they weren't filtering the wine until about 1975.

So, Ridge's approach to fine wine production was-- don't do anything to the wine, but test it, get the facts on it.

CS: But what can you do about acetic acid?

LMcC: Add SO₂, filter the wine or blend the faulty wine with unspoiled wine.

CS: Yes, but that doesn't get rid of acetic acid.

LMcC: It kills the micro-organism or removed the organism.

CS: So?

LMcC: And then you could blend the wine. Some of these wines became blenders. Maybe you'd have a Geyserville lot that had high alcohol, a little sugar, high volatile acidity-- so you blend it away with another lot.

CS: So, you are providing them with information-- this is the situation with this wine, and you have to do something about it. So they try to do it within the parameters of their philosophy of winemaking.

Bennion and Draper

LMcC: Exactly. Their philosophy was don't filter, don't fine, use small barrel ageing. But they still needed the facts; they were scientists. By then Paul Draper had arrived. He refined the winemaking philosophy.

CS: That's right, you come on the scene just as he becomes winemaker. He was there before, since 1969, but not as winemaker.

LMcC: Right. In 1971 there was a transition. Who was the winemaker? Essentially the winery had two winemakers for a time, Paul and Dave. We all thought of Dave Bennion as the winemaker, but both he and Paul Draper were acting like the winemaker. He had the title. There was a real transition in 1971.

CS: So far as the official situation there I understand that Paul was the official winemaker for the 1971 vintage. What I want to know from you is what you saw so far as the function of winemaker is concerned.

LMcC: I was working at the upper winery with Paul Draper. Dave Bennion came in and out of the building very frequently.

CS: This was in 1971.

LMcC: And in 1972 and 1973.

CS: How did things work? You were looking at the wine from the 1970 vintage and the 1971 vintage is taking place.

LMcC: The 1970 wines are at the lower winery.

CS: And gradually are moved to the upper.

LMcC: That's right. But they are still doing the bottling at the lower winery. They ship the wine back to the lower winery, about a mile, after they had put them in these pickle tanks, which are of cheap polyethylene material, on the back of a flatbed truck.

CS: What do you see happening up there concerning decisions about wine style, how long to do what, what to put into what, etc?

LMcC: Somebody says we're making such-and-such wine. This is what we do. That somebody is Paul Draper. But on a daily basis there is a crew, maybe ten to fourteen men making wine, crushing, syphoning, racking, etc. At that time Paul was there two or three days per week; he was living up in San Francisco then. So there are many weeks when he would not be there every day. But Dave was always coming into the winery. Now this became an issue. He was not the winemaker, but he knew how to make wine. He was there on a daily basis. And he could answer almost any question about making wine. Or at least he would attempt to answer any such question. He was a very gregarious kind of guy who loved to sit down and talk about winemaking. Often his talk would have a lot of winemaking philosophy in it.

CS: Well, I figure he had run nine vintages so far before 1971, if you don't count the goofy early ones before 1962.

LMcC: He's the man who we all see as having made the winery run up until 1971. Now he's hired Paul Draper to work for him. Both of them are moving in and out of the operation and it isn't totally clear who the winemaker is sometimes. Dave was still the boss, the president.

So I remember a couple of issues I had to deal with. These are really pretty historical. First, I have to tell Dave that it isn't working when he asks me what going on up at the upper winery, and I tell him, and then Paul doesn't like the fact that he has an inside view of what's going on as the result of what I'm telling him. Also, I may not understand what's going on, from Paul's point of view, and I may have relayed information that he doesn't consider accurate. So I told Dave, "This is nothing personal, but my loyalties have to be with Paul Draper, because he's my boss. That's the structure, and I can't report to you, because it causes some problems."

CS: It's a sort of chain-of-command thing. But did Dave have a problem with it?

LMcC: He didn't like it. He wanted friendly, open relations. His number one personal trait was getting close to people, trying to know them, spending time with them. That was very important to him.

CS: So he would rather keep up this rather informal exchange of ideas and information with you.

LMcC: That's right.

CS: I can see the other side of it. Paul doesn't want Dave to walk in and say to him that "I hear you've been putting methyl bromide in the Zinfandel," or such.

LMcC: Yes, but I also perceive that that was something that Paul needed. He wanted a structure, a chain-of-command, and that the people that he was working with could see that structure and work in it. He was in charge of winemaking, but it was rather unclear. He still needed to get a lot of information from Dave, even then. Dave was the entrepreneur who had established this single-vineyard concept, the idea of looking to France for a stylistic model, and he had built the model. Paul had to get information about the model while, at the same time, establishing a transitional period when Ridge was moving from an entrepreneurial operation to a more established, structured company with more formal relationships. Paul was doing production management and winemaking management and he was also starting to think about the marketing aspect of the operation in a different way.

CS: As we get down into the later 1970s how would you characterize the effect of these relationships on the wines themselves? Do you see any relationship with Ridge wines then and this tension?

LMcC: I don't see a negative. There is a sort of essential tension in all companies going from the entrepreneurial stage to the more structured stage that is good. It's good to have these tensions whether people feel good or bad about them or not.

CS: You can't think of anything really going wrong up there, so far as wine was concerned, as the result of these tensions.

LMcC: I don't think so. I think that these were smart men-- everybody was smart up there-- and everybody was well-intentioned about the wine. There was a powerful consumer orientation there. Their intention was to avoid mishaps, whatever the tensions. That's what I remember. Hew and Charlie knew that they needed to augment Dave's ability. Dave knew it too. So they hired Paul. And they knew they needed to augment Paul's lack of technical training.

CS: That's you.

LMcC: The other way to see Ridge, undeniably, was the release of wines. Remember I told you about the Fox Road Zinfandel that Dave wasn't concerned about it being a little fizzy. I see Paul's first impact, of historical dimension, was that he said that some of these grape sources will not work. And some of these are sources that go back before his time there. He begins this re-arrangement. Paul wants wines that will age.

CS: We should have drunk up those Lodi wines when we bought them.

LMcC: Paul took a stand on this. There were other lighter types. There was a *primeur* from Geyserville. He said that we shouldn't make these wines. We just weren't going to make these lighter wines from Region III that didn't age.

CS: But that kind of philosophical decision doesn't always come from the winemaker. More often it comes from the owner, setting a direction. Paul had to get this across to the owners.

LMcC: And he did it. That was part of his genius in that matter. He was really looking out into the marketplace. But not to the retailers. More he was looking at the actual marketing of the winery. What he was saying was that you couldn't go into a tasting with a Lodi Zinfandel and be talking about a French model for premium wine production.

CS: Or be talking about a 1969 Geyserville with a 1969 Lodi Zinfandel.

LMcC: So these changes are having an impact on what is going into the bottles. He is having an impact of philosophy.

CS: Where are we going? He sees the public relations aspects of tastings and the marketing aspect as well. It's like Ch. Latour making a Spumante. There the idea of a winery image.

LMcC: He came to winemaking from a connoisseur's point of view and was able to take Ridge and put the stamp of the connoisseur winemaker on it. That was his philosophy. He was not a person who was scientist.

CS: Do you recall any anecdotal story about wines in your early years at Ridge that might be interesting?

LMcC: I remember a white wine we made that was a mixture of Sylvaner and Chardonnay from Vine Hill. I was introducing fining techniques to the winery. I was working on eggs or some other agent. So I

had ordered some Sparkaloid from Scott Labs which was a mixture of some kind of cellulose product and a gelatin compound. We had decided to fine this wine. I talked with Paul about it, and with Dave, and I went ahead. I remember doing it late in the afternoon. The winery was empty and I completed the process and looked down into the tank and saw something moving. I ran and got a drop light and poked it down into this pickle tank and it looked as if there were manta rays swimming in the wine. There were no instructions on how to use this stuff, so I mixed it in hot water, and the result was these huge manta ray sheets of Sparkaloid floating around in the wine. It wouldn't settle. I sat down and waited on into the evening and was really getting nervous. I'd just recently been hired and things were going well and it looks as if I've screwed up this huge batch of wine. And this was my idea. Finally I called Dave later at night, maybe eight o'clock. So I told him about these huge sheets of jello in the wine. All he said was, "Don't worry about it." Things like that just didn't worry him. To him winemaking was not an emergency situation.

And the next morning the wine was beautiful. It was the first fined wine made at Ridge. It was also protein stable. I went on from then to develop a whole series of fining techniques.

CS: Well, that was a pretty good story. Can you remember something that didn't work out so well?

LMcC: There was the unbottling of the 1969 Geyserville Zinfandel, lot 24G, in 1973. Every winery has those stories. The 1978 Monte Bello Cab was unbottled after it had fermented a little bit after bottling.

CS: Did you ever have a wine go malo-lactic in the bottle.

LMcC: That's an example of the transition. I think Dave did. Paul was aware of this and part of his assignment was to avoid an ML in the bottle. He was particularly interested in tasting those 1971 wines in 1972 to see whether they had gone through ML. That year we used total-acid analysis to determine whether they had gone through ML. If we got a drop in TA we would assume it had gone through ML.

CS: My God, that is really primitive. You weren't even using paper chromatography yet?

LMcC: That we started with the 1972 vintage. In the summer of 1972 I worked on determining ML with the jar technique and the paper. I recall calling Professor Kunkee at UC Davis, he's an expert on ML, and asking him about the method, and he sent it to me and we had it going for the 1972 vintage.

CS: The spectrophotometric thing comes later.

LMcC: Much later.

CS: Let's talk about varieties now.

LMcC: Ridge was a Zinfandel house that made Petite Sirah, Chardonnay, Cabernet Sauvignon. And there were white wines from Vine Hill-- Sylvaner, White Riesling. The Cabernet came from the estate, but once in a while a few Cab grapes would come from the outside, but very seldom. It was about 90% red wine. Maybe 85%.

There were problems about the sourcing of the grapes. Paul came in and had a lot to do with making decisions that vastly improved Ridge's grape sources. He realized that the grapes coming in from Lodi were not making wines of the same quality as those from grapes coming in from a place like Geyserville.

CS: It's not too long before this that they start getting grapes from Paso Robles.

LMcC: Right, from the Dusi Ranch. And from the foothills along the coast. Both Draper and Bennion start pushing more for grapes nearer the coast.

CS: They did make some Amador Zin.

LMcC: Yes. One of the things that Paul did was to move to the Sierra Foothills and drop the Lodi Zin. This was about 1972 or 1973.

By 1974 we were getting Zin from Amador and I can remember it sitting in 2000 gallon stainless tanks after the harvest. But the best wines were obviously coming from the Geyserville area. The 1973 Geyserville had components that were really very exciting. Part of this was due to the fact that these were coming from grapes that were in mixed vineyards. They were called Zinfandel by Leo Trentadue, but actually there were several varieties, including Grenache, Carignane, Zinfandel, Petite Sirah and some Alicante Bouschet, and also some Cinsault. And there were even some white grapes that got in. I don't think they got sorted out until the eighties.

CS: Yes, there is a time when the Geyserville Zins eventually had the percentages on the label down at the bottom for each of the varieties. The 1990 label doesn't say "Zinfandel"; It just says "Geyserville," since the percentage of Zin isn't enough to label it as a varietal. I didn't notice that until someone called it to my attention. You see Ridge and Geyserville, you think Zinfandel.

LMcC: There was also the problem in the Zins of the seventies with very high alcohol.

CS: What about those Mendocino Zins?

LMcC: I remember taking a trip up there with Paul in 1973. We were looking at Zins way out on the ridgetops, at places like Zeni and Procillino vineyards in Mendocino County. We drove around looking for new vineyard sources. But there were few planted there then that would work at Ridge. The vineyards were old and often pure Zinfandel, but the acids were often very high and the wines were out of balance.

CS: I did buy some Ridge Mendocino Zins from the seventies that aged very well and were good drinking in the mid-eighties. But they had tart acid backbones.

LMcC: It's interesting to look at Ridge in those years and see how other producers were looking at their wines. I am sure they saw Ridge as sort of experiments. Such wineries as Robert Mondavi had people out of Davis who had the basic winemaking chemistry down perfect. But people were still looking at Ridge as being out on the edge. For them it was like having an experimental winery run for you for free. Those high Mendocino acids weren't where the fine wine industry was going. And you can see that today, and in France. Bordeaux acids are much softer than they were some years ago. And the acidic Amador wines didn't stick at Ridge either. Paul was important in this. He'd look at a grape source for two or three years, and we'd meet and talk about them. And if they weren't doing what we wanted, he'd cancel the contracts. That's what happened in Amador. We were out of there by the time the eighties arrived.

But for me Ridge was a place where there was no room up the organizational tree for advancement. It was always run that way. But I decided that I was really enjoying myself there; it was a fabulous interaction. They had an incredible flexibility. And there was incredible loyalty. Ridge was a place where, I decided, you could go out and try your hand at something else and stay involved with them. And this is what I did.

In 1975, at my father's urging, I decided to start my own company. I called it Santa Cruz Agricultural Chemistry, but it was really Leo McCloskey doing consulting. So I did that and cut my time at Ridge probably from forty hours per week to about twenty.

I really enjoyed what I was doing. First I enjoyed not going to Syntex and going to Ridge. I enjoyed the freedom, but I wanted my own company. But I wasn't thinking flavor yet. I wanted to take

these dozen enzymatic analyses I had developed, and my malo-lactic technology, and help other starting entrepreneurs, particularly with what I knew about the early years at Ridge.

CS: With your consulting company going now do you remain an employee at Ridge?

Changing Relationships

LMcC: In 1975 I went into a transition in my relationship with Ridge because I was in transition forming my own company. I should clarify that by 1976 I was working not only with Ridge but with Felton Empire, and in 1977 Smothers, then David Bruce. There was a large number of wineries. I formed this company to take advantage of the expansion in the California wine industry. So I was able to work as an expert on enzymatic analysis and the technology of premium red wine production, based on my experience at Ridge from 1971 to 1975. Another thing that got me ready was the consumer action orientation that I learned at Ridge. I got it from all of them, Hew, Charlie, Dave and Paul. Hew and Charlie were particularly important in this.

I decided by 1976 that Ridge was a client. I wasn't really an employee anymore. Their check went to Santa Cruz Agricultural Chemistry. We talked that over and I'm not sure when exactly that started, but it was 1976 or 1977.

CS: And that relationship comes right down to today in that manner.

LMcC: Right. They are a client

CS: Who were the first people you helped?

LMcC: The first people were at Monterey Peninsula Winery and Calera³. I recall it was 1975. They came up to Ridge and really admired what had been done, but they remind me of Oregon today. They were such independent people. Also, I clearly remember Josh Jensen calling Ridge in 1975 asking for me.⁴

One of the reasons I thought to go into consulting was that I'd be at Ridge, Paul was living in San Francisco at the time, and I would be inundated with phone calls with people who would tell me they had got my name somehow and they wanted to talk to me about winemaking. I was giving free consulting over the phone through the summer of 1974, and it put a bee in my bonnet. So eventually I'd say, why don't I meet you and we can talk. There was also Dick Graff when he was at Mt. Eden.

Those years make me laugh at myself. I can remember going out to one meeting at Monterey Peninsula Winery with my college sport coat with arm patches. I couldn't get them really to take me seriously at first, as a consultant. I had just moved to Santa Cruz. So I bought myself new clothes and my first new car. It was a Peugeot 504; Dave Bennion had one then. Paul and I each bought one. And I was doing a lot more reading. I read Schoonmaker again. Pretty soon I had a couple of these jobs. Jensen hired me to help him at Chalone, where I met Dick Graff in 1976.

CS: What was Jensen doing at Chalone?

LMcC: He got his start through Dick Graff. He gave Josh the opportunity to make wine at Chalone for the first two years. So I helped Josh make his first essence, which I had already made at Ridge.

CS: Explain that.

LMcC: An essence is a wine that is made from grapes with greatly concentrated sugars, like

³

⁴ Calera Wine Company, BW 4826, founded in 1976, near Hollister in San Benito County.

Sauternes. Dave Bennion used the term. That would be fruit harvested at about 30-40° Brix. And the finished wine always contained at least 9-14% sugar and at least 14% alcohol.

CS: I know why Dave used that term. In relationship to the Hungarian Tokaj Essenzia.

LMcC: Right. He knew about that. And he knew Andrew Quady.⁵

To continue with regard to all the telephone calls I got at Ridge-- By 1977 my consulting firm had worked with about twenty clients.

CS: Did you have any of the Santa Cruz Mountain people?

LMcC: I had Roudon-Smith, David Bruce Winery, Smothers, Felton-Empire and Ridge as clients.

I want to interject a point here about Ridge which you mentioned earlier. By the late-1970s Ridge is known as the California example of *Brettanomyces*. At the same time it is becoming focused on flavor rather than just techniques and single vineyards. The winery is moving ahead in a very positive direction while it is being infected with a spoilage yeast. The new direction starts in 1977 when article was published in the *Journal of Science, Food and Agriculture* written by T. Chris Somers. He was from Australia. He developed a technique for determining what we today call complex antho-cyanin pigments. These are the pigments in all the fine wines of France and which he could show were in Cabernet Sauvignon and Petite Sirah (Shiraz) in Australia. He tasted 404 Australian Cabernets and Petite Sirahs and showed that the evaluation of these wines was linked to this chemistry. This was the first time that a flavor chemical in wine was directly related to the ranking of wine in taste evaluations. For me personally this is the equivalent of what Pasteur did. Pasteur observed that the acetic acid content was high in wines that were ranked sensorially low in the 1850s⁶. He introduced the first biotechnology which was applied to wine. Yeast was the answer in the 1860s and flavor is the technology frontier of the future.

CS: So you're going the other direction with high quality.

LMcC: Right. By the 1980s Paul and I are saying that if you measure flavor you can make another jump in quality. That's what it boils down to. Pasteur lays down the basic that if you measure sugar, acid, alcohol you have quality assurance for the basic primary chemistry of wine. That's what we did at Ridge in the early years. What we didn't do, and what hadn't been done at Davis, was to make another quality jump in the flavor chemistry. This was being made possible by Somer's work in 1977.

I remember mentioning this to Paul Draper in about 1978, saying that we had to look at this work. And by 1979 I had hooked up with a colleague at San Jose State University and we made the first application of high performance liquid chromatography in California attempting to measure Somer's pigments. This is the paper I eventually published with Leon Yengoyan. But we missed the boat. We couldn't do it. We could not measure this complex antho-cyanin in wine routinely. We could only determine the normal grape pigments and not the ones that Somers found in wines. I decided in 1979 that I wanted to pursue my passion, which was the links between the flavor and aroma chemistry and the sensory and economic values put on Ridge wines.

Ridge was my model. They were the ones who were willing to give me the freedom. They had that glass ceiling I couldn't break through, but they had lots of freedom and they were loyal.

CS: I was hearing about some of this but I didn't understand what I was hearing, except that McCloskey is working on the science of flavor.

⁵ Quady Winery, BW 4684, in Madera, specializes in dessert wines.

⁶ L. Pasteur. *Études sur le vin*. F. Savy. Paris, 1866 and 1873.

Flavor

LMcC: Well, McCloskey is keeping the food on the table by working with many wineries, but the Ridge connections helped me focus on fine wine. Ridge sort of forced me out, since I couldn't ultimately reach my career goals there. And so I had my clients and Felton-Empire arrives on the scene. Eventually I pulled back at Ridge working maybe one or two days per week. That was about in 1980. And I went back to the University of California for an advanced degree.

Before, in 1976, I had met John Pollard and he becomes one of my best friends. He's an MBA type. Later we become partners at Felton-Empire along with two other people. I also met Dick Smothers about that time. And I met others like Harvey Loew, who is now a management consultant in industrial psychology in Chicago. They showed me how to mature as a manager. They helped me learn how to run a winery. And I met Al Gagnon, who owned Tepusquet. He'll be part of the Felton-Empire operation, with a lot of the money behind it.

CS: OK, let's get Felton-Empire going.

Felton-Empire

LMcC: It was 1976, my first vintage as a winemaker, early in the year, and John Pollard and Jim Beauregard have the idea to start a winery. Pollard was an airline pilot, and that is a shaky business. So he decides to have another business in 1976. He probably reads about this in *Entrepreneur Magazine* and decides he wants to do a winery. There was simply an explosion in the interest in wineries then. He decides to put this together and he has already met Beauregard. They are managing vineyards together. They have Vine Hill, Hallcrest and Beauregard's Bonny Doon place.⁷

I met John in Santa Cruz and I gave him a tour of Ridge. Then we meet in Santa Cruz and put together a winery. At first he decides that the winery is just going to start off as a garage. So we form a partnership. Jim has been managing the Hallcrest place and John puts this all together, all the pieces, and I'm the winemaking piece.

I wanted to get a real winery, not just a barn or garage. I wanted it to be very presentable. The wine industry was at the stage where you have to look pretty good; it's part of a successful package. And within two or three weeks he picks up the old Hallcrest Winery.

CS: Was there anything going on there other than the vineyard?

LMcC: Nothing. It hadn't been used since the early sixties and it was just full of cobwebs.⁸ They had sold off the equipment and the wine was made at Concannon for a while.

At any rate, we put that winery together very fast. And we decided to focus on the Santa Cruz Mountain grapes we had available to us.

I went to see Carl Werner down at Callaway. He had been at Mondavi. This was to talk about White Riesling production. Then I went to France and Germany in 1976 and was there touring the wine country in the summer.

CS: That's where we'll pick up next time.

* * * * *

⁷ See Beauregard Ranch interview.

⁸ See Hallcrest interview.

June 11, 1993

CS: We had talked about the background to Felton-Empire. Let's go on to getting it operating.

LMcC: Pollard was the business person. He generated cash to purchase equipment in the summer and late spring of 1976. That included a little Zambelli crusher and a basket press which he had made. And he got a hydraulic jack for a press. He also ordered some 2.5 ton fermenters and two 1,000 gallon tanks made by Santa Rosa Stainless Steel.

I remember being on vacation that summer and then the grapes came in from Vine Hill, the Beauregard Ranch and Hallcrest. No other sources. Most gave us Riesling type wines except for the Cabernet Sauvignon from Hallcrest. And there was a little bit of Chardonnay from Vine Hill. Dick Smothers had purchased Vine Hill Road vineyard from Ridge.

That season was particularly good for the Riesling type wines, which was our winery mission. That is, to use varietals that were the most widely planted in Santa Cruz County. The vintage came on with a lot of hot weather. We had good ripening right up until the end of September. It was a hot year in Santa Cruz Mountains. Then it rained in the last week of September and then it dried out immediately and we went back to an Indian summer and we got botrytis in the vineyard. But not in the Cabernet, of course.

We crushed the grapes and we just had fabulous wines from the word GO. The botrytis was a positive. The fruit was not damaged, it just had some botrytis. There was hardly any shriveling, but there was a massive growth of the fungus on the outside of the fruit. We only let it go for about five or six days with this growth, and then we harvested it. The wine was then cold fermented at about 34-35° F. It fermented for about 110 days. Then we decided to have an early bottling. We bottled with hardly any processing, using many of the techniques I'd used at Ridge. We made a Santa Cruz Mountain White Riesling and a Santa Cruz Mountain Riesling. Many were just using that term, like Wente, very successfully.

CS: Not just because there was Sylvaner in it?

LMcC: No. Wente had their Grey Riesling. Mirassou had their Monterey Riesling. It was classical and legal.

CS: And also a legal generic term, as well.

How about the Cabernet?

LMcC: That we aged it two years and then bottled it. The chemistry on the Cab was good that year. We used American oak, which I learned at Ridge. That was unfortunate, because if we had used French oak that wine would be a better wine today. It is still a good wine. I have a couple of cases left.

CS: That is remarkable, since you're going in using grapes from a vineyard that historically doesn't ripen its Cabernet more than one year in three.

LMcC: We had a great vintage on our hands.

CS: Did you label that wine Hallcrest Vineyard? I know you did in later years.

LMcC: No, not at the beginning. We wanted to source our fruit from all over the Santa Cruz Mountains. But later we did use the single vineyard designation.

I talked to Paul Draper about this. He came down to the winery.

The white wine sold out before mid-summer. I remember John Pollard was hoping that we

could get \$3-4 a bottle. It finally sold out retail at \$8 a bottle.

CS: Do you think the botrytis contributed to the success of that wine.

LMcC: Sure.

CS: How did you market these early wines? And how much did you produce?

LMcC: We made 435 cases of the White Riesling, an equal amount of the Riesling, and about 450 gallons of Cabernet Sauvignon. We also bought a little bit of bulk wine, Ruby Cabernet from the Central Valley, so that we could break in our new oak barrels for a year. That was another item from Ridge. They would use a little bit of new oak, but then spread it out among wines.

By 1977 we were marketing the wines through Bill Gibbs, a wine broker, who had been the marketing person at Ridge and had helped Dave Bennion launch their Advanced Tasting Program (ATP).

CS: By 1980 how big were you?

LMcC: By 1980 we were up to about 9,000 cases.

CS: How about new sources of grapes.

LMcC: We move from strictly Santa Cruz Mountain grapes to other areas. We bought good wine grapes from up and down the California coast.

CS: Then, is this the beginning of your Maritime Series of wines?

LMcC: Yes. That begins in 1979. That was our low end, lower priced, high value white Riesling. We made about 5,000 cases of that. And we made about 2,000 cases of Chenin blanc. We bought fruit from Potter Valley in Mendocino County, another cool region like Santa Cruz Mountains. And we went all the way down to Tepusquet, because they had been out selling their fruit up and down the coast.

CS: Didn't you develop a special connection with Tepusquet?

LMcC: Yes. By 1980 we were really growing and we needed cash. Pollard has sold stock in the company to a couple of brothers, as investors. And for a while things are going along fine and then they decided to bring a law suit against us. I think that was in 1982. Ridge's attorney, Mario Rosati, was also an investor with us at this point.

CS: What was the legal issue?

LMcC: The Brassfield brothers had invested perhaps \$350,000 in Felton-Empire, but they thought that the winery wasn't big enough.

CS: Its physical capital did not reflect the monetary value of their investment?

LMcC: That was their contention. That was on the surface. In actuality there was something about a split within Felton-Empire between Pollard and Jim Beauregard. They were not getting along and Jim was the one who had introduced the Brassfield family to us. Then Pollard decided that he wanted to leave California for Utah. So there had to be a new president for Felton-Empire. I didn't want the job; I was a winemaker.

CS: Was he wanting to liquidate his assets with this move.

LMcC: It would have been difficult. He wanted to. He made it known that he would have liked to sell his shares. He did sell them, eventually.

Then the Brassfield, seeing that Pollard had left, left the lawsuit in place, and they made it known to us that they would like to own the company. They wanted to bring in more capital.

CS: In this you all just owned the Hallcrest place, right?

LMcC: That's right.

CS: Let me interject a question here relating to Hallcrest. The Griffiths still owned the upper Hallcrest vineyard, with the Cabernet. Did you buy the grapes from them?

LMcC: We bought their grapes. Later we leased the vineyard after the first year and Jim Beauregard managed the vineyard and sold us the grapes.

CS: What was the upshot of the lawsuit?

LMcC: I became president. And Mario and I determined that we would fight and win the suit. I wanted to keep my investment in FE. Pollard wanted to get out. I think Jim was ambivalent at that time. But he wasn't interested in investing more money.

So, we won the lawsuit. That was in about 1983.

CS: So there is no connection with the closing down of FE.

LMcC: No. Not at all.

By now Al Gagnon has come on board as an investor. He had invested about \$225,000.

CS: He has Tepusquet.⁹

LMcC: He is Louis Lucas's partner and they own Tepusquet in Santa Barbara County, which is the largest single vineyard on the California coast.

Al, Mario and I win that lawsuit. In all this I spent about five years learning how to run a company. We raised a lot of money. We were making good wines. We really changed the winery's winemaking. In the process, I am no longer the winemaker, which is passed to Brooks Taintner.

CS: What was his background?

LMcC: He went to UC Santa Cruz with a biology and chemistry dual major. He had apprenticed in the wine business. The wines only got better. I was able to make sure that he got what he wanted. New French oak barrels. Better sources of Pinot noir. We were making very interesting wines between 1984 and 1986. We had converted from Riesling production to Chardonnay, in response to the market. But it was very difficult for me to abandon White Riesling production.

CS: You didn't really abandon it.

LMcC: We made one White Riesling from the Hallcrest vineyard. And we also made a small amount of Santa Cruz Mountain White Riesling, maybe 1500 cases.

CS: So by then 1500 cases isn't very much.

⁹ For the complicated Tepusquet story see: *Wines & Vines* 11/1/71, 12/1/76, 5/1/78, 7/1/79, 11/1/84, 8/1/87; *San Jose Mercury* 5/28/84; *Wine Spectator*, 5/15/87, 6/15/87, 8/31/87.

LMcC: Right. We were up to about 18,000 cases of wine and an equal amount of wine grape juice.

CS: We'll get to that.

LMcC: We finally had got rid of the lawsuit. Then Al and I sat down and did some thinking and we decided to sell the winery. That was in the fall of 1986.

So I called around and talked to Gomberg & Fredrikson. They informed me that this was not going to be an easy task. They had 100 wineries in the Napa area that people were willing to sell. We were in shock.

We could see that profits were dropping in the wine business for the small to medium producer. Cost of good produced was going up steadily. Everything was going up. In 1987 we made the decision to sell it however we could. Gomberg & Fredrikson had made it clear that no one was going to buy a Santa Cruz County winery. I remember Jon Fredrickson telling me, "Leo, I live on Skyline Boulevard and the Santa Cruz Mountains is considered pretty ticky-tacky by wealthy people from Virginia."

But we decided to move ahead on it.

CS: Interesting, that idea of Jon's when Ridge had just sold, January 1986, for almost \$10,000,000.

Selling Felton-Empire

LMcC: And that helps push me with the idea to sell.

Al Gagnon, whose background was in high finance, said that we could get the stockholders' equity out of the crafting an asset sale.

We sold all our inventory, and that came to about \$1,000,000. We sold the winery building. And we sold the winery equipment, all on a single day. We sold all that equipment on June 21, 1987. I did not want to be there. It was too painful for me. Interesting, the largest purchaser that day is currently in receivership.

And we sold the building and vineyard to John Schumacher, who renamed the winery Hallcrest. He came up with the money to pay for the winery completely.

CS: I didn't realize that. I thought you were carrying his note.

LMcC: He got his money from his father.

CS: Sounds like Bonny Doon.

LMcC: We generated the stockholders' equity which gave us money to pay the investors. The early investors got a lot more than they put in, but they had invested their "sweat equity." The people who bought stock at the end received a smaller percentage.

CS: Were the Brassfields still in at this point.

LMcC: Yes, and they accepted the sale.

What really pushed us to sell was the forecast that we could not survive an economic downturn, like the one that got under way a couple of years ago. But also, Crocker Bank was acquired by Wells Fargo. We had been banking with Crocker. At the same time Tepusquet went into receivership with Wells Fargo and that bank had taken over the FE notes.

This was a terrible blow to Al Gagnon. He had a huge equity in Tepusquet. FE was making money. I remember being in the VP's office in San Francisco. They had decided that the FE loans were

all now one. Wells wanted to cash in their FE stock, that they had from Tepusquet going under. They had owned, Gagnon had owned, about 23% of FE. Wells contacts us and tells us that they now wanted to sell "their" stock. And they wanted the debt owed Tepusquet by FE to be paid in cash.

CS: I just wonder whether bankers were looking at the tendency in wine consumption at that moment, 1985-87. After 40 years of going straight up it leveled off and has been drifting down ever since. I'll bet that was working on bankers' minds.

LMcC: We didn't have that in mind. But banks were definitely reducing their holdings in wineries. They were in what they called "formula lending." That means that when the wine industry did not meet their formulas for lines of credit they could call the notes as due. This happens when the bank thinks that the value of your wine inventories has declined. They no longer meet their formula, and that is written into the loan at the beginning. This allows banks to get at their money quickly, before they go into receivership. They don't want the winery liquidating the inventory to pay salaries and such.

CS: So this ends up pretty well for you.

LMcC: Old investors do well. Middle investors get about what they put in. And the late investors lose some, perhaps 10-20% on a share.

CS: When was the final sale made?

LMcC: We did not crush fruit in 1987. We did pose as a winery until the Christmas season of 1987. The marketing people sold wine. Then, on December 31, 1987 we sold to Bill Gibbs the brand name and the computers and business systems. And all the inventory that remained. What he didn't want in terms of inventory we sold to various outlets at about cost of goods produced.

We escaped by the skin of our teeth, but it was a hell of a lot of work. Today it looks as if we were smart. At the time I was largely embarrassed that I had sold this going winery that everyone thought was doing quite well. And it was. The wines were good and improving.

To compare what we did, Ridge was sold at the same time for about \$10,000,000. We pieced FE out for about \$2,000,000. Of that we had about \$950,000 in debts that had to be paid. With my piece of that money I was able to start up this place. I did work for other wineries in the interim.

Varietal Grape Juice

CS: Now let's go back and do the grape juice story.

LMcC: Our first was a Gewürztraminer, about 23% sugar, in 1980.¹⁰ By 1983 we had a White Riesling, and a Gamay Beaujolais.

CS: I recall your coming to dinner at our place in 1982 with Susan Hathaway and bringing a bottle of the White Riesling juice for dessert and it fooled everyone. By then we didn't know it wasn't wine.

LMcC: This happened to me all the time. People tended to think it was a sweet White Riesling wine.

In 1984 I was invited to the White House in relationship to that grape juice. It was perceived by MADD (Mothers Against Drunk Drivers) as a good product. They always had our wine grape juice at the board of directors meetings. So we got on a list, since we were about the only people in the

¹⁰ For the story in the press see: *Wine Spectator*, 1/16/80; *California Grape Grower*, 7/1/83.

industry doing something that could be equated with the new temperance movement. I felt like "Mr. Smith Goes to Washington." And it was a big deal for the winery.

CS: How much grape juice did you sell at the top?

LMcC: 18,000 cases. That was half our production at its height. We called ourselves the Empire Juice Company.

I think that Bill Gibbs still bottles juice under that label.

CS: Did you make it at the winery?

LMcC: At first all at the winery. And as we got bigger we used the custom crush facility at the San Martin Winery. This was an Al Gagnon product. He saw this eventually as a 100,000 case thing. We were using a lot of Tepusquet grapes, exclusively. But the bank's attitude at the time, in 1986, cut right in there. It was a classic example of the banking function disrupting business.

June 23, 1993

CS: Let's start this session talking about your relations with Ridge, and what you saw going on up there in the late seventies and eighties.

More on Ridge

LMcC: From my vantage point today I am particularly concerned about bottled wine. These days a client will often show me his bottled wine from the seventies and eighties. One thing we can see looking back is that we had a lot of very tannic wines. There were a lot of wines that were not very sophisticated; I don't want to say crude.

Ridge wines I include here in the seventies. Case in point would be the 1974 Monte Bello Cab. The same is true of the 1978.

CS: Was that a concern to the Ridge people at that moment?

LMcC: No, not really. Ridge was continuing with Dave Bennion's idea of single vineyard wines, not dead ringers for any particular Bordeaux chateau. The same was true of the Mayacamas cabs, 1973, 1974, also Diamond Creek in those years. Here we have mountain grown wines that are being made in a very tannic style.

CS: How about Zinfandels.

LMcC: Same thing. You could say that this tannin was really admired. Ridge was also adding Petite Sirah fairly consistently to their Zinfandels.

CS: Was that to widen the flavors?

LMcC: To make the wines more mouth-filling. There is an interesting flavor to tannins. You like Rhone wines. You get it there.

These California wines are tannic, for one reason, because so many of them are being made with the press wine. This was particularly true of small producers. But there was no attention given

how to run the press. What I mean is, nobody was managing the press wine they were adding. They were pressing these grapes down to almost a powder, using these bladder presses. There was also focus on a heavy maceration.

CS: What do you mean by "heavy maceration?" Is this what we mean today when we talk about extended maceration. This supposedly brings out the harsher tannins by the end of the primary fermentation.

LMcC: I think that is a sort of an inter-winery myth. It's an idea I've heard come out of Château Lynch-Bages¹¹, who have an American winemaker. I've also heard it from Michael Martini¹² and see this sort of thing in a journal like *Practical Winery*. A number of Napa people bought into this idea, but it is patently not true. Extended maceration does not give you softer wine. It just makes it more tannic.

CS: There are some fairly powerful contrary views on this.¹³

LMcC: On the matter of white wine, we could say that not much had changed at Ridge since the early seventies. Winemaking techniques were pretty much the same at Ridge. There was a pretty straightforward tank fermentation. No surf lie yet. Small tanks, however, and then to barrels for about a year.

CS: There wasn't very much white wine. They had given up Vine Hill and there was just that little patch of Chardonnay up on the ridge.

LMcC: Yes, there was about an acre and a half of vines on a two acre plot there.

CS: Are Ridge wines evolving as you go into the eighties?

LMcC: At the end of the seventies Ridge wines were about perfect in respect to the primary chemistry involved. They are stable, but full-bodied and full-flavored. As you move out of the seventies there is a sense of this. I can remember it in discussions with Paul Draper. We are monitoring all these various aspects of that primary chemistry. But the real frontier is going to be in flavor, where there is no testing. You cannot find studies that link the quality of wine in California to some kind of chemical testing system, or concept of chemistry, beyond the primary chemistry I had mentioned, you can't find any. In fact University of California (Davis) seems to have taken a position that holds that quality itself doesn't really exist. Quality is something that is a learned response of a wine drinker. Maynard Amerine had a strong sense of quality, but it wasn't part of the pantheon of ideas at Davis.

CS: In a scholarly paper this is true of Amerine, but he did a lot in the more popular press and in periodicals and there he would definitely discuss quality beyond primary chemistry, but not in any kind of quantitative fashion.¹⁴

LMcC: But we were beginning to expect that measurement of certain factors in California wine was the next frontier. We were thinking that a lot of these California wines in the seventies, as they aged, were not going to become more elegant. Today many of these wines tend to be chalky, tannic, harsh.

¹¹ A Fifth Growth of Pauillac, usually rated much higher.

¹² Winemaker and vice president for production at the L. M. Martini Winery in the Napa Valley.

¹³ On the matter of managing tannins during fermentation see winemakers' views: Beaulieu Vineyard, Cakebread, Dehlinger, Gundlach-Bundscu, K. Kennedy, J. Lohr, Sequoia Grove, Shafer, R. Strong in *Practical Winery* (March 1992):20; Ahlgren, Santa Cruz Mountain, Bargetto, Hess Collection, (September 1991): 23; Forman, *San Francisco Chronicle* 6/27/90.

¹⁴ For examples see: *Redwood Rancher* (31:5); *House Beautiful* (November 1963): 236; *San Francisco Magazine* (October 1964): 26.

CS: I had a couple of 1976s last week, a Dehlinger Cab and a Ravenswood Zinfandel. They were certainly elegant. My guests were cheering.

LMcC: But I think the Dehlinger was using techniques that were beginning to emerge in the seventies in Napa Valley. Robert Mondavi was jumping out on this matter of quality, rather than the single vineyard concept.

CS: Let's look at some specific wines. What is happening with Petite Sirah at Ridge in the late seventies?

LMcC: They were making a York Creek PS and continuing with the single vineyard idea. But they are also saying that within a single vineyard, like York Creek, why don't we find a portion of the vineyard that could be even more special. So they created this Devil's Hill designation under the York Creek designation.

CS: How did they do it, the selection.

LMcC: They took the most tannic, mouth-filling wine in the vineyard and segregate that out as an Advanced Tasting Program (ATP) wine. And that was the Devil's Hill. They did it also at Howell Mountain for the Zinfandel there. And they would put a good hit of PS in these more powerful Zinfandels. A very large part of the PS that Ridge was getting was going into Zinfandel.

CS: I wonder if you heard anything about clones, Rhones, Syrah and California Petite Sirah.

LMcC: Dave Bennion was very interested in this Duriff-Petite Sirah thing. I recall he talked to Ken Burnap¹⁵ about it. Ridge was also interested in French Syrah. I know they wondered by some California PSs tasted so much like French Syrah. And why do some of these Rhones taste so much like California PS. And they do. I have five of them sitting right there, which we are analyzing. (He points to several bottles, which include some Châteauneuf-du-Papes.)

There was this question, but no one ever pursued it actually doing anything about it.

CS: Any French people here from the Rhone back then, anything to do with York Creek PS?

LMcC: Someone was here. I think it was Etienne Guigal.

CS: You don't remember anything exciting coming from his visit, anything he said?

LMcC: No.

CS: OK, but you came up with the right name. I didn't want to lead you. Dave Bennion told me that Guigal said on tasting the York Creek PS, either the 1971 or the 1974, I'm not sure which, that it was unquestionably true French Syrah. But it couldn't be. Those are not Syrah vines up there on Spring Mountain. And it's similar to the confusion with Concannon and their PS. Jim Concannon swears that they had Duriff there, planted right next to their PS vines. The Duriff went into their Burgundy and the PS was the varietal. And the vines were not the same. Professor Meredith at UC Davis is working on this with DNA "fingerprinting." What a mystery!

¹⁵ Santa Cruz Mountain Vineyard winery (BW 4697). Burnap labeled a Petite Sirah "Duriff" in 1980 after UC Davis investigators decided they were the same: *Wine Spectator*, 9/1/1980. More recent research at UC Davis suggests that earlier findings were not accurate and were somewhat incomplete. For some recent ideas see *Practical Winery* (November 1992): 30. A *San Francisco Chronicle* article of 6/24/1992 is an inaccurate discussion of these findings. cf. Prof. Ann Meredith to Charles Sullivan, 7/7/1992.

LMcC: I do remember that the Ridge PS was being made just the same way in 1979 as it was in 1971.

CS: I think they are both great wines. I have seen some pretty keen Rhone lovers fooled by that 1971 in the mid-eighties. It is just now getting a little feeble, but it is still a fine wine.

LMcC: I remember that Paul Draper was so satisfied with that wine. It was great when it was made and was always interesting as it aged.

CS: In 1987 I wrote out a certificate at a dinner guaranteeing it was a French wine, before the bottle was uncovered. Guigal and I were both fooled.

What are the changes you saw in the eighties in Ridge Cabernet production?

LMcC: In 1979 they did not even produce a Monte Bello Cab. There was a 1979 York Creek Cabernet and it was wonderful. This was the lowest tannin York Creek they ever had made. It was about 900 ppm, while usually it was about 1500 ppm. There was also a Jimsomare 1979 and a Santa Cruz Mountain. From 1980 to 1983 they blended Jimsomare Cabernet into the Monte Bello.

By 1983 we were taking a more careful look at Monte Bello. I had introduced the idea breaking the wine into separate cuvées and, rather than blending the wine right away, which had usually been the case, right after the primary fermentation and malo-lactic. But there had been no tasting going on between sub-lots that I can recall. I was working with Paul and David Noyes on this.

We decided that it would be good to make separate tanks of Monte Bello and Jimsomare and to taste these wines later in the spring. This is what they do at many of the Bordeaux chateaux, but I didn't know it then.

I also suggested that we not put the press wine in. But that was shot down in 1983. But they did agree to keep the lots separate for a longer period of time.

CS: Was there any identification of lots going in, in terms of vineyard geography?

LMcC: Not yet. There was an idea that the older vines might be better. But there was no enological program.

CS: So it is just a matter of gustatory reaction to these separate lots, with no real idea that they were separate for any particular reason.

LMcC: Right. From 1971 to 1982 the Cab was blended before Christmas. But in 1983 there were about ten lots. There were probably as many as thirty tanks going in out of the fermentation. So we didn't break them down anywhere nearly so far as we might have. This was a major breakthrough. Then we fined them all separately. I clearly remember David Noyes suggesting that we should taste them after fining with one ounce of gelatin per tank and that they could taste one egg's impact on a tank of wine.

We set up maybe ten fining trials, which I designed. They were sure they could taste the difference between one egg and two egg fining in a barrel of Cabernet. But these were such low levels that no one could tell the difference.

In 1983 we had a statistician come in, and a sensory evaluation person from Davis. We hired her to come down for about two or three days. She showed clearly that no person at Ridge Vineyards could taste these differences in the fining levels. The one who statistically was able to taste these differences the best was David Noyes. He was the one who was working with the wines, he was the closest to them. She was really impressed by what he was able to do. I certainly couldn't differentiate at such low levels.

CS: So you were coming to the conclusion that for no particularly reason that you could determine at that moment, this or that cuvée was better than this one.

LMcC: Right. Then Paul would make the decisions quickly. He was an excellent taster for quality. He would go right through and grade these ten lots.

So they were now graded. And then we waited. I idea was that the flavor was developing or changing in the wine. So we waited and we got to observe these changes. We found that some wines that had been rated high at first became low ranked wines later in the spring. Some unimpressive wines improved quite a lot.

CS: Did you know that such and such a wine was number three or number seven in the previous tasting? Or did you do it blind?

LMcC: We started that in 1984. But we did do some blind tasting. When we had that statistician and the sensory evaluation person, we did the tasting blind. They convinced me that blind tasting for production tasting was essential.

CS: One of these people wasn't Ann Noble, was it?¹⁶

LMcC: No, but one of them had worked with her.

So we made these 1983 wines and we found out that what we thought we could taste we couldn't. But we did find we could really improve quality by keeping these cuvées separate.

CS: When did you decide what the final *assemblage* was going to be?

LMcC: Paul did it when the wine was about a year old.

CS: Was that made on decisions made at that moment, or on a temporal continuum of evaluations over that first year?

LMcC: The wines were finally put together on the basis of how they were perceived at a moment, just before.

The Jimsomare wine still went into the Monte Bello that year.¹⁷ We found out that the aroma of the Jimsomare had a vegetal character, a cigar box smell, and it was very objectionable to people in the marketplace who were selling the wine. So that blending of the Jimsomare into the Monte Bello was stopped after 1983.¹⁸

CS: How do you account for this vegetal character, under-ripeness?

LMcC: The vineyard site, the clone, the age of the vines. Lots of leaf cover down there. There is a green bean smell and flavor that comes through.

CS: Which you can cut down on by summer pruning, hedging, leaf removal etc.

LMcC: Right. We know that now. But there was nothing like that going on then.

¹⁶ A professor of enology at UC Davis who specializes in flavor analysis. She is well known for her Flavor-Wheels for table wine and sparkling wine evaluation. See *American Journal of Enology and Viticulture*. 35:2, 107 (1984).

¹⁷ The 1983 Monte Bello was finally bottled under the Santa Cruz Mountain label, but was rated at 84 by James Laube and the *Wine Spectator*. See James Laube. *California's Great Cabernets* (San Francisco 1989): 305, for a complete evaluation of Ridge Cabernets through the 1986 vintage.

¹⁸ Laube rated the 1984 Monte Bello at 89. *Wine Spectator* rated it twice at 95 and 97.

CS: Canopy control for flavor was still in the offing.

LMcC: So after 1983 there is a shift in Ridge red wines. There is now the understanding that Ridge quality was not perfect and could be improved. Some wines were being perceived as too tannic, too vegetal.

CS: How do you people account for that when the 1964 and 1970 Monte Bellos were so great, and still are?

LMcC: We asked ourselves that question in 1983. But I wasn't there back then and have no first hand knowledge about those wines' production. I simply have no answer to that now.

CS: So more changes are coming after 1983.

Problems of Chemistry

LMcC: Lots of changes. First, the problems that Ridge have can be seen throughout the California wine industry.

But before we go on, I want to note here that at this point Ridge had a tremendous *brettanomyces* infection. It really begins to be bad in the late seventies. My first recollection of it was with the 1979 York Creek Zinfandel. Paul and I were both very disturbed by this. I remember saying that I thought the wine smelled like bathroom tile. And Paul retorted, with someone from marketing present, that you can't really say that. We didn't have those aromas in our wines, generally speaking. Everybody was in denial about it. Any winery might do this, denying that they had a problem.

By 1981 we agreed that we did have the problem. My consulting company introduced a system of *brettanomyces* testing and it wasn't really good enough yet, since we are using methodology that we'd picked up from others. UC Davis had introduced no testing for this organism.

So what happens? It runs wild through many California wineries, including Ridge.

CS: But how were they trying to control it?

LMcC: They had no idea how. We tried SO₂ in 1983 on my suggestion, unfortunately, and we looked at it under the microscope the next day and later. It was a York Creek Petite Sirah and there was *brettanomyces*, clear as a bell, sporulating into dekkera. And the SO₂ was causing it. It was killing the organism, but all these spores were being produced. But these little spores, like eggs, that settled to the bottom and would wait until the wine was racked. But I saw that when the wines were coming to the bottling tank in the mid-eighties, wines that had no *brettanomyces* turn into a full-fledged contamination in the bottling tank.

CS: You have to get out the filters.

LMcC: But filtration was not really in place at Ridge in 1983. But by the mid-eighties it had been introduced for all the Zinfandels. Later, I think in 1989, after a very discouraging production meeting, the winery finally agreed to filter everything. Bennion had always been opposed to filtration, and Paul Draper followed through. It was part of the Holy Grail at Ridge.

So to hold down *brettanomyces* in the winery you had to have incredible cleanliness and you had to filter, any time you see it. Today, since 1989, all the wines are very tightly filtered at Ridge.

CS: So the 1992 Monte Bello Cabernet out of the barrel that I love so much still has a big filtering program ahead of it.

LMcC: But I think that the Ridge wines today, even with filtration, are much bigger and much longer-lasting, than in the era when they were not filtered. The great French wines are filtered. I know Château Lafite is filtered. The 1989 Monte Bello was the first that was ever filtered brett free and got a top rating from Wine *Spectator*. When you have *brettanomyces* stripping is not the big problem. It puts a cloud over a wine. Jeff Baker at Carmenet calls brett the "great equalizer." Once you have it in all the wine at a tasting they are all the same. If you have it you can't smell the great things that were introduced by Dave Bennion.

CS: But I attended a meeting of the Society of Wine Educators last year and Professor Fogelsang of Fresno State University, the brett expert, gave us eight samples, four red and four white, of a base wine, free of brett, with a little, a little more, and a lot, and in a blind tasting the wines with just a little brett came out on top.

LMcC: Wines that have brett and are filtered have had brett and still have a dash of brett flavor.

CS: These weren't Ridge wines we tasted.

LMcC: Yes, but all wine that has a sense that it is alive gets it from the yeast. So the *brettanomyces* thing is like a glass half full-half empty. You add the brett to the wine and it comes alive. Maybe the control wine was just a little bit dead.

CS: My impression was that they both were excellent, bright fresh wines, and that the small amount of brett added complexity and a flavor that improved the overall flavor of the young wine. It sounds to me that what you're saying is that brett can improve the flavor of a wine.

You know the old story from Burgundy about how a little brett improves the flavor.

LMcC: Yes. I've heard it. But these Ridge wines may have benefited too, but they are being filtered so that they are commercially stable and their varietal characteristic is not going to be ruined.

By the end of the eighties Ridge had conquered *brettanomyces*-- it took ten years. Now their focus is on flavor. And this is part of my program.

If you look at this in a historical sense, I am standing on the shoulders of Chris Somers in Australia. I got the idea reading that paper in 1977.

Flavor Again

CS: How do you begin introducing these ideas about flavor components.

LMcC: We worked at San Jose State in 1979 and 1980, trying to use high performance liquid chromatography (HPLC) to determine the polymeric red pigments that Somers said he had discovered. But we failed. So I decided that there was no established way to investigate this area. So I enrolled at UC Santa Cruz in a doctorate program in biology. I had some really outstanding people as advisors. I ended up in Jean Langenheim's laboratory in 1980.

CS: How does this relate to the Somers question?

LMcC: He had found this red pigment and was not able to culminate his own work, so far as scholarship or a practical quality program was concerned. UC Davis then didn't think this pigment existed. The Bordeaux faculty weren't able to do it. A British group at Bristol also was not able to develop a test.

CS: In unsophisticated terms, I want you to tell me why you think that finding this pigment would have a direct relationship to wine quality? Did Somers suggest it?

LMcC: Somers showed at a statistically significant level that the polymeric red pigment that he had been measuring indirectly, and polyphenolic flavors in general in red wine, was linked to the quality rankings given those wines, 440 of them, given by wine judges. This had never been done.

CS: So you see a situation, you see an outcome, you hypothesize a logical result, you don't know there's a connection but you suspect one. Like you see a guy run out of a bank with a blazing gun and a money bag, you infer there's been a crime committed. But you need to get into the bank and collect data.

LMcC: Right. It looks like there is something here, but wine industry academics don't buy it. There doesn't have to have been a cause and effect relationship.

CS: People who drink a lot get lung cancer more than average. So-- you make the inference. Drinking causes lung cancer. But you don't factor in that they smoke more than others. You have to check out the other possible factors.

LMcC: Right. But I was really curious. And I was more interested in this than in winemaking, and I'm the winemaker at Felton-Empire at this time.

Anyway, Jean Langenheim was a terpene expert. There had been some things about terpenes in grapes in about 1981 or 1982.¹⁹

CS: Sure, but everybody knew what they were, or had a name for them. Like in Rieslings, Germans call it *Edel Firn*.

LMcC: That's right. I remember talking to people at the University of California at Davis. Ralph Kunkee didn't really know the term back then.

CS: But wait, what do terpenes have to do with phenols? I know what they have to do with wine.

LMcC: The group that I worked in at UC Santa Cruz was a secondary-plant-chemistry group (SPC). This is a field of chemistry which has to do with flavors, pigments, aromas and compounds that are not essential to the life of the plant. They are attractors and repellents. They are the things that keep herbivores away from some plants. Or they might attract bees to it. And this is where so many of the flavors in plants come from. That's where you find flavor research, and if you are a flavor person you have to become an expert in SPC.

I didn't work on grapes in my PhD program; I worked on a tropical tree system, in a program that was getting money from the National Science Foundation. I worked for a while in a place just south of Acapulco, in tropical Mexico.

You bite into the berries from this plant and you think you want to die it's so strong. And they're related to genus *Vitis*.

CS: You mean they're inside *Vitaceae*, but a different genus.²⁰

LMcC: Right. I also did a lot of work on terpenes. These are things in our spices, tea. They're used in beverages. I could see that this SPC field really fit right into the world of food flavors.

I recall Jean Langenheim saying to me in 1981, "Leo, you're in the wine business, but you

¹⁹ Terpenes are hydrocarbons found in resins and essential oils, often used in perfumes and medicines, such as cough syrups.

²⁰ *Vitaceae* is the family that takes its name from its most important genus, *Vitis*. But *Vitis* is only one of the eleven genera in *vitaceae*.

people are not disciplined." She said to me, "I'm going to break you. I'm going to be your football coach." She wanted me to look at a bigger range. She didn't want to hear about this company or that vineyard or this winemaker. So this education was great for me; I really needed it.

In late 1980 I recall having lunch with Paul Draper at his house. I recall telling him that I was overwhelmed. The work I was doing was too much for me. I told him I was going to have to cut my time at Ridge back to about a day a week. I told him I was going to focus on the PhD program. I could consult, but I had to slow down up there.

CS: But as you go on in this program you are going to be learning things and these things are going to work themselves into Ridge wines. What did you learn?

LMcC: That the aromas that they didn't like in Ridge Cabernets were part of the secondary chemistry of the plant. It was no longer a mystery. These were pyrazines, the green bean taste, that were growing in the vineyard.

CS: So, you find you have this in the wine. You tell them they have P. So what? What do they do about it by just knowing its name? Did you tell them to do anything?

LMcC: I knew they were produced by the plant and not in the winery. The solution is in the vineyard. So I am saying break down the vineyard into sub-lots, track down the pyrazine, and we don't blend it in.

CS: So at that moment the answer really is in the winery. But you aren't telling them in the vineyard to chop this, train this way, eliminate this.

LMcC: No, not in 1983.

CS: But, you see I am interested in whether what you are learning is going to translate into telling somebody something that they can do in the vineyard to improve the chemistry of the grapes.

LMcC: In my graduate program I am finding out that tannins form this group of compounds that dominate woody plants. We always talk about tannin at wine tasting, but there is no test for tannin in the literature.

CS: But I can go back to Hilgard's reports in the 1880s and he has a column that measures tannins. Same as in the Amerine-Winkler report of the 1940s. They always give you the grams/ 100 cc of tannin in their recommendations on varietals, from the wines they made in the lab at Davis.²¹

LMcC: That would be a test of total polyphenols, of which tannins are the major member. But that isn't a very specific test.

I was hearing about the tannins in the tree systems I was working on. They were the natural protectors of the trees, because they protected the seeds. The reason the seeds don't rot is that they have these tannins. They kill the fungi. It's a question of plant-defense-theory.

CS: So, the protective layer, which is sometimes the fruit, is going to have less tannin than the seed.

LMcC: No. There is no tannin in the skin. It is an attractor.

²¹ M.A. Amerine and A.J. Winkler. "Composition and Quality of Musts and Wines of California Grapes," in *Hilgardia*, 15:6, 519 *passim* (1944).

CS: I thought there were tannins in the coloring pigments of the skins. The fruit attracts the birds and the bird disperses the seed through its droppings.

LMcC: You'll find the grape pomace back in the vineyard with fungus all over them, but they have been protected enough to still be sproutable.

CS: Let's go on to the phenolics and what you learned that it going to help the wine producer.

LMcC: The sensory and economic value of food, including wine, is tied to the secondary chemistry of the plant, not the primary chemistry. Historically getting the primary chemistry correct was the big thing. You go to France in the 1850s and the best wines had no vinegar. The primary chemistry we have down in making California wine.

But the secondary chemistry- terpenes, polyphenols- varies widely. Wineries would not allow this to be the case if they knew it.

CS: What is going to determine quality, in your approach?

LMcC: Quality will relate to balance.

CS: Are you going to look into a microscope and decide quality is high or low? Or are you going to listen to what somebody says?

LMcC: At first I listen to what somebody says. The chemistry of the grape is seen as very complicated. But when I asked Jean Langenheim about this she said that was baloney. She pointed out that plants do not think. She said that I was speaking anthropomorphically. Plants are limited by their forebears. She said that without any chemical analysis she could tell me what was in a grape. She told me to read the 1949-54 surveys by plant systematists on the chemistry of plants worldwide and that I would see that tannins are only produced in plants like the grape, that evolved on the planet during a certain period, that are relatively ancient.

CS: But you're talking about tannins here in the same way that Hilgard did. A number, so many grams per 100 cc. Isn't it something more complicated than this.

LMcC: I found that all woody plants, including wine grapes, would contain the following suite of chemicals. I got this from reading Bates Smith from Bristol England. He showed that they would be similar to what was in tea.

That idea comes to me in 1983-84 and I introduced it to Paul Draper at Ridge. Grapes have about twenty polyphenols that can be tasted.

CS: Do you identify them and name them?

LMcC: Yes.

CS: Can you isolate them and make a gustatory inference about what this particular phenol adds in way of flavor.

LMcC: Sure. And I tell people how much of this chemistry is formed in the vineyard, and how does their fermentation process, and the maceration-- that is, the extraction process, how is the fruit extracted. I introduced the idea of separating the press wine at Ridge.

CS: What are you saying? That there are, in this group of twenty polyphenols, certain ones in the press wine in greater numbers than in the free run, and these are polyphenols that detract from the

flavor of the wine?

LMcC: That's right. You have to view the grape as a thing that has organs. It has the skin that has a job, but it does not have the job of producing all the chemistry. It has the job of being an attractor. So it is only going to produce certain chemicals related to that function. That is the case today.

CS: But, wait a minute there is a lot of tannin. . . .

LMcC: In the seeds.

CS: No, in the skins.

LMcC: There is no tannin in the skins. We have not found any tannin in the skins. There is a lot of chemistry in the skin, but it is not tannin. It is a pigment that has a taste. It is a mock-tannin.²²

CS: And it is not a polyphenol?

LMcC: It is a polyphenol. But it is not a tannin.

CS: But that's my point. It is one part of this group of polyphenols you are identifying as being part of the flavor chemistry. So what if it isn't technically a tannin?

LMcC: There are about eight of these in the skin of Cabernet Sauvignon. These are ones you can see and taste. There are six in Zinfandel and four in Pinot noir. This has a lot going for it and it is highly predictive. It predicted that all the chemistry would be segregated in the grape. Indirectly I used it to show that if you change the fermentation you can extract the grape skins separately from the seeds, by changing the amount of crushing. It made a lot of traditional techniques make sense, like keeping the press wine separate. So we started to add these techniques at Ridge, not because somebody had insider knowledge at Château Lafite, but because we were introducing these ideas from a very American point of view -- technology.²³

CS: In this process did you know what the function of a specific polyphenol would be in the grape?

LMcC: No.

CS: The reason I ask this is that knowing this might make it possible for you to go into the vineyard and do something that might affect the production of this or that anthocyanin, before the grape got into the winery.

LMcC: In 1983-84 I was working on *Hymenaea*, which is distributed across Africa and South America.

²² There may be some confusion in terminology here. Winkler et al analyze the skin of red grapes in detail, contending that "in red grapes the skin contains large amounts of tannin." *General Viticulture* (Berkeley 1974):145. More recently C.S. Ough analyzed the phenols in red wines, discussing the various anthocyanins in seeds and skins. He discusses flavonols, flavonoids, catechins, etc., citing V.L. Singleton's *Wine Phenols* (1988) in Springer Verlag's *Modern Methods of Plant Analysis*, Vol. 6, new series. Ough also cites T.C.Somer's work in the same volume and in *Vitis*, 24,43-50, all of this in Ough's *Winemaking Basics* (New York 1992):141. Earlier Amerine et al discussed the lack of knowledge in this area, but cited Ribéreau-Gayon, Durmishidze, and others for their work on anthocyan pigments. *Technology of Wine Making* (Westport 1967): 85, 103-7. Emile Peyneau discusses "bitter and astringent tasting substances" in his *Knowing and Making Wine* (New York 1984):44. He argues they produce a large part of the wine's flavor. He discusses the condensed tannins "located in the seeds and skins" as leucoanthocyanins. There is also an explanation of the tannins' role in the aging of red wines.

²³ For the public picture of McCloskey's research see *Wine Spectator* 12/31/1986 and *Oakland Tribune*, 5/28/1986.

CS: Family?

LMcC: *Leguminosæ*. A lot of our amber comes from it.²⁴ This is an important forest product. That's what I was working on. They didn't think it would be good for me to work on grapes. So I was working on SPC in this plant.

So my analysis of grape SPC starts in 1988, when Bill Curtiss and I at Ridge make a deal that when I leave Felton-Empire, I will come to Ridge and bring my knowledge of SPC to bear in the form of some HPLC analysis. We begin to investigate the polyphenols of the red grape. I thought that we would never actually get to the aromas. But today we are doing them.

We bought a high-performance-liquid-chromatograph in 1988 and I had a contract with Ridge to work two days a week on this project at the winery.

I tried to find out what the top 16 compounds were that we could measure in Ridge wines, that are polyphenols. And how do they account for the total number of polyphenols being reported in the wine literature.

CS: You have to know where these things exist in the grape to be able to develop techniques in the winery that deal with the manipulation of skin, pulp, seed, stems. How about stems?

LMcC: They have lots of tannin. And when you look at Pinot noir you find some producers who add stems to get more tannin. They can double the tannin content of a Pinot noir.

During the period we were talking about lots of questions explode on the scene from this group of ideas from natural products chemistry having to do with secondary chemistry in plants. Fermentation, use of press wine, vineyard activities, these will be the major places for change, and here is where we will be finding the major differences in bottled wine now. Bottled wine variation is a function of this chemistry, this secondary plant chemistry.

CS: What about flavanoids and such?

LMcC: They also are polyphenols.

CS: Nobody ever told me til now. That helps me understand this better now.

LMcC: Polyphenols include the simple phenolic acids, flavanoids, catechins (the tea-like components). There are about five to six thousand flavanoids recorded now. These include all the plant pigments that are red or blue, and yellow, as well.

I really believe that this chemistry focuses on the next frontier of wine improvement. That's what interests me about wine now, or any field. I want to know where the next frontier of knowledge is.

CS: Let's get this more specific in terms what you did in the field. I want to know what you've found out. I think I have that. I want to know what of this you've told people. And then I want to know how they have modified their practices in the vineyard and cellar as a result.

LMcC: What I am doing for people is I'm forecasting what winemaking steps are going to be the most important.

First, I'm pushing the idea that we have to look at the bottled wine to have a model for the goal. There is a lot of controversy about whether these ideas work. The producer gives me a wine that has the characteristics which is a goal for his wine production. Remember, I have to deal with the fact that people are going to be resistant to new ideas. So we introduced this idea at Ridge, and at Felton-Empire, of course-- I was the boss.

So my approach is to have people look at bottled wine. And I tell them that the bottled wine that they prefer have the characteristics of the wines that they should be making, when the wines are

²⁴ Its amber-like resin is courbaril, or copal.

brand new, a week old. So, do they like low tannin or high tannin wine. . . .

CS: But the point is that you are talking about twenty different variables that you can measure. The low-high tannin is just the canvas on which you'll compose the final work.

LMcC: Right.

CS: So the way I see it, your client is going to tell you that wine xyz is the best for him, and he is talking about a bottle of wine. It could be a brand new bottle of Château Latour. And you show him that this wine has this kind of spectrum of phenols.

LMcC: That's what we are going to do, but in 1987-88 we hadn't done it yet. But I have put forth the idea that you have to set a standard. It could be what you think is the best of your own wine, or someone else's wine whose quality you reasonably aspire to. Then we go back with the idea of changing the tannin by changing what's happening during fermentation.

We also pushed the idea that a lot of the things we were pushing upheld some of the classic elements of traditional methods. When I say you should keep the press wine out of the final product, I'm talking about something many great chateaux do. And back in the early eighties at Ridge they weren't doing it. You can say that you're really using Lafite's idea, not just my idea.

We did do some media work back in the mid-eighties, about what we were doing.

CS: I recall an article in *Wine Spectator* about a presentation you gave to a professional group here.

LMcC: We got a lot of negative feedback. I think winemakers thought we hadn't tipped out hats to them enough. Many think that new ideas about making wine should come from them-- period.

But at Ridge in these years my ideas were introduced across the board. And these ideas dovetailed very nicely with Paul Draper's ideas. He likes traditional wine making techniques and I like traditional wine. I know that traditional techniques do work. But he's not sure when they work. And I am able to introduce that predictive element, that's tells when certain traditional techniques work. Not only when, but how much the technique will work, and will it have a chance with this variety.

Today, Ridge wines are all made differently. This was not the case in the seventies or the early eighties. The Cabernets from Monte Bello are made quite differently from those from Jimsomare or York Creek. There is no more standard recipe for fermentation for Cabernets. It used to be that they made Cabernet the way they made Zinfandel. And when you went to market you told everyone your made your Zins like your Cabs, because it sounded better. Now they all are made differently and you don't mind saying it. And the Zins from Paso Robles are fermented differently than those from Geyserville. There is a sense of geography now that is making an impact of decisions concerning maceration. The amount of pressing that goes on is related to the varietal involved, or the vineyard. Zinfandels get all their press wine today, but not the hardest press. Cabernets at Monte Bello get no press wine at all until January or February, usually. And that's done in a highly predictive way. Different lots get different amounts of press. At Jimsomare they get no press and they are fermented about half the amount of time as the Monte Bello. The York Creeks are also fermented for a shorter period of time because of their high tannin. This is a focus on flavor.

CS: This explains the outcome, in terms of modifying activities in the cellar. But, this has to have been an evolutionary process. You must have kicked things around among you quite a bit. You just described four different approaches to fermentation. York Creek, Jimsomare, Monte Bello, and the Zins. It wasn't in concrete the first time you did it.

LMcC: No. It took a while. Remember, that in 1983 I introduced having a large number of cuvées. In

1984 we started fining the wine in ways that and at levels that weren't in the text books. Let's create our own fining levels that work for us and our grapes from different sources. This really had a powerful impact on the 1984 Monte Bello Cabernet. I remember a meeting where Hew Crane and Charlie Rosen are standing there and I have two bottles of wine for a board meeting to demonstrate some of these ideas. And they picked the wine that has been fined with ten pounds per thousand gallons as the most French-like. Paul says, that's true. This is the Monte Bello and this is the experiment over here. And everybody is flabbergasted to find that the old style is the wine they don't prefer.

CS: You're talking fining. I asked you a question about fermentation and you answered me with fining and separate lots. I want you to answer me in terms of fermentation evolution.

LMcC: After 1985 we started to create very tiny cuvées of wine, perhaps 500-1,500 gallons of Monte Bello, each one fermented separately, each one from a known vineyard tract. (In 1983 we had the ten cuvées, but we didn't know which part of the vineyard they came from.) Now they know.

CS: And some Monte Bello might go out under the Santa Cruz Mountain label.

LMcC: That's right. The fermentation was adjusted according to how tannic those wines were from the vineyard.

CS: But we're back there again. It isn't just a matter of how tannic; it's also which tannins. Hilgard told you tannic in grams per 100 cc in the 1890s.

LMcC: We are measuring the different tannins now here at my lab. We can do that kind of analysis today, about all kinds of grape secondary chemistry. We sell data packaged in a report that contains extra information.

CS: And, do you tell them to get this you do this?

LMcC: Yes. But I want to inject here a human element to help explain what was happening back in 1985-1987. This was the most tumultuous period of my life. It is also the most tumultuous in Dave Bennion's life. Maybe, Paul Draper, too. And the wine industry is changing in these years. People are going under financially. Felton-Empire sees that Ridge is being sold. Al Gagnon is in deep trouble at Tepusquet. We're forced to liquidate Felton-Empire because his bank buys our bank. Dave Bennion has been removed as president at Ridge at the beginning of 1985. And at the same time there is something very good happening at Ridge, even though there was a sense of loss without Dave as president anymore. But there was a sense of loss up there after he left as president, and I think he thought it was a little mean-spirited.

The good side is that Paul is able to really get some of the things done he wants done. It's when he quits thinking only about the "single vineyard." It's when he quits thinking that a better wine is a bigger wine, or that an ATP wine is the biggest most tannic wine in a category. These had been a lot of Dave's ideas. And I suspect while he was president there was always pressure to keep it the way it had been, the way he liked it.

Paul had great tasting ability. He is a consummate wine taster, the connoisseur serving as winemaker. He is a very aesthetic person, and has a fine sense of balance. So from my perspective I like what he is able to do in terms of change at the winery. This is when David Noyes leaves after Dave Bennion steps down. This is probably in 1989. Noyes had been the winemaker at the same time that Paul was the winemaker.

CS: How does Noyes' leaving affect the wine? Or was it a personal thing?

LMcC: Mostly, I think it was a personal thing between him and Paul Draper. They had a falling out.

CS: It wasn't that there would be a new system of production and he didn't fit.

LMcC: No, I don't think so. This is a human thing. Paul is taking over, really. I remember that Paul was always concerned over what his title should be. He wondered about what Dick Graff's title was at Chalone. That's how you can be a winemaker and advance in a company.

But I see that Paul is able to install his system. He wanted to move back in and take a larger part in making the wines.

CS: So, you think that Paul is back in it more at the winery after 1988-89.

LMcC: He is much more in it. From my point of view when Otsuka bought Ridge Paul sees that his function cannot be in the business side of operations. He's not a numbers-crunching executive type. He is a creative aesthetic who now wants to get more involved in the winemaking. You will have to talk to David and Paul about the details at the time.

CS: I shall, you may be sure.²⁶

LMcC: And then Dave Bennion is killed in the auto accident.²⁶ My company disappears. But in late 1987 I had struck a bargain with Ridge, through Bill Curtiss, kind of free-lancing there. I have a contract with Curtiss, because I can see all this turmoil. I'm wondering if they will install Japanese management and fire all the consultants, like me. That contract went from late 1987 to late 1989. But Ridge is now sold and Curtiss departs.²⁷ We don't sign a new contract in 1989. Wilma Sturrock, the new president wants to do it on a handshake.

I see a discontinuity of the planning, at least in my role. I had hoped, after Felton-Empire, that I might in 1989 renew my contract with Ridge almost as an employee again. And that I would then direct a research effort from within Ridge having to do with the polyphenols and flavor. We had bought the HPLC and were investigating the polyphenols to generate tests to make the predictions we have been talking about, like macerations, fermentations, and pressing. So what I did, in late 1989 I went to see Dick Graff at Chalone. I took my father with me, and I remember telling him that I'd be going to lunch with him. He said it was 11:30. He says, "How can we meet?" And I told him that my ideas were so far out, so far as these winemakers are concerned, that Graff would throw me out of his office in thirty minutes. And he did.

So we met for lunch. But then Graff and I met again that summer. He decided that I was on. He told me to come to meet the winemakers and that we'd do whatever they decided. This is a Chalone corporation deal. By now I have reformed my company as McCloskey, Arhennius & Co. (My wife is Dr. Susan Arhennius, who also dates back to the Santa Cruz, Jean Langenheim days-- for me. She's an expert in terpenes and makes a great partner, for several reasons.)

Dick Graff sets up the presentation, and the winemakers laugh me down, except for one person. This is Jeff Baker or Carmenet. He says, "I'll do it if I can have the entire budget for this at Carmenet." So I went aboard at Carmenet for the 1989 vintage. That's when my contract was dissolving at Ridge. So the company that was formed then is what you see here from that moment, these offices. The quake occurred that year, also.

We began to supply Ridge with a report which we developed here. We sell these reports and generate all the data that the wineries will need. We don't rely on a research program using HPLC alone. We have a multi-barreled approach. We just purchased other offices in Sonoma.

We give the winemaker data indexed to the bottled wine. The first reference always comes from his telling us what he likes, what his goal is, in terms of specific bottled wine. He'll give me maybe twelve wines in his competition, and he'll tell me how he ranks them. So I index your new wines to the scale taken from your ranking.

²⁵ Unfortunately I was not able to interview Noyes for this project.

²⁶ *San Francisco Chronicle*, 4/13/1988.

²⁷ *San Jose Mercury*, 1/1/1987.

CS: Have you done anything yet where you're looking at aged wine in the bottle?

LMcC: We have looked at some old Cheval-Blancs²⁸ and some Latours. We can see that in the first about seven years there is no precipitation of polyphenols in the wine. Cheval-Blanc in a twenty year period there is precipitation going on. In the case of a 1938 Château Latour half the bottle has precipitated.

CS: How about in a very old, very delicate Burgundy. Are the polyphenols still there.

LMcC: They are still there; they are very stable. But the astringency is dropping as the wine oxidizes a bit. There is this sense that the tannins are not as reactive. Remember, these are biological deterrents to attacks from herbivores and protectors against fungus attack. And they lose their biological activity with respect to their being to do this. In a bottle of wine they lose it also.

But there is something exciting about aging and polyphenols. Most wines don't age very well. That's something that I think the French know; they generally drink their wines younger. Robert Parker did a column this year saying that hardly any red wine ages well. You have to drink these wines young. Most wines. I think that I could confirm that well over half of the wines bottled with labels that say that the wines should be kept for twenty years, shouldn't be kept for twenty years. They would probably be more enjoyable on the younger side of their existence than the older.

CS: I have a couple of hundred cases of wine in my cellar, none of which say that they should be aged for twenty years, but perhaps should. The 1982 red Bordeaux are eleven years old, and I haven't even moved most of them into bins yet. Ten years is nothing for these wines. Granted, twenty years is long for a large majority of wines.

LMcC: I love old wines. The bouquets are so interesting. And the more tannic wines have the most interesting bouquets.

CS: Let's finish up on your operations today.

LMcC: We are an entrepreneurial operation. There is a lot of risk involved with what we are doing. We have offices in Sonoma and Santa Cruz. I think we'll have another one someplace else, eventually. We generate data by the means of high technology. We use HPLC, methodology that we have "knocked off" from biotechnology companies. We use a capillary gas chromatography to do aromatics. We use mass-specs to identify all of our aromatics. And we use carbon 13 to identify all the solid flavors, like the tannin in wine. We have the criteria for chemical identification that you would find in a pharmaceutical research group. This isn't very saleable, so we take the data that we generate, and we package it in a way that adds more information to it, that the winemaker wants, an index, mainly, of bottled wine. How does the wine index, the wine chemistry, compare to bottled wines? We have the winery set the scale of standards of excellence. Each winery gives us its own scale. We have about fifteen clients by now. We have thousands of wines in our data-base.

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²⁸ Premier Grand Cru of St. Emilion.

