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The Present Vista for the Vitis Vinifera European Grape Varieties in the East

Konstantin Frank

Dr. Konstantin Frank and Sons

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Introduction

It is true that all attempts to grow the Vitis Vinifera - European grape varieties in the eastern part of the United States since the early days of colonization of this continent have been infinite failures. (1,2,3,4,5,6,7,8,9). But today we know much more about the Vinifera than we knew in 1616. Now in Hammondsport, New York are flourishing more than 100 acres of Viniferas which are the pride of Germany, France and Russia. Furthermore, there is a tendency that the acreage of the Viniferas in the Northeast will continually grow. (10,11,12,13,14,15,16)

Today we know that the species Vitis Vinifera represents many thousands of European grape varieties with tremendously different characteristics. Among them is Muscat Alexandria, grape variety native to Egypt, and many, many other varieties native to South Asia and to South Europe, which are very sensitive to low temperatures and which can be grown only in regions free from freezing temperatures. But among the species Vinifera are also very freeze resistant grape varieties such as Muscat Ottonel, Johannisberger Riesling, the entire family of Pinot’s; Pinot Noir, Pinot Gris, Pinot Blanc, Pinot Chardonnay, Russian
2.

varieties; Sereksia, Rkatziteli, Mzwane, Saperavi and a great many other European grape varieties which never before have been tested in New York State. These very freeze resistant grape varieties were grown many centuries mostly in the northernmost commercial grape growing regions of the world: on the Moselle, on the Rhine in Germany as well as in the coldest grape regions of Russia, where the winter temperatures are much lower and the growing seasons much shorter than those of the Finger Lakes region or on Long Island in New York State, or even in the grape growing regions in the State of Ohio, where the climate conditions are much better.

From these very freeze resistant grape varieties, German and Russian scientists selected some clones. These clones are more productive, much higher in quality and surpass the original varieties from which they were selected for their freeze resistance.

But the Vitis Vinifera varieties must be grafted to protect them from Phylloxera and in some cases, they must be grafted to protect them from Nematodes. They must be sprayed to protect them from fungus diseases in the Northeast, the same way as they need protection from these pests wherever in the world the Vinifera are grown. Therefore, by using new techniques, new remedies, freeze resistant grape varieties and even more freeze resistant clones, which were unknown in 1616, the culture of Vitis Vinifera in the Northeast presents no more unrealizable difficulties, and does not differ much from the general practice of grape growing methods elsewhere.
The Present Stand and the Perspectives for the Future for the Wine and Table Grape Industries in New York State

At the present time the New York State wine industry utilizes approximately 20% of the total grape production of the State. This means that 15,000 to 18,000 tons of grapes, the yield from 5,500 to 6,000 acres goes annually to the wine making industry. The remaining 80% of the State's grape production, the yield from 24,000 acres, is annually sold to the juice industry.

The Table Grape industry is practically non-existent in New York State as well as in the entire Northeast. Very few Concord grapes are utilized as fresh fruit. Those that are, are used mostly at home by the grape growers and their families. 99% of the grapes that are sold as table grapes in the Northeast come from California and Arizona, the statistics show that New York State alone imports forty million dollars worth of table grapes annually. This means that the population of New York State consumes approximately 150,000 tons of imported fresh grapes, or the yield from an additional 45,000 acres.

There has always been a demand for imported wines from European countries. But after World War II, because of the steady stationing of American servicemen abroad, and the increase in American tourists, the taste of Americans changed. More and more Americans began to prefer the taste of imported wines. Very rapidly consumption of foreign wines grew until in 1953 the United States imported approximately four and a half million gallons of wines. (17)
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According to the U.S. Department of Commerce during the first nine months of 1962 nine and a half million gallons were imported by the U.S. The leading American magazine Wines & Vines predicted the importation of fourteen and a half million gallons in 1962. (18)

This means our imports have increased more than three times. On the other hand, for the past three years, the Concord growers were unable to sell their crops in their entirety and the price of Concord grapes dropped from $120.00 a ton to $75.00 and even $50.00 a ton.

What exactly does this fourteen and a half million gallons mean? To produce it we must have at least 80,000 tons of grapes and to be able to harvest this tonnage we need a vineyard area of 28,000 acres. This means that to be able to cover the imports of foreign wines and the imports of table grapes, the acreage of grapes must be increased from 29,000-30,000 present now to 100,000 acres and even then we would have to import millions of gallons of European wines from California which New York State wine industry uses now for blending to reduce the foxiness of the Labrusca wines produced in this state.

These fourteen and a half million gallons of imported wines represent more than seventy million bottles. If we take a price of $2.00 a bottle, then this would make a sum of one hundred and forty million dollars. This sum is enough to pay a salary of $5,000 per year to 28,000 workers. And if we take an average size family with five members, then this one hundred and forty million dollars would be enough to support the population of a city like Albany.
5.

But more must be said: It is true that in Europe in some few exceptional years, in very few adaptable locations, a very few famous wine cellars, in very small quantity can produce wines of incredible high quality. But such excellent great wines with such famous names as "Bernkasteler Doctor", "Trockenbeerenauslese" (Dried Berry Selection) or "Schloss Johannisberg" or "Schloss Reinhartshausen" or "Chateau d Yquem" and a very few other famous wines are as excellent as expensive. One bottle of such celebrated "Trockenbeerenauslese" has been sold even at auctions in Germany for $50.00 and $75.00 and even higher. Under these labels here in New York you can buy a bottle of "Bernkasteler Doctor" "Trockenbeerenauslese" for only $6.00.

Some importers have become very aggressive and very untruthful. They tell the consumers that this high quality wine can be produced only abroad, because this is one wonder which cannot be repeated anywhere else. (19) Some assure the American buyer that the foreign wine labels are "sober", "especially truthful", "impressive", That they "reveal the basic facts about the wines", that they are "superior". Some advertisers go even so far as to find some connection between the quality of "Ockfener Geisberg" Auslese and Communist leader, Karl Marx (the CONTINENTAL magazine of September 10, 1962).(20) Is this not a little too much?

A good answer to these questions is given by Mr. Otto E. Meyer in WINES & VINES of November 1961 (21), Mr. Fred C. Taylor in WINES & VINES of January 1962. (22)
This changing of taste and the foreign competition evoked on assimilation of the New York State wine industry to the European wine types. Annually millions of gallons of wines are imported from California for blending with the wines produced in New York State to reduce the foxy Labrusca flavor. Besides for the assimilation of the New York State wine industry to the foreign wine types, the French hybrids were continuously introduced and the acreage of these hybrids increased. But this is moving in a very dangerous direction and can have very bad consequences.

It is well known that the leaves of the Vitis Vinifera varieties, as well as the leaves of the American-Labrusca varieties cannot be attacked by the most destructive race of the rootlouse, so called "leaf form Phylloxera". (23,24,25,26,27) On the leaves of Concord, Catawba, Delaware, Ives and other American grape varieties with Labrusca blood in them, the "leaf form Phylloxera" cannot exist. It cannot build the galls, it cannot have their full closed cycle of development. That is why in the regions of European grapes, including California, as well as in the Northeast grape region of Labrusca grape varieties the spread of Phylloxera is very limited in area and goes slowly. The leaves of the Franco-American, so-called French hybrids, will be very badly attacked by the "leaf form Phylloxera". Therefore, only in the planting of the French hybrids can the Phylloxera make a full development cycle. (23,24,25) By the propagation of French hybrids here, artificially will be organized special nursery conditions, a hatchery for the propagation and spread of the most destructive form of Phylloxera. The numbers of
this pest will be enormously increased and there is no doubt but what this will be very destructive for our entire wine and juice industries. How can we ignore the destruction and loss caused so recently by this pest in Europe and throughout the entire world, including California?

We have to take into consideration the fifty years experience with the French hybrids in European countries which strictly prohibit the planting and the propagation of the French hybrids in Germany, in Italy, in Austria, in Russia and in most of the grape regions of France. (25,26,27,28,29) In these countries all vineyards are grafted on Phylloxera resistant rootstocks, but here in the regions of own rooted grape culture, by the propagation of French hybrids we take enormous risks. In new European literature the French hybrids were qualified as propagator and spreader of Phylloxera. The leading European scientists and the governments of the above mentioned countries are against propagation of French hybrids.

On October 24, 1962, I received a letter from the president of the Andres Wines, Ltd., Mr. A. Peller at Port Moody in British Columbia. I would like to quote a part of this letter here, "At present all of our plantings are on self rooted stocks. In importing some of our plants these last two years Phylloxera has showed up in the plants in the leaf form only, the year they were planted, even though the plants were dipped in Malathion solution before shipment. The affected plants were Seibels 5279 and 10878. It has not showed up on any of the other plants even though they were in the same shipment. The affected plants were dug up and
destroyed as soon as they were spotted, the surrounding area was then fumigated. So far the protective measures have been successful."

The Seibels 5279 and 10878 are the most planted French hybrids here and they show already Phylloxera galls on the leaves, regress in growth and productivity. Before I became associated with Gold Seal Vineyards, Inc., in Hammondsport, Mr. Charles Fournier, President of this wine company, had tested many thousands of French hybrid varieties, since 1953 to 1958 I have continued this testing. Most of these French hybrids, because of lack of quality, low yield and presence of Phylloxera, were destroyed in 1957. Also the best of the French hybrids—Ravat 6 and 51 and the Seibels 5279, 10868 and 10878, some of them even being grafted, are now finishing their swan song. They can in no way withstand the competition of native American or European grape varieties. The Ravat 6 is also very sensitive to the powdery mildew and freeze damage. In Canada where tests of these French hybrids were started a few years earlier their digging up has already begun.

In the years 1953 to 1955, I tested 5,000 different hybrids produced by breeders from New York State experimental Station, Geneva, New York. During this three year period we made weight records, sugar-acid determination and we fermented these seedling samples separately. Among these seedling grape samples were hybrids with a very different degrees of Labrusca aroma. There were samples with very strong aroma like Ives and even stronger, and there were
samples almost neutral, without any sign of Labrusca taste. Host of these seedling vines were very vigorous and very productive. This confirms the high degree of their Phylloxera resistance. They showed also high resistance to fungus diseases.

It is very important that the New York State Agricultural Station hybrids all have Labrusca blood in them and therefore the leaves of these hybrids possess immunity to the leaf form Phylloxera, the same as all other American Labrusca varieties. Therefore these hybrids will not propagate and will not spread Phylloxera. These hybrids were bred and born here for these climate and soil conditions and for the taste of Northeast Americans, with different degrees of foxy aroma so highly appreciated in the Northeast.

The president of the Urbana Wine Company, Charles Fournier, was very interested in finding hybrids with neutral European taste. Hybrids without any Labrusca aroma. His searching for this neutrality between thousands of French hybrids which he tested in Hammond-sport for many years has not been very successful. Most of these French hybrids have the so called "hybrid taste" or so called, "Indian taste" which is inherited from Riparia and Rupestris, wild American species.

From the experimental plot of the New York State Agricultural Experiment Station, from 5,000 different seedling numbers grown there, we selected direct in the vineyard 78 seedlings. Very helpful in this tasting was Austrian exchange student, Mr. Josef
Moser, son of Mr. Lenz Moser, highly respected European author of the book "Grape Growing One Time Different". We both are very sensitive to the sign of Labrusca taste and we selected these seedling numbers to be without any Labrusca aroma. The wine samples made from these selected seedlings were tasted by three professional wine makers.

Here are some comments made during these tastings:

Sample #33833 - Muscatel type, light, interesting, may be for blending with dry wine.

Sample #34840 - Good, pink, agreeable, low acid, interesting.

Sample #33277 - Peculiar flavor, may have to be made on the skin, Cabernet type.

Sample #34376 - Fruity, nice for Rose, C.F. reminds of last pressing of Pinot Noir.

Sample #33294 - Very good, vinous red wine bouquet, Cabernet type.

Sample #34393 - Good wine, good body, low acid, good balance, interesting bouquet.

Sample #33403 - Worth watching, slight "Riesling" aroma, good taste. And so on: (30,31)

It must be stated that these wines of New York State hybrids were compared with the wines imported from Europe and from California in blind tasting.
These selected hybrids showed neutral taste, high sugar content, some of them even 26.4% sugar and very good acid. I strongly believe that many of these New York State hybrids are positively better than the Seibels 5279, 10868 and 10878 and I hope these French hybrids soon will be replaced by some of the New York State very valuable hybrids with neutral taste and with immunity to "leaf form Phylloxera".

A very good idea can be the start of a new industry of high quality grape varieties of European type—Perlette, Delight, Beauty and some others as well as table varieties of American type like Alden and others, strictly high quality table types. (42,33) For the city of New York this table grape industry will be very successful on Long Island and for Chicago and vicinity in Ohio State grape regions, on the shores of Lake Erie. The climate conditions and the soil types in both these regions are much milder and the growing season much longer than in the Finger Lakes region and the sandy soils there make grape culture much easier.

**Experimental Methods and Materials**

There was always some demand for imported wines. These imports grow very rapidly and because of the Free Market there is no doubt but what this free foreign trade can damage very badly our own wine and grape industry. Therefore we have to prepare ourselves to be able to compete with these imports and this we cannot do even with the best hybrids and hybrid wines. Only the very best and highest quality Riesling, Pinot Noir, Pinot Chardonnay or Cabernet wines produced here and presented to our customers can do the job.
Having experience in growing Vitis Vinifera grape varieties 1915 on my father’s farm and the French hybrids and the Viniferas also since 1922 as an horticulturist with diploma and since 1929 as a grape scientist in Europe, Russia, Austria and Germany, I was very surprised to hear and to read that the Vitis Vinifera - European grape varieties - cannot be grown in New York State. Shortly after my arrival in this beautiful, free country, while working at the New York State Agricultural Experimentation Station in Geneva, New York, in 1952 and 1953, I started the study of possibilities of growing the Vitis Vinifera in the Northeast.

Since that time I have personally grafted more than 350,000 Vinifera vines and since 1953 planted 10 to 15 acres of Vitis Vinifera in Hammondsport annually. During that time we tested in our nursery and in our experimental vineyards about 20 different European grape varieties.

The start of this project was made with propagation wood of Vinifera varieties introduced from the University of California at Davis, from Bright’s Wine Cellars in Canada, and from the New York State Agricultural Experimentation Station at Geneva, New York. We were also very successful with our own selections of native wild grape species which we selected from the woods of New York State and Canada. These are wild American grape species of Vitis Riparia and Vitis Aestivalis and their natural crossings. Altogether we have tested 62 different rootstocks representing our selections, old rootstocks developed in France, Hungary, Austria and new selections produced by German scientists.
In exchange for my selections of wild American species which we have used with good success for grafting as a rootstock, on two special permits from the U.S. Department of Agriculture, Agricultural Research Service, Crops Research Division in Washington, we introduced in 1959 and 1960 from the German and from the Austrian Experimental Station, 4,000 grafted vines which represent about 30 different clones of Johannisberger Riesling, Gewuerztraminer and Muscat Ottonel. These are clones of very premium quality, representing very different types of wines. These wines are typical to Riesling wines produced in different German grape regions, such as the Rhine type, the Moselle type and wines typical to the Riesling wines produced in the Palatinate, in Bavaria and in Austria.

These clones are selected also for high productivity and they do surpass the original varieties, Riesling, Pinot Chardonnay, Sereksia and others, from which they are selected for higher freeze resistance. We grow them now with excellent success in our quarantine plot in Hammondsport.

Since 1959 these imported vines have been under quarantine for virus disease, observation by scientists from the U.S. Department of Agriculture Research Service, Plant Quarantine Branch, Washington D.C., Plant Quarantine Branch, Hoboken, New Jersey, Department of Agriculture and Markets, Albany, New York and under observation of the Department of Plant Pathology of Cornell University, New York State Agricultural Experiment Station, Geneva, New York. At Geneva these imported vines are included in the indexing program.
for checking of freedom for virus diseases. During these 4 years of observations and checking, no symptoms of any virus diseases have been found. It is hoped that in the spring of 1963 these clones will be released for propagation.

Discussion

The profitability of the vineyard will be determined by the productivity and by the longevity of the vines. These two factors are based on the adaptability of the rootstock variety to the type of soil and on the affinity of the rootstock varieties to the scion. The degree of this harmony between the rootstock variety and the scion affinity stipulate in both directions the reciprocal influence between rootstock and scion. In this way, by selection of proper combination of soil, rootstock and scion, we can to some degree control the start and the vigor of the growth, the productivity, the time of blossoming of grapes, the time of fruit ripening, leaf coloring, leaf fall, degree of wood ripening, freeze resistance and the age of the vines. (34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50) If one of these three components soil - rootstock - scion - which stipulate the adaptability and the affinity is in disagreement, then we cannot expect good results and the degree of this disagreement determines our success.

In my experience I have never met such enormous changing of soil types on such a very small area. In a row of 70 vines, the soil changed 7 times. These types of soil were enormously different from each other in physical, chemical, organic matter and moisture holding properties. These changes of the soil in our experimental
vineyard are shown in a detailed soil map made by our County Agricultural Agent, Mr. Ted Markham (Fig. I). It is normal to expect that these very different types of soil will in different degrees influence the adaptability of rootstock. Therefore on this experimental plot we have noted, as we have suspected, different vigor, different adaptability, different freeze resistance and different freeze damage and naturally different productivity of grape varieties tested on this experimental plot. After the very exceptionally cold winter of 1960-1961, in which the temperature dropped to minus 22 Fahrenheit or minus 30 centigrade, the fluctuation in winter damage and in production was enormous. By the Riesling grafted on the Riparia/Rupestris 3309, on Berlandieri/Riparia 5A and 5BB and by the Gamay Beaujolais grafted on Cordifolia/Riparia 125-1, from 80% to 90% of buds were killed by the freeze and from these rootstock-scion combinations we have picked only 200 to 300 pounds per acre. In the same row, Riesling grafted on native Riperia and Gamay Beaujolais in the south part of the same row, grafted on native rootstock Riparia/Urbana, but on different soil types, bud damage was only 10% to 15% and we have harvested 5 to 6 tons per acre.

The adaptability of 62 different rootstock varieties we tested by planting of 2,000 rootstock vines on different types of soil in 7 different locations in our 107 acres experimental farm. This makes it possible to study the adaptability of the rootstock varieties without influence of the scion.
From these test plots of American rootstock varieties, as we suspected we obtained very different but very convincing results. In the same plot, in a case of a high degree of adaptability between the rootstock variety and the type of soil, we pruned an average per vine of 150 to 200 cuttings for grafting. In the same test plot, in a case of high disagreement or even total absence of the adaptability between rootstock variety and type of soil, the vines were very depressed, dying or even dead. And so, in all these 7 plots of rootstock testing, we have received very different results depending on the degrees of adaptability or disagreement between the rootstock varieties and the type of soil.

Similar response to the adaptability we observed in our experimental nursery. In one row of 500 feet where we planted 2,000 grafts, we noted sections of this row with 90%-95% of first grade grafts. On the other hand, in the same row, because of the change of character of the soil, we have sections, some spots, of this row with total loss of grafts. But in the next row, only three feet away, on the same type of soil, one other rootstock variety has done very well. This is nothing new. Every farmer knows, and can tell you, in which spots of his vineyard he has every year a better yield. Concord, Catawba, Delaware, etc., possess their adaptability in different degrees to different types of soil also.

In 1953 and 1954, not having knowledge about the local soil variations, we planted our experimental plots in 4 replications. In every replication we planted ten to twenty vines of each rootstock-
scion combination and we were disappointed in our expectation by finding out how hard it was to find two replications of one rootstock-scion combination being planted on more or less identical or similar type of soil. In some cases only a part of the vines of the replication were planted on one type of soil and the other part of the vines of the same replication were planted on very different soil type. Therefore, after we discarded about forty of absolutely nonadapted rootstock varieties, we planted from one-half to two acres of some very promising rootstock-scion combinations for close testing.

Also in these new plantings we have to make detailed soil maps to be able to find the best adapted rootstock-scion combinations for a different type of soil. That can be done only by trail for a number of years and number of experimental plots. For better comparison these plots shall be planted in different locations and on different types of soil.

After finding out the adaptability of rootstock varieties to the different types of soil, before planting new vineyards, we have to survey, to map the soil types of the future vineyard and according to the adaptability of the rootstock variety to the type of soil, we have to locate and to lay out the rootstock-scion combinations. Only in this way can we avoid the fluctuation in growth, freeze damage, productivity, etc.

Since 1953 we have made phenological observations, temperature and freeze damage records. Since 1957 we have yield records
and analysis for sugar and acid determinations. Also from this year we have started our wine making experiments. In my experimental cellar are stored about 300 gallons of experimental wines made since 1958 from 14 different grape varieties and about 15 different clones. Also we used different methods of wine making and different times of harvesting.

During the past six years we have harvested Johannisberger Riesling in the middle of October equal to the quality of a Riesling of "Spaetlese" (late harvest). In such ripe condition the Riesling grape can be harvested in Germany in a few best locations, late in November or even December and only in one year out of five. Also, in the middle of October we have harvested Pinot Chardonnay, Gewuerztraminer and other grape varieties of Vitis Vinifera, very ripe and with high sugar content and good balanced acid.

In a leading American magazine, WINES & VINES, April 1961, U.S. Senator, Thomas H. Kuchel called the introduction of Premier Semillon produced by the California winery, Cresta Blanca, from grapes attacked by Botrytis, as a breakthrough of the European monopoly. The author of the book, “The Technology of Wine Making” and the Head of the Pomology Department of the University of California, Dr. Maynard A. Amerine, described this “Premier Semilion” as a worthy culmination of long years of study and experimentation.

And here, for the past six years, the Botrytis was attacking our Riesling grapes every year. In 1961, 60% of the berries of the Riesling were botrytised. All our Johannisberger Riesling wine
made in the middle of October in 1961 was already in the condition of German "Spaetlese" (late harvest).

In 1961 we made ten gallons and 1962 we made twenty gallons of a famous German "Trockenbeerenauslese" wine. This wine, so-called "Dry Berry Selection" has received world-wide recognition and costs in Germany more than $50.00 a bottle.

In 1962 we made forty different European wine varieties.

**Conclusion**

The Vitis Vinifera wines produced in Hammondsport, New York, are now a reality - they are now on the market.

In 1961 Gold Seal Vineyards, Inc., bottled the Johannisberger Riesling, Gewuerztraminer, Pinot Noir, Pinot Chardonnay and Muscat Ottonel that were harvested in Hammondsport in 1959 and 1960.

In 1962 in Hammondsport were harvested more than one hundred tons of Vitis Viniferas, true European varieties. That is 100,000 bottles - a very good start.

Ten years of experimentation with Viniferas in Hammondsport is not enough to make decisions and recommendations about adaptability and affinity of rootstock varieties. To do that we need more data, more experimental plots and more years of experimentation.

The general grape practices of New York State need very few changes to be adapted to the successful culture of Vitis Vinifera.
The quality of our Vinifera wines produced in 1957, 1958, 1959, 1960, 1961 and 1962 in Hammondsport confirms to us that on the slopes of the Finger Lakes we can produce GREAT WINES of America; excellent varietal wines such as Johannisberger Riesling, Cabernet Sauvignon, Pinot Noir, Pinot Chardonnay, Gewuerztraminer, Muscat Ottonel - equal to the Great Wines of France and Germany, wines that are the pride of these countries.

In 1961, both leading American magazines in the wine, juice and grape industry, WINES & VINES as well as THE AMERICAN FRUIT GROCER, published several articles elucidation the problems of growing the Viniferas in the East. Some of these articles expressed very contradictory points of view. It goes without saying that after the appearance of these articles, each time I received congratulations as well as many inquiries asking for my opinion, advice, suggestions and plant material.

These congratulations and interrogations were expressed by leading wine industrialists, wine and grape scientists, domestic, on the State and Federal level as well as abroad, which respectably represent and conduct the wine industries and wine and grape science. Many of these scientists have written books about the wines and grapes, some of them have even world-wide reputations.

It is impossible to quote here many good wishes, congratulations and references but I would like to express my cordial appreciation to all of them who wrote to me for their encouragement during years of hard work.
Here are some of these opinions, judgements and compliments:

“I think Dr. Frank is going toward the improvement of the wine industry in the Finger Lakes area. It may be some years before it is fully realized, but I feel confident that his work will be greatly appreciated in the years to come. I want to congratulate you and your company for a far-sighted policy that will be a credit to the industry”. (W. E. Washbon, Assistant State Leader of County Agricultural Agents) June 19, 1957.

“...may be another revolution in the Finger Lakes wine industry. Dr. Frank has grafted Riesling, Pinot Noir, Cabernet and Chardonnay. These grafted vines have proved hardy through the rugged winter in the lakes region. It is uncanny to have vines grown in the native American soil in this N.Y. lake country produce wines indistinguishable from the European wines. Dr. Frank thinks hybrids are out.” (Tom Marvel, Writer, “Dictionary of Wines”) October 1957.

“Diesmal sind Ihre Weinproben gottlob vollstaendig intakt angekommen. Ich habe sie mit meinen Mitarbeitern durchprobiert und sie auch vom Autor des Buches "Die Technologie des Wienes" Herrn Weinbauoberlehrer Troost verkosten lassen. Gerade auf das Urteil des letzteren lege ich grossen Wert. Bei den Nr 1 und 2 sagte er "Donnerwetter, die koennten ja bei uns gewachsen sein. Der mann, der sie herstellte, der kann was". Es freute mich, mein Urteilso ueberraschend bestaetigt zu erhalten. Die erste 3 Nummern sind gerade schoen, elegant, mit feiner Blume...

Mitt einem Wort: wir gratulieren Ihnen zu diesen Weinen

Zu meinen Mitarbeitern sagte ich, sie wuerden einen historischen

Es freut mich für Sie, dass Ihre langjährigen, zarten Bemühungen unter den ungünstigen klimatischen Bedingungen des Nordostens der U.S.A. Europäer-Reben zu kultivieren, von Erfolg gekrönt wurden” (Hugo Schanderl, Professor Director of Botanical Institute in Geisenheim, West Germany) December 1, 1958

"Dr. Franks' work so far is very impressive and my interest in following the Viniferas is much increased. Both of the wines were very good. But it is the Cabernet that really catches my eye and arouses my hope.” (Phillip M. Wagner, Proprietor, Boordy Vineyard, Riderwood, Maryland) September 24, 1958.


"Bestätige den Fspfang der Weinproben. Sampel I stellt einen prachtveller Rieslingwein dar, der einfach jeden staunen laest." (Hugo Schanderl, Professor Director of Botanical Institute in Geisenheim, West Germany) July 3, 1959.

"Thanks for your wine samples. They were tasted in the lab and compared with ours when we had wine made from the same varieties. Your Cabernet was fermenting or gassy and had a strong pleasant winy - bouquet - tasted good. The chromatograph shows that little or no male-lactic fermentation has taken place. Acidity is good
but on the low side* Were the grapes over-ripe? The Pinot Blanc is very good. A little too acid, also, but no mal-lactic fermentation. Better than our Chardonnay." (Ademar de Chaunac, Winemaker, Brights Wines Limited, Canada) April 30, 1959.

"Most of the folks were very much interested that some European varieties proved quite hardy at Urbana, even though they were seriously injured in the Station vineyard and at Fredonia. Most of the people seem to feel that the rootstock apparently, as you suspected; played some role in the degree of manifestation of winter injury on the European varieties. Apparently the Pinot Chardonnay on rootstock 1202 appeared much more resistant than when grown on rootstock 1613. The general comments would indicate that the work you are doing shows promise of being very valuable not only to Gold Seal Vineyards but to the New York grape industry as a whole. In general, all who visited your program agree that Gold Seal Vineyards should be commended for their viticultural research and this effort on the part of industry should be encouraged. We hope that we will have an opportunity to continue to cooperate with you to our mutual benefit." (Arthur J. Heinicke, Director, New York State Agricultural Experimental Station, Geneva, New York) July 1, 1959.

"I was glad to read in a recent Democrat and Chronicle the very nice publicity which they gave you and of which you are very deserving. I believe your record is an asset to the industry in propagating these vineyards new to the area." (William Widmer, President, Widmer’s Wine Cellars, Inc., Naples, N.Y.) December 3, 1959.
I wish to say that I would have liked to have seen you Thursday after tasting your wines. I was so impressed by them that their memory remains almost as fresh as when I was actually tasting them. The Riesling and the Chardonnay are magnificent wines. How can one say which one likes the best! They are so different, so true each in itself, so beyond comparison. The Pinot Gris I have never before tasted as an unblended wine, and I found it extremely interesting. It seems to me to have a definite place in the wine category, as a wine for fish, yes? Even to serve with the sweeter kinds, such as lobster. The Pinot Blanc is a gay wine - I found myself smiling over it.” (Mrs. Julian Street, Writer, Sharon, Connecticut) April 30, 1960.

“The beginning of the end of California’s monopoly on Vinifera wines...Dr. Frank did the work; President Fournier backed him. Credit for this N.Y. State Vinifera growing project goes to Dr. Konstantin Frank, Vineyard Research Man and to Mr. Fournier who gave Dr. Frank the go-ahead for..."(CALIFORNIA WINELETTER - The Independent Wine Industry News Service - Since 1948) Kay 21, 1960.

“This is just a note to express to you my great appreciation for your kindness in showing me your successful experiments with Vinifera grapes at Hammondsport. I learned a great deal more about grapes in one afternoon...” (C. O. Erlanson, Chief New Crops Research Branch, U.S.D.A., Beltsville, Maryland) August 23, 1960.

“You have completely convinced me of the success of your experiments and I do not see how any reasonable man can still doubt them ...I do hope that some day I shall be able to benefit by some of
these successful experiments and as we discussed in the vineyard, I hope that you can send me some wood this spring of different kinds of rootstock that have an affinity for Riesling and Pinot Chardonnay. Again, my congratulations and sincere thanks for a most memorable day.” (Everett S. Crosby, Proprietor, High Tor Vineyards, New City, New York) August 10, 1960.

“Have heard glowing reports from Andre Tchelistcheff about your successes with Vinifera and the quality of the wines made from them. Congratulations to you and Dr. Frank on this project, we’re very happy it has worked out so well.” (Louis M. Martini, Vice President, Louis M. Martini Winery, St. Helena, California) August 31, 1960.

“It was more than I expected. Before making the trip I had heard of your success in growing Vinifera grapes at Hammondsport but I had hardly expected to witness such uniformly superb performance by so many varieties. This..., and I feel that I learned a great deal.” (Harold F. Vinter, New Crops Investigations, New Crops Research Branch, U.S.D.A., Beltsville, Maryland) September 22, 1960.

“Your success with Vinifera grapes in the Finger Lakes area clearly demonstrated that it is possible to grow these grapes here in America. We recognize the contribution that these varieties could make to the industry and are indeed grateful for the information that you have given to us.” (C. J. Monroe, Field Manager, Jordan Wines Limited, Toronto, Canada) October 6, 1960.

“On behalf of the Society I wish to extend to you and Dr. Frank our sincere compliments for your beautiful products and to thank you for your courtesy and generosity in making it possible for us
to taste them." (Dr. Raoul H. Blanquie) January 20. 1961.

"Your Chardonnay was just as fine as the bottle we enjoyed with Mildred and your good self Lake Keuka." (Herman Wente, Wente Brothers Wine Cellar, Livermore, California)


"We all enjoyed the tour of the vineyards and found it most interesting and instructive. Dr. Frank's enthusiasm and deep knowledge of vines and grapes is impressive. On discussing your new wines on the way home, we all agreed that Pinot Chardonnay, Johannisberger Riesling and Gewurztraminer were outstanding and comparable to first-class representatives of their European counterparts. The Pinot Noir Rose was even more outstanding. The Pinot Noir had an excellent fruity flavor..." (Raymond Ewell, University of Buffalo, Buffalo, New York) June 7, 1961.

"My interest in the Vinifera in the East had been very much aroused by Andre Tchelistcheff's enthusiastic praise for White Riesling wines he had tasted in New York, and Dr. Winkler's prediction that New York State could easily out perform California in producing fine table wines from that grape." (J. Harold Wayland, Ph.D., Consulting Physicist, California Institute of Technology, Pasadena, California) August 27, 1961.

"At various times in the past year, there have been articles concerning the success Dr. Frank has had in growing various varie-
ties of Vinifera in the Keuka Lake District of New York. Late this past August I decided to see for myself. I was amazed! Dr. Frank has considerable acreage in Riesling, Cabernet Sauvignon, Gamay, Pinot Noir, Traminer and a number of others..., and in contrast to my own French hybrids grown in the milder winter climate of eastern Pennsylvania, I found acres of Dr. Frank's Vinifera were in better condition than my hybrids. Here were Vinifera with no mildew, sturdy, vigorous in appearance and literally twice the grape production of my hybrids! Obviously, some rootstock-scion combinations were farmore successful than others and there seems to be considerable "doubt" that other growers will have the same success as Dr. Frank. Most of this doubt, however is based on past failures and not on actual attempts to duplicate Dr. Frank's methods. Of course the proof of the vine is in the taste of the wine and I might add that Gold Seal's wines made from Dr. Frank's Viniferas are spectacular! They are far closer to the better European wines than much of California's products available here in the East, made from low acidity grapes!"(M. S. Gordon, Birchrunville, Pennsylvania) September 16, 1961.

"Both Braun and I were impressed by the vigor of the Riesling and Pinot Chardonnay vines and the absence of any serious fungus diseases such as black rot, downy mildew and powdery mildew on these varieties. Since the 1961 season was a very favorable one for the development of both black rot and downy mildew, it is apparent that neither of these diseases offers any serious problems on these varieties with the present fungicide program. I will be very interested in what your yield figures on Riesling turn out to be, particularly since
they will be obtained from a fairly sizeable acreage. It was still my impression that yields will prove slightly lower than those you obtained last year, but whether your estimate of 6 tons per acre or mine of 5 tons per acre turns out to be correct is scarcely worth worrying about - either yield is extremely good for 3 year old vines!"

(R. M. Gilmer, Professor, New York State Agricultural Experiment Station, Geneva, New York) October 4, 1961.

"It was wonderful to see the phenomenal success you are having with your Vinifera selections and we at the College have a tremendous interest in your work. I have discussed briefly with Dr. Barton your suggestions regarding the growing of table grapes on Long Island. Both of us agree that this should be followed as quickly as possible and we will attempt to make arrangements this fall."

(W. K. Kennedy, Director, New York State Agricultural Experiment Station, Geneva, New York) October 4, 1961.

"Professors Hoffman and Tompkins have kept me informed of your willingness to provide cuttings of your table grape selections for planting on Long Island. On behalf of the College I wish to thank you for your keen interest in this project and the assistance you are providing. All of us sincerely hope that these varieties can be grown successfully on Long Island, as this could be a valuable asset to a number of farmers."

(W. K. Kennedy, Director, N.Y.S. Agricultural Experiment Station, Geneva, New York) October 27, 1961.

"This is to express the appreciation of the Pomology Department for the excellent seminar you gave our group on Tuesday, January 16. We have received favorable comments from both staff and graduate
students.
In your discussion on the possibilities of growing Vinifera in New York, you raised some interesting points. Your thoughts on the broad distribution of Vinifera grapes throughout the world, the adaptability of some varieties to areas similar to New York, together with new pesticides and other techniques now at our command would seem to justify a reconsideration of our past position. Furthermore, your results at Gold Seal to date indicate we should experience fewer difficulties with certain Vinifera varieties than did our forefathers who lacked advantages of the present era."
(M. B. Hoffman, Head Pomology Department, New York State College of Agriculture, Cornell University, Ithaca, New York) January 22, 1962.

"I am sorry I missed your seminar at Ithaca. However, I have heard some very complimentary remarks about it. I would like to have a copy of the mimeograph material you gave out at the time." (John Carlton Cain, Professor, N.Y.S. Agricultural Experiment Station, Geneva, New York) January 18, 1962.

"The amazing successes that you have in growing Vinifera should be a great source of satisfaction to you. After what you showed me I am convinced that whole new vistas are being opened up insofar as the New York State wine industries are concerned. I sincerely trust that you will receive the recognition due you for pioneering work. I want to take this opportunity to say again to you that I am extremely interested in the possibilities of growing Vinifera in Maryland." (Dr. G. H. Mowbray, Tall Timbers, Woodbine, Maryland) July 6, 1962.
"The visit with you we still remember and retain the impression of the good work being done to establish "Vitis Vinifera" in the east of U.S.A. We have at last managed to introduce a minute quantity of quality Vinifera varieties from Davis, California. It was a terrific struggle to get the Government to allow it in. Even so it went to a Virologist in Victoria for further quarantine. I write personally to you for some information on the stocks you have found successful in the region at Hammondsport. All stocks in Australia are of ancient origin and probably degenerate."

(Karl Seppelt, B. Sepplet & Sons Limited, Tanunda, Australia)

July 16, 1962.

"Der Aufenthalt bei Gold Seal war sehr interessant, wir wurden dort bestens empfangen durch Herrn Fournier und er hat mir Weine mitgegeben zur Verkostung, die wirklich als hervorragend bezeichnet werden köennen. Neben den Weissen war es namentlich ein Pinot Noir, der in seiner Art eine Mittelstelung zwischen einen Rotwein des Wallis-unserer klimatisch bevorzugten Gegend-und einem Burgunder hoher Schule gelten darf." (W. F. Eggenberger, Director, Schweizerische Obst- und Weinfachschule, Wadenswil, Switzerland)

September 1962.

"First, I wish to thank you for your kindness in showing me your experimental vineyard last week. I am greatly impressed. As you have said, it has taken me three years to get to Hammondsport. However, when I finally did to call on you it was most worthwhile. I have written to Dean Palm, with copy to Dr. Kennedy, outlining my views on this subject." (John Wickham, Fruit Farmer, Cutchogue, Long Island, New York) September 25, 1962.
31.

"I want to thank you for your courtesy and the hospitality you extended when I visited your vineyard on September 21, in the company of Dr. John Einset and other research workers of the New York State Agricultural Experiment Station. You had an amazing demonstration of wine grape growing to show us and if I had not seen it, I would have to say it is impossible to grow in the Eastern United States, the varieties I saw thriving so well in your vineyard. It will be most interesting for me to follow the results of your carefully planned and well developed experimentation, and to do so, I hope to have an opportunity/ to again visit your vineyard." (George D. Oberle, professor of Horticulture, Virginia Polytechnic Institute, Blacksburg, Virginia) October 5, 1962.

"A word to say what a pleasure it was to have my annual visit with you and to see your vines. The wines of the three clones of Riesling were extremely impressive, and I was much interested in both the wine and the vine of the Ukrainian Sereksie." (Phillip M. Wagner, Proprietor, Boordy Vineyard, Riderwood, Maryland) October 1, 1962.

"It was both a pleasure and enlightening to review the progress you are making with the Vinifera grapes...All of us deeply appreciate your taking time to show our group your vineyards and to permit us to sample your excellent wines. I am sure that you are delighted with the growing interest in Vinifera production in New York State." (W. K. Kennedy, Director, New York State Agricultural Experiment Station, Geneva, New York) October 24, 1962.

"You are certainly contributing much information that may pave the
way for the growing of hardy Vinifera varieties on vigor controlling understock in the Hammondsport region." (Herman P. Breitfeld, Senior Horticultural Inspector, Department of Agriculture and Markets, Albany, New York) October 18, 1962.

"I want to thank you for coming to Suffolk County to tell me about the excellent research that you are conducting on grapes. I agree with you that there is a good possibility of profitable production of high quality table grapes on Long Island. I am enclosing a copy of the layout of the planting to be made in the John Wickhams, I have hopes that we can get several plantings made in the County." (Horace D. Wells, Suffolk County Agricultural Agent, Riverhead, Long Island, New York) November 21, 1962.

"In this note I wish to express to you my appreciation for your kindness in showing our group your experiments with Vinifera Grapes and the results with various root stocks. I was particularly impressed with the quality of wines you have made from the grapes grown in the Finger Lakes Area. Your success with Vinifera grapes demonstrates that these grapes can be successfully grown in the Eastern United States.

I know you have worked long and hard on this project and I hope you will continue the work. May I suggest that you publish the results of your experiments so that future workers will readily have available the results of your work." (James A. Cox, Entomologist College of Agriculture, Pennsylvania State University, North East, Pennsylvania) September 21, 1963.

"The influence of rootstock on hardiness, yield, quality of the
fruit and other characteristics of the scion variety has been
demonstrated strikingly in your work. I hope your search for new
improved clones, and the testing of them, may continue.” (H. K.
Fleming, Professor of Pomology, College of Agriculture, Pennsylvania
State University, North East, Pennsylvania) September 25, 1963.

"As you know, on September 26, 1953, I again observed with you
your vinifera grape vineyard. I was accompanied on this visit by
Horticultural Inspector Howard Swansen of Dansville, N. Y. Mr.
Swansen and I were both impressed with the yield on the variety
Riesling despite the severe winter of 1962-63 and the late spring
frosts which damaged the blossoms of many native grape varieties in
the area.

For several years now, I have had the opportunity to observe these
vinifera plantings of yours. I have been able to become very well
acquainted with the research project you have been carrying on with
various clones of the vinifera variety Riesling and to lesser extent
with Pinot Chardonnay and Pinot Noir on many different rootstocks.
The object of this project being to find out which combination of
clones and rootstocks produce the hardiest vines, the best quality
and yield. Moreover, the rootstocks are being checked for adapti-
bility for various soil types.

Altho you have done considerable work with this project and have
shown that it can be done successfully, you know as well as I that
there is much more necessary work to be done before all the data
has been obtained. It is because of the need for more work on this
project that I was sorry to learn that you are going to drop it
because of lack of funds and lack of outside interest. It is my hope that somehow this project can be continued with outside support." (Herman P, Breitfeld, Senior Horticultural Inspector, Department of Agriculture and Markets, Albany, New York) October 1963.

"You are demonstrating on a commercial scale what an informed scientist and a skillful horticulturist can do with selected high-quality varieties at the extreme limits of their climatic range. No amount of lecture on my part would have made this point as dramatically as you did when you walked with us through your vineyards and discussed your experiments. It was particularly satisfying that we visited you just as you were harvesting the results of this year's work." (L. Fredric Hough, Professor and Research Specialist in Pomology, New Jersey Agricultural Experiment Station, Rutgers. The State University, New Brunswick, New Jersey) October 24, 1963.

"My experimental Viniferas are looking very healthy, however, production on some are only meager...After visiting your experimental plots and seeing the different root stocks, I am convinced that root stocks of special selection can bring about winter resistance, but with certain limitations in extremely cold conditions. As a result of my visit with you, I am more optimistic about my possibility of growing viniferas here.

I am very grateful to you for teaching me many things about root-stocks, clon-selections and German wines. During my visit to Dr. Schenk in Rudesheim, Dr. Schandrel in Geisenheim and Lenz Moser in Austria, I have learned to appreciate the research that you are
doing to enable us to grow Viniferas east of the Rocky Mountains.”

(A. C. Wiederkahr* Wiederkahr Wine Cellars, Inc., Altus, Arkansas)

July 12, 1963.
BIBLIOGRAPHY

1. YEARBOOK OF THE UNITED STATES DEPARTMENT OF AGRICULTURE, 1898.


30. GOLD SEAL TASTE BOOK, 1953.
31. GOLD SEAL TASTE BOOK, 1954.
32. Perlette, Delight Bulletin, University of California, Experimental Station, Davis.
34. Arntz, H., DAS KLEINE VEINLEXIKON, 1959.
43. Cosmo, t., PROBLEMS OF RECONSTRUCTION OF GRAPE CULTURE IN ITALY, 1960.
44. Hughlin, P., STUDY OF BUD FERTILITY OF GRAPES WITH SPECIAL REGARD AND RESPONSE TO THE ROOTSTOCK, 1960.


49. EXPERIENCE IN PRODUCTION OF GRAFTS IN MOLDAVIA, 1962.