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CHARLES KOHLER.

It is with the deepest regret that we refer to the sudden and untimely death of Mr. Charles Kohler. Cut off in the prime of life and apparently in the best of health, the announcement of his death was a shock to the community. No man's death has ever been more regretted. He was held in the highest esteem by all. Nothing was ever said of him but good. He was ever kind and generous; always willing and ready to assist those in need, and foremost in any enterprise that would promote the welfare of the State, and more particularly that of the business in which he was engaged. Time and time again has he given substantial aid, when needed, to the cause of viticulture. Hours and hours has he devoted to the interest of the industry. The good that he has done during his lifetime will never be known. His good deeds were performed quietly and unostentatiously, and few even of his most intimate friends were aware of the extent of his charitable or private actions. The grape growing industry of California has lost a warm friend and an ardent supporter. He was the leading viticulturist of the State of California, and, speaking for all who are engaged in the industry, we deeply deplore his loss and extend our heartfelt sympathy to the sorrowing members of his family.

Charles Kohler was the son of an agricultural implement maker, and born in Grabow, Mecklenburg, Germany, on the 18th day of July 1830. He was therefore in his 57th year at the time of his death. In his boyhood, and while receiving the solid education which Germany, before all other countries, gave to her sons; he showed extraordinary musical ability in a country where the love of music and power of interpreting it, was common.

After leaving school he studied music for five years and attained remarkable proficiency, especially in rendering the works of the great masters on the violin. The young minds of Germany were stirred about that time with the idea of German liberty versus the divine right of Kings to rule, and when the constitutional gains of 1848 were lost in 1849, young Kohler turned his thoughts westward. When twenty years of age he landed in New York, without capital or friends. Yes, he had both, he had a well grounded knowledge of music and he had his violin. Though doing fairly well in New York, the stories of the brighter prospects of the adventurous spirits who were carving out a new state on the wilder coast of the Pacific, drew his thoughts to California, and in 1852 he set sail. When he landed here he was discovered to be the best interpreter of the works of Mozart, Beethoven, Hayden and Mendelsohn. Rough as the Californians of those days were, the softening influence of virtuous women being almost entirely absent, they found a partial substitute in listening to Kohler's reproduction of these thrilling

tones, which can subdue the most savage heart. The incident which turned Mr. Kohler's attention from the profession of music to œnology and viticulture, while simple enough in itself, is almost dramatic when fairly presented. In 1853, it was the habit of Mr. Kohler and some of his musical friends to walk out, over the sand hills to the Golden Gate and by the ozone from the ocean, overcome the effects of the stifling air of the concert room in which they had passed the previous evening, and thus gain fresh strength for another night's ordeal. Many plans and projects these ambitious young Germans discussed as they jogged through the chapparel and over dunes, none of which as far as we know came to aught. On one occasion, when the party consisted of John Beutler, a popular tenor of those days, and John Frohling and Charles Kohler, both members of the Germania Concert society, one of the party carried a small paper bag of which he seemed to take more than usual care. To all inquiries what he had, he replied, "Wait and you will see. Wait and you'll get a surprise." When the party sat down to partake of refreshments, John Beutler drew from the bag by the stem a bunch of grapes, which had been shipped from some old Mission Vineyard in Los Angeles to San Francisco, and exclaimed with enthusiam, "My native land, Baden on the Rhine, never produced a finer bunch of grapes than this." The bunch was a fine one, every grape fully formed and ripened, free from mildew or blemish. The two other German lads were as enthusiastic over the sight, which brought back to them memories of their own fair Fatherland. Suddenly, Beutler jumped to his feet as if inspired and said, "Boys I have it. Eureka! I have a proposition which will make all our fortunes, but you must go to work in a practical manner. The country that produces such fine grapes as these must eventually become a great wine country. Let us build the first altar raised in California to Bacchus, and introduce the wine business on the Pacific coast. Grapes and wine make everybody wealthy and happy that goes into the business at home. Let us do it here." The proposition was accepted with glee, and after many serious discussions, the firm of Kohler & Frohling was formed. Los Angeles and adjacent counties were the only parts of the State where it was supposed the vine would thrive, and there the first vineyard and winery for supplying the public on a commercial scale was located. But though vine growing, wine making and wine dealing was the business of the day, music as a ready money-making business was not abandoned, and Charles Kohler after working all day at his new business, retained his engagement for two years, and by his violin earned an ounce of gold ($16) every night, which all went into the business of the concern. Mr. Kohler was a very wealthy merchant, a large land owner in many counties, and his name is known wherever wine is drank. In 1856, with Mr. George Hansen of Los Angeles, he conceived the idea of starting a German wine colony in Los Angeles county.

Some forty Germans in San Francisco joined them and the result is Anaheim, the parent colony of this State, and while it has passed a successful but somewhat sleepy existence these past ten or twelve years, it is now awakened to new life and will no longer be content to let its younger sisters, Riverside, Pasadena, Ontario and Colton, claim precedence unchallenged. In 1860, Kohler & Frohling established an agency in New York for the sale of pure California wine. Affairs looked very bright then, though a setback came later. It was after the vintage of 1860 that Mr. Frohling invited the residents of Los Angeles to a ball in the fermenting house of the firm in the outskirts of Los Angeles. The business has grown since and larger and more substantial crushing and fermenting houses, distillery and cooper shops have been erected. But as Charles Kohler once said in the hearing of some visiting friends who were looking at the half decayed building with its rafters and its walls covered with dried out, dust covered festoons and wreathes, "While I live and this building stands, those old decorations shall not be torn down. They shall stay as a reminder

of our early days and in memory of one of the best men, dear old John Frohling." So, alone for many years. Mr. Kohler battled with trial and difficulties, always pushing ahead, always pushing ahead, always striving to encourage the introduction of new and better varieties of grapes, always studying questions of fermentation and ripening wines, always ready to advise and encourage young beginners, always ready with purse or check book to help in any movement to advance the interests of the California wine trade and also every other interest, producing, manufacturing, educational, literary, musical, charitable or political, that promised to help build a free, enlightened, prosperous and cultured State. Thirty-four years of Mr. Kohler's life have been given with hardly a day's intermission to his business, and while the struggles of the first fourteen years never dampened his spirits or soured his temper, the successes of the latter twenty did not change him, except that it gave him more power to do good.

Mr. Kohler married in 1854, Miss Eliza Hagen of Mannheim on the Rhine by whom he had seven children of whom two sons, Hans H. and Charles Kohler, Jr. with a son-in-law Herman Bohrman residing in New York had an interest in their father's business and took some of the load of work of supervision off his shoulders. How much this work is may be estimated from the following recital: The main cellars occupy nearly the whole of the basement of Montgomery Block, extending from Merchant to Washington street and which is connected with their office. The firm also occupies the entire basement of the Centre Market, Sutter and Dupont streets. The oldest vineyard is that in Los Angeles, next comes that in Sonoma Valley. Mr. Kohler owned in conjunction with George West of Stockton, and Thomas R. Minturn, a one-third interest in the Sierra Vista Vineyard, Minturn, Fresno county, which estate consists of 2,080 acres, of which 600 are planted with vines and mostly in full bearing. Mr. Kohler was also one of the largest owners in the great Natoma vineyard Sacramento county, one of the most famous in the State, and is also a large holder in the Swiss-Italian vineyard of Healdsburg, Sonoma county. Then besides these establishments there is the New York branch house at No. 6 Barclay street, under charge of Mr. Bohrman. On May 1st this latter establishment will move into one of the magnificent new buildings recently erected on Broadway, extending from No. 41 to 45, and which will form probably the finest and largest wine cellar in New York.

Amidst all his business, Mr. Kohler never skirked his duty as a citizen of a republic. He had always taken a great interest in the cause of education, in the public English speaking schools, as well as the cosmopolitan or those in which foreign languages are taught, and also in the kindergartens. In 1870 he was elected a member of the School Board and had after a lapse of sixteen years, entered on another term. He served five years as a Director of the Free Public Library. In the last Presidential election he was a candidate for the electoral college and though his ticket was defeated in this State, he ran 800 votes ahead of his associates. Mr. Kohler was a life member of the German Benevolent Association, and a Director of the German Savings Union and of the Union Insurance Company of this city. He had twice been appointed one of the fifteen freeholders to draw a new charter for this city. Home industries and manufactures always had the warmest sympathies of Mr. Kohler, even those which had no connection with his special business. In viticulture he always held a foremost place, not only as an adviser, but in pecuniary assistance and he was Treasurer of the Viticultural Association of California.

His last movement on behalf of viticulture, and one concerning which he spoke warmly and encouragingly, only two days before his death, to the editor of this paper, was on the subject of condensed must. It was through Mr. Kohler's instrumentality that Dr. Ferdinand Springmühl, who is now on his way, will visit California for the purpose of endeavoring to form a large company to buy grapes and condense must.

The following fitting tribute is from the pen of Charles A. Wetmore. Thus the first Chief Executive Viticultural Officer wrote of the pioneer in California viticulture:

There is so much to us all in the death of our friend Charles Kohler that I feel too sad to-day to write even the commonest tribute to his memory. I cannot even imitate his generous nature and think the kind words that would have flowed from his pen on like occasions. I am thinking selfishly how much we have lost, how much we may miss him. Your editorials may coldly review his career and usefulness, but they do not soothe the California heart which yearns in vain for the successors of such men. We have lost, one by one, these great State builders, free-hearted and free-handed men, and how many more can we lose before the California of the past has changed forever? Who take their places in our hearts or in our practical lives?

Who succeeded Ralston? Who will succeed Kohler?

Fellow vine growers, wine makers, wine merchants and citizens, we have lost a friend; and a lost friend can never be replaced. There was once, in the old Californian days, an element of friendship, of *camaraderie*, a flavor of the campfire, and the common purse that does not return after these sad funeral ceremonies. One by one they go, and few are left. Who take their place in our hearts?

God save our State from the desolation of selfishness! It is the few who still live and continue to die, and the many who always live. Among the many who will live, will there be any such few? Men with brains to direct and sympathies to support the weak? Men to lead and encourage followers? I have thought of these things as others passed away, but never so keenly as now, because Charles Kohler was near to me and my efforts. I feel lost now because I do not see where his successor can be found. California has been changing rapidly. Has it been for the better? Ask our workers. Once there was a typical California, generous hospitality for individual enterprise and worth; now there is intrenched a California line of succession, typical of the class of bondholders, moneylenders and landlords, to take its place. My faith teaches me to believe that San Francisco will not long be the prey of harpies; that some Christ will yet drive the selfish from this temple of nature; but it is hope that maketh the heart sick. We lose, but we do not yet gain. On these occasions we mourn, but are not comforted. Soon we shall know our California no more. What shall our future be?

Let the chroniclers coldly write the obituaries. We remember the warm hand, the cheerful voice, the hopeful words and the help in time of need. We think of the friend, while the public think of the assets. Are there such friends in store for the public? Few, if any.

The glory of San Francisco is passing away with these men, unless a regeneration of our life, as it seems imminent, follows quickly. Generous impulse has had a severe struggle for existence. Autopsies have lied. Our best men have been smothered to death by cold blankets. The life of the public-spirited, warm-hearted and social hero has been wilted by contest with the blasts of selfishness. There may have been honor, but there has been little comfort for the sensitive natures of friends of the people in San Francisco. False friends have stolen the prizes.

Our friend, Charles Kohler, leaves us, an exceptional man; full of our love and esteem, successful, as the world goes, and a pride as well as honor to his family. There was in him, however, that spirit of the old Californian, that does not seem to be reproduced and which makes his loss felt more keenly. I could dwell on this subject through columns of words, if it were of any avail. It is useless. Let the Californian of to-day look about him and find another such company of popular leaders, if he can. If this suggestion seems well timed, let him aid in redeveloping the generous instincts that made the men of the past; let him encourage fainting hearts and cease homage to selfish power. Let him hope that San Francisco will become again the home and pride of the free-hearted and free-handed.

I can offer no greater eulogy of such men as our friend than to ask the reader to contrast his disposition and manner of life like that of others who have passed away, with the natural or enforced dispositions and manners of the great body of their successors.

There is hope; but it is in change for the better. Revive the time when kindly sentiment and honest, sturdy enthusiasm reeled! Revive the time when San Francisco was the friend of the State; its capitalists, statesmen, its merchants, the close friends of industry, and its population, the incarnation of courage, hope and enterprise! To fix our thoughts, let us hope that among our young merchants there may be a thousand such as Charles Kohler.

CHARLES A. WETMORE,

San Francisco, April 19.

A GOOD WINE.

New York Connoisseurs Like the California Products.

D. F. Verdenal, writing from New York to the San Francisco *Chronicle* about old Californians, says: Quite a number of Californians are now in the business of selling the wine products of the Pacific Coast, and from their respective accounts they are all doing quite well. In fact, to hear them talk you would imagine that all New York was anxious to imbibe the pure juice of the grape from the sunny slopes of Santa Clara, or Napa, or Los Angeles, or Sonoma. Dave Rich now knows more about the flavor, bouquets, age and ripeness of California wines than he used to know about stocks on Pine. He takes the "bouquets" in at the pores, but keeps straight as a shingle, notwithstanding. Abermeyer, who represents the Edgehill vineyards of Napa, is a go-aheadative young man, who doesn't allow the grass to grow under his feet when in pursuit of a customer who likes only pure wines, minus cherry juice or other foreign substances. He reports the demand for his wines as increasing. The California Vintage Company, represented by George Hamlin, formerly of your Coast, is expanding. Kohler & Frohling's agency report business as A1. In fact, New York is beginning to appreciate California wines as such. For a long time past California vintages have been served up at the hotels and clubs disguised with fancy labels and well-branded corks. Now that there is an honest effort to serve up the wines of California growth, without any disguise, the connoisseurs flop their lips and say, "A pretty good wine!"

Pasteur's Method for Preserving Wine.

A great deal has been said and written about Pasteur's wine heating process, and it has been difficult to determine what value to put upon the testimony of those who have tried it. Professor Neubauer, of Wiesbaden, published a note of some experiments, conducted by himself, which deserve to be read with attention. He says the tannic acid and extractive stuff of the red wine precipitate most of the albuminous constituency of the wine, so that when the wine is heated it does not thicken or become milky. In his experiments, he carefully corked the wine and covered the corks with parchment paper, and warmed the bottles over a water bath, for half an hour, from 60° to 65° C. Bottles of wine of the same sort, heated and in natural condition, properly labelled, were stored in his cellar; and, on the occasion of the meeting of a club in Wiesbaden, numerous specimens were produced for trial. It was unanimously resolved at this meeting: "That the wine which had been heated was far superior, in odor, taste and ripeness, to the specimens taken from the cask." Their decision of impartial witnesses, known to be good judges of wine, created such a sensation among wine growers that they immediately formed a company to purchase the necessary heating apparatus of the French manufacturers. The wine is in this way rapidly prepared for the market. It will bear transportation to warm climates, as was proved at the opening of the Suez Canal, on which occasion Pasteur's wine was preferred to all others. White wines have not been so thoroughly tested, and it is a question whether they are so much improved by heating as the clarets. Our American wine manufacturers ought to repeat these experiments.—*Scientific American.*

Old Wine.

The following is translated from a French paper for the benefit of the large wineries of California, by Mr. R. C. DeBoom of Napa:

The *Daily News* of London, publishes a telegram from Oporto, which mentions the most important sale of old wines of Porto, perhaps ever before made. It concerns no less than 2,000 pipes (about 200,000 gallons) of wine of the crops of 1858 to 1877. The seller is Mrs. (Dona) Antonia A. Ferreira, the well known owner of the Duro vineyards, and the buyers are Messrs. Silva & Coseno. It is known that a large quantity of said wines will go to "The Continental Bodega Company."

N. B.—One pipe is equal to 400 litres French measure.—*Napa Register*

A MEDICAL STUDY OF INEBRIETY.

By T. D. Crothers, M. D.,
Superintendent of Walnut Lodge, Hartford, Conn.

[Bonfort's Wine and Spirit Circular.]

The most intelligent medical men of to-day are like judges at the bar—ready to hear all testimony, but are very careful to decide with caution and conservatism. To-morrow new testimony appears, and the judgment of yesterday is reversed, of dogmatic statements and positive assertions. We are always suspicious of imperfect knowledge and unfairness.

Medical scientists who fully realize the great heights and depths of the unknown that bound them on all sides become investigators and explorers, rather than critics and defenders of some theory.

Inebriety and the inebriate are fast becoming great national topics which physicians must solve and teach how to remedy. Over one hundred thousand persons are dying every year from this cause, and to accept and not act upon the theory of a moral causation is to proclaim our profound ignorance of the operations of Nature's laws on the human organism. The learned clergyman who pronounced all drinking a vice to be cured by more severe punishment is to be excused on account of his imperfect knowledge of physiological science; but the physician who says that all drinking is wickedness, and all drunkards could be made to stop by force, makes a sad display of his non-expertness, knowledge and judgment.

The almost countless theories of the nature and remedies for inebriety, like weak scaffolding, will neither support the defender or give proper opportunity for correct study. What is needed to-day is an accurate study of the inebriate; a study of the causes and conditions which have brought on the drink impulse; a study of the heredity, the early growth and culture, also the physical lesions which have broken up the nutrient brain-centres. From these inquiries will appear the facts and the laws which govern the origin, growth and termination of this evil.

Like the astronomer, who long and patiently notes the positions of the stars, and takes measurements of the conditions in which they appear, and with other facts determines the great laws of their movements in the heavens, so the inebriate and his history must be studied and noted, and as accurately and incessantly; and from these exact histories we shall find the laws and conditions which make an inebriate of one man and protect his neighbors equally exposed. There will be no mystery about these cases when they are better known. All of the sufferings and losses which come from them will be realized and provided against, with an intelligent application of the laws of cure and prevention. This is the new field for medical men which promises more gain to the human race than any other department of preventative medicine. Here insanity, criminality, pauperism, idiocy and other degenerations can be checked and prevented in their infancy. Here we can find the explanation of those strange inebriates where alternations of sanity and insanity, honesty and criminality, honor and meanness, truthfulness and falsehood, kindness and brutality, love and hatred, frankness and treachery, and practically the most opposite mental qualities as well as physical symptoms of health and disease.

What are the laws and forces which develop this state of brain disorder? What causes, exciting or predisposing, are constantly developing so many cases of this disease? What are the preventable causes which develop inebriety? When started, what are the best means to restore and cure the victim? These are questions which cannot be answered by theory and speculation.

The moralist and prohibitionist who answer these are like blind leaders of the blind. Such questions must be answered by physicians, based on long study of the facts. Physicians who give their time and energy to sustain societies and political parties, not only lose sight of the real work, but do themselves a great injury by following vague theories when they should be explorers over the frontiers, discovering new facts and laws. This work can not be done by specialists; they must have the aid of the general practitioner.

Here, as in the study of insanity, the observations of the family physician are of the greatest value. His opportunities for noting causes and conditions are very great, and his conclusions are often more accurate. The physician who is familiar with the family history, growth, culture and occupation of the victim, also of all the surroundings and conditions which make up his every-day life, has at his command facts from which to determine the prevention and cure.

The study of this subject must be from the side of symptomatology. Many and accurately tabulated histories must be made from which the facts can be ascertained. This is the only approach to the solution of this drink problem. Pathological study fails more completely to reveal any facts than in cases of insanity. The study of alcohol on the organism, pathologically and clinically, fails to give more than some vague and confused facts, which, by themselves and alone, are almost worthless, but, when combined with a full physiological and psychological history and an accurate knowledge of the spirits used, may be of value. Studies of alcohol are yet in their infancy; the clinical and physiological action of alcohol are alike largely unknown. The composition of the common spirituous drinks of the day are also unknown, even by the manufacturer.

He rudely combines certain spirits and other substances for their color and taste, and has no conception of the complete alcohols that are present and forming. The chemist only can form some idea of the spirit compounds from his most rigid and delicate analysis. To know the action of alcohol on the body we must first have a distinct, simple alcohol; not a complex body that is constantly changing, but an alcohol from a certain substance made in a certain way. Then we must have a long series of accurate observations of its action on a healthy body. The error of studying the effects of the different spirit compounds, with no conception of what these compounds are, is apparent in many papers, and even books, on this subject. A careful study of inebriety points to alcohol as secondary in the list of causes. It is in many cases only the spark which ignites a long train of events and causes, giving them great intensity and energy. It is always a symptom of degeneration and disease, which not only began long ago, but is now growing with great rapidity. To remove the alcohol alone is only to change the direction of the disease-current. To quarantine the victim and control all of his conditions of living, both mental and physical, and build up the body—these are the true methods of restoration and cure.

The medical study of inebriety must be made before the nature of this malady can be understood. The necessity for help felt in so many homes demands some method for cure and relief. The physician has never been taught to consider them diseased, and never accepts the theories of the time, and so neglects one of the great future fields of medicine. When called to treat a case suffering from a pro-paroxysm of drink, and feel as if his efforts were secondary to some form of moral remedies that are needed, he should take up these poor victims and study all of their conditions of life, the same as in typhoid fever, conscious of an exciting and predisposing cause which can be discovered and prevented.

A physician, at my suggestion, made a careful study of the case of his son, who was in a rebel prison and became incapacitated for hard work, but drank to great excess at times. He found that each attack was preceded by constipation and acute dyspepsia. By treating and remedying these conditions the drink paroxysm was prevented. In another case an inebriate, whose case was aggravating and extreme, was permanently cured by changing his employment and living a more regular life.

The specialist finds in his imperfect studies many such cases, where conditions and states of living seem to be the exciting causes.

The family physician should have discovered this condition and the remedy long before. A very excellent clergyman was brought to my care by his physician for opium inebriety, following the long use of alcohol. The causes were partially inheritance and general intemperance in the gratification of every whim and caprice. If this physician had realized the true state he could have prevented the ruin of a strong, noble man. These cases are far too numerous, and physicians who are conscious of crowding and limited practice seem strangely unconscious of these poor, sick men mutely appealing for help from every side—sick men who can be helped and restored to temperate and healthy living again now neglected and dying, victims of the ignorance and persecution of the times. If inebriates and their friends could realize how much the family physician could do to prevent and permanently break up the drink impulse, his services would be in constant demand. If the physician would study each case from a purely scientific point of view he will be amazed to find that it is within his power not only to cure but prevent a large amount of the inebriety of to-day. Medical men who spend the time in lecturing upon the dangers of alcohol and the evils of inebriety are practically retarding the scientific study and coming down to the level of theorists and non-experts. Every medical man should be a pioneer investigator, ascertaining the facts and teaching them.

There will be no real progress in the amelioration of this great drink disease until physicians take up the subject and become the recognized authority in the nature, causes and remedy of this new form of insanity. The following incident is given to illustrate a common mistake in the medical profession: A very able physician condemned the notion of disease in inebriety and criticized my writings bitterly. He wrote and gave addresses, declaring inebriety always a vice, and the treatment should be a more rigorous enforcement of law and severe punishment. He urged a whipping-post as the best remedy. His papers attracted attention, and are endorsed to-day as authority in many circles. Years after, this physician brought me for treatment his inebriate son. All of his previous views had changed. When necessity brought a case of inebriety for his special study all his theories vanished, and he recognized the facts he had so stoutly denied before.

The temperance agitations in society and in politics of to-day will all die away before the march of scientific study by the medical profession. Already a few bold men have crossed the frontiers—the pickets of the great army that is to follow. Science and grim necessity for help appeal to medical men everywhere for the facts and laws controlling the origin, line of march and destination of this great army of inebriates.

NOTES FROM CALIFORNIA.

[Correspondence Wine and Spirit Review.]

A comparison of all the different reports shows that Alameda county came first with fifteen samples reported upon as being "extra," thirty samples as "fine," and twenty-two samples "good." In Alameda county there are some good wine-makers, such as Juan Gallejos, A. J. Chauche, and C. A. Wetmore; but, taken as a whole, the county had never attained as much prominence for its wines as had Napa, Sonoma Santa Clara, or Los Angeles. The reason for this is that wine-making has but just commenced in Alameda county as compared with its older rivals. The soil in Livermore valley is particularly adapted to grape culture, and resembles that of the wine districts of France.

Another important feature of the committee's report was that of the thirty-six samples exhibited by the State Viticultural Commission there were four extra, nine fine, and nine good types. The University of California furnished fifty-six samples, but the committee reported that the wines were "not good and were evidently made from unripe grapes, which came from vines too heavily loaded." The committee also considers that wine-making in such small quantities is practically useless and does not show accurately what kind of wine the different varieties are capable of making. This report upon the work done by the Commission and the University is very valuable, as it shows the usefulness of the former and the uselessness of the latter. A large sum of money is voted by the Legislature of the State to assist viticultural experiments at the University, and it is now generally conceded that this money should not be so devoted in future, but should be turned over to the State Commission, where it will be used to good advantage.

The account of the life of the late Charles Kohler, is taken from the *Herald of Trade* of February 24th, and is the most correct history of the deceased gentleman that has ever been published.

New Grapevines.—The Viticultural Commission has received from Willian Farrar, a vineyardist of Queen Beyan, N. S. W., several cuttings of grapevines to be tested in this State. The varieties are: Baxter's late sherry, Ancarot and Shepherd's Reisling. The vines will be set out at C. A. Wetmore's vineyard at Livermore.—*Pacific Rural Press.*

THE VINEYARD.

How to Plant and Manage it.

[Fruit and Grape Grower.]

FIRST—Select a dry, sunny spot with free circulation of air, on either clay loam, sandy loam, gravelly, sandy, or even heavy clay, if underdrained, having respect to climate and facilities for marketing, avoiding as far as possible localities where late springs and early fall frosts, heavy dews and fogs prevail, as these are excessively unfavorable to successful grape growing. Avoid, also the low, flat lands and poorly-drained fields. As a rule, a south, south-eastern or eastern exposure is preferable; the two latter are more protected from prevailing winter winds and more likely to retain a snow covering, which is an important item. Many persons in planting a vineyard choose the poorest soil and lands most difficult to cultivate, saying that they can't spare their best land: and while it often occurs that the grape does better under this treatment than any other crop, yet a good Niagara vineyard from which you expect to realize from $300 to $600 and more per acre, is entitled to the best land on the farm, and to the best care, as 10 acres from a farm of 100 acres will be worth more than the 90 that remain devoted to agricultural purposes, and, if cared for properly, will endure a generation, while the amount of labor required for its care, is not more than the same number of acres planted in corn. The localities being decided upon, the next thing is the preparation of the soil, on which, together with the planting and care for the first and second years of growth, depend the early and abundant returns to remunerate the vineyardist; for, if proper attention to the early life and vigorous growth of the plant be given, the first substantial crop should not be later than the third year, or two years and six months from planting; whereas, if the farm crops are grown during the first and second years, especially during the latter, as many do, the first crop will be necessarily delayed until the fourth, and perhaps the fifth year, and these will not be satisfactory. In preparing the ground, if in sod, it should be plowed deep and well, and if a sub-soil attachment is at hand that will follow the plow in the furrow, loosening up the ground 5 or 6 inches deep in the bottom of the furrow, it will be of great advantage to the plant; and, to facilitate planting, the lands should be plowed just to the width of the rows apart, to wit: 10 feet, and plant the vine in the dead furrow, which will require very little digging for the hole in which to plant the vine, which should be set at least 12 inches deep below the level surface of the ground in ordinary soil; and if the soil is very light, deeper still. The cultivation during the season will fill up the dead furrow, and by plowing towards the vine in the fall the dead furrow is changed to the centre or between the rows. Stubble or land cropped with corn or potatoes, if treated with subsoil as above, would be improved; and when fitted, can, as in the other case, be laid out by drawing a wire on two sides of the field at right angles (a wire is best, as it will not stretch) with a loop in the wire every 10 feet, thus: ——0——0——0—— drive a little stake or peg down at each loop over the whole field, which will then row both ways, and then run a plow furrow close to the peg across the field, letting the peg stand, and by crossing the opposite way with the plow, leaving the peg standing, very little digging will be required, and the plant can be leaned up against the peg in planting and the rows will be exact in all directions.

PLANTING.

Now, great care should be taken to have this work done well, as this is the important thing in order to secure a good thrifty vineyard from the start.

FIRST—The long, woody roots, if two years old, should be cut back to nine to twelve inches, according to the size of the plant, before taken to the field to have them ready.

SECOND—The roots should not be allowed to get dry; in planting, put the plants in a pail with sufficient water in it to keep the roots wet, and let a boy hand the plant to the planter, who should receive it, set it, properly spreading the roots in the hole just prepared by some other person, or persons, designated for the purpose, filling in with his hands surface soil about the roots to the depth of two or three inches, and then take the next, and so on, to be followed by another who will pack the earth down about the roots, exercising great care not to injure the plant in so doing, filling up the hole, leaving the top buds out of the ground, and, if the plant is too short to allow the hole to be filled, leave a depression about the vine to be filled as the plant grows, remembering that after heavy showers they should be looked after at once, to see that none are covered with earth that has washed over them, nor any washed out, as is sometimes the case. Train to one cane, keeping off the laterals for about a foot or more above the surface of the ground, and after that let it grow as it will for the first year. Before the plant is set let a boy scatter from a basket in the bottom of a hole a couple of handfuls of dissolved bone meal (this can be got of Smith & Becker, Buffalo, N. Y., at $35 per ton), which should be covered with three inches of surface before setting the plant, so the roots will not come in contact with it. Great care should be taken in the use of commercial fertilizers, many vineyards have been ruined by the too liberal use of them; after planting, a copious rainfall washing it down on to the roots and destroying them, but if below them and covered they will find it and just take what they want and no more. The following fall or early spring, bone meal, 300 to 500 pounds per acre, and unleached wood ashes, twenty-five to fifty bushels per acre, or, in the absence of ashes, 300 to 400 pounds of muriate of potash per acre, sown broadcast and worked into the soil is, without doubt, the very best fertilizer you can give a vineyard. After the vineyard is established, an application once in two or three years will be sufficient. It is quite as important to keep the soil stirred after the vine is planted out, as it is with the hill of corn, keeping the ground loose and moist, and allowing no weeds to get up to choke the vine; two rows of potatoes or tomatoes can be grown between the rows of vines the first year, but not more, and after that no crop should be allowed, as what can be grown from any other crop will by no means compensate for the sacrifice of the vine. In case of a drouth the first year, a couple of forksful of half-rotten barnyard manure placed about the vine will serve at the same time as a mulch and fertilizer, and secure a good vigorous growth, even should it be very dry, and this should not be neglected, as losses occasioned by drouth or any cause make the vineyard irregular, and are disastrous to the best success of the same for several years. It is better during the first summer's growth to drive a lath down by the side of the plant and tie it up a couple of times to keep it up away from the harrow or cultivator, and in the fall, after the leaves have fallen, to prune back two or three buds. Train to single cane, twelve or sixteen inches above the ground, and then let the laterals grow; and before the ground freezes, plow (shallow) toward the vines, and put two or three shovelfuls of earth over the vine, first putting a forkful of rotted manure around them. This method will furnish a good, safe protection for the winter, during which time the material should be obtained for the trellis to be put up the following spring, if at the north, but at the south, the trellis can be put up in the winter months. The plan which is rapidly growing in favor with practical vineyardists, and which is adopted in many sections, where strong growing varieties are cultivated largely for market, giving better satisfaction than any other method previously tried, and which we recommend, is as follows Posts made of either chestnut, oak or cedar, white or red, are used and cut long enough to be six feet above ground after being set two or two and one-half feet in the ground according to soil and location. The end posts need to be braced so as not to settle over and loosen the wires which are stretched from post to post. The posts are set 40 to 50 feet apart, according as the surface of the field is level or uneven, requiring to be nearer if even. The first, or bottom wire, is placed three and one-half feet from the ground, and the second, or top wire, at the bottom of the post, two and one-half feet above the first wire—always running the rows north and south if practicable. The two wires will be found to be sufficient, although some prefer three, dividing the space differently: The first, two and one-half feet from the ground, and the other two, one and three-fourths feet apart. Both of these plans are designed for the same system of training the vine. The wires must be drawn as tightly as they will bear, so as to not stretch and sag down under the weight of fruit. No, 9 or 10 annealed iron or steel wire is used—either is proved to be strong enough and preferable to galvanized, and can be secured by *our planters* of the "*Niagara*" at present for three cents per lb., or for less by applying to us. No. 9 wires stretches to 19 feet per lb. in the vineyard. The wire between the posts require the additional support of stakes from 10 to 20 feet apart, according to circumstances, which can be determined by the experience of the planter. The wires to be fastened to the stakes—which should be two and one-half to three and one-half inches in diameter—with a staple (Ω) driven in firmly, or by sawing a notch downward, wedge-shape in the side of the stake; put in the wire and drive a shingle nail over it, which is very simple and effectual; and to the posts—which should be five to seven inches in diameter—by winding the wire around one post and through the other, and winding around a piece of hard wood seven or eight inches long and an inch square, so as to be rolled up at any time and take up any slack in the wire. This is a very simple device and quite effectual. Another method is to run a bolt through the post with an eye for the wire and a thread and nut on the other end. This is substantial, but a little more expensive. Both the posts and stakes can be preserved and made to last much longer by boiling for two hours in coal tar, covering a space on the posts and stakes extending eight or nine inches above the surface of the ground. It will be readily seen that by setting the above posts equally distant, beginning on the same line, the field will be divided into sections, and the space between the end post in one section and the end post of the adjoining section will leave a space for a roadway, which can be of any desired width by proper planning in laying out the field; and, when fields are fenced in there should be space enough for roadways around the outside for convenience in gathering the crop. Sharpening the posts and making a hole with a large crowbar when the ground is soft in the spring or winter, or boring a hole with a post auger smaller than the post, and then driving the post down with a maul or sledge hammer is a very rapid and effectual way of putting up the trellis and makes the post set very firm. The trellis being now in place, the young vine should be uncovered in the spring as soon as all the danger from freezing is past—often times vines that have been covered with earth during the winter are left covered so late in the spring as to destroy the buds—and, as soon as the ground is in condition to work, fill in all vacancies with strong plants, so as to keep the vineyards as uniform as possible.

The main object in having the trellis up the second year is for the purpose of getting the vines well established with the necessary arms for producing a crop of fruit the third year, which can be easily accomplished with thorough cultivation the second year, and with proper attention to the training of the vine, which is as follows: Confine the new growth to one cane (the strongest is always selected), which is carried perpendicularly to the top wire, when it is turned off to the right, say, keeping off the laterals, and allowed to run along the wire for three feet or more, when the end is pinched off, the effect of which is to cause the vine to throw out laterals again, one of which is saved—that nearest to the upper wire—and train on that to the left, and so, in a like manner, two are saved for the lower wire, forming two arms for that, one to the right and the other to the left, and all other laterals to be taken off.

These will be required to be tied to the wires to keep them from being broken off, and with care to keep the first cane upright, the vineyard will present a fine appearance with no unsightly elbows in the main cane. On account of the theory advanced by some, that the best clusters tend toward the end of the vine, which will soon be found on the upper wire only, which is only in theory, and not proven by practice, they suggest, to which there is no objection, that this can be obviated by letting two upright canes grow instead of one; the one having one arm to the left on the lower wire and one arm to the left on the upper, both of which are on the renewal plan. Another plan for a trellis, which doubtless is better than the above, (where, by reason of the extreme cold winters, the vines require to be laid down and covered), is as follows: posts and wire as above, with three horizontal wires and posts five feet above ground. The first wire two feet from the ground, and the other two, one and one-half feet apart each, and the vine trained all one way. The advantages are: First. The strings can be cut in the fall, and drop the vine down on the ground to cover with the plow or other covering, also getting the benefit of the snowfall. Second. By driving the horse, in cultivation, next to the row the

way the vine runs, and back in the middle of the row, there is no danger of breaking off the new growth; this method might be found a protection to the young shoots in exposed places, subject to winds, running the vine with the wind when practicable. The main vine and fruiting wood is tied to the first and second wire, and pruned, tying the new growth to the upper wire and always rubbing off the buds above the top wire; thus the vines will run about the same. Marks across the vine indicate where to prune, which should always be done in the fall, as soon as the leaves have ripened, or the frost has caused them to fall, in order to harden up the wood. In case it is not convenient to put up the trellis the second year, and the purpose is to adopt the Kniffin system, this can be done by training the second year's growth to three canes, pruning these in the fall to about three feet and fruiting the two outside canes, using the middle cane to grow your arms for the next year, and cutting away the two outside canes after fruiting. During the second year, while shaping the vines for future cropping, the ground should be thoroughly cultivated, by first plowing away from the vines in the spring—not too deep, say four or five inches—and with the frequent use of the cultivator and harrow, the vineyard can be kept free of weeds, and the soil loose and and moist, save that the use of the hoe will be required under the trellis occupied by the vines beyond the reach of the cultivator or harrow, which will be very slight if the work of planting and setting the trellis is properly done—being so straight that the space left for the hoe will be very narrow—stopping all cultivation, however, by the 1st to the middle of August, to give the wood time to ripen before the heavy frost. At the close of the season, after the leaves have fallen from the vines, and before winter sets in, the vines should be pruned, with due regard to the ability of the vine. A safe rule to adopt, will be to prune these four arms back to six buds at the end of the second season, tying the main cane to both wires, and the arms at the outer ends, the tying is thus done for the coming season, which is one of the advantages of this system, being a great economy of time and labor over the old system, which requires the tying of almost numberless new growths—and some of these for several times—requiring patience and experience to do well.

Equally satisfactory results can be obtained without it, by the system recommended, as stated by practical grape growers of large experience along the highlands on the Hudson who have adopted this system in preference to all others, and are supplying the New York market with large crops of luscious fruit. The management and traiuing of the vine are somewhat different the third year from the second. The new growth or fruit-bearing canes are made to hang down on both sides of the trellis, from both wires, like twigs of willow, which can be done by one man taking one side of the trellis and another the other side, passing along rapidly, pulling them loose where the tendrils biud them, and so let them sway in the wind, giving them air and light, and the fruit hanging underneath is free for picking, not beiug bound in by the vines, and if these canes grow sufficiently long to reach the ground and interfere with cultivation, the ends are removed readily by a corn-cutter or scythe, or several can be gathered in the hands at once and twisted off. The only summer pruning needed is to break out the superfluous shoots at the base of the fruit-bearing vines, giving the strength of these for the perfecting of fruit and fruit-bearing arms for the next year's crop, which will be laterals that grow out at the point where the arm is connected with the main upright cane, which, let grow unchecked, hanging down the same as the fruit-bearing cane, they will make four laterals to be brought up to the wire to form new arms to take the place of the old arms, that will be cut away at the next pruniug. This will be the same each year afterward, growing a new fruit arm for the next year's crop, to take the place of the old arm to be cut away each year, and the new arm to be cut back to eight or nine buds the third year, which will provide for all the fruit the vine can sustain.

Most varieties of grapes are prolific bearers, and quite liable to suffer injury from overbearing. Care is necessary in the treatment of youug vines in this regard. It may do no harm to leave one or even two clusters when the vine is in its second year but at no age of the vine, should more fruit be left to mature than it is able to carry through safely. If allowed to overbear, the fruit will be inferior, and the constitution of the vine so impaired as, often times, to require years to restore it to its former vigor and productiveness. One of the evidences of over-bearing, even in a healthy vine, is a feeble growth of fruit wood while carrying its heavy burden for the next year's crop. Eight to ten lbs. is quite sufficient for a strong vine the third year, and twelve to fifteen and eighteen lbs, according to the size and vigor of the vine, for the fourth year. With the Niagara, if the large clusters only are left, they will ordinarily weigh from one-half a pound to a pound and more each, and by this method it is easily ascertained the amount a given vine is carrying.

PROSPECTS OF THE VINTAGE.

The *Evening Post* of 27th Inst. says: It is yet too early to make any reasonably accurate estimate of the vintage of 1887 in quantity, and certainly not in quality. While the production of last year was approximately 20,000,000 gallons, or nearly three times as much as in 1885, it is the belief of those connected with the Viticultural Commission, that a still larger output may be expected this season. Favorable reports have come from every prominent wine-producing locality. The season is backward, but the bunches are full and numerous. The vines look well, and, as a rule, are more free from disease than for years past. The danger of frost is practically over, as only once in the history of the state has any considerable damage been done after April 25th.

To-day, after reviewing the prospects, a prominent wine man said: "If the season continues as favorable as it has begun there is a possibility that the crop may reach 30,000,000 gallons, not from the increased acreage, but the greater age of the vines already planted. To be sure, there are a score or more of ifs and buts to be included in such figures. Last year the fermentation was good throughout the state, something which I hope will hold good again. One thing auguring well for our wines is that there is a growing tendency among vineyardists generally to raise better varieties of grapes. The Medoc types—that is, the Cabernet Sauvignon, the Cabernet Franc and for blends the Merlot, Verdot and Tannat are justly the favorites. Last year California produced from 11,000 to 12,000 gallons of wine from these grapes, and it is of superior quality. A few days ago I visited Mr. Wetmore's cellar, at Livermore, and he has some excellent wine made from these varieties. In France they are all small bearers, but here they seem to be nearly as prolific as many other inferior varieties. Then, too, growers are taking up the well-known coloring grapes, the Alicante Bouschet and the Petite Bouschet. The production of these superior wines is certain to be augmented with each succeeding year."

A NOVEL WAY OF SELLING FRUIT.

Selling fruit by auction is the only right way, says President Corsa, of the Delaware fruit exchange. This exchange was organized when the Delaware peach business was almost ruined because of low prices, and the difficulty and expense of marketing. The stock in the exchange is held by farmers and commission men. The growers bring their fruit to an exchange, where it is officially inspected and graded and then sold with the crates to the highest bidder. The buyer pays cash on the spot to the Secretary, who turns it over to the seller less a small fee for inspection and privileges of the exchange. The buyer ships the fruit, and pays the freight, so that the farmers are relieved of all bother with the railroads. The empty baskets and crates are duly returned, put up at auction, and sold for what they are worth. So successful has this plan been, that farmers have realized a much larger price on their peaches since the exchange has been in operation than ever before, and with far less work and trouble. The pay is sure and immediate. All growers strive to grade their fruit properly, for one man doesn't like to have his neighbor's fruit look better or sell better than his own. Moreover, as the official inspector dumps the fruit fraud is impossible. The exchange is open at certain hours, and while business is going on, telegrams are received giving the state of the markets and supply at all principal points. So large has the business become, that the buyers have persuaded the railroads to put on special fast peach trains. They ship as far as Chicago and St. Louis, and some exports were made to Liverpool, last year, with success. Poor or surplus fruit is evaporated, and the dried product sold in the same way. The farmers and growers are now happy and prosperous, they are increasing their acreage and giving it better attention, the commission men are able to handle the fruit more conveniently, and realize on it more promptly, the railroads get more freight and all parties are well satisfied.

We are very confident that this principle of doing business can be successfully adapted to almost any section that produces a considerable quantity of fruit or farm produce. It is the best solution of the middlemen problem yet submitted. It can be applied to the sale of apples, dried products, etc. This kind of co-operation that is making such rapid advances in the dairy, means that agriculture is keeping pace with the concentration and competition in other industries.—*Fruit and Grape Grower.*

The Largest Farm in the World.

In the extreme southwest corner of Louisiana lies the largest producing farm in the world. It runs 100 miles north and south, and many miles east and west, and is owned and operated by a company of northern capitalists. Their general manager, J. B. Watkins, gives an interesting account of this gigantic plantation, which throws the great Dalrymple farm in Dakota into the shade completely.

"The 1,500,000 acres of our tract," Mr. Watkins said, "was purchased in 1883 from the State of Louisiana and from the United States government. At that time it was a vast grazing land for the cattle of the few dealers in the neighborhood. When I took possession I found over 30,000 head of half wild horses and cattle. My work was to divide the immense tract into convenient pastures, establishing stations or ranches every six miles. The fencing alone cost in the neighborhood of $50,000 The land I found to be the best adapted to rice, sugar, corn and cotton. All our cultivating, ditching, etc., is done by steam power. We take a tract, say half a mile wide, for instance, and place an engine on each side. The engines are portable, and operate a cable attached to four plows, and under this arrangement we are able to plow thirty acres a day with only the labor of three men. Our harrowing, planting, and other cultivation, is done in a like manner, in fact, there is not a single draught horse on the entire place. We have, of course, horses for the herders of cattle, of which we now have 16,000 head. The Southern Pacific railroad runs for thirty-six miles through our farm. We have three steamboats operating on the waters of our own estate, upon which there are three hundred miles of navigable waters. We have an ice house, a bank, a ship yard and a rice mill." —*St. Louis Republican.*

The common custom has been to either plant grape cuttings directly in the vineyard or to plant them in nursery and then transplant them into the vineyard the following winter. The objection to the first method is the improbability of getting a good stand of growing vines, and the second is objectionable because the vineyard loses almost a season's growth. Mr. J. M. Sewell, of Central Colony, has adopted a plan which is apparently a decided improvement on the old methods. He planted his cuttings some two months ago by putting them into a deep trench top ends down. They were covered entirely with earth to a depth of three or four inches. He is now transplanting his cuttings into the vineyard, the roots having already started finely, while the buds are just beginning to swell. The fact that the lower end of the cuttings were so near the surface accounts for their starting so early. Upon some samples shown us the roots are already from two to five inches in length, and as the ground is now in prime condition would undoubtedly grow without interruption if properly planted. A little extra work is required in planting these cuttings, as care must be taken not to break off the young roots.—*Cloverdale Reveille.*

The late Charles Kohler left his entire estate to his wife, saying: "In thus bequeathing my estate to my wife, to the exclusion of my children, I am moved by no want of paternal affection for them, but by the belief that their own interests will be better served thereby, and well knowing that my wife will always provide for their education." The will authorized the widow in her judgment to pay $500 to each of the following institutions: Protestant Orphan Asylum, Hebrew Orphan Asylum, Catholic Orphan Asylum and the German Benevolent Society. A bequest of $500 is also made to the poor of Grabow, Germany. The widow, who is nominated as executrix, is authorized to pay "to any other institutions or benevolent associations as she, my wife, may deem most deserving, without consideration of nativity, religion or creed, the sum of $500." The estate is valued at more than $500,000.—*The Herald of Trade*

INFLUENCE OF THE MODE OF FERMENTATION ON THE COLOR OF WINES.

It will be remembered that toward the end of the vintage season of 1886, a series of nine fermentations, intended to test the influence of various methods of fermentation upon the resulting wines, was made at the viticultural laboratory; the material being second crop Zinfandel grapes furnished by Mr. Gallegos, of Mission San Jose. The first results of these experiments were given in Bulletin No. 63, and more extendedly in the Viticultural Report for 1886, pages 116 to 124. As time progresses the differences between the several products become in some cases much more marked than they were at first; among these the color-changes are especially notable and practically instructive.

The table below shows the intensities and tints observed by means of the colorimeter at three different times, the first being immediately after pressing, the date of which was between November 7th and 15th.

	Mode of Fermentation.	Per cent. of Color at Pressing.	Tint.	Percent. of Color Dec. 20, 1886.	Tint.	Percent. of Color April 8, 1887.	Tint.
556	Foulage and floating cover ...	45.4	21 p. r.	36.3	21 p. r.	17.0	4th p. r.
557	Foulage, no cover	31.8	21 p. r.	31.8	21 p. r.	13.0	1 to 2 r.
558	Three Perret's frames	30.0	21 p. r.	18.8	3-4 p. r.	7.4	2 r.
559	Single Perret frame	27.8	21 p. r.	18.0	21 p. r.	9.0	1st r.
560	Frequent foulage, no cover....	46.1	21 p. r.	35.7	21 p. r.	18.0	1 to 5 p. r.
561	Foulage and floating cover....	47.0	21 p. r.	27.0	4th p. r.	29.6	3d p. r.
562	Foulage and floating cover—Temp. 62°.	47.6	21 p. r.	26.0	21 p. r.	17.7	5th p. r.
563	Moral process, with stems	46.6	21 p. r.	30.0	21 p. r.	17.0	4th p. r.
564	Old style, no cover or stirring.	34.5	21 p. r.	30.0	21 p. r.	17.0	4th p. r.

T. 72°-75°

T. 90°-100°

NOTE.—"p. r." means purple red; "r." means red.

It will be noted that of the nine wines, five had at pressing a full amount of color, averaging about 46 per cent. of the (assumed) maximum of the scale; while the four others had in the neighborhood of 30 per cent. only, the lowest being in the case of the sample fermented with one grated frame (No. 559) that kept the pomace submerged in one mass, but was not stirred at all during the fermentation. The next lowest was the one in which three frames were used (No. 558); the next to this the one fermented at 100 degrees without cover (No. 557) but with frequent stirring; the next, the one treated in by our usual method, with solid floating cover and twice-daily stirring, but at 62 degrees (No. 562) instead of the usual temperature of 75 degrees; while the one similarly treated at the latter temperature (No. 561) had the maximum of 47 per cent. of color. The influence of a temperature high in securing a rapid and full extraction of color was further shown in the sample similarly fermented at 100 degrees (No. 556), in which 46 hours sufficed to extract the color fully. A comparison of the samples treated without stirring with those in which stirring was practiced, leaves no doubt of the beneficial influence of *"foulage."*

In the readings of Dec. 20, however, the differences originally brought about by difference in the temperature of fermentation are already greatly diminished. Nos. 556, 561 and 562, which were fermented respectively at 100, 75 and 62 degrees, now show a difference of only 6 between the two first on the one hand and the third on the other. On April 8th these three samples have become exactly alike, both in intensity (17) and in tint.

It thus appears that the apparent advantage of a high temperature in fermentation, in extracting the color, was only a temporary one, and has ceased to manifest itself just about the time that new wines are usually sold. The little color of the wine made at 62 has maintained itself, having lost only 50 per cent. of its original intensity, while the two others suffered an average loss of 63 per cent.

It still remains to be shown that the same rule holds good for *all* red grapes; but it seems definitely proven that in the Zinfandel grape at least no permanent advantage is gained for color by fermenting at a high temperature, unless some means were found to prevent the loss occurring under ordinary treatment.

A very striking point is shown in the case of the two wines in the preparation of which no stirring was practiced, and in which, therefore, we may assume that only the most interior portion of the color-bearing layers was extracted at all. Here we have in the case of No. 558, with an original intensity of 30, a decrease to 7.4, or nearly 75 per cent. loss. In No. 559, although the original intensity was less—27.8—the color has remained at a better figure—9.0—doubtless for the reason that the higher temperature produced in the thick pomace mass caused the more permanent pigments of the exterior layers to be partially extracted. This is also indicated by the tints observed, which, in the latter sample, lie nearer the purples than in the former.

It thus again appears that in the case of Zinfandel wines *not* subjected to *foulage* or its equivalent during fermentation, not only is the color extracted less as a whole, but is also of a less permanent character, and lies toward the "reds" of Burgundies rather than the "purple-red" tints of the Bordeaux wines.

Glancing at the column of intensities observed on April 8th, it appears that the maximum of color has been preserved by the sample fermented according to the usual practice of the viticultural laboratory, viz.: No. 561, which stands 2.6 points above the highest sample made according to any other method. This sample has also preserved more nearly the purple-red Bordeaux tint than any other; those fermented without any cover (Nos. 557 and 560) having on the contrary gone decidedly farther toward the reds. That this is the tendency of all these samples is obvious from an inspection of the table of tints; and it is in accord with what is known of *all* red wines, and will be amply apparent from a tabular statement of our observations upon a large number of wines, soon to be published.

It should be remembered that, as stated in a former bulletin, the French color-scale runs from simple "purple-red" through five numbered shades toward "red," and from this again through progressively numbered shades of red to orange, the final stage being the brownish-red color of old port wines.

E. W. HILGARD.

Berkeley, April 15, 1887.

OUR WINES AND RAISINS.

[San Francisco News Letter.]

The importance of our viticultural industries to California has frequently been referred to in the *News Letter*. The making of raisins and wines has been advancing with an almost unparalleled rapidity. The raisin crop of last year amounted to 750,000 boxes, and the wine crop to 18,000,000 gallons. The former represents about $1,500,000 in value, and the latter about $3,000,000 in makers' hands, though by the time the wine reaches the consumer it would be worth nearer $10,000,000. It is only a few years, comparatively speaking, since the planting of vines was commenced to any extent throughout the State, and now, in every county, acres and acres of vineyards are to be found covering the hills and valleys with their fruitful and delicious crops. Many acres of land heretofore planted to wheat are now covered with the vines, the soil and climate of California being, like that of France, particularly adapted for its growth. But we are more fortunate even than the great wine-making country of Europe. We have a much larger area of suitable ground to work upon, and our vineyards have not been stricken down, like those of France, by the vine plague, phyloxera. The remedy, too, for this pest, and which is being extensively used in France, is close at hand. Millions of resistant vines, the wild vine stock of the United States, are being set out in France and subsequently grafted with the choice varieties. Here we have been more fortunate. We have planted the resistant stock in our young vineyards before they have been devestated to any extent. We have further grafted them with the choicest varieties of vines that are to be found in the most celebrated European vineyards. Our progress and advancement in viticulture has been remarkable, and has earned for California the title of the future grape country of the world.

Much of our improvement is due to the energetic work of Mr. C. A. Wetmore, the late Chief Executive Viticultural Officer of the State. He has, however, been fortunate in the field that he had to work upon, for the viticulturists of California are a remarkably intelligent body of ladies and gentlemen. This fact is not only shown by the comprehensive and valuable discussions at their conventions, and the readiness with which they grasp at and work out any new suggestions, but it is shown above all in the practical result of their workings—the quality of the wine and raisins that they manufacture. Nobody would ever have surmised, a few years ago, that the quantity of raisins exported from California, as the product of the past season, would have amounted to 12,564,000 pounds. Yet such was the case, and this quantity does not include what has been exported by sea, or what has been consumed on the Pacific Coast. The quantity mentioned has been shipped overland to meet the requirements of the Eastern markets where the California raisin has been rapidly supplanting the imported Spanish fruit. That we should be enabled to do this, within a few years, speaks volumes for the quality of our raisins and the care with which they are handled and packed. An effort has been made to reduce the tariff on Spanish raisins, but this should be defeated. Any alteration in the tariff should be in the direction of an increase, because the raisin industry should be fostered while it is in its infancy. Another argument in favor of a higher tariff is the enforcement of the Inter-State Commerce Bill, which has the effect of raising the overland freight on raisins shipped to New York to seventy cents a box. If this rate be maintained after the next raisin crop is packed, it will practically shut out the eastern market and prove a source of trouble and possible loss to the raisin makers. Another thing, the raisin makers should lose no time in representing their case in the proper quarter. If they fail to do so they cannot expect to obtain any redress.

In the wine business the question of high freights is not such an important factor. Large shipments of wine were made last month to Eastern points, which, with the stocks already on hand there, will be ample for all requirements for some time to come. Wine can be shipped East by the Panama steamers and by the Horn, and the long voyage should tend to improve its quality. With raisins the opposite would be the case, to say nothing of the loss of the demand in the East at Christmas time, which would result by shipping the new season's fruit round the Horn. Three-fourths of the wine exported from California is shipped from San Francisco, where it has first passed through the hands of the wine merchants. There should, therefore, be no difficulty in filling up a ship to New York, from time to time, with California wines. This could be done according to Eastern requirement. Nearly 1,750,000 gallons of wine have already been shipped overland this year, and the total amount exported from the State during the past quarter was but little less than 2,000,000 gallons. This is but a trifling increase over the exports during the first quarter of last year, and shows that the demand is not increasing in proportion to the supply. This is a matter that demands the attention of wine makers and wine merchants. The vintage of 1886 was double that of 1885, therefore it is very evident that there must be a large carry-over stock this year. In one respect, this will be a decided advantage, as it will afford an opportunity for maturing our wine, which we have been unable to do in the past to any great extent. At the same time the large surplus will have a tendency to to decrease prices, unless some very earnest efforts be made to extend the consumption in the East, or to endeavor to place the wines of California on the London market. Both branches of the viticultural industry have, at the present time, some knotty problems to deal with, as the *News Letter* has indicated. It is now in order for those who are most directly interested to bestir themselves on their own behalf lest the troubles should grow to undue dimensions.

The Report of the Fourth Annual State Viticultural Convention is now published and ready for delivery. Single copies are one dollar each, but special rates can be obtained for five copies or more.

A HAWAIIAN VINEYARD.

[P. C. Advertiser.]

By invitation of Mr. Philip Milton, a representative of the *Pacific Commercial Advertiser* visited that gentleman's place on King street yesterday, and was shown over the fine vineyard that within the past four years Mr. Milton has planted. The site upon which the vines are growing is, like the rest of the lots in that part of the city, quite level, the soil being almost entirely black volcanic sand and light yellow earth. The drainage is good, and Mr. Milton has, very wisely, dug large pits, into which is thrown all the debris that accumulates, such as dead leaves, sweepings, of the pathways, and from the stables in the rear of the dwelling. When this material accumulates in any quantity, all that will burn is thus consumed and the pit filled up.

The whole ground where the grape vines were to be planted was first deeply trenched, and then enriched in the manner indicated. These trenches are about four feet wide, and as long as the locality where they are dug would allow. The ground being ready, the vines were set out about ten feet apart in the rows, and the same distance from each other. There is quite a variety of vines now growing, including the Muscatel, Toksy, Isabella, Catawba, and the Mission grape. In all there are about 160 vines, covering a half acre of ground, and just now loaded with fine bunches of grapes, many of which are about ripe. As previously stated, the oldest of the vines have been planted about four years, and the youngest in bearing are less than two years old.

Of the older ones the trunks of the majority are about two and a half inches in diameter, though there are some nearer four. Mr. Milton states that he finds that the vines planted near the place where his horses stand while they are being washed down are most vigorous. The framework on which the vines are supported is built of 4 by 4 timber, and is about seven feet high. The posts are about ten feet apart, and being placed on stones, they will last for a long time. The whole cost of the framework was about $1,500, and all the posts being supported on stones, clear of ground, the repairs will be but small for the next twenty years.

In cultivating the grape Mr. Milton does not hesitate to thin out the bunches when they begin to form, as he sees them become crowded on the vine, or the berries, when too close together on the bunch. By doing so early in the season he secures larger sized berries, and by the judicious use of sulphur blown into the bunches from a pair of bellows, he keeps the grapes free from the slightest appearance of the mildew or the aphis insect. The vines are pruned in February of each year, and much care is taken that while there shall not be too much foliage left on them, neither should they be left too bare. The sun should find its way to the ripening bunches, but not too directly. Care should be taken also in taking off the leaves, that they be not broken off close to the branch. When this is done the vine is apt to bleed. The stems should be pinched off close to the leaf, and then the bit that is left dries up and falls off.

As the grapes ripen, the mynah birds, with that fine appreciation of what is nice in the way of fruit, make inroads upon the vineyard, and are only driven off by the presence of a man with a kerosene can which he beats, and an occassional shot from a musket kept handy for that purpose.

Mr. Milton calculates that this year's crop of grapes will be about 3,000 pounds, and there is a good demand for them at forty cents a pound. At this rate, or even at a much less price, it will be seen that grape growing on these islands is bound to be a paying business. Indeed, the fact that all who have a little piece of ground, no matter how small, can have every year a nice supply of this most healthful and pleasant of fruits, should induce all to start a vine or two.

FACTS THAT TALK.

[Wine and Fruit Grower.]

On the night of the 1st of March the House of Representatives, by a vote of 142 to 101, "refused consideration" to the Sweet Wines bill (or Fractional Gallon bill) as amended by the Conference Committee, and reported back. The signification of this is that the bill as passed by the Senate last July, having been emasculated by the "crooked amendments" of a hostile Sub-Committee from the House in the interest of the alcohol-distillers of the West in particular, and bastard-wine makers in general, so as to be utterly worthless as a protection to the public against impure wines, and to the wine-growers as a measure of relief from unjust taxation, our friends in the House rose up in their wrath and indignantly crushed the whole proceeding, Committee and all, and rejected the bill. It will be seen that there was a good majority in the House in favor of the bill, as it passed the Senate; and had it been so reported back, we could have got the bill through by a majority of not less than 41. It will also be seen that a hostile Committee, acting in the interest of corporations, can so manipulate legislation in committee that no bill can reach the House in the shape desired by those seeking the legislative relief, or as the majority are willsng to receive and act upon it.

The gentlemen who composed this hostile Sub-Committee, who have done this work, are Mr. William R. Morrison, of Illinois, Mr. Henry R. Harris, of Georgia, and Mr. William McKinley, Jr., of Ohio. It will be well for farmers to note and remember these names.

It must not be forgotton that this legislation was part of the work undertaken by the wine growers of the country to check adulteration and sophistication of vineyard products, and to protect the legitimate industry against disreputable competition, and the public against unwholesome, falsified, or bogus wines. It will become our duty to study carefully the causes of our non-success, and to analyze the nature and character of the agencies that have intervened to check our progress. If there are not some things published in this connection in these columns within the next few months that will give certain parties a foretaste of an earthquake of the Charleston pattern, it will not be our fault.

The vine-growers of the United States are now called upon to consider some very serious facts affecting the future of their industry. With arable land adapted to the cultivation of the grape, greater in area than any other country on the globe—a soil unsurpassed in fertility, and capable of producing wines sufficient to supply the whole world—they find themselves to-day hemmed in with unfriendly and hostile conditions that check development and expansion even as affecting domestic consumption, and practically if not absolutely debarred from all participation in export trade. These hostile conditions are due in part to obstructive laws enacted to further the aims of other industries, chiefly whisky; but still more to the absence of all legislation of a helpful and encouraging nature.

There are no national laws against adulteration. As said on another occasion, no general statutes stand between the villainous schemes of the rascals of the whole world and American stomachs. The consumers, the general public, should be made to understand the full significance of this fact. When that is done, our task will be greatly simplified. When it is shown that poisons abound in food and beverage offered in the markets of the country, and that certain persons and classes of people are deliberately engaged in the practice of producing unwholesome and poisonous food and beverage, to the injury of public health and to the serious detriment of the honest producers, there will arise a clamor that will be heard even in the committee-rooms of Congress, and we shall no longer witness the shameful spectacle of a horde of bogus wine makers and forty-rod whiskey-distillers dictating legislation affecting the pure-wine interests of the country.

This question of adulteration of food and beverage must be made *a burning question* from now henceforward until it is determined in favor of honest methods and honest producers. The wretches who are bringing disgrace to the name of American wine merchants, must be "gathered in." The farmers have the remedy in their own hands, and *it is their fight*. Let every granger and farmers' club in the country make this question of prime importance in all their discussions, and especially in all Congressional elections.

THE PURE JUICE OF THE GRAPE.

[Melbourne Paper.]

Mr. Hayter's Victorian Year Book for 1885-86, just issued, informs us that the area under vines exceeded that returned in 1884-85 by 733 acres. The quantity of wine returned exceeded a million gallons, and was more than that in 1884-85 by 243,000 gallons, or about a third. Now, satisfactory as this is to all interested in the increasing products of a country, it yet may not be so to highly enthusiastic teetotallers; and it is for the purpose of pleasing these latter and the public generally, and the vine growers in particular, that I pen these lines.

At this season of the year I would remind a large number of your readers who are invalids that on the Continent there is what is called "the grape cure." The patient goes to the vineyard and picks his bunch of grapes, eats them, and repeats the process a given number of times in each day, and many medical men certify to satisfactory results in thus curing chronic diseases, constipation, insomnia, dyspepsia, &c.

Now, when in New York, I saw a firm in Fulton Street making a fortune in a very simple manner. During the grape season they bring into the saloon the grapes in cases, and unpack them before the people, who are all standing by. You can purchase your grapes, and you can order them to be put into the wine-press, and as the crushing goes on you place your glass at the tap, and drink immediately the fresh-crushed juice. There can be no adulteration, for it is done before your eyes; or if you do not like to purchase the grapes and trouble yourself about it, you can buy the recently expressed juice at five cents a glass. This is a most delicious, refreshing, healthy and cooling drink. Moreover, if you believe in the medicinal virtues of the grape and its "cure," here you have the remedy at once at hand, without the inconvenience of the skins and stones. The people flock by hundreds there, and the sick likewise, to obtain what they denominate "blood food." Others take it away fresh in bottles to their invalids at home.

Leaving out, however, all mention of it as a remedy for the sick, and looking at it only in the broad sense of a most refreshing, cooling beverage, with slight laxative properties most admirably adapted for our hot climate, I ask are there not one or two enterprising citizens, centrally situated, who, during the present grape season, would like to make an independence, and, at the same time, be a benefit to their fellow citizens, to the teetotallers, and especially to the vine growers of this country? Any wine shop, moreover, would add to its celebrity by associating itself with this movement; and my friends, the licensed victuallers, might obtain a small, elegantly-painted press, and serve it out to their customers, for I speak from experience when I say a wee drap o' brandy with it makes the nicest tipple a mon can take.

At Denver, in the United States, at the Exhibition there, I saw they had a large press pouring it out by the gallon; and the man in charge was serving it out as fast as the juice escaped. This press was nearly all glass, so that you could see the grapes as fast as emptied in being crushed, and the pure juice pouring out.

California Wine Crop.

[Town and Country Journal.]

Very satisfactory reports have been received of this crop from the agricultural districts of California. It is admitted on all hands that the wine crop of 1886 exceeds that of any previous year. Prominent wine merchants assess it at 19,500,000 gallons; whereas last year's crop was only 7,500,000 gallons. The quality of this year's crop is said to be excellent. The raisin crop is also very large; one estimate giving 500,000 boxes of 20 lbs. each, as against 260,000 boxes in 1885. Other estimates are larger. The grape crop is enormous. Out of 356,000,000 lbs., 40,000,000 lbs. have been shipped eastward to be used as table fruit, 20,000,000 lbs. have been consumed in the same form at home, 20,000,000 have been used in making brandy, 30,000,000 lbs. appear in the form of raisins, and the remainder has been consumed in making wine. The eastward shipments of lemons, limes and oranges will be twice as large as they were last year, it is said, owing to a reduction of the freight charges. As the crops increase, producers in California are learning new ways of selling them. The owners of several large vineyards have recently established agencies in eastern cities for the sale of their wines; and by escaping the Pacific Coast middlemen have been able to raise the price which they receive by nearly 100 per cent. The greatest market for California wines and raisins will be found in the eastern seaboard states. The notorious adulteration of French wines has prepared this market for the California product. It has created a demand for purity in wines; and this is a demand, say the San Francisco journals, which California can supply.

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FRIDAY.....APRIL 29, 1887

If Algerian Viticulture will not be affected more disastrously by phylloxera, progress of planting the vine outstrips California considerably, and as sanguine writers believe, Algiers will become the great vineyard supply for the Old World. Colonists and natives, although the latter are Mohammedans, vie with each other in planting vineyards. The productiveness of the vine is remarkable. Four hundred and fifty gallons per hectar is the average product. Defects of ordinary Algerian wines are said to be too deep a color, coarseness of taste and too great an alcoholic strength. But the choice of varieties, which for the Colonists is as serious a matter of study as for California, corrects the second of the three defects. One great difficulty in the very warm African Colony is proper cellarage.

Recent statistics show that Switzerland produces about twenty-seven million gallons wine, but for the completion of consumption needs imports double that quantity, and that the whole of the wine consumed by that small nation is annually close upon eighty million gallons. The twenty times larger population of our grand Republic cannot keep up with the Swiss in enjoying the juice of the grape.

The Imperial Court of Leipzig (Saxony) has, upon an appeal, decreed that an addition of 100 liter of sugar dissolved in water to 1,000 liter of must is to be considered an adulteration and its product not a natural wine.

OUR WINES IN AUSTRIA.

Prof. Dr. J. Bersch of Vienna, as was announced at the close of the California State Viticultural Convention in December, 1884, received a collection of samples of wines from those exhibited at that Convention. The professor wrote last spring that these wines had remained intact and were waiting for the opportunity of being tested by a good number of Austrian wine men.

On March 29th, the following letter was sent to Mr. F. Pohndorff by the gentleman named:

"On the 27th of March at last the samples of California, sent two years ago, came before a large assemblage of experts, who took great interest in examining them. As regards taste and bouquet, the wines were declared very good. We had not ventured to previously clarify the wines, being too little acquainted with their nature, which seems to have little affinity with the nature of European wines. The persuasion was gained and expressed, that considering the youth of California viticulture, the cleanness of the tone of taste of the products examined appears remarkable. Likewise, that your grape growers will with their products be able to victoriously meet the competition of European wines."

These expressions which, it is to be hoped, will be repeated with the minutes of the tasting of the different wines sent, in the professor's excellent technical journal, are surely as encouraging as can be desired.

It was supposed that the Zinfandel sample, which, if we remember right, was of Sonoma growth, would have appeared less strange to the Vienna wine men, as we have always held that wine to be of rather Hungarian than Bordelais characteristics. Ofner and Carlowitz wines are red Hungarian wines with which the Viennese wine trade is well conversant.

The more Southern character of our wines being necessarily very different from the light seductive little wines the more temperate Austrian vineyards bring forth, must have appeared strange at the outset to the Viennese gentlemen, and it would be well to repeat the remittance of growers' original wines to Professor Bersch in order to render these men who show an interest in our wines, if only to enrich their knowledge, more fully acquainted with them, and that they may give us their frank opinion about them again, for our own instruction.

The cleanness of the tone or sound "of the taste of" the wines, which is the literal expression used by Dr. Bersch, would mean what the words "metal" "ringing by the touch" "savor harmony," in short, "the impression on the palate," used in other languages for the same idea, manifest.

The custom of purchase of wine through a broker in Bordeaux is 5 per cent. commission and shipping expenses for putting the wine on board. Thus, 4 barriques of wine or 1 ton (925 liters) at 500 francs would cost with broker's commission 25 francs, fixed type of filling casks and cartage 20 francs—545 francs, against 6 months' draft and 3 per cent. banker's expenses.

Campe's varnish for casks is prepared by treating 1 kilogram shellack, 125 grams venetian turpentine and 125 grams rosin with 6 kilograms alcohol of 90 per cent.

Subscribe for THE MERCHANT.

SECTION FOUR.

The suspension of Section Four of the Inter-State Commerce Bill, for only two or three months, will be practically useless as far as California products are concerned. The fruit season will be well begun just at the expiration of that time, and it is most unfair to the growers that they should remain in a state of uncertainty regarding the disposal of their crops. A large proportion of the fruit is sold to canners, and the prices paid for it are regulated by supply and demand. If none of the fruit can be shipped East, owing to prohibitory freight rates by rail, then the local supply will be in excess of the demand, and the fruit growers must accept much lower prices than usual from the canners. The raisin makers will be in an equal state of uncertainty, though they will have a few months longer grace before being brought face to face with the difficulty. The present suspension of Section Four, for only two or three months, is of no practical value to farmers in California. All of last year's surplus stocks have been cleaned up, and for the present there is very little to ship East. Salmon shipments will be the first thing to attract attention, and these will probably be made by the Canadian Pacific route. But the greatest trouble is for our fruit men, who will probably have the largest fruit crop ever produced in the State upon their hands, and yet they are unable to determine whether they can obtain living prices, or whether their fruit must rot upon the trees. There are millions of dollars involved, in California, upon this Interstate Bill, and it is outrageous to think that our fruit growers run the risk of losing everything. Section Four should certainly, in common fairness and justice, be suspended till the end of the year. We do not want to see the country flooded with European dried fruits, while California can supply all that are needed for consumption in the United States. But this is what we shall see unless a further suspension of Section Four be granted. As it is at present, the fruit growers of California feel completely demoralized, and they must remain so until they know definitely, before contracting for this season's crops, whether they are to be enabled to live or starve.

OUR WINE SHIPMENTS.

A reference to the table of wine shipments, published elsewhere, shows that the exports by sea continue in larger quantities than we were able to record last year. The shipments by the Panama line of steamers are naturally larger than usual on account of the effects of the Interstate Bill, which raised the rates of freight during the month. The suspension of Section Four, however, for a period of seventy-five days will probably cause further heavy shipments by rail in all lines of California produce. We find that the exports of wines to Mexico are larger than they have been for some time past, and that the Hawaiian Islands take 3,000 gallons. A new feature in our regular table is the shipment of over 2,000 gallons of wine to Norway. The steamer that sailed for Hong Kong and Yokohama, on the 26th inst., also took a larger quantity of California wine than has been shipped to Oriental ports for many months past.

Mr. Charles A. Wetmore left for San Diego last week to look after his business interests there.

CAPTAIN H. W. McINTYRE.

Captain H. W. McIntyre, President of the Grape Growers' and Wine Makers' Association of California, and manager of the Niebaum Vineyard at Rutherford, Napa County, will very shortly take charge of the enormous vineyard of Senator Stanford at Vina. Captain McIntyre is one of the most progressive vineyardists in the State. He is intelligent, hard-working and practical in his methods. We had hoped that he would have accepted the office of Chief Executive Viticultural Officer which was tendered to him by the State Commission, but which, while recognizing the compliment paid him, he evidently declined with a view to accepting his new position at Vina. While regretting the loss to the State at large, we cannot but congratulate Senator Stanford upon his selection. Captain McIntyre has a large field before him to work upon, and we wish him as much success at Vina as he has met with at Rutherford, whence his departure will be deeply regretted.

Fluctuations in sugar have been the rule since our last issue. Prices have dropped and advanced again promiscuously, opportunities for speculation having, in fact, been equally as good as in the wheat deal. There have also been changes in overland freight rates for raw and refined sugars, and shipments are being made, to points on the Missouri River, by the Canadian Pacific Railroad. It is certain that the history of the sugar trade in California will be more varied this year than it ever has been in former times. With the ups and downs in prices, shipments direct, round the Horn and by the Canadian Pacific, there is ample opportunity for a very interesting article.

Mr. J. H. Wheeler, Chief Executive Viticultural Officer, has been asked by Norman J. Coleman, United States Commissioner of Agriculture, for the names and addresses of all persons who are engaged in viticulture in California. It is believed that the Department of Agriculture intends to collate and distribute information that will be useful to vineyardists, in the same manner as has been done for other branches of agriculture. Our industry is at length being fitly recognized at Washington.

The new wine cellars of Messrs Kohler & Frohling will be opened in New York tomorrow. They are by far the most complete and extensive cellars in the east, and the removal into them by the firm was spoken of with pleasure by the late Charles Kohler only a couple of days before his death.

Mr. Clarence J. Wetmore, Secretary to the State Viticultural Commission, has taken unto himself a wife. The MERCHANT hopes that they may cling to each other like vines and be blessed with many olive branches. The vine and the olive both flourish well in California.

Advices from the Colonies report but little change over the condition of affairs that existed a month previously. Trade was quiet without any special features. The surplus of wheat for export will be more accurately determined by the incoming steamer.

THE WINE HARVEST OF FRANCE FOR 1886.

From the annual report of the minister of finance recently published, I am enabled to obtain interesting information concerning the yield of wine in the several departments of France. The total yield produced 25,063,345 hectoliters, a decrease of 3,472,806 hectoliters on the production of the preceding year, and nearly 11,500,000 hectoliters less than the average of the last ten years. The average yield amounted to 36,679,000, as will be seen by the following :

Years.	Hectoliters.
1876	41,847,000
1877	56,405,000
1878	48,729,000
1879	25,770,000
1880	29,667,000
1881	34,139,000
1882	30,886,000
1883	36,029,000
1884	34,781,000
1885	28,536,000

PREJUDICIAL CAUSES.

The atmospheric disturbances which prevailed during the budding and maturing of the grapes, greatly contributed toward the unsatisfactory result of the yield. Fatal effects from rain, frost and hail, are reported from nearly all the departments excepting those of the southern region. Those showing the greatest decrease in production are: Ain, Allier, Aube, Cher, Coté d'Or, Doubs, Indre, Indre-et-Loire, Jura, Loire, et-Cher, Haute-Loire, Loiret, Main-et-Loire, Meurthe-et-Moselle, Meuse-Nievre, Puy-de-Dome, Rhone, Saone-et-Loire, Sarthe, Vienne, and Yonne,

PHYLLOXERA AND MILDEW.

The causes mentioned as affecting unfavorably the yield have been accentuated by the continual development of the phylloxera and mildew, two plagues that for several years have been steadily devastating the vineyards of France. The mildew is rapidly increasing everywhere. During the past year it appeared in two forms, the mildew proper, or that which attacks the leaf, and the peronospora, or that which attacks the grapes, drying the young fruit, and thereby preventing maturity. The following departments suffered from its ravages : Corrége, Doubs, Indre, Loire-et-Cher, Haute-Loire, Loire-Inférieure, Lozére, Main-et-Loire, Sarthe, Deux Sevres, Tarn, and Haute-Vienne. Many well known and several new insecticides for the extermination of these plagues have been tried. As far as applied, the most successful this season is the invention and property of an American, Rev. Walter T. Griffin, of Brooklyn, N. Y., who has invented an ingeniously constructed machine so fitted and arranged as to apply and distribute the curative powder or liquid directly to the vines. Attached to the rear of the machine are two soft sweepers, held by flexible springs, which by the rotation of the wheels move in such manner as to completely sweep all clinging insects from the vines, and without injury to the plant remove the bark where the winter egg is deposited, and at the same time distribute the insecticide directly on the spot where the egg is found.

The winter egg or embryo state of phylloxera, always deposited under the bark of wood over one year old, is the foe to be destroyed by the vine growers of France, as this minute object, hardly observable by the naked eye, is capable, according to the carefully ascertained figures of M. Valery-Mayet, professor in the school of agriculture at Montpellier, in France, of producing one female gallicola, which by the end of May has laid 500 eggs, which hatch out immediately, and by the end of June, these have increased to 250,000. If calculated to the fourth generation, the enormous number of 62,500,000,000 is produced. They have five and sometimes six generations a year. It is clearly perceivable that almost incalculable damage accrues from the deposit on the vine of one winter egg. Mr. Griffin is at this moment vigorously engaged in fighting this pest. His efforts have been singularly rewarded by most gratifying results, and he has several flattering certificates from influential vine growers of the Médoc attesting to the effective value of his treatment.

QUALITY OF THE WINE.

The quality of the wine of 1886 is mediocre, and poor in alcoholic property. The viticultnrists have endeavored to remedy these defects by free sugaring. During the first ten months of 1885, 6,031,000 kilograms, or 12,062,000 pounds of sugar were employed in sugaring wines. For the same period of 1886, the quantity employed increased to 27,410,000 kilograms, or 54,820,000 pounds.

IMPORTATION OF FOREIGN WINES.

In presence of the deficit in the yield, foreign wines are more than ever resorted to. For the first eleven months of 1885, 6,831,000 hectoliters of foreign wines were imported into France, and for the corresponding period of 1886, 9,438,000 hectoliters. Spain, as usual being the largest contributor, sent during this period, 5,187,000 hectoliters, and Italy following with 1,697,000 hectoliters. Importations were also from Algiers and other wine producing countries.

WINE FROM DREGS AND DRIED GRAPES.

The decrease in the production has given stimulus to another industry, the fabrication of wine from dried grapes, and from the residuum of pressed grapes by the process of sugaring. The total quantity of this fabrication for the year 1886 amounted to 5,500,000 hectoliters, an increase of 1,533,000 hectoliters over the production from the same source in 1885. During the past year, 2,688,000 hectoliters of wine were obtained from the dregs of pressed grapes, and 2,812,000 hectoliters from dried grapes.

As the vineyards of France depreciate, those of Algiers increase in value. The production and cultivation of the vine in the different provinces of that country steadily increases, and the yield for 1886 shows an increase of 550,984 hectoliters. The total production was 1,569,284 hectoliters. Number of hectares planted in vines during the year 1886, as follows :

Provinces.	Area planted.	Production of wine.
	Hectares.	*Hectoliters.*
Alger	24,422	624,347
Constantine	12,130	385,556
Oran	26,114	559,381
Total	69,666	1,569,284

Algiers sent to France during the first eleven months of 1886, 398,000 hectoliters of wine. The following gives the yield in the departments ot the west and south of France :

Gironde.—Yield of 1886, 1,108,685 hectoliters, an increase of 32,629 hectoliters on that of 1885. Number of hectares planted in vines 141,897 against 139,457 in 1885.

The annual production of the Gironde since 1875 has been as follows :

Years.	Hectoliters.
1875	5,279,110
1876	1,964,045
1877	3,511,094
1878	2,210,114
1879	1,567,506
1880	1,660,235
1881	1,276,000
1882	1,114,000
1883	1,867,559
1884	1,338,183
1885	1,076,056
1886	1,108,685

Charente-Inférieure.—Yield of 1886, 698,802 hectoliters ; increase of 89,650 on that of 1885, which was 609,152 hectoliters. Average yield of the last ten years, 2,251,784 hectoliters ; number of hectares planted in 1886, 51,601 ; hectares planted in 1885, 59,217.

Charente.—Yield of 1886, 75,412 hectoliters ; decrease of 37,278 on that of 1885, which was 112,690 hectoliters. Hectares planted in 1886, 23,457 ; in 1885, 26,023. Average yield during the last ten years, 1,019,848 hectoliters.

Dordogne.—Yield of 1886, 125,155 hectoliters ; decrease of 42,541 hectoliters on that of 1885, which was 167,696 hectoliters. Hectares planted in 1886, 59,953; in 1885, 64,200. Average yield for the last ten years, 442,455 hectoliters.

Gers.—Yield of 1886, 733,865 hectoliters ; increase of 290,281 on that of 1885, which was 443,581 hectoliters. Hectares planted in 1886, 133,591 ; in 1885, 131,979. Average yield for the last ten years, 1,192,354 hectoliters.

Lot-et-Garonne.—Yield of 1886, 363,753 hectoliters ; increase of 20,731 on that of 1885, which was 343,022 hectoliters. Hectares planted in 1886, 65,525; in 1885, 66,642. Average yield of the last ten years, 603,155 hectoliters.

Landes.—Yield of 1886, 56,660 hectoliters; increase of 4,531 on that of 1885, which was 52,129 hectoliters. Hectares planted in 1886, 20,594 ; in 1885, 20,439. Average yield of the last ten years, 269,740 hectoliters.

Basses-Pyrénées.—Yield of 1886, 55,291 hectoliters ; increase of 13,072 hectoliters on that of 1885, which was 42,219. Hectares planted in 1886, 20,859 ; in 1885, 21,297. Average yield for the last ten years, 139,916 hectoliters.

Hautes-Pyrénées.—Yield of 1886, 73,446 hectoliters ; increase of 32,528 on that of 1885, which was 40,918 hectoliters. Hectares planted in 1886, 16,382 ; in 1885, 16,255. Average yield of last ten years, 187,845 hectoliters.

GEO. W. ROOSEVELT,
Consul.

UNITED STATES CONSULATE,
Bordeaux, France, January 6, 1887.

CURRANTS.

EDITOR MERCHANT: — Statistics are instructive. Thus, the figures of Great Britain's importations in 1885 present some features from which to draw conclusions of some value. Oranges and lemons received that year from foreign countries cost the United Kingdom £1,474,191, apples £623,319, nuts £368,275, almonds £254,524, fresh fruits £1,370,743. dried and preserved fruit £488,020, raisins £956,237 and currants $1,458,182. These last two figures are relevant. The importance of the Korinthian grape is illustrated most graphically. Each year the value of the subacids of that precious little fruit is found to be of higher service, particularly in manufacturing districts in England, where it takes largely the place of butter. The production of Greece is taxed to its utmost by the demand for currants for that reason, and also for the use for fermenting the fruit in France. The limited area in the Hellenic Kingdom where the Korinthian grape succeeds, viz.: the Peloponnesus, the shore of the Gulf of Korinth and the Islands of Cephalonia and Zante, may soon be insufficient to supply the wants of commerce. The Cape of Good Hope viticultural reports speak of currants from that region. The writer is not versed in the commercial occurrences as to that fruit, and only guesses that the original value of average quality on board of $30 ruling a dozen years ago must have considerably increased. Nor is he aware that the monopoly of the currant region of Greece has to any extent been shared by any other grape growing part. Three years ago nice looking and sweet tasting dried fruit from California propagations of Korinthian grapes were present at our Convention in San Francisco. Elongated bunches of several varieties of them in fresh state we saw at several previous Conventions. Although the shape of the bunches and berries had been modified from the original compact short form of the Greek fruit, yet the taste, if of less pronounced acid expression than the latter, appeared as rich in sweetness. The Fresno hot plain whence the samples came, and if I err not from Yolo County others, may, like certain districts traversed by the Sacramento River, and where fruit ripens early, possess the faculty of harboring the precious Korinthian Vine and of emulating the privileged spots of Greece in producing its fruit.

America partakes but to a small degree in the trade in currants and the fruit is here little used for the purposes to which particularly Belgium, Rhenish Prussia and other consuming countries dedicate it, viz.: less in puddings than in the baker's product. But when currants can be made at home and eventually become plentiful, surely they will not lack a market at home, not to speak of concurring in European markets.

Thus, the study of production of the valuable little variety, which we know is possible in certain spots in California, should be taken in hand. It may require study of all conditions necessary for the prosperity of the variety, and it should, therefore, be attempted on a small scale and with the possession of as much as possible information about so exacting a plant, to whose perfection or rather sole success in the Korinthian region the continuance of a high temperature day and night in the dogdays is indispensable for rapid and complete maturity—but we have certainly progressive men on the right spots who will feel happy if their pains will be rewarded by solving so interesting a question.

The writer was engaged from 1871 for several years in the solution of the problem of making wine from the Korinthian grape in Patras and Cephalonia. The problem was solved. The Korinthian grape is susceptible of producing wine, and a valuable and good wine at that, requiring, however, age and being of the nature of hot, Southern whites. There is thus double reason for trying the stafides varieties of Korinth, Zante, by the by, under which name the fruit goes in California, is the least of the producing islands. The name of Korinth (corrupted into currant) should be respected.

F. POHNDORFF.

Washington, D. C., April 10, 1887.

The climate of the South of Italy seems to be subversed. From Genova continued snow fall, late in March, was reported, an occurrence hardly imaginable. The heavy storms in that region had most damaging effects on the olive groves. Tall olive trees of more than 300 years of age have been uprooted by the terrific hurricane. The hopes for the olive crop have been annihilated in the districts of Port Maurizio, Spezzia, Ventimiglia and along the Riviera, where subsequent earthquakes have done still greater harm.

WINTER SHIPMENT OF GRAPES.

[J. Sagar in the Vineyardist.]

According to recent reports on grapes held for shipment during the winter, prices received have not been as satisfying to the shippers as was expected. It couldn't have been owing to a glut in the market at such a time, and yet there must have been some plausible reason for such a condition of things. May we not suppose that people generally lose their taste for grapes during the extremes of winter, and for that reason is it not evident that the demand would not be equal to the supply? Such being the fact, of what use is it to talk about suitable storage for winter shipments? There may have been occasionally an instance of a shipment in winter bringing a good paying price, the question is, are such occasions to be depended upon? I do not think the kind of grapes we raise can be stored for any length of time in ever so suitable a place, and then come forth in as presentable a shape as they were before such incarceration. Taking the best that could be done in such direction, I mean after a period of three or even two months, wouldn't they necessarily be more or less wilted, and if so would it be reasonable to expect them to bring fancy or even remunerative prices? My theory is to dispose of them during the proper season. But I am inclined to think that it has not altogether been the intention of the grower to hold his grapes for winter shipment. Has it not been more the force of circumstances than anything else? Men having from fifty all the way up to hundred acre vineyards, cannot get around fast enough to dispose of their entire crops inside the two fall months; hence, on a portion of their crops they are thrown upon the uncertainties of winter shipments. I may state that I had the past fall Delaware and Concord grapes picked and in the grape-house four weeks before they were shipped, and when they were received at the commission house, notwithstanding as a general thing, they had been at least four days on the road, I invariably received postals that they were received in good order. I have doors and windows on all sides of the grape-house, and they were receiving every day a good circulation of fresh air. I shall, on some future occasion, give my *modus operandi* of picking the grapes.

We have sometimes had it heralded about that such and such a one has been receiving extraordinary prices for their grapes, sometimes before others have given the first thought about commencing to pick, thus attempting, for it is nothing else, that they are smarter than those who cannot follow suit, or that the positions of their vineyards are located more favorably for such early ripening, all of which is pure *bosh*. Such shipments of grapes are not more than half ripe, and have invariably been only forerunners of a demoralized market by continuous shipments of the same. Then the question arises, what about commission houses selling such grapes? My impression is that it is an imposition upon a large class of buyers; while if a few such shipments were returned to the growers, it wouldn't be long before we had a better state of things in the markets. Notwithstanding that grapes have been in the markets more than thirty years there are still a large class of people who cannot tell the difference between a ripe and a half ripe grape. To such people a grape may not be very sweet, and yet they will think it is all right, and it is on account of just such people that the market in the early part of the season is flooded with green grapes. Then, again, there are, I think, a still larger class that cannot be imposed on in the same way, and the consequence is, no doubt, that they refrain from buying until they are satisfied that the grapes are ripe. Is it not reasonable, then, that during a considerable portion of the season we lose a large portion of our best customers.

I must say a few words touching the one hundred acre vineyards. Supposing they were divided into ten acre lots, with as many different owners, wouldn't they be more likely to market the one hundred acres so divided during the proper season, than if the same were under the control of one man? The trouble, no doubt, is not securing sufficient help to go through with the business as it ought to be. The lack of such help is only an indication of the ravenous disposition of such men to undertake more than they have the ability to manage. Then again, if he should employ help enough to market his crop during the proper season, and should mark them to one house, wouldn't his shipments be so appallingly large the commissioner would be nearly at a loss how to dispose of them? But somebody must have them, probably at their own price. It would be a poor course to pursue, and I am so sure that no one can be foolish enough to do so. Of course they can be sent to different houses at the same time.

AMERICAN VINES IN FRANCE.

[St. James' Gazette.]

The excitement about the replanting of the ruined French vineyards has recently entered on an acute stage. Five years ago the dealers in American vine plants, seeds, and cuttings had it all their own way; and the more enterprising of the vineyard proprietors were investing large sums of money in varieties of *Vitis Estivalis* and *V. Riparia*. One had no business in an agricultural society's meeting unless he could talk glibly of the Black Jacquez of Mississippi and Missouri and knew all its seventeen other names, besides its supposed ancester the Herbemont. Then there was Norton's Virginia from the Potomac, the Cynthiana or Red River, the Cunningham, the Clinton, the Solonis, the York Madeira, and the Taylor and its hybrids. But since then millions of Clintons and Taylors have been uprooted for their hollow failure in resistance to the phylloxera; while other supposed varieties of the same family, *V. Riparia*, are following their wake, for they will not take grafts from the French vines; and 15,000 of these stocks have all perished together in one vineyard alone near Montpellier. The truth is that practical men are now waking up to the fact—long well known to botanists—that the hybridizations of vines in their wild American habitats have been infinite, and that thus it is not easy to get a phylloxera-proof *Estivalis* or *Riparia* uncrossed by the worthless *V. Labrusca*. But the loss of years and capital is hard to bear; and hence there is just now a considerable amount of stir, and also of that mode of motion which we now know as heat. I myself have cautiously experimented with American vines in southwestern France for some years, but can as yet give very few positive recommendations. More time is required. So far, the Chasselas de Fontainebleau grafted on American Solonis stocks gives a good result; but the growth of the wood is slow. The Herbemonts on their own roots are unequal, some plants growing ahead fast enough, while others lag behind most discouragingly. One year their large bunches of small black grapes are delicious, the next nothing but verjuice is produced. The Elvira and the Noah, said to be American seedlings from the Taylor, produce a small golden-green luscious muscat grape, which has the fatal habit of dropping from its small bunches as it ripens. Useless for wine in France, it gives a fair brandy. The Cunningham, a southern *Estivalis*, seems to prefer an early grave.

Recent French vine congresses seem to have hammered out the opinion that it is no longer of any use to sow vine-seeds imported from America. The Yankees are on the opposite tack, of course, and allege that all their hybridizations of American by French vines are failures. The Viticultural Society of Lyons points to a "king of hybrids," the Saint Sauveur, obtained from seeds of the American Jacquez (*Estivalis*) gathered in France, which is said to resist both mildew and the phylloxera and to give an excellent wine. The Vialla (at first named La Tourate), another French seedling from the American Clinton (*Riparia*), is also highly spoken of as a stock on which to graft the European vines; and there is a third hybrid between the Spanish grape Pedro Ximenes—the wine so called was popular in England 300 years ago as Peter-see-me—and *V. Rupestris*, a common wild thing known in America as the bush-grape. Great things are prophesied for this novelty. These three varieties are, in reality, all that are left standing by the discussions in the congresses. Meanwhile the stern fact stares them in the face that the French vintage of last year produced little more than two-thirds of the average of the last ten bad years, being a falling off from 1885 of 750,000 gallons.

THE PORTAL WINE COMPANY.

[Santa Cruz Surf.]

The organization and incorporation of a company to purchase the well known Burgundy vineyard of J. B. J. Portal, in Santa Clara County, and to extend and develop the same under the general supervision of Mr. Portal, backed by a larger capital than the resources of one person, seems to be a step in the right direction towards upbuilding and maintaining a reputation and securing a market for a staple brand of pure California wines. Mr. Portal has enjoyed some exceptional advantages in securing a large area of vines of the best French varieties, adapted for the production of high-class clarets, Burgundies and Sauternes. He has already demonstrated what can be done with grapes of this character and with wine of this quality. We believe the type of vineyard he has planted embraces in the main the varieties that will be found the most prolific and profitable for wine purposes in this country; consequently Santa Cruz possesses a kindred interest in seeing this experiment put upon its feet, as it were. We hear it rumored that some Santa Cruz capital may become associated with Santa Clara in this enterprise, and we shall rejoice to see the two counties blending their interests in this as well as other investments to mutual advantage.

The Report of the Fourth Annual State Viticultural Convention is now published and ready for delivery. Single copies are one dollar each, but special rates can be obtained for five copies or more.

OUR NATIVE WINE SHIPMENTS BY SEA.

PER P. M. S. S. CO'S STEAMER SAN BLAS, APRIL 15th, 1887.

TO NEW YORK.

MARKS.	SHIPPERS.	PACKAGES AND CONTENTS.	GALLONS	VALUE
K & F	Kohler & Frohling	305 barrels Wine	15,190	$8,215
A V Co	C Schilling & Co.	60 barrels Wine	2,872	1,150
Z M	S Lachman & Co	1 cask Wine	68	44
L in diamond	Eisen Vineyard Co	25 half barrels Brandy	703	1,090
K in diamond	J Gundlach & Co.	8 quarter casks Wine	989	692
Baltimore	"	2 barrels Wine		
K in diamond	"	2 barrels Wine	98	98
S in diamond	"	3 half barrels Wine	81	60
F N	Williams, Dimond & Co	5 barrels Wine	232	116
Total amount of Wine			19,530	10,376
Total amount of Brandy			703	1,090

TO CENTRAL AMERICA.

F M Corinto	Cabrera, Roma & Co	1 barrel Wine	33	$33
S P San Juan del Sur	Kohler & Frohling	1 half barrel Wine	28	19
"	"	1 half barrel Whiskey	27	87
A M, San Jose de Guatemala	Eug de Sabla & Co	4 cases Whiskey		36
"	"	2 cases Wine		8
F P, La Union	"	1 keg Wine	10	8
B F & Co, Corinto	"	6 barrels Wine	406	229
A C & Co, La Union	L F Lastr to	40 cases Wine		160
M V & Co, Corinto	B Dreyfus & Co	50 cases Wine		250
H & S, Amapala	John T Wright	6 kegs Wine	60	75
E T, Amapala	"	16 kegs Wine	160	200
M V, Corinto	Wilmerding & Co	1 barrel Whiskey	36	108
T B, Champerico	Tillman & Bendel	20 cases Wine		82
"	"	4 kegs Wine	40	39
P A & Co, Amapala	Montealegre & Co	5 barrels Wine	163	124
Total amount of Wine, 112 cases and			900	$1,229
Total amount of Whiskey, 4 cases and			63	231

TO MEXICO.

J F, San Blas	W Loaiza	2 barrels Wine	97	$82
A B & Co, San Benito	Cabrera, Roma & Co	12 kegs Wine	192	246
A D & Co, Acapulco	Urruela & Urioste	15 cases Wine		69
G & J, San Benito	E L G Steele & Co	12 barrels Wine	326	191
"	"	10 cases Wine		37
Q & Co, Puerto Angel	H Levi & Co	2 cases Wine		8
C G, Mazatlan	J F Schleiden	1 barrel Wine	50	74
P C R, Mazatlan	"	3 kegs Wine	30	60
A A, Mazatlan	"	8 kegs Wine	80	109
G A, Mazatlan	"	4 kegs Wine	40	76
O S, Manzanillo	Thannhauser & Co	2 barrels Wine	96	85
J M R, San Blas	J Gundlach & Co	18 kegs Wine	279	88
J M D in diamond, Mazatlan	J F Schleiden	1 half barrel Cognac	26	86
M R in diamond, Mazatlan	"	1 puncheon Claret	162	97
L A in diamond, Mazatlan	"	1 half barrel Claret	25	15
F A in circle, Mazatlan	"	1 barrel Zinfandel	49	73
R Bus in circle, Mazatlan	"	3 half puncheons Claret	241	154
"	"	1 half barrel Brandy	26	92
R H in diamond, Mazatlan	"	1 half barrel Cognac	26	79
"	"	1 barrel Claret	46	27
G A in diamond, Mazatlan	"	4 kegs Wine	40	76
"	"	1 barrel Claret	47	28
H Y in diamond, Mazatlan	"	8 kegs Wine	80	150
C C in diamond, Mazatlan	"	2 barrels Wine	98	104
P C R in circle, Mazatlan	"	3 kegs Wine	30	60
"	"	1 barrel Wine	50	30
Total amount of Wine, 27 cases and			2,062	$2,096
Total amount of Brandy			26	92
Total amount of Cognac			53	165

TO PANAMA.

Per J J	Williams, Dimond & Co	3 barrels Wine	140	$70
P in diamond	J Gundlach & Co	4 casks Wine	249	112
D E S S B	B Dreyfus & Co	1 case Wine		5
J F	C Carpy & Co	10 half puncheons Wine	587	264
Total amount of Wine 1 case and			976	451

TO NEW YORK—PER STEAMER SAN JUAN, April 26th, 1887.

S C	Arpad Haraszthy & Co	1 case Wine	12	$41
S A	"	4 cases Wine	10	20
A S B	John Bergez	1 cask Wine	90	40
K & F	Kohler & Frohling	105 barrels Wine	5,062	2,600
B D & Co	B Dreyfus & Co	75 barrels Wine	3,537	1,800
J W S	Heathcote, Dexter & Co	1 barrel Wine	50	50
A V Co	C Schilling & Co	100 barrels Wine	4,705	2,120
S & C	Stetson & Adams	250 barrels Wine	12,184	6,092
E B & J	Lachman & Jacobi	150 barrels Wine	7,502	2,273
R G & Co	A Greenebaum & Co	6 casks Wine	374	224
"	"	10 barrels Wine	492	295
A G & Co	"	505 cases Wine		2,208
F F & Co	"	3 half-barrels Brandy	72	163
Total amount of Wine, 505 cases and			33,989	17,763
Total amount of Brandy			72	165

TO NORWAY.

D B	Huschler Bros	43 barrels Wine	2,112	$1,071
Christiana	"	5 barrels Brandy	229	229

TO COLON.

J A C	Cabrera, Roma & Co	10 casks Wine	480	$181

TO HONOLULU PER STEAMER AUSTRALIA, April 26th, 1887.

H J	Arpad Haraszthy & Co	4 barrels Wine	187	175
"	"	126 kegs Wine	630	630
"	"	40 kegs Wine	400	400
"	"	18 cases Wine	44	75
F & P	B Dreyfus & Co	8 half-barrels Wine		
"	"	30 kegs Wine		
"	"	40 kegs Wine	708	600
L & Co	Lachman & Jacobi	39 kegs of Wine	250	231
W S L	Lenormand Bros	5 barrels Claret	249	172
Total amount of Wine			2,468	2,283

TO HONGKONG—PER STEAMER SAN PABLO, April 26th, 1887.

K in circle, Kobe	A E Amoy	5 barrels Wine	259	$107
"	"	1 case Wine	3	2
B in circle, Yoko	"	5 barrels Wine	250	100
S Bus, Yoko	C B Jennings	12 cases Wine	30	42
A, 7 in triangle, C, Yoko	Arpad Haraszthy & Co	5 barrels Wine	246	160
"	"	2 half barrels Wine	50	40
V, H in diamond, W, Yoko	C R Lilienthal & Co	2 barrels Whiskey	81	92
L in diamond, Co, Yoko	A Mayers	5 barrels Wine	320	121
S S, Yoko	B Dreyfus & Co	2 half barrels Wine	53	60
"	"	1 keg Whiskey	10	50
Total amount of Wine			1,202	$634
Total amount of Whiskey			91	142

MISCELLANEOUS SHIPMENTS.

DESTINATION.	VESSEL	RIG.	GALLONS.	VALUE.
Victoria	Geo W Elder	Steamer	120	$86
Papeete	River Clyde	Bark	2,805	1,302
Aftica	River Clyde	Bark	314	122
Japan	City of Pekin	Steamer	1,140	615
Kahului	Anna	Schooner	28	30
Honolulu	J D Spreckles	Brig	500	433
Butaritari	Alton	Schooner	103	121
Petropanlofski	Alexander II	Steamer	1,226	962
Total			6,236	$3,671

Total shipments by Panama steamers	59,069 gallons	$31,917
Total Miscellaneous shipments	12,498 "	7,840
Grand totals	71,567	$39,757

WINE MAKING.

What can be Seen at the Vineyard of Wm. Palmtag.

Free Lance.

A short drive of eight miles from Hollister westward into the foothills of the Gabilan range of mountains brings one to the vineyard of Wm. Palmtag, where at this season of the year a large force of men and boys are employed in picking the grapes from the thousands of vines now bending with their rich clusters of pendant fruit, and from them making fine wines of various kinds. To one unaccustomed to the California method of wine making, a visit to an extensive vineyard like that of Wm. Palmtag well repays the trouble of the journey.

The first business of wine making is of course to pick the grapes. This is no slight task. Care must be taken that the grapes are in that condition of maturity which will insure the best wine. They must be fully ripe, yet not too ripe. They must contain neither too much nor too little sugar. The grapes being in the proper condition for picking, the vineyard is divided into blocks, each of which is thoroughly stripped of its fruit before the next block is touched. As the grapes are picked they are placed in fifty pound boxes and then taken in loads of twenty-five boxes at a time to the winery. There the first process in the real work in converting them into wine is to put the great clusters into a machine, situated in the second story of the winery.

This machine serves a double purpose. It not only crushes the grapes, but in doing so separates them from the stem. If the stem be crushed, the juice exuding from it imparts a bitter flavor to the wine, thus lessening its value. This crushing machine, by an ingeniously constructed screw, tears the grapes from the stem, sending the former into the grape-crusher, and the latter into a huge receptacle placed by the side of the machine.

From the crusher the grapes drop into large tanks in the story below. If the wine to be made is claret, the next process is that of fermentation. The crushed grapes are placed in the tanks, remain quiet for thirty-six hours, and then the trouble—viz, fermentation—commences. Looking into the tanks one would think they were placed over a tremendously hot fire and were about to boil over. The grapes seethe and sizzle, and although before the fermentation commenced they were two feet from the top of the tank, now they are almost even with the top, and are kept from boiling over by a man who, with a hoe-shaped implement, rakes them back and forth, and pushes them up and down at regular intervals both night and day. One cannot help thinking, as he watches the grapes being thus beaten and pushed, and their accompanying remonstrance, but that they are rebelling at this fermenting process, and are struggling to get out.

The fermenting process continues from ten to twelve days. Then the liquor is drawn off and pumped into great casks holding thousands of gallons each, and are allowed to remain quietly in the ice-cold cellars. Every year each cask is emptied three times, in order that the wine may be cleared of its impurities, which have settled in the bottom of the casks.

This year Mr. Palmtag is making a very large quantity of claret which promises to be a very fine quality of wine. One thing is sure, viz: that the wine will be made of the pure juice of the grape, and will be subject to no adulterations or admixture of foreign substances and wines. In making claret this year the following varieties of grapes have been used, all of which have been grown in Mr. Palmtag's vineyard: Trousseau, Black Pinot, Zinfandel, Charbono, Ploussard, Cabernet Franc.

After the liquor or wine has been drawn off from the tanks into the casks, the mass of crushed grapes is called pomace. This pomace in all European and in many California vineyards is used for making a second-class quality of claret which, especially in France, is used by the laboring people. This second-class wine is made the same as that of the first quality, water being poured upon the pomace and the mass being allowed to ferment for a certain length of time when the liquor is drawn off. Mr. Palmtag however makes no second-class quality of wine. Instead of using the pomace in this way he fills the tanks full of water, allows the pomace to ferment, draws the liquor off, and instead of using it as a second-class wine distills it into a very fine quality of grape brandy, which, for medicinal and all other purposes, can not be excelled. This process of distillation is very elaborate and requires the exercise of great judgment and a long experience. A description of this process is of necessity quite long, and will be given in another issue of the *Free Lance*.

Beside claret, Mr. Palmtag this season is making a large quantity of white wine. The process differs from that used in

making claret only in the amount of fermentation allowed. The grapes are crushed and passed into a tank the same as when claret is made, but instead of being allowed to remain there ten or twelve days before the liquor is drawn off, this is done at the end of the first day and as soon as the least evidence of fermentation appears. The liquor is then pumped into casks and allowed to clarify itself the same as in claret. The grapes used in white wine manufacture are principally of the varieties known as Reisling, Burgois, pink and white Sweetwater.

This year Mr. Palmtag will make over 15,000 gallons of wine and brandy, for which he receives the highest market price.

AUSTRALIAN WINE CASKS.

[Australian Times and Anglo-New Zealander.]

We are glad to learn that the Australian Vignerons are utilizing the experience many of them gained while in Europe during the exhibition. Some recent arrivals of wines from Australia have shown increased care in preparation, and further improvement may be looked for. But the question of casks is still in almost as unsatisfactory a state as years ago. Only a few days since, we had brought under our notice some excellent wines which would have commanded fair prices on the London market, materially depressed in value because of irregularity in flavor, arising, there can be no doubt, from differences in the casks. The complaint against Australian wines will not be overcome fully by any amount of scalding, scrubbing, "pickling," or any other process, so long as plain spirit casks, brandy casks, rum casks, and the like are used. There is not so much difference where sherry or port casks have been adopted; but the question arises, Why should Australian Vignerons use old casks at all? It is not the plan on the Continent—where, if they do use casks a second time, every care is taken that they are filled with wines of the same description as at first. Who ever heard of claret shipped in port or Taragona casks, or sherry shipped in old spirit casks? The question, as it effects Australia, is partly one of so-called economy, and partly of the absence of suitable wood for cask-making amongst the colonial timbers. What is called "blackwood" seems to be the only wood found in Australia at all suitable for making casks. Similar to red oak or cabbage wood in fibre, it is, however, too porous and irregular. And, what is of more serious consequence, it communicates a disagreeable flavor to its contents. It does for sugar or molasses, but is not sufficiently delicate for wine. In Spain and Portugal, chestnut wood is most appreciated, but it is scarce and dear, and oak is for that reason most generally adopted. Of oak there are several varieties—Bosnian, Baltic, American, etc. Of these, the former are adapted for ale, porter, and stout, and are chiefly used for such products in England and Germany. For wine, nothing can excel good white oak, with its clean, close grain, and we would strongly urge vignerons to use exclusively casks of this material for the English market. They could easily be again collected by the agent in England, packed into shooks, and returned to Australia by sailing vessel at something like half-a-crown apiece. Even this charge would to some extent at least, be recouped in the reduced value allowed to consumers for returned casks. The plan is now being tried in some quarters, and there is little doubt but that the issue will prove satisfactory. In our researches concerning the cask question, we were attracted by the prestige of Messrs. Chippindale & Co., to stroll into their works at Bunhill-row, in which all the various processes involved in the cask manufacture are gone through with a delicacy and precision only attainable by a long-established firm, where the solidity of antique workmanship is grafted on to the latest improvements which experience and changes in caste suggest. The Messrs. Chippindale have been in existence as a firm for 127 years, and during that period have supplied some of the leading wine producers of the world, and the leading London and country brewers. In more recent times, the books boast the name of several Australian vignerons, notably Messrs. Hardy & Co., of Adelaide, the casks to whose recent trial order are now on their way back to England filled with wine.

They are now making four large vats for Messrs. Burgoyne & Co. The Messrs. Chippindale have declined to exhibit at the Adelaide Jubilee Exhibition; one of the members of the firm proceeds to Australia to superintend the exhibits, which will doubtless be subsequently shown at Melbourne, and an opportunity will thus be afforded the local vignerons of effacing, in one important direction at least, the still existing prejudice against Australian wines, by the use of sound and untainted receptacles.

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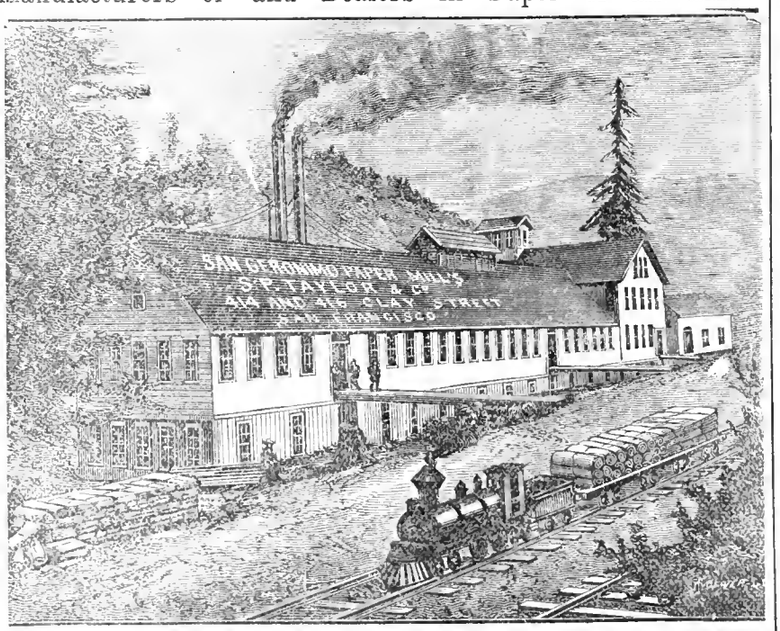

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VOL. XVIII, NO. 2. SAN FRANCISCO, MAY 13, 1887. PRICE 15 CENTS

Oidium (Tuckeri) and the Use of Sulphur.

Being Appendix I to the Annual Report of the Chief Executive Viticultural Officer, for the Year 1887.

NOTE.

To the Board of State Viticultural Commissioners: GENTLEMEN—By your instructions I take this means of communicating to the public the results of our late study—in advance of the issuance of my regular annual report. The numerous inquiries addressed to this office regarding the use of sulphur in the vineyard, induces me at this appropriate time to repeat to the public the most important parts of the instructions, hitherto issued from this office—supplementing the same with a few additions—the results of recent researches and experiments.

I hope soon, in addition to our special studies, to begin the publication of regular periodical reports on the condition of the viticultural industry in the different sections of the State, the same to be compiled from regular reports from the different societies and officers of this Bureau.

Yours very respectfully,
JOHN H. WHEELER,
Chief Executive Viticultural Officer.

SAN FRANCISCO, May 10, 1887.

OIDIUM.*

The oidium (*tuckeri*) is a vegetable parasite of American origiu. It attacks all growing portions of the vine and imparts to the leaves a chapped appearance, and gives them a whitish or gray color. The vine, when badly affected, has a blighted and sickly appearance; the young leaves and tender parts become dried and roll up, attacked, the herbaceous parts blacken, cease to grow, and end by withering and drying up. This latter extreme is rarely attained in California. The growing berries are attacked as readily as other parts, giving the whole a languishing and unhealthy aspect. The young branches also present blotches of a powdered nature which ultimately cover the greater part of the surface exposed to the sun, and where badly also taking on a whitish, powdered and eventually chapped appearance which causes them to crack open and cease to grow. Thus it will be seen that the oidium, unlike other fungus, affects the crop directly as well as indirectly through damage to the foliage. The parasite first appears abundant in June, though frequently commencing its attack in May, at or after the time of flowering.

The conditions favoring the oidium are moisture and warmth, the latter playing the moist important part. The moisture here meant is not the extremely humid condition of the atmosphere which appears with or immediately follows a rain or heavy fog. A condition often incorrectly named as favorable to oidium, but merely the moisture to be found in sea breeze after it has traveled ten, twenty or even thirty miles inland. An atmosphere which produces a light dew at night is sufficiently moist to favor to the utmost the propagation of oidium. Quite different in this respect is the *peronospora* and *Anthracnose* which require the deposition of heavy rain. fog or excessive moisture to produce their growth. For this reason, I believe, California has been comparatively free from the true *Mildiou*, a disease which of late years in France, where summer rains are frequent, has threatened the vineyards to as great an extent as has the dreaded phylloxera.

Our principal vegetable parasite thus far has been the oidium, one especially favored by our dry, warm climate, and one easily destroyed by the timely application of sulphur.

As before remarked, excessive moistnre is unfavorable to the propagation of oidium, and a good shower will do much to remove and destroy the germs.

As to temperature, the disease begins its development where the average of day and night runs up to 53° F.; it spreads rapidly at 70° F., and is checked in its growth where the thermoneter indicates near 100° F. Above 100° its damage is rapidly diminished, and at 112°—a temperature quite common throughout the interior vineyard districts of California—the germs loose their vitality and the effects of the disease entirely cease.

To be sure, where vines make a dense growth and are trained high above the ground, the germs may be so sheltered in shady spots as to escape the effects of the heat. Where, on the contrary, the vines are trained along or close to the ground and receive the reverberated in addition to the direct heat of the sun, the manner in which vines should be trained—then, the high temperature above named accomplishes a complete extermination of the parasite, a result which has often been noted in Algiers where such temperatures are frequent throughout the early growing period of the vine.

Let it be borne in mind generally that the propagation of the oidium and other vegetable parasites of the vine are greatly favored by trellises and high training. Short pruned vines and those trained close to the ground are most exempt from fungoid diseases.

A hot north wind will sweep the oidium from a vineyard well exposed to its effects. This forms one of nature's most common remedies in California, and should be a consolation to those who may otherwise lose by it in the grain field.

Some varieties of vines are found more susceptible to the attack of oidium than others, other conditions being similar.

This fact should influence the vineyardist as to the frequency of applying the remedy and the amount of sulphur employed.

Varieties particularly subject to the effects of oidium are the (Muscat, Chasselas, Zinfandel, Folle Blanche, Crabb's Black Burgundy, Teinturier, Gamay, Cabernet Sauvignon, Cabernet Franc, Riesling, Carignane, Terret and Cinsaut.) Among those little susceptible are the Grenache, all of the true Pinots, the Alicante Bouschet, Petit Bouschet, Colombar, Sauvignon blanc and the Aramon. The American grapes *Vitis Labrusca, V. Riparia* and *V. Rupestris* are but little affected by oidium.

REMEDIES.—Many substances have been applied principally in the form of powders—lime has been extensively employed, and it has been found that any dust effects beneficial results on the diseased plant. None have proved so efficacious, however, as sulphur dust. and on this we can rest our perfect reliance, for, if properly applied, it affects all that may be desired in the way of a cure, and is comparatively inexpensive. The oidium is a disease quite easy to treat because its spores and growth are confined to the exterior and exposed portion of the plant, which is not the case with the *peronospera viticola* and some other vegetable parasites.

THE APPLICATION OF SULPHUR AS A REMEDY.—There have been many conflicting and erroneous statements made concerning this remedy, its application and effects as applied in California. Imperfect and hasty generalizations, drawn from limited local experiences, have not unfrequently been published and results both expensive and wasteful have often followed. To correct the wrong impressions thus formed and save further dispute, it seems necessary to treat the subject in a somewhat technical manner, the truth on some points of which it seems to me precludes the possibility of further dispute as to kinds which should be employed; the difference in the effect of various brands imported or domestic, and the manner and time best for making the treatment.

The vineyards of California consume annually 1200 tons of sulphur, an average of about 15 lbs of sulphur per acre. None of this sulphur is the product of California mines or deposits as many suppose. For three years previous to 1887 sulphur sublimers and grinders have been entirely dependent on countries other than the United States for their raw material. There has of late years been no sulphur found in California which could pay the cost of mining, refining and transportation to San Francisco, and be sold here at even double the present cost of sulphur imported from Sicily or Japan.

Four years ago California received small quantities of sulphur from Nevada, but the competition of cheap labor in the Orient, and cheap transportation by sea soon choked out the local industry. Considerable promise comes to the home industry now from Utah, where large deposits are being worked and the refined produet, ground and sublimed, are being placed on the California market at the same figures as the imported vineyard sulphur; or that prepared in San Francisco from the imported raw material. How long the sulphur mines of Utah will continue available to consumers in the United States will depend entirely upon railroad freights, which have of late been so capricious as to preclude any certain future dependence.

To show the comparative insignificance of our own sulphur mines, let it be known that in 1880 there were mined in the whole

*Frequently and improperly confused with mild ow, which it is not. The true *mildiou* is the dreaded *Peronospora Viticola*, a parasite far more formidable than the disease we commonly treat with sulphur and one which does not succumb to this or other simple remedies.

The misnomer of the parasite common to California frequently leads to a confusion of remedies—sulphate of copper and slacked lime is the remedy for *mildiou*—but one not necessary for our oidium.

United States 600 tons, while our imports for 1881 aggregated 105,438 tons.

This latter quantity came almost exclusively from Sicily. Virtually, the Island of Sicily furnishes the world with sulphur, notwithstanding Japan is now her most formidable competitor for the Pacific Coast of North America. Sicily has for years been the original point of production for the sulphur used in vineyards the world over, and whether this sulphur sold mostly in commerce as "Sicily seconds" and containiug not to exceed 3% of ash impurities, has gone first to Marseilles or Antwerp to to be ground or sublimed; or whether it has come to New York or California to be ground or sublimed, has made but one essential difference to California vineyardists, viz: All sulphur sublimed without the United States pays a duty on entering our ports of one cent per pound, which sometimes makes an addition of nearly 50% to the selling cost. All other brimstone, crude or ground, except in rolls, pays no duty.

I desire to draw particular attention to this difference for the instruction of those who have with this as with California wine in past years, been led to believe, that any goods bearing a French label are better than those produced at home. The case is a parallel to that by which our wine drinkers were long duped by French labels.

Some may claim that the sulphur ground or sublimed in Europe is finer than that prepared in California. To determine this I have examined carefully over twenty samples of sulphur which I have been collecting and carefully sampling for several years past, with the following results: Domestic preparations of sublimed sulphur have averaged as fine as those from Marseilles or Belgium. Of the ground sulphur, that produced in California has generally proved the finer, and the finest of all prepared by either method was ground sulphur prepared in California.

So much to the credit of the home industry. I have learned direct from the leading importer of foreign prepared sulphur that generally the Europeans do not grind as fine as is the practice in California; but that if California markets so demand, it may be prepared as fine as needed. This is because they expect us to use sublimed sulphur if sulphur in a fine condition be needed. They care little about the import duty of one cent per pound on the latter so long as they are reimbursed. Nor is it their business or care whether we use one variety and avoid the tax or the cheaper with equally beneficial results.

The imports of sublimed sulphur to a single merchant in this city have cost California vineyardists in the past three years nearly $15,000 duty, no benefits of which have accrued to our vineyards; and this, a loss to proprietors, adds another conspicuous monument to the long and unwholesome practice among some of our people of aping the French in everything.

We therefore conclude from the foregoing that "California sulphur" means sulphur from other countries, ground or sublimed only in California; and that for economy's sake, if anyone insist on a foreign article, he should buy the ground sulphur and thereby escape the duty of one cent per pound.

Comparative value of ground and sublimed sulphur for vineyard use.—This much mooted question has been carelessly handled by many. First let us comprehend the effect of any sulphur distributed in the vineyard. Sulphur, in a fine condition, exposed to the atmosphere, undergoes a partial evaporation; the vapor produced comes in contact with the germs or organs of the oidium and accomplishes their destruction. Evaporation is therefore the result desired. This evaporation is particularly favored by exposure to the suns heat and especially when the ambiant temperature reaches 70° F or over.

Now, other things being equal, the finer the sulphur the greater must be the surface exposed and consequently the more rapid the evaporation. Evaporation is the result desired. Sublimed sulphur is that produced by boiling crude brimstone and condensing the vapor thus formed in a closed chamber. In cooling the vapor the sulphur is recovered in little round globules. Several of these globules are usually attached and form a string in appearance when magnified, much resembling a string of beads. The sulphur in this shape exposes less surface than could be produced in any other form; so that with equal fineness, ground and irregular particles would better answer our purpose. To demonstrate this practically, two samples of the same sulphur accurately determined in weight, one ground and the other sublimed, were exposed to the same heat as if in the vineyard. Samples selected for this purpose were of apparent equal fineness. The same were weighed from day to day, and the experiment repeated several times; and the above conclusions were amply born out in every weighing. Not only did the sublimed or flowers of sulphur evaporate less; but it also showed a more rapid formation of sulphuric acid than the ground sample, thus furnishing another objection to the use of sublimed sulphur; one which its exponents have frequently and incorrectly urged against the use of ground or triturated sulphur.

I have yet to know of any considerable damage done to vines by the sulphuric acid existing as an impurity in the commercial article, either ground or sublimed; though some have strongly urged the presence of sulphuric acid as an objection to ground sulphur. This is wrong as there is every condition to favor the formation of sulphuric acid in the operation of subliming sulphur, and nothing to favor such formation in the grinding process. Specialists who have made this matter a thorough study, corroborated my conclusions.

I do not urge this as an objection to the use of sublimed sulphur, but if any disadvantage accrues form the presence of sulphuric acid, it must not be laid at the door of the ground sulphur.*

In connection with this let it be known that neither subliming nor grinding does in any wise alter the chemical nature of sulphur, which is an elementary substance and unalterable chemically, otherwise than by combining it with some other element or compound. It is not changed in its preparation as above named, any more than would be pure lead if made into shot by melting or by being cut to the proper shape. The same analogy holds true as to its source—pure lead from one mine or country is chemically identical with that from any other mine or country. So with sulphur from Sicily, from California or any other country. This I state for the benefit of non-chemists, some of whom have thought prepared sulphur to be a compound altered from its elementary condition and hence variable in strength.

*The presence of considerable quantities of sulphuric acid may be detected by the lumpy condition which results from its presence.

One point favoring the sublimed sulphur is, that in preparing it the product is freed of the ashy impurity existing in the crude article of commerce, to the extent of from one to three per cent. This impurity, however, is a neutral volcanic ash, which works no injury to the vine, and in buying ground sulphur can only be estimated as a loss of from one to three per cent.—a loss which is in no wise commensurate with the difference in prices of the two forms, ground and sublimed.

We find European authorities of the present date unanimous in the opinion that finely ground or triturated sulphur is more suitable for vineyard use than the sublimed.

Prof. G. Foex, who is Director and Professor of viticulture at the National School of Agriculture at Montpellier, in his "*Cours Complet de Viticulture*," published in 1886 says: "Formerly, only sublimed sulphur was employed (in the vineyards) because it contained more sulphurous acid; but since learning that the effect of the sulphur on the oidium is due to the vapor which it emits at an elevated temperature, a result obtained as well with ground as with sublimed sulphur, the former being considerable cheaper, has come into general use.

"Furthermore, the use of flowers of sulphur is seriously objectionable, inasmuch as it consists of little globular particles which are readily lost from the foliage of the vine under the influence of light breeze. Its application affects the workmen, too, with a trouble known as *ophtalmie des sulfreurs*—affecting the eyes.

"The ground sulphur, on the contrary, which is made up of angular and irregular particles, adhere more closely to the green portions of the vine and trouble the workmen much less."

M. A. Du Boreuil, M. La Forgue and others express the same preference for finely ground sulphur.

How and When to Apply Sulphur.—For very small vineyards, the dredger, an instrument much resembling a large pepper box, answers well enough, especially while the vines are young. For more advanced vineyards and larger areas, the bellows should be used, holding from three to five pounds of sulphur. These latter are furnished by local manufacturers and effect a considerable saving of time, labor and material over the dredger. By the use of the bellows, too, the sulphur can be more evenly distributed. A simple open nozzle is the best; any perforated cover for this latter is apt to get clogged and the bell-shape frequently given to it does not spread or expand the sulphur jet—a purpose for which it is designed but fails to accomplish. A bent nozzle is more of an encumbrance than an advantage. The simplest, strongest bellows of good size will prove cheapest and best in the end. With this tool a workman will sulphur from five to eight thoussnd vines per day—vines in an advanced state of vegetation. He may apply as many pounds of sulphur per day with other instruments but it can not thus be so evenly distributed nor cover the same area.

The powdered sulphur should be applied so as to lodge as much as possible on and near the growing parts of the vine. This secures a dense sulphur vapor in direct contact with the diseased organs. Sulphur on the old stump, or even on the surface of the ground, will destroy the oidium, but a larger quantity would be required.

Sulphur falling on the ground is by no means lost, but a lesser quantity will answer if lodged on the leaves and branches. It has been stated that sulphur falling to the earth is lost by its effect being immediately neutralized. The sulphurous acid formed is neutralized, but the vapor of sulphur—the active disinfectant is not neutralized; nor is the effect of the sulphur lost, except as it be covered up and hid from the sun and air.

The simplest rule as to the time for applying sulphur is: "Treat the vineyard whenever the disease makes its appearance." But, if we desire to apprehend even its introduction, which is the general custom in California, the first application should be made at or about the time of flowering, as at this period the disease is apt to attack the delicate organs of fructification and render the vine infertile. Altogether the most favorable results have been obtained by sulphuring at the time of blossoming. This, too, is one of the methods of combating *coulure*, a trouble which will be treated later on. Young vines do not require so frequent sulphuring nor so great a quantity as vines in full bearing. The former should be sulphured when the shoots attain a length of a few inches; and again, later on, it the oidium makes its appearance. Bearing vines should, in addition to the treatment at blossoming, receive a second application from the first to the middle of June, and again, later on, if the disease makes its appearance.

The quantity used at each application may vary with the number of vines per acre, and should be governed somewhat by the susceptibility of the variety as before explained. Less is needed for the first than for subsequent applications, when the vines attain full proportions. The quantity commonly used in California for old vines subject to oidium, is about eight pounds per acre for the first treatment, and from twelve to twenty lbs. at the second application.

The use of this remedy in conformance with the above instructions will effect a great saving over conventional methods pertaining at present in California. Not unfrequently our vineyardists sulphur in weather positively prohibitory to the disease. Varieties but little liable to oidium, situated perhaps in the hottest and driest interior localities and trained low to escape it, often receives a dose which goes only to fertilize the soil and stimulate the growth of the vine.

This latter function is one which, however, must not be overlooked; the general aspect of the vine is always improved and vegetation greatly stimulated by the free use of sulphur. A small percentage only of the sulphur applied vaporizes—the balance works into the soil, becomes slowly oxydized and finally unites to form sulphates of the alkalies and alkaline earths, which are in substance the essential ingredient of some of the best fertilizers. Still it is well to know whether the sulphur is applied for the cure of oidium and as a fertilizer, or as a fertilizer only.

The most favorable hours for applying sulphur are from eight or nine o'clock in the morning to the middle of the afternoon, preferably from 9 A. M. till 2 P. M. The sulphur which comes in contact with dew or other water is in no wise altered thereby, but ceases to give off its vapor only until the water evaporates, and thereby exposes its surface to the atmosphere. A rain following the application of sulphur does not alter this element but results in damage only in removing the particles mechanically

from the foliage of the vine to other places more remote from the seat of disease.

Any wind other than very gentle will do much to shake off and remove the sulphur from the leaves. A windy day should therefore be avoided. In fact, a hot, still midday is best in all respects as amply proven by the strong odor of sulphur prevailing at the time of such an application.

In purchasing sulphur its quality and fineness may best be determined by the use of the microscope. The weight of a given bulk will establish the relatiye fineness, but cannot be used in comparing sublimed with ground, as the mechanical condition of the two are different—sublimed sulphur is in beaded strings and occupies more space than ground sulphur, much as shavings are of greater bulk than sawdust To persons experienced in its use, the fineness may be determined by the feeling—almost impalpable it should be. I have never known this sulphur adulterated, although ground sulphur is frequently added to the sublimed to enable the merchant to sell it cheaper. All samples of Eastern sublimed sulphur examined I have found mixed in this manner, showing that the credit of ground sulphur has sometimes been unconsciously extended to the so-called and more expensive sublimed.

Where the question of purity or fineness arises with any vineyardist, samples may be sent to this office, where a prompt determination will be made and reported without cost to the applicant.

To further substantiate these recommendation of the ground sulphur, I will state that of the sulphur used of late years in California vineyards, over three-fourths has been ground sulphur; and I have yet to know of anyone employing sulphur extensively who has abandoned the ground, or even that ground in California for the foreign prepared or sublimed sulphur, which latter sells at one and a quarter to one a half cents higher than the ground or triturated.

Ground sulphur may be easily distinguished from sublimed by the difference in color, the latter always shows more yellow, the former more white or a lighter tint of yellow.

Condensed Must.

[S. F. Chronicle.]

Los Angeles, May 10.—An agreement made to-day between Dr. Springmuhl Von Weissenfeld and J. Debarth Shorb, is of great interest to the grape growers and wine makers. Dr. Weissenfeld represents a system of concentrating wine must, which reduces it nearly 50 per cent., enabling it to be shipped inexpensively to any point and there made into wine. The agreement gives Shorb the use of the patent in the United States. He said to-night: "Now that the matter has been arranged definitely I shall go ahead and have the business working by next vintage. It will give California unlimited market for her grapes and enable her wines to be introduced into Europe. Dr. Von Weissenfeld's company agree to take all the wine which we can make. The process will not only benefit this portion of the State, but will inevitably make the whole State the greatest wine country in the world.

Dr. Ferdinand Springmühl, who is interested in the formation of a company for condensing must, has arrived in California and is now on a visit to Los Angeles.

FERTILIZERS.

[The Vineyardist.]

Remarks on the use and value of fertilizers, by Hon. J. H. Gregory, at a meeting of the Massachusetts Farmers' Club:

NATURE'S WAY OF MANURING.

Now, nature's way of manuring is how, is what? She drops her leaves, her twigs, her bark and her decaying vegetation anywhere she pleases on the surface of the earth. These are decomposed, and the rocks below them are decomposed, also, by the action of the elements and all plant food is made in that way. Well, now, if we are going back to nature's primitive, original way, we must go a good way back of where we are now. I speak of our present farming methods. Everything that is put on in the shape of manures is different from nature's way. It is artificial. We do not drop things on the surface of the earth to have them decompose slowly, and to have them find the crops or not, just as it happens, but we apply manures to the soil and work them in with harrows and cultivators. We put on so much for this crop, and so much for that crop. We say that such ground is adapted to such a crop, and such to another. That is our way of farming and it is artificial. Our way of manuring is artificial. If our fertilizers are artificial, so is the form of barnyard manure. It is a departure from the natural way of feeding plants. If the fertilizer man is cornered in this way, he can turn around and show them that they are cornered in the same manner.

BARNYARD MANURE, AN ADVANCE STEP.

Now, the use of barnyard manure is one step in advance of the natural method. Decomposition in it is carried further than it is by the natural method. It is a quicker process and more concentrated than the natural process, and plant feeding by fertilizers is one more step in advance along the same line of progress. What are the elements of barnyard manure? The same as you find in these plants which nature makes. Barnyard manure is made by the animals eating these plants, and in that manure is found the elements of the plants. What are fertilizers? Fertilizers have in them the same elements that barnyard manure has in it, only in a more concentrated form. Barnyard manure, in turn, is more concentrated than nature's way of decomposing the various plants on the surface of the earth.

THE COW'S STOMACH A LABORATORY.

Now, we talk about fertilizers as being the product of the laboratory and an artificial thing. Did you ever think of a cow's stomach as a laboratory? It is, and the digestive process is going on as if the food were in the laboratory. The manure is the product of chemical processes, they are not more such products than is barnyard manure, which has passed through the laboratory of the cow. There is a wonderful arrangement of the digestive organs of cows, horses, sheep and oxen, and in them chemistry does its work. The process is the same in both cases, only we have more bulk in case of the animal product, and less bulk in case of the fertilizers. The difference is simply a matter of bulk. And when you take into consideration the elements in barnyard manure, and the elements in fertilizers, they are the same precisely. The essential elements are the same in all their variety, but one is merely more concentrated, and that is all the difference there is in them. You can take barnyard manure, and from it manufacture commercial fertilizer. It can all be changed by a simple process. You can get from the manure nitrogen and phosphoric acid and potash, as well as from the phosphate rock of South Carolina, or from the bones or flesh of animals, or from any other source whatever.

BONES AND FLESH.

When you come to look at it, you find that the bones and flesh are made from the very same food that makes the manure. In one case the matter takes one form, and in the other it takes another, The commercial fertilizer manufacturer takes the bones and flesh of your animals to get plant food from. What difference does it make to your plants whether it come from the animal or from the fertilizer? They both come from the same source. So, as a matter of reason, fertilizer and its use is on the same line of progress that we were on when we advanced from nature's way to the use of barnyard manure. Now, one great difference between barnyard manure and fertilizer, is that everything is available in the fertilizer for the crop. How do you knew what the crop needs? You know by analyzing it. How do you know what a house is made of? You take the different parts and see. So you can see what your crop is made of.

DIFFERENCE BETWEEN BARNYARD MANURE AND FERTILIZER.

In using barnyard manure you find that there is a difference between that and fertilizer in this respect, that it has the same elements as the fertilizer, but they are not in the same condition. Some of the elements are latent. The nitrogen is almost wholly latent, and is not ready to be taken up until it undergoes some changes. But nitrogen in the form of sulphate of ammonia and nitrate of soda is all ready to be taken up by the plants. From the fact that the nitrogen in the barnyard manure is not ready to be taken up by the plants at first, and undergoes change slowly, you have got to put a good deal more on in order to give the plant enough to take up. So there is a leakage in barnyard manure, because that element is not in suitable form for the plants. It is not so with the potash and phosphoric acid, because the plants will immediately receive benefit from them. Ammonia, as soon as it gets free, leaches down into the soil and wastes in the drainage of the soil.

Now, then, suppose a man says that he will let all the nitrogen go, that he will put on phosphoric acid and potash, and if the plants don't find it this year, next year's crop will. This is not the way that you put money at interest. It would be like putting money into a bank without getting any interest upon it for a year. You would not call that a wise investment. You would want to get your interest on it from the time you put it in. Now, take that as an illustration of the use of fertilizers. The question comes, shall you apply fertilizer or barnyard manure. You are not going to put on what will not be profitable. But if you put on manure you must let a great deal of it lie over till next year, and thus lose a year's interest. If you put on fertilizers it is not so. The crop takes it up the first year, and you can regulate the food according to the plants.

ROTATION OF CROPS.

From this follows one result as a corollary, and that is that where you use fertilizers, you do not need the system of rotation of crops. It strikes at the foundation of that. There are certain chemical changes in the soil by which certain kinds of plant food are set free. The great reason for rotation is that the plants we put on one year take out certain elements and leave others. If we put on another crop the second year, it will find some of these others. So we go on for three or four years in rotation. But with commercial fertilizers, we put on what the crop needs and it takes it up at once. There is nothing left for another crop. We are not obliged to put in anything for a second year. We put in just what the crop wants, and not trouble ourselves about any future crops.

Now, in regard to barnyard manure, it strikes me that there is not too much emphasis to be put upon the fact that you cannot get all the elements the first year. The percentage is about one-half per cent. of nitrogen, one-half per cent. of phosphoric acid, and one-half per cent. of potash. You cannot always find what the crop wants of these elements without giving it too much. Crops need different amounts of food. It is not necessary to go the whole length of the Stockbridge theory in order to admit this. Some need more ammonia, and some more potash. I use the words ammonia and nitrogen interchangeably. They are about the same thing, except that ammonia has one-half per cent. of hydrogen so that in ammonia there is one-fifth more of plant food than there is to be obtained in nitrogen. Therefore I say that, if you want to feed a crop a great deal of nitrogen, you must put on a great deal more phosphoric acid and potash in barn manure than you want in order to get enough potash. There is one weakness in the barnyard manure. You have to get a great deal more of one element in order to get enough of another. It would be like ordering the same proportions of materials for building different kinds of houses. It would be like having as many boards and bricks to build a wooden house, where you want the bricks for nothing but chimneys, as for a brick house. The wise man will see that he has bricks and boards for each house according to his needs. That is the principle of fertilizers. You give the plants the elements they want, just as a man would adapt his quantity of bricks and boards to the different houses. He would give few bricks to the house where they were wanted only for a chimney, and make his supply of boards large in proportion. So much for a few general remarks.

I have made this subject somewhat prominent, because I am myself using a great many tons of fertilizers yearly. People come to see me, as I should go to them in like case, to ask this question and that question, and to have me make suggestions as to their use. I find that a good many have not got beyond the idea that a fertilizer is a stimulus, and that it is an artificial food anyway, an unnatural food, a costly food, a fancy food, a purely sentimental food, born in the laboratory. So they treat it not as a real practical thing, something that is natural in the progressive development of agriculture, but as an exotic, a whim and caprice, that theorists are endeavoring to engraft on the healthy, old-fashioned, stable manure, in addition to other things which the theorists talk about, but will not be of any practical benefit, which have got to have their run, but which will not pay to have very much to do with. They do not think that they are a real benefit to agriculture in the same way that manure is of advantage to crops.

MADEIRA.

[Ridley's Wine and Spirit Circular.]

Many of our readers may possibly recollect a drawing by the late John Leech which appeared some years since in the pages of *Punch*, depicting the joy expressed by the coachman of a presumably aristocratic family on learning from the butler that the win'yards were a comin' round, and that there was every prospec' of getting some more good Madeiry." Unfortunately, however, notwithstanding the gratuitous advertisement given by that popular journal, the fact that the Island has recovered a great portion of its former productiveness is still unknown to the vast majority of wine consumers, and thus the re-development of this branch of business is seriously retarded by the erroneous impression that the veritable article is no longer to be met with. This is certainly the case with the general public, and although we presume that the Trade are better informed upon the subject, and know that a reconstitution of the vineyards has taken place since their destruction by *oidium*, there are possibly many points in connection with Madeira which have not hitherto come under their notice, and we therefore feel that little apology to our readers is necessary if we trouble them with a few remarks in connection with a visit to the Island which we have made during the past month.

In these days of rapid transit and communication, which have brought the producer and distributor into much closer connection, it becomes absolutely necessary for the latter to keep himself posted in matters with which his ancestors and predecessors had little or no concern. When wine was regarded entirely as a luxury, and when the consumer was content to pay prices leaving a large margin of profit without entering into particulars, which are now invariably asked as to vintage, growth or *dosage*, as the case may be, matters were very different. The merchant on this side could then be content with Messrs. So-&-So's No. 1 Claret at fifty pounds a hogshead; he could give eighty pounds for his Sherry and Madeira. He knew the extent and the tastes of his customers, and that if they were disposed to purchase wine at all they were willing to trust themselves to his judgment and pay any prices, in reason, which he might demand. Cheap wine was unknown; competition had interfered but slightly with his business, and a comparatively limited trade was compensated by an inverse ratio of profit. Now-a days, however, when wine has become more a staple article of commerce, and when the wine merchant has to look to increased sales, to small profits and quick returns, he requires to know more of the countries of production, and of the markets from which he derives his supply, in order that he may purchase with the greatest advantage to himself and his customers. We do not, of course, in any way intend by these remarks to cast the slightest disparagement upon the shipper, or the position which he holds in regard to the Trade. On the other hand, we feel that at no time was he more necessary to the safe conduct of business, for, without the shipper, purchasing and blending would be an operation fraught with risk to the merchant, which, in these days of small profits, he would be less justified than formerly in incurring. Probably, however, the shipper is almost as great a gainer as his customer by any technical information which the latter may acquire, for it naturally becomes easier for two parties to come to terms where both are cognissnt of facts, than where one side is ignorant and must be convinced before he can be made to see the advantages which would accrue from such-and-such a transaction. This was notably the case when disaster first overtook the Charentes, and prices began to rise. Those who were aware of the real state of affairs took time by the forelock, and, although most have again run short and have had to take in fresh supplies, they were able to ward off the high prices for a much longer period than their disbelieving brethren, who chose to look upon the *Phylloxera* as a will-o'-the-wisp seized upon by the shipper as a means of obtaining extra profits. Under these circumstances we have decided on giving our personal experiences when good fortune may chance to take us to the countries of production, and as we have just been enabled to visit Madeira under favorable circumstances, we have decided on making the Island a point of commencement in what we hope to make a series of articles upon "Wine-producing" countries.

It is scarcely necessary to enter into the history of Madeira Wines prior to the destruction of the vineyards by *oidium* in 1852, beyond remarking that early in the century the annual exportation on more than one occasion amounted to nearly seventeen thousand pipes, showing that in the more restricted days of the Wine Trade, this branch held a very important position. Record does not say (nor even is the present production exactly known), what was the exact yield of the country in these prosperous days, but allowing for home consumption, and for the large quantity then turned into spirit, it may be taken for granted that it was greatly in excess of the above quantity. We heard that for some years the average yield was estimated as not falling far short of 30,000 pipes. It would consequently appear that with the stimulus of increased demand for wine throughout the world, the trade in Madeira would by this time have developed into a very important branch of commerce, had no unforseen circumstances overtaken it. With the spring of 1852, however, came the *oidium*, which, returning year by year, destroyed the majority of the vines, and reduced the production of the Island to very scanty limits. Most of the proprietors put their land under sugar cane, and for the quarter of a century following the disaster of 1852, sugar was quite the staple product. So greatly in fact was the trade crippled by short supplies of young wine, and high prices asked for old stocks, that in 1865, the total exportations fell to the paltry amount of 536 pipes, or less than a quarter of what was last year shipped by one house. Prices rose on the Island between 1860 and 1865 to a very great extent and we learned that the firm of Messrs. Cossart, Gordon & Co., during those years purchased the stock of more than one retiring shipper at £80 per pipe all round, not including casks, and for smaller quantities higher prices were reached. The land-owners were asking for *must* from the newly planted vineyards, £20 to £25 per pipe for north side, and £30 to £35 for south side, measured at the wine-press. These prices for new wines of course lowered gradually with the return vintages. After it had been discovered that sulphur constituted an effectual remedy for the evil, replanting was entered upon in earnest, and the vine crop again reached fair dimensions, it being estimated that between 1870 and 1876, a yearly average yield of some 10,000 pipes must have been reached. In 1873, the *phylloxera* made its appearance, causing in the course of the next few years great devastation in various parts, notably in the district of Cama de Lobos, one of the best localities in the south, and latterly at several places on the north side of the Island. The second calamity seems to have utterly disheartened the unfortunate growers, mostly peasants it must be remembered, who have only the produce of their few roods of land to subsist upon, and who therefore were not in a position to employ any means of resisting the plague, had any certain method of so doing been at that time discovered. The proprietors in the affected districts were nearly ruined, and as vineyard after vineyard was destroyed, they made but little attempt to replant them, but put those lands suitable for the purpose again under sugar cane. Thus a second check was placed upon the recovery of the Madeira trade, and it is only within the past few years that circumstances have again taken a turn, which bids fair to once more stimulate its revival. These circumstances consist in the discovery that certain American vine stocks are *phylloxera resistant*, that certain chemicals, notably bi-sulphate of carbon, which is easy of application is destructive to the insect, and thirdly that a disease is now destroying the sugar canes, and thereby necessitating replanting in some form or other. This disease being so far without any known remedy, and the Government having started an establishment for the gratuitous supply of *resistant* stocks, the natives are once more turning their attention to vines, and the area under its cultivation is daily increasing. The only drawback in connection with this return to the old state of things is that the American stocks require grafting with the native vine, in order to produce the usual style of Madeira wine, which means the loss of a year's yield, and which involves great hardships on the peasant, who therefore in some instances prefers, or is compelled to accept, the reduced income derived from the sale of wine, made direct from the new plant, to passing over a season with a view to better times in the future.

The system of wine growing and manipulation in Madeira, taken as a whole, seems to differ in most respects from that of any other country. Commencing with the vineyards which are essentially unique in their size, until the moment the wines are ready for shipment, points of difference present themselves, which would astonish most continental vignerons, and most especially those of France. Practically speaking, there is but one vineyard worthy of the name in the entire Island; this being the property of Messrs. Leacock & Co., and extending over about twelve acres.

But for this, and some of the larger Quintas, the wine production of the Island is carried on in holdings varying in size from two to three acres to small plots, many of them scarcely bigger than those occupied by the agricultural laborer in England, whilst in some instances the patches of banked up soil against the sides of the steep mountains are so small, as to be capable of growing but two or three vines. The land is for the most part cultivated by tenants, who pay their rent, half the produce, in kind to their landlords. These tenants cannot be evicted unless their "Bemfeitorias" or improvements in the shape of cottages, sheds, walls for terracing trees and crops be paid for. Some of the larger landowners have still as many as one hundred to two hundred tenants on their properties. At present, however, owing to the abolition of the "Morgados" or entails, the landowners, as an aristocracy, are gradually becoming extinct, the land, owing to the Portugese law of inheritance, which provides that no one can will away from his children more than one-third of his half of the property. The other half, belonging to his widow, is gradually becoming sub-divided. These laws naturally also obtain as regards the tenants, so that their holdings also get sub-divided in similar manner. On the death of a tenant, it often happens that his holding, as far as his "Bemfeitorias" are concerned, comes to the market merely because it is of insufficient size to support his grown up family upon. Nearly all the laborers and workmen in Funchal are tenants upon properties in the vicinity, and ask for a day now and then to work upon their land. Subsistence on their own produce seems the general idea of the Madeira peasant, and until such becomes impracticable, he is loth to part with his land. We saw one small estate, if such it can be called, no bigger than our office, which was the property of a mother and her three children, each portion being marked off by a low wall, which in itself occupied quite an eighth of the whole area of the ground.

Since the abolition of "Morgados" or entails some of the better class of tenants have bought up small properties, and a great deal of land has otherwise changed hands. The "nouveaux riches" or returned Demerara emigrants being generally to the front in buying up those "Quintas" in the vicinity of Funchal, which come into the market. This is in itself a good thing, as they are generally practical men, and much of the replanting of vines going on now in the Quintas near Funchal, can be traced to their money and energy.

The produce of the land when under tenants, is divided at the wine-press, sugar mill or threshing floor, as the case may be. It generally happens that the tenants follow their landlords and sell their produce to the same purchaser, but it is not unfrequently the case that two merchants' employees may be at the wine-press at the same time, the one receiving for his master the landlord's half, the other the tenant's half. On account of these small tenants' holdings the larger shippers at the vintage time have hard work bargaining with innumerable peasants, and have to open several hundred accounts in their books. On the higher mountain lands under pine tree cultivation, wheat crops or pasture, the holdings are naturally much larger than those in the more valuable wine or sugar cane districts, and it often happens that a landlord will let out a whole hill side to one or more tenants to pasture cattle, make plantations of pine tree, etc., making special arrangement about rent and so forth. The forests in the interior and the "serras" or moor land all the higher mountain ranges belong for the most part to the municipalities of the different districts. Much greater care should be taken with the preservation of these forests than is done, for on their preservation depends, to a great extent, the water supply of the different streams, which feed the "Levadas" or water courses used for irrigation.

Owing to the prolific nature of the soil and climate, the vine in the Island, and especially on the south side, grows with extraordinary rapidity, the growth of the wood in a single year frequently amount-

ing to ten feet. This the small grower is reluctant to prune back in the generally approved manner, and hence it is no unusual sight to find one vine covering several square yards of trellis work, upon which it is trained somewhat after the style adopted in parts of Italy. This trellis work is horizontal, about four feet from the ground, thus allowing the vigneron to pass underneath to attend to the fruit, and also enabling him to secure an additional crop of vegetables at the same time which is obtainable all the year round. On the north-side of the Island where a large quantity of Wine is made, the system is not so much resorted to as that of allowing the vine to trail along the ground during the greater portion of the year, and then to prop it up at the time when the fruit is becoming ripe. The size of some of the old vines in the "quintas" at Funchal, is very great. We saw one of the old vines in Messrs. Cossart Gordon & Co.'s premises, which measured 19 inches in circumference at 1 foot from the ground, at 8 feet above the ground it measured 18 inches, and its branches trained over a corridor some 10 feet in height, pruned back though they were when we saw them, stretched over an area of some 1,900 square feet.

There are several kinds of grapes used for Wine production of the Island of which the Verdelho stands first, as from it by far the greater portion of the typical Madeira is produced, the vines on the north-side especially consisting almost entirely of this species. It is small and of an oval shape, possessing much saccharine and flavor which constitutes greatly to the character of the Wine. In addition to these, there are the Malmsey, from which the Wine of that name is obtained, a round, golden grape, growing in straggling bunches, and which is allowed to remain on the vine until almost converted into a raisin, thereby giving the rich, oily nature to the Wine; the Bual, productive of a delicate and very soft Wine; the Sercial, a Rhenish type from which the dry Wine of that name is obtained, and the Tinta, the only red grape grown on the Island, which is of a Burgundy character, from which, if picked separately, a red Wine is made, but as the grapes of the different sorts are in most instances grown and picked indiscriminately, the produce generally goes to make the Madeira of Commerce in its various grades. Other descriptions of grapes are not in sufficient use to require mention.

Taken singly, Malmsey, Bual, Tinta and Sercial are only produced and sold in small quantities, owing to the difficulty experienced in getting the growers to gather their grapes separately, and may in fact be looked upon more as specialties than commercial articles, it being probable that with the exception of Tinta, the yield of each description does not amount to a hundred pipes a year. The Madeira, as typically known to the Trade and Consumer, consists principally of a blend of the north-side Wine with that grown on the southern slopes, which is generally speaking, of better quality; but owing to the ravages of the *Phylloxera* in the once celebrated Cama de Lobos, is not so abundant as in days of yore. A large quantity of good south-side Wine is, however, made at Calheta and at other districts. The Wine of Porto Santo, one of the Madeira group, which is somewhat coarser in character than the north country Wines, is also used to a certain extent in the cheaper blends.

Owing to the warm climate on the south-side, the seasons on the coast are very early, and at the time of our visit early in March, signs of vegetation, in the shape of leaves and fruit buds, had already made their appearance in the vineyards. The vintage therefore commences towards the earlier part of August, extending to the end of October for those places higher or less favorably situated. The usual custom is for the Merchant to purchase the yield before the crop is picked, and although it is pressed on the spot (the old system of treading the grapes being employed) under the supervision of one of his employés, the *must* is in the majority of instances, promptly removed in skins to his establishment before undergoing fermentation. A small addition of Spirit is in many cases made at this point to the weaker Wines. After the fermentation, at different periods from the beginning of November until March or April, the young Wines are placed in what is known as the *Estufa*, a system, as far as we can learn, which is not general, even if adopted at all, in any other Wine-producing country in the World. The *Estufa* is a stone building divided into separate compartments heated with flues somewhat in the same manner as our hot-houses, most if not all, the Shipping Houses have *Estufas* on their premises. Some of these are capable of holding several hundred pipes at a time. The temperature of the *Estufa* is made to vary in the different compartments from 90° to 160° Fahrenheit, the light, common Wines being subjected to greater heat than the better classes, whilst the time that they are left in the *Estufa* is from three to six months in inverse ratio to the heat employed. The effect of this operation is naturally to diminish the bulk quantity of the Wines, which it does to the extent of from five to fifteen per cent., whilst on the other hand also, the Alcoholic strength is also lessened, owing to the volatile character of the ether; this is generally about two per cent. Upon being removed from the *Estufa*, the Wines will be found to have become very dark in color,—in some instances almost brown, and have therefore to be cleaned with charcoal, either vegetable or animal; the latter, however, is so powerful in respect of reducing color, that it is only used to a limited extent and in exceptional cases. The Wines will now be found to have acquired the peculiar "cooked" flavor, if we may so express it, for which Madeira is noted, and for which it doubtless has the *Estufa* to thank, for with the Canteiro, or Scantling Wines, which have not been subjected to this treatment, the characteristic is entirely absent. The *Estufa* also undoubtedly adds a firmness to the Wine, which is of great service in allowing it to be shipped without the addition of much Spirit. Beside, to these two descriptions of treatment, we had almost omitted to mention another known as *Surdo* (deaf) or more properly, silent Wines, to which a larger quantity of Spirit is added at the time of fermentation, thereby checking this phase, and retaining to the Wine the full sweetness of the *must*. This Wine is used in the same manner for giving sweetness and body to other descriptions, as Paxarette is in the province of Andalusia.

The treatment of the Wines after leaving the *Estufas* is very much the same as that adopted in the Jerez and other South of Spain districts, the Solera system being employed with most of the better descriptions. There is not, however, that characteristic difference between individual casks, as is the case with Sherries, nor does "flowering" take place with the young Wines, except on very rare occasions. The two principal things, which at present speak favorably for the future of Madeira Wines are, firstly, that owing to the climate, there is but little doubt of the success of a vintage, provided only that the vines are sound, and secondly, that owing to the *Estufa* treatment, the Wines will stand the journey to Great Britain, with but little addition of Spirit, and therefore no very great difficulty should be experienced in shipping them under thirty degrees. In speaking thus, we allude of course, mostly to younger Wines, not to the older or special descriptions of which the strength is in most instances, considerably above the shilling limit. On the other hand, there is one drawback to development of the Trade, in the heavy taxes which the Portuguese Government lays on almost every article in connection with Wine manufacture. There is to commence with, an export duty on wine to the extent of about £1 2s 6d per pipe, in addition to which there are duties on staves which have to be imported for cask manufacture, on iron hoops, hoop nails, Isinglass for fining, &c., &c. Whilst there are also taxes on the *Estufas*, and on the amount of labor employed. It is estimated that a pipe of Wine pays directly or indirectly to the State at least £5 before it leaves the Island. This is an enormous percentage on a Wine which has to fight its way against the Wines of other countries, and the consequence is that the development of the Trade is retarded.

As to the phylloxera, although it has doubtless done great harm to many districts, there now seems every indication that it is under control. Replanting is now going on in all directions, and the vineyards of many of the more prosperous proprietors are likely soon to be again in full bearing. The difficulty, as we have before remarked, is with the poorer peasants in the matter of grafting, but even this we imagine will, in course of time, be gradually overcome, when the occupiers see the assured success of their neighbor's enterprise. There is, moreover, a method of which we have seen an experiment on the estate of Mr. John Blandy of planting two slips, one of Verdelho, Malmsey or other native vines as the case may be, and another of *phylloxera-resistant* stock, so close together that the stems touch one another. These stems in the course of a year grow together, when the upper portion of the American species can be cut off, thus leaving the native stock with the resistant root in addition to its own. This, of course, has the drawback of expense in that it requires double the amount of slips, but on the other hand it obviates the necessity of foregoing a year's crop.

During our stay in Funchal we naturally availed ourselves of the opportunity to visit the establishments of the leading shipping firms, and of inspecting the various stocks held by them. The houses which we were able to visit were those of Messrs. Cossart, Gordon & Co., Messrs. Blandy Brothers & Co., Messrs. Krohn Brothers & Co., Messrs. Leacock & Co., Messrs. Henriques & Lawton, Messrs. H. D. Drury & Co. and Messrs. R. Donaldson & Co. As we have always set our face emphatically against advocating the merits of any particular firm, we abstain from entering into detail with respect to the different establishments. On every occasion we found something to praise and possibly something to criticise. Nothing is perfect in this world, and there is no reason why it should be expected in Funchal more than in any other place. It is of Madeira as a wine and not of the individual firms interested in the business that we attempt to write, as it is the merits of the wine, not of the vendors, which we wish to lay before the Trade. That the shippers themselves have not their merits, however, we would not have it be supposed, for it is impossible to meet with a set of gentlemen more thoroughly *au fait* with their business, or more willing to place every facility in the way of those anxious to become acquainted with their particular Trade. Personally, we cannot sufficiently thank our friends on the Island for the courtesy and hospitality which they showed us during the period of our visit, and we can only trust that our humble attempt to place the true facts concerning the present position of Madeira before the Trade may have some slight effect in calling attention to the merits of these wines, which, in face of the new shilling limit, should, we think, show a considerable increase in popular favor. Upon one point we are confident, namely, that they are well worthy merchant's consideration when laying in stock, for, owing to their quick maturity under the method we have described, and their safety in transmission, they undoubtedly constitute extremely good value. The result of our inspection of shippers' stocks showed us that there is at the present moment a large store of old wines in their hands, available either for export singly or for bringing up newer stocks, whilst the daily increasing quantity of land under vine cultivation does away with any fear which may arise that an augmentation in demand might grow out of proportion with the supply. We shall doubtless be told that as the area of land in the Island suitable to vine is limited, the supply must be limited also. This is in a sense, of course, true, but when we bear in mind that a cultivated vineyard like that of Messrs. Leacock & Co., at Sao Joao, is capable of producing, when in full bearing, seven pipes to the acre, the limitation is one which we imagine that it will take an extremely long time to reach.

IMPORTANT TO VINEYARDISTS.

A Patent Process For Concentration of Wine Must.

Los Angeles, May 10.—An agreement made to-day between Dr. Springmuhl Von Weissenfeld and J. DeBarth Shorb, is of great interest to grape growers and wine makers. Dr. Weissenfeld represents a system of concentrating wine must, which reduces it nearly 50 per cent., enabling it to be shipped inexpensively to any point, and there made into wine. The agreement gives Shorb the use of the patent in the United States. He said to-night: "Now that the matter has been arranged definitely, I shall go ahead and have the business working by next vintage. It will give California unlimited market for her grapes, and enable her wines to be introduced into Europe. Dr. Von Weissenfeld's company agree to take all the wine which we can make. The process will not only benefit this portion of the State, but will inevitably make the whole State the greatest wine country in the world."

The Report of the Fourth Annual State Viticultural Convention is now published and ready for delivery. Single copies are one dollar each, but special rates can be obtained for five copies or more.

U. S. DEPARTMENT OF AGRICULTURE

BOTANICAL DIVISION,

SECTION OF VEGETABLE PATHOLOGY.

Circular No. 3.

TREATMENT OF THE DOWNEY MILDEW AND BLACK ROT OF THE GRAPE.

To the Vineyardists of the Country:

Last year a circular was sent out by this Department recommending for trial certain remedies for the mildew and rot of the grape.

The results of experiments in 1886 have fully demonstrated the value of sulphate of copper, "blue stone," over all other remedies in combating the mildew, and the results of many chemical analyses of the fruit and parts of vines treated with the copper compounds have clearly shown that there is no danger to health attending their application. The only precaution advised is not to apply them near (within fifteen days of) the vintage.

In their employment the fact must be kept in mind that their action is only preventive, therefore their application should be made early in the season, from the latter part of May to the end of June. Subsequent applications act only in so far as they serve to check the spread of the disease. The amount of the fluid compounds required to treat an acre of vines will depend largely upon the kind of pump and spraying nozzle used to apply them, and upon the extent of growth of the vines themselves; the amount may vary from twenty to thirty-five gallons.

The following are the formulæ of the remedies which so far have given the best results. An account of the results of trials you may make with one or more of them is earnestly desired, and a blank form for making up a report for the use of the Department in future publications will be sent you upon the receipt of an addressed postal card.

LIQUID REMEDIES.

(1) *Simple solution of Sulphate of Copper.*—Dissolve one pound of pure sulphate of copper in twenty-five gallons of water. Spray the vines with a convenient force-pump having a nozzle of fine aperture. Less lasting in its effect than the next, as it is easily washed off by rains.

(2) *Eau Céleste, Blue Water* (the "Audoynaud process").—Dissolve one pound of sulphate of copper in three or four gallons of warm water; when completely dissolved and the water has cooled, add one pint of commercial ammonia; then dilute to twenty-two gallons. The concentrated liquid should be kept in a keg or some wooden vessel and diluted when required for use. Apply the same as in the case of simple solutions.

The effects obtained by this preparation have been equal to those resulting from the use of the copper mixture of Gironde, and are said to be even more lasting.

(3) *Copper Mixture of Gironde, Bordeaux Mixture.*—Dissolve sixteen pounds of sulphate of copper in twenty-two gallons of water; in another vessel slake thirty pounds of lime in six gallons of water. When the latter mixture has cooled, it is slowly poured into the copper solution, care being taken to mix the fluids thoroughly by constant stirring. It is well to have this compound prepared some days before it is required for use. It should be well stirred before applying. Some have reduced the ingredients to two pounds of sulphate of copper and two pounds of lime to twenty-two gallons of water, and have obtained good results.

Well-made pumps with specially constructed nozzles are required for the application of this compound, unless we resort to the tedious and wasteful method of using brooms or whisps made of slender twigs, which are dipped into the compound and then switched right and left so as to spray the foliage, as directed in our circular of last season. The Vermorel apparatus, including reservoir, pump, and spraying nozzle, is well adapted for vineyard use, and is specially constructed for applying the various liquid preparations containing sulphate of copper.

POWDERS.

(4) *David's Powder.*—Dissolve four pounds of sulphate of copper in the least possible amount of hot water, and slake sixteen pounds of lime with the smallest quantity of water required. When the copper solution and the slaked lime are completely cooled, mix them together thoroughly, let the compound dry in the sun, crush and sift. Apply with a sulphuring bellows furnished with an outside receptacle for the powder. The copper coming in contact with the leather will soon destroy it.

(5) *Sulphatine,*—Mix two and a half pounds of anhydrous sulphate of copper with fifteen pounds of triturated sulphur and ten pounds of air-slaked lime. Apply in the same manner as No. 4.

Both these powders (Nos. 4 and 5) ought to be procured from the manufacturer, prepared ready for use.

NOTE.—It is very probable that Nos. 2, 3, 4 and 5 will be found equally serviceable in preventing potato "blight" and "rot." No. 5 should be employed when one has to contend with both the Downy and Powdery mildews. For apple scab we suggest trials with Nos. 2 and 3.

The degree of success attending the use of these compounds will depend more or less, (1) upon their careful preparation, (2) the time of the application, (3) the more or less intelligent manner in which they are applied, (4) the atmospheric conditions existing at the time or which may follow the applications, (5) the number of treatments made, and (6) the purity of the copper used.

In all cases where these remedies are tried a number of plants or vines should be left untreated to serve as "control experiments," for comparison with those treated.

Prices of materials (subject, of course, to variations):

Sulphate of Copper, pure, in quantity by the barrel	5@6 cts pr lb.
At retail	10 "
Anhydrous sulphate of copper	28 "
Flowers of sulphur, wholesale	2½ "
Retail	5@6 "
Ammonia, who esale	5@6 "
Retail	10 "
Lime, per barrel (200 pounds)	$1.05
"Sulphatine," in quantity	5@6 "

PRACTICAL HINTS AND OBSERVATIONS TO BE NOTED IN THE TREATMENT OF THE FUNGUS DISEASES OF PLANTS, WITH ESPECIAL REFERENCE TO THOSE AFFECTING THE GRAPE VINE.

1. The kind of remedy or remedies employed, and how prepared.
2. Variety of vines or other plants treated.
3. Number of vines or area covered.
4. Amount of material used and how applied.
5. Cost of material used.
6. Cost of labor in preparing and applying same.
7. Number of applications made and date of each.
8. Date of first appearance of the mildew.
9. Date of first appearance of the black-rot.
10. Condition of vineyard in respect to disease in 1885-86.
11. Condition of vines in respect to disease at time of first application, second application, etc.
12. Condition of weather when the applications of remedies were made and the kind of weather immediately following.
13. Condition of foliage at the vintage, of treated vines compared with those not treated.
14. Condition of foliage two weeks before the usual time for the falling of the leaves, on treated vines compared with those untreated.
15. Condition of new wood as to ripening, etc., upon treated and untreated vines.

NOTE.—When practicable, daily records should be kept of temperature, rainfall, amount of dew, fogs, etc., for the development of fungi is largely subject to existing meteorological conditions.

NORMAN J. COLMAN,
Commissioner of Agriculture.

WASHINGTON D. C., April, 1887.

FORTIFYING WINES.

EDITOR MERCHANT.—The beginning has been made in acknowledging the vast importance of the question of what kind of distillates should be used in fortifying wines. California viticulture with the great facilities for producing the proper kind of spirit may consider the question with ease, but not with laxness.

The Government of France is sure to act upon the unmitigated condemnation on the part of the Academy of Medicine of the employment of spirit from cereals, tuberenles or roots in wines, and it may not be long before the grave measure be adopted that only grape distillates be allowed for fortifying wines in France.

In a report of the Spanish Chamber of Commerce in London to the Minister of State in Madrid, it is stated regarding the use in wines of spirits distilled from grain or potatoes, "That these toxic products are a hundred times more baneful to the wine interests of Spain than opium is to China," and that "Grain and potato spirits have ruined the grape distilling industry of Spain."

To quote fully the opinion emitted by the patriotic Chamber of Commerce, which, if expressed in somewhat high colored terms, contains innegable truths; it states, "That taking advantage of the general ignorance on that head, the wine trade of Spain, buying imported amylic spirits at cheap rates, by their greed have poisoned, enervated, and physically and morally degraded the Spanish people. Compare but present statistics of crimes, proceeding from taverns and of cerebral diseases, the hospital of which is the madhouse, with those statistics of times in which Spaniards used pure grape brandy and wine without stretching by spirit."

"It would be cheaper if Spain made a present to the German potato spirit manufacturers of the value of the twenty-three million gallons of amylic alcohol now annually imported, than allowing them to ruin thereby the national Spanish industry, destroy the public health and consummate the discredit of Spain's wine production in all countries."

Complaints of adulterated and stretched wines from Spain have been frequent in France, and more than one parcel of such wines has been condemned after its entry, or in consequence of analysis on the frontier.

The Chamber of Commerce, upon the question of the Minister, what formula or guarantees could be adopted to prevent adulterations of wines by spirit not from grapes, replied that the law should take in hand the means of protecting the legitimate industry, by putting a very high duty on imported spirit not distilled from the grape.

Further, the Chamber says, "That the private individual should refuse to use wines adulterated with toxic alcohol. Where the senses of smell and taste cannot distinguish between pure and adulterated wines, a perfect analytical chemist exists in ourselves, residing in our stomachs, which, with the persuasive voice of indigestion tells us, 'you are poisoning me.'"

It may take some time before this voice in the stomach becomes a recognized authority among consumers on the American Continent. The discriminating consumer of table wine at the meal, of course, needs no other guide than the easy experience of what agrees with him and what is repulsive. But dram drinking means quantities and the voice of the instinctive chemist is not heeded by the average absorber.

The amount of wines that contain additions of spirit not proceeding from the grape may be enormous. California has the privilege of dispensing with grain spirit, and the exercise of the privilege, putting the anomalous distillates under the bane, would considerably benefit the grape industry. We have nothing to do with establishing the value in a hygienic sense of grape distillates over grain distillates for direct consumption and after, through age, they have been made fit for that purpose. But we have a full right to insist upon the use of grape brandy only, in wines.

Eastern viticulture has apparently been debarred by Nature from grapes reaching a sufficient amount of sugar. The use of the proportion of cane sugar to fill the gap for the composition of a good must is therefore obligatory. But when we hear that immense quantities of high wines are furnished by whisky distillers of Ohio and Pennsylvania for wine making in certain regions, it is time to rebel.

The recommendation to Eastern wine makers to abstain from fortifying their dry wines with (grain) alcohol, was well meant. The Committees on Wines at the First National Viticultural Convention in Washington last May were unanimous in that regard, when their senses spoke and in some cases the innate analytical chemist told the tale on examining Eastern wine samples.

Let us draw the moral from researches and experiences of others, that it is time to awaken to energetic acting in repulsing the use of grain spirits in wine, and raising our wine distilling interest. Low grade wines, yet prevailing too much, will give useful distillates for fortifying sweet wines. We can afford to offer grape spirits for Eastern sweet wines. Their sweet Catawbas might be made wholesome thereby.

F. POENDORFF.

Washington, May 2, 1887.

THE NAGAMBIE VINEYARDS.

[The Australasian.]

The central section of the Goulburn Valley has long been distinguished as a vine-growing district. Around Nagambie, about 18 miles down the river from Seymour, the Goulburn Valley Vineyard Company and the Chateau Tahbilk Company established vine culture many years ago, and the industry was commenced with all the sanguine hopes and needless expenditure of money which characterized early experiments in the wine-producing business. A want of practical knowledge, combined with a conviction that high prices could be obtained, and that much money must be spent, led to failure, and for a time vine-growing languished in the district. The Goulburn Valley Company came to grief, the vineyard being subdivided and much of it destroyed, and the Tahbilk Company remained for a long time an unprofitable investment and a monument of fair hopes disappointed. Experience, better price for wine, and a more rational expenditure of money, however, at length brought about a change. The skillful management of Mr F. Coueslant made Tahbilk profitable; it then began to increase, other vineyards were planted, and generally a progressive movement was initiated, which has continued for three or four years, and bids fair to be maintained,

The Chateau Tahbilk Vineyard is situated on the Goulburn river, about five miles from Nagambie. It is one of the largest in the colony, being 300 acres in extent, and the cellars are among the most extensive in Australia. The vineyard has been enlarged greatly of late years, about 50 acres being added each season, so that all the vines are not yet bearing. There are 175 acres of the vineyard in full bearing, 50 acres are last year's cuttings, and the remainder are under two and three years old. The soil is of a reddish color, and varies from the strong clay loam of the Goulburn Valley; the rainfall is somewhat heavier than towards Shepparton and the Murray, An increased rainfall is generally shown by a higher yield of grain crops, by from two to four bushels per acre, being obtained than upon the country north of Shepparton. It is no doubt owing to enjoying a better rainfall that the yield of grapes averages higher than in some more northern districts. From 250 to 300 gallons per acre is considered an average yield in the Nagambie district. This season has been a very dry one, but the summer rains have greatly improved the grape crop, and the Tahbilk vineyard is expected to produce fully an average yield, or about 300 gallons per acre.

Wide planting has a strong advocate in Mr. Coneslant. He has found that a heavier crop is obtained by planting the vines wide apart, and that the cost of cultivation is far less than when the vines are close together. The vineyard was originally planted according to the close system, but the present manager has over the greater part of it taken out every second row. The result of taking out every second row of vines has been an increase of yield and a saving in the cost of pruning the vines and cultivating the land. A section of the vineyard still remains as originally planted. The vines here are destined to be thinned out, but they will be allowed to stand some time, to convince all who may have doubts of the advantages of planting wide apart. In making extensions 8ft. by 8ft. was at first tried, and then 10ft. by 10ft.; but finally 8ft. by 12ft. was adopted as the best. The 8ft. by 12ft. system gives 453 vines per acre, and the 10 ft. by 10 ft. system 435 vines. There is, therefore, practically about the same amount of space allowed for the vines, and the rows are more convenient for working when 12 feet apart. The dray employed in carting away the grapes at vintage can be taken along between any two of the rows. Mr. Couselant does not adopt this system because the company has a large area of land available for planting, but because he believes it the best calulated to produce the most profitable return from each acre. As a proof of his belief in the system, he intends to plant a vineyard upon a small property of his own 8ft. by 12ft.

Irrigation has been resorted to this season to save the cuttings in the new vineyard from perishing from the drought. The plant was not fitted up until the month of February, and the cuttings, most of which had failed to sprout, were in danger of being entirely lost. The winter had been so dry that Mr. Coneslant, who has been hitherto very sueeessful with his planting of cuttings, would have this season shared the fate of many new planters in the Goulburn Valley. It was found that while the cuttings looked dead they were not actually dry. At the risk of being too late, therefore, the water was put on, and immediately the cuttings began to grow. Nearly all the cuttings sprouted, and the plantation which would otherwise have been lost, was saved. The area of cuttings watered was 60 acres, and the whole of this, with the saving of a whole year, may be set against the cost of the irrigating machinery. For watering new plantations alone the scheme would be profitable, but it is intended to utilize it judiciously nearly all over the vineyard. The vineyard will be irrigated in the winter, and by this means a supply of moisture will be stored in the subsoil. To irrigate late in the season might endanger the quality of the wine, but such a course is considered quite unnecessary. With the subsoil well moistened during winter, a heavy crop is likely to be obtained without further irrigation, even in the driest season.

The water is raised 53 ft. This is something new. We have seen by the experiments in pumping carried on along the Murray and the Gunbower water-courses, that raising a volume of water to a height of from 5 ft. to 20 ft., or up to 30 ft., is not only possible, but practicable at a reasonable cost, but the fear has been that the centrifugal pump would become too expensive a means of raising a supply to a greater height. Mr. Coueslant raised a fine stream of sufficient volume for irrigating a height of 53 ft. at a reasonable cost. The cost can be easily calculated from the following data: An 8-horse power steam Robey steam engine was employed to drive one of Robinson Broters' 7-inch centrifugal pumps. A heap of fire wood was gathered in from the adjoining paddoek, and one man was employed in looking after the engine and pump. This is what was required to raise 1,000 gallons of water per minute, the distribution of the water over the land being another matter. Not only was the water raised a perpendicular height of 53 ft., but it had to be forced through a slanting galvanized iron pipe 500 ft. in length, in order to reach that elevation.

Here we have an encouraging fact for landowners along the banks of all our permanent streams. There are but few places where the Murray is more than 53 ft, below its banks, and still fewer sites along the Goulburn and Ovens and other permanent streams where the water would need to be raised such a height to render it available for irrigation. Two men were employed in distributing the water over the land, but the flooding system was followed, and in ordinary cases more labor would be required in distributing. There is no question at all that water will pay for distribution. The question is, can a supply be properly obtained? And Mr. Coueslant's experiment adds another affirmative answer. In irrigating the cuttings rather hurriedly, the land was simply flooded, and the water spread over the ground in the same remarkable way as over the wheat fields on the Murray, Bar creek and Gunbower experiments. It will be found, however, in irrigating the vineyard, that flooding is not the best system. Mr. Coueslant's object is to moisten the subsoil, and this will be best obtained by running the water in furrows between the vines. Flooding the surface would tend to make the roots of the vines grow upwards, but by drawing furrows between the rows the water will sink into the ground and spread all through the subsoil. Mr. Coneslant's pump was fixed about 12 ft. above the surface of the river, and the water was forced the remainder of the distance through a strong galvanized iron pipe. The galvanized iron pipe which I have referred to as being also used by Mr. Lightfoot, of the Pines, near Shepparton, and Mr. Crawford, of Brookfield hop plantation, Everton, seems to answer all the purposes of east-iron pipes, while being much cheaper.

Stakes or props are considered unnecessary when vines have become five or six years old, except in the case of a few varieties which possess weak supple branches. In vines planted upon the close or medium systems, Mr. Coneslant adopts the "gooseberry bush" form of training. No stakes are required, for the branches are topped. But the vines, which are planted 10ft. by 10ft. or 8ft. by 12ft., are treated upon different systems. The vines, which have plenty of soil for their roots and room for their branches, are capable of bearing more fruit than the branches can support unaided. These vines are provided with very strong stakes or props. The strong stakes 7ft. long are put 2ft. into the ground, so that they stand 5ft. high. In pruning the vines a bearing branch is left, which is wound in spiral form around the stake. The spiral branch is carried to the top of the stake, where it is secured, the top being cut off. There is no after pruning or cutting back of the young branches. The vine is left after the first pruning to take its own course, the soil around being kept well pulverised and free from weeds. Such vines look something like hop plants, bearing fruit from the bottom to the top, and the system seems to at once economise labor and secure heavy yields. It is easy to see that with vines so wide apart, horse implements can be employed to do nearly all the work of cultivating; there is a saving of supports and cuttings, economy in pruning and facilities for harvesting. Add to this heavier yields, and wide planting needs no further recommendation.

The vintage was to have commenced on the 17th inst., and the arrangements for carrying it on are more complete than on any previous occasion. The cellars have always been extensive, but until this season the means of carrying on the vintage were old-fashioned. Modern methods require that there should be little hand labor employed in passing the grapes through the various operations connected with the vintage. The grape mills are on the second floor, the presses and fermenting-vats on the ground floor, and the storing casks in the underground cellar. Steam-driven machinery will now elevate the grapes to the second floor, and improved methods will be adopted in the subsequent operations. A large lift or elevator is provided at the end of the building, which is 300ft. in length. The elevator is a double one, so that while the loaded stage is ascending the empty platform is descending. A whole dray-load of grapes is put on to the elevator at once, 12 boxes, containing 1¾cwt. each, being accommodated. The boxes are placed upon a truck which is set upon the elevator, and when the second floor is reached, the truck with its load is run along a tramway to any point required. The tramway is one of the French Decanville steel tramways. It is made in sections, with flat steel sleepers connecting the rails, and can be easily laid in any direction desired. Such a system will be a great improvement upon the old one of raising the grapes in single boxes by means of a handwindlass. The eight-horse power engine used for working the centrifugal pump drives the elevating machinery.

The wine presses are upon the French model. The large ones are of French manufacture, being by Lamonnier-Sully, and they are very conviently worked. Two men can put down the press by turning a handle, the screw being turned by a large horizontal cog-wheel, operated by spur gear from the handle spindle. The other press is made by Messrs. Robinson and Sons upon the model of the French ratchet press, which has been illustrated in *The Australasian*. The grape mill is by Gaillot, of Beaune, France, and is upon the same principle as those used on the large vineyards of California. The grapes first pass through crushing rollers, and afterwards through a perforated clyinder, in which a revolving spiked spiral works separates the grapes and the stalks. The main building of the cellars is two-story high, and 200 feet in length. An excavated cellar extends the whole length of the building, and from the centre of this cellar a grand brick vault, 200 feet long and 23 feet wide, is projected at right angles. The building above ground has been recently extended by 100 feet, so that it is now 300 feet in length. As the cellars contain a plentiful supply of casks of all sizes, there is accommodation for storing large quantities of wine. The varieties of vine cultivated are chiefly Red Hermitage, Cabernet, Mataro, Malbec, Reisling, Gouais, Verdeilho, White Hermitage and a small quantity of Muscatel. It is the general custom to retain the wine in the Tahbilk cellars for about three years, and remove them as required to the company's vaults, 85 Little Collins street east. Last season was a very good one, the yield being 400 gallons per acre, and the average 300 gallons for this season, must be considered highly satisfactory under the circumstanees.

A recent article in the MERCHANT on the subject of vinegar making has caused one wine maker in California to advertise in a daily paper in San Francisco for a first class vinegar maker. We admire the candor of the advertiser in thus acknowledging the force of our remarks, that it is preferable to make good vinegar than it is to place bad wine on the market, and thus get a bad name for California wines in general and his own brand in particular.

THE SAN FRANCISCO MERCHANT

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E. C. HUGHES & Co., - - Proprietors
CHARLES R. BUCKLAND, - - - Editor.
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FRIDAY..... MAY 13, 1887

ASSESSMENT CURIOS.

Magee's Real Estate Circular has drawn attention to some veritable curiosities in the assessments in different counties of California. We have formerly pointed out that the assessors found no wine in the city cellars when they made up their returns, and the following examples of assessment are on a parity with the former freak of the Assessors. For instance:

BRANDIES AND OTHER LIQUORS.

Colusa County, per gallon	$3.00
Napa County, " "	50

WINES.

Yuba County, per gallon	$ 40
Sacramento County, per gallon	07

We had always been under the impression that the viticultural products of Napa County were among the best in the State, but it seems that they are far and away behind those of Colusa County. In wines too, Sacramento County does not compare very favorably with Yuba County. Napa should look to its laurels, for we are quite sure that the wine makers there would willingly pay increased taxation in order to hold the premier position. Regarding Sacramento County's deplorable condition, we are shrewdly suspicious that friend Maslin can hardly have supervised the work of his subordinates.

In our wine table, published in this issue, will be found a shipment of nearly 110,000 gallons by Lachman & Jacobi in the ship Undaunted for New York. This we believe is the largest single shipment ever made by one firm.

OUR AUSTRALIAN CONNECTION.

There have recently been some very important developments in our connections with the Australasian Colonies, that call for more than a passing notice. As we have before intimated, the Canadian Pacific people are making strenuous efforts to control the trade on the Pacific Ocean. Their first venture is to run a line of fast steamers between Victoria, B. C., Japan and China. To assist them, they sought a subsidy from the British Government of £10,000 per annum, but their request was denied. The steamers to be used in the service have been arranged for, and will shortly be running on the projected route.

That they will remain satisfied with this connection alone, for their overland railroad line is very problematical. They will also endeavor to wrest the Australian Mail Service, and its consequent trade, away from San Francisco. It is therefore incumbent upon us, that active measures should be taken to prevent the performance of any such step. And to do this, action must be taken in advance. We must not let them slip in before we have any plans perfected for retaining this connection. That this fact is becoming very apparent, is evidenced by the prompt action of the Messrs. Spreckels, in offering to convey the Australian Delegates, now in London, from New York to Sydney, free of expense. This is a very shrewd business-like move to head off the Canadian Pacific people, who had offered to carry the Delegates over their line, from Montreal to Victoria. Aside from its being a matter of business, the Messrs. Spreckels offer is a most generous one, and one that shows that these gentlemen are fully alive to the importance of our Australasian connection. Their action should be heartily endorsed by the business men of San Francisco, as well as by the various railroad companies in the United States. That it will be appreciated in the Colonies we are firmly convinced, in fact it is an offer that is without parallel.

The main consideration of the Colonies, in regard to their various mail services, is a question of time. They desire to obtain the quickest possible connection with the United Kingdom, and where they can secure this they are willing to pay liberal subsidies. The quickest route will moreover attract the largest amount of travel, especially on the part of men who have business of an urgent nature to transact; and of tourists in cases where the most varied attractions can be offered. That the United States railroad people are alive to the coming competition of the Canadian Pacific, is evident from their announced intention of running special trains between New York and San Francisco in a hundred hours. These trains were originally intended to connect with the steamers running between San Francisco and Yokohama, but there is no doubt but that they will also connect with the Australian monthly mail steamers. Of the two lines, the latter will be found the most useful, as they bring and take a much larger number of passengers, also heavier mails, and arrive on their schedule time with the regularity of clockwork. In fact, a leading railroad official has informed us that it was already almost a certainty that these fast trains would connect with the Australian Mail Steamers, as it was impossible to disregard their importance to the various trunk lines in the United States.

Desiring to ascertain the time occupied between the Colonies and the United Kingdom, in the various existing mail services, we have consulted the latest time-table issued by the New Zealand Government, and which is officially correct. Taking Sydney as the terminal point, we have the following results. Thus:

SYDNEY TO LONDON.

Route.	Days.
San Francisco Service	40
Orient Line	40
Peninsular & Oriental	40
Messageri s Maritimes	43

These are the official schedule contract times in which the mails by the various routes must be delivered between Sydney and London. It will be seen that the San Francisco Service is even at present, as quick as any of the others to and from Sydney. With New Zealand, it is five days less, the contract time between Auckland and London, via San Francisco, being thirty-five days. The direct mail service between New Zealand and London, is scheduled at forty-four days, the same time as is occupied by mails that have to be forwarded to that Colony from Melbourne or Sydney, by the services of the Peninsular and Oriental or Orient lines of Steamers. It will thus be seen, that, as far as New Zealand is concerned, the San Francisco service is decidedly the best, even to the most Southern portions of that Colony, as it only takes three days additional to forward the mails from Auckland to Dunedin. And in the case of New South Wales, the San Francisco Service is equal to the others. But under the present contract of the Oceanic Company, much better work has been done. Upon more than one occasion, the mails have been delivered in London in less than thirty-three days from Auckland, and less than thirty-eight days from Sydney.

The time now allowed the steamers of the Oceanic Company, between Sydney and Auckland and San Francisco, is twenty-five and twenty days respectively. But the trip is frequently made one day quicker, which gives us nineteen days from Auckland and twenty-four from Sydney. When the fast special train to New York is running in connection with this service, that is four days and four hours from San Francisco to New York, there will be no difficulty whatever in landing the Australian Mails in London, within thirty-two days from Auckland and thirty-seven days from Sydney. It may even be done quicker. If extra inducement were offered the Oceanic Company, the run from Auckland to San Francisco would be made in nineteen days; from here to New York by the fast train in four days; and from New York to London in seven days by the fast Atlantic steamers. This would give a total of thirty days between Auckland and London, and of thirty-four or thirty-five days between Sydney and London, via San Francisco. By this means, the service through the United States would be, by far, the quickest for the Colonies of New Zealand and New South Wales, and, adding another day for the overland transportation of mails between Sydney and Melbourne, the Colony of Victoria could also have mail connection with the United Kingdom, in thirty-five or thirty-six days, via San Francisco, as against its present fastest schedule time of thirty-nine days by the Peninsular and Oriental or Orient lines. It is incumbent therefore, upon our railroad companies, to endeavor to afford such facilities of transportation for the Colonial mails, as will make the service through the United States both the quickest and the most popular. By shortening the overland time to one hundred hours, we will not only retain the support of New Zealand and New South Wales, but will also gain additional support from the Colony of Victoria. At the same time, while the Governments of the various Colonies are giving us their liberal patronage, it is manifestly the duty of the Postmaster General of the United States, to afford very liberal assistance, and encourage American trade and commerce.

PURE BRANDY WANTED.

An announcement has recently been made concerning French brandy by M. Emile Alglave, before the French association for the advancement of the sciences. It is stated that, out of the 40,000,000 gallons of brandy annually consumed in France, not more than 550,000 gallons, or 12½ per cent, are distilled from wine, the remainder being extracted from rice, beetroot, maize or molasses. According to M. Alglave, pure brandy may intoxicate but it does not poison or madden, while brandy concocted from the materials mentioned does both. In the presence of the members of the association he gave practical proofs of these facts. He took two guinea pigs to each of which he gave a similar quantity of spirit. The pig that drank the pure brandy was tipsy and hilarious; the other one was dead drunk and like a corpse. He next repeated the experiment on two dogs. The pure brandy dog became intoxicated, reeled and staggered. The dog that was under the influence of the impure brandy fell into a fit of epilepsy, lay upon its back with its legs in the air, foamed at the mouth and showed every symptom of delirum tremens. M. Alglave argued that the distillation of all brandy other than from wine should be prohibited, and that every bottle of brandy sold should have a government stamp or label on it, guaranteeing its genuineness. But with the present yield of the French vineyards, there is insufficient wine to make all the brandy required. It is here that California could come in by exporting to France our pure brandy, stamped as such with the pure brandy stamp of this State. This is a suggestion worthy of consideration at the hands of our wine makers and wine merchants, and it should certainly be possible to at least make definite enquiries as to the possibilities of the French market for our pure products.

We regret to note the death of Hon. J. F. Black of Livermore, on 9th inst. Mr. Black had a large vineyard in Alameda County, which is planted with the choicest varieties of vines. Though quiet and unobtrusive in his manner, Mr. Black was one of our most intelligent and progressive viticulturists. He took the greatest possible interest in the industry, and was always present at viticultural meetings, assisting not only by his presence, but also liberally with his purse. To know him was to like him, and there are many warm friends of the deceased gentleman, who will deeply deplore his loss.

Arrangements have been completed for making the plates for and striking off the pure wine labels, but Controller Dunn is now exercised as to the number that will be required, and it is doubtful when he will be able to find out.

Any communications intended for the editor of the MERCHANT should be addressed to 327 Market Street, and all matters pertaining to the business affairs of the office should be sent to P. O. Box 2366.

THE PRICE OF WINE.

We have heard that some of the wine merchants of San Francisco are endeavoring to create a corner in California wines, and we believe there is some foundation for the report. It seems that the same trouble has again occurred, as to prices that we have been obliged to record in former years. At buying season prices are forced down, and at selling season they are advanced. There is as much manipulation in the wine market as there is in a stock deal by those who have the inside track. A few small lots of very ordinary wines have been sold at 14 and 15 cents per gallon, consequently, the price for the whole vintage has been fixed at that rate. This is most unfair. There is no reason why the price for good, sound wines should be fixed by that of a casual sale for very ordinary stuff. Although last year's vintage was the largest ever produced in the State, it must be remembered that the supply of 1885 wines in merchants' cellars must be very limited. This is shown by our statistics of export, as well as by the known quantity used for home consumption. There must, therefore, before long, be a more active demand.

Our wine-makers are now better prepared to store their wines than they were a few years ago. It is hoped also that they will shortly have facilities for storage in the old refinery building in San Francisco. The Eastern markets, on the other hand, are tolerably well supplied for some months to come. The merchants must have wine, and they can well afford to pay a higher price than they are now offering, as very fair prices are obtained from the consumer, who will not be permitted to derive any benefit from low prices. It simply means large profits for the middle man. We recollect very clearly how prices were advanced in the city when it was feared there would be a short supply. Since that time there has been no new wine fit for the consumer, and if there was a scarcity then there must be a still greater scarcity now in our city cellars. Wine-makers should not forget this circumstance when receiving the generous fifteen cents a gallon offers. It seems to be a fitting opportunity for them to take advantage of the condition of the market, and to profit by the little lesson that was taught them last year.

Wine-makers are again brought face to face with a difficult problem. They must do something for themselves. We doubt whether the establishment of an Exchange for the sale of wines would do much good at present, as the buyers would be limited to the San Francisco houses, which have branch establishments or agencies in the East, and a combination could easily be formed to break the market. When the consumption of wine becomes more extended throughout the United States, then there would be more buyers from all sections, and an Exchange might answer. Consumption of wine must be pushed throughout the country, and we think that wine-makers can themselves do this by co-operation. If one maker alone has not sufficient capital to embark in such an enterprise, let two or three in the same section try to work together. One very good feature in the business, at the present time, is the increasing interest in, and favorable reports upon our wines from Europe. There it is becoming more apparent every year that the wines of California contain much merit. They are not thrown on one side now as being worthless.

There is also more desire now in Europe for pure wines, and the large viticultural area of California attracts attention towards us as the probable future source of supply. It might be well, therefore, for the winemakers of one or several districts to select a representative, who is well acquainted with California and with European wine countries, to visit these places with samples and prices of wines that can be supplied in quantities. He would probably be able to effect sales, and, at any rate, he would be able to report definitely upon the prospects of Europe as a market after diligent and intelligent inquiry.

We give these suggestions for what they are worth, in the hope that they may be found of practical value to the wine makers whom we desire to see obtaining a fair price for their products, instead of being entirely in the hands of a few local jobbers. If they will act for themselves, we think that they will find the result to be pecuniarily beneficial, besides relieving the market of surplus supplies.

Since the foregoing was in type, we learn that the sharp frosts of this week have seriously affected the vines in some sections. It was thought that all danger from frost had passed, but experience has proved to the contrary. There is always an anxiety to conceal any damage that may be done by late frosts, but, without mentioning localities, it is safe to assert that the yield of a considerable area of vines has been seriously affected by the untimely visitation of this week. Such being the case it will naturally follow that there will be an advance in the price of wines, and we think a very material one, Early intimation of the effect of the frost, may have been the cause of the rumors current that the price of wines had already advanced. Another reason for the advance is said to be in the action of the proposed storage company, which would relieve wine makers from present difficulties, and enable them to hold their wines over for another year.

Another reason that suggests itself, and a very material reason too, for the advance in prices is the fact that Dr. Springmiihl has already made arrangements with Mr. J. De Barth Shorb, for the use of his patent for condensing must throughout the United States. There is not the least doubt that this will relieve the market of any surplus production of wine, especially, as Dr. Springmiihl has, on behalf of the Company that he represents, agreed to take all the wines that can be made. If the bulk of the wine that is manufactured in Los Angeles, Fresno, or any other county alone, be converted into condensed must, then it is safe to say, that one-half of the next vintage being thus disposed of, the price of wine will no longer be a source of trouble to the maker ; nor the price of grapes to the grower. In Dr. Springmiihl's undertaking, we have the fullest confidence, and the fact that Mr. Shorb has heartily entered into his plans, will inspire confidence throughout the State. The importance of this new arrangement cannot be over-estimated. All our surplus wine being converted into condensed must, can be exported to Europe, where it will supply the deficiencies that exist, and thus enable our grape growers and wine makers to obtain good prices for their grapes and wines. This new departure has come rather suddenly, but we think that our friends in the Country will be able to stand the consequences of an immediate advance in prices, and of assured better prospects in the future. Instead of offers at fifteen cents per gallon, we shall not be in the least surprised to hear of offers of twenty-five and thirty cents per gallon before many months have expired.

WINE STORAGE.

What the MERCHANT has been advocating for a couple of years past is about to be accomplished. We refer to the matter of wine storage. For some time past this question has given rise to serious thought on the part of our leading wine makers, who saw the acreage planted in vines largely increasing, with the prospects of a corresponding increase in the wine output, but without any corresponding increase in consumption. Although there is yet a very large population in the United States to whom California wines are unknown, it will be many years before these markets are found to be a source of demand for wine such as is urgently needed at the present time. The prompt necessity for some means of storing wine was postponed for a year, owing to the short corp of 1885. But the vintage of 1886 has, more prominently than ever before, shown the urgent necessity for the adoption of some wholesale plan for storing California wines.

The result is that a company is being formed for the purpose of taking the matter in hand. The first thing to be done was to secure suitable premises, and here the company was fortunate in obtaining a lease for ten years of the old sugar refinery, at the corner of Eighth and Brannan Streets, which belongs to Claus Spreckels. This building is well built and very strong, consequently well adapted for the uses to which it is to be put. Some machinery in it is to be removed, and it will be ready for occupation, that is for receiving wine from the makers, by June 15th. The capacity of the building is about 1,500,000 gallons, and this can be increased to 5,000,000 gallons, by leasing adjoining lands, if found necessary and desirable. The cellars will be in charge of competent, experienced men, and the company propose not only to store the wine, but also to make advances on it. None but sound wine will be accepted. An advance of ten cents per gallon will be made on the wine in the warehouse, and a charge of about 2½ cents per gallon per annum will be made for storage. Packing the wine will be charged for at cost, and further advances may, perhaps, be made as the wine ages. The capital of the Company is $250,000, and we are told that more has been offered if it may be found to be necessary.

Besides the foregoing advantages, which will be found of the utmost assistance to all wine makers, and especially to those whose cellar capacity is limited in extent, and will not enable them to carry over their wines for more than one season, there will be another important advantage. The placing of several million gallons of wine, from different makers and from different parts of the State, in one warehouse, will induce buyers from the east to come here and select their own stocks. They will have every variety to choose from at once, without being compelled to travel from one section to another. This great saving of time should attract Eastern buyers to San Francisco, and make this the central wine depot of California. No doubt the example now being started here will be followed in other places, but it is most probable that the greatest quantity of the wine will continue to find its way to San Francisco as the main distributing point. Sellers will, of course, have their prices registered at the warehouse for the information of buyers, who can be informed, when tasting, of the value of each particular lot, together with the quantity obtainable. For some time past there has been a storage cellar established, in a smaller way, at the corner of Front and Broadway Streets, under the management of Mr. Leopold Juzia, who was formerly cellarmaster for Mr. A. G. Chauche of Livermore. This, we believe, has proved a success, and we trust that the same may be the case with the larger establishment, at the corner of Eighth and Brannan Streets. With good management, we see no reason why it should not be, and it would be a great pity to learn of any failure in this important progressive step in the viticultural history of California.

The statements here given, as to the proposed business arrangements of the Company, are from information derived from Mr. Harrison who appears to have the management of affairs in hand. Mr. Harrison has declined, however, to give us at present the names of the gentlemen who are forming the Company, or the names of the directors. We sought to obtain this for the benefit of our readers who are most directly concerned, and who will not, of course, enter into any business connections with the Company until they ascertain these facts. We are, however, informed by Mr. Claus Spreckels himself, that the lease of the old refinery building to this Company has not yet been signed. We believe that the plan proposed for storing wines will be a great success, and that the Company will have numerous applications for cellar room immediately they are prepared to give the fullest particulars. But until the names of the capitalists and directors interested in the concern are forthcoming, we do not believe that any wine maker will store his wines there. It is a pity that there has been so much secrecy about the matter and that the names have for so long been withheld. We think that Mr. Harrison will best serve the interests of both the Company and the wine makers by promptly announcing the names of the gentlemen who are pecuniarily interested in the Company.

J. D. Spreckels & Bros., in their liberal offer to convey the Australian delegates, now in London, from New York to Sydney, free of expense, have wisely selected the route over which the Australian mails are carried, viz: from New York to Chicago by the Lake Erie and New York Central; from Chicago to Denver by the Chicago, Burlington and Quincey; from Denver to Ogden by the Denver and Rio Grande Scenic line; and from Ogden to San Francisco by the Southern Pacific Company of California.

We publish elsewhere several remedies for diseases of the vine, that are suggested by Hon. Norman J. Colman, Commissioner of Agriculture. It is desired that the results of any experiments made, be reported to the Commissioner, and for this purpose, blank forms will be supplied on application to the Department of Agriculture at Washington.

Hon. H. A. Pellet of St. Helena has been in town this week, on behalf of the wine makers of this district, making enquiries as to the facilities afforded by the new wine storage company for handling wines and making advances thereon.

The first of a series of Reports by Mr. J. H. Wheeler, Chief Executive Viticultural Officer, is published in this issue, and the subject selected is suitable to the season.

PRICES OF FOREIGN WINES.

To obtain an exact idea of prices the trade of France pays for deep-tinted wines of an alcoholic strength analogous to that of the average of good stout California clarets, in Sicilian ports, that is put on board by the grower, the following prices, which ruled at the end of March, will give valuable information.

Scoglietti, Riposto and Marzememi are the ports of shipment. Milazzo wines of densest ruby tint and full 12 per cent of alcohol, 38 lire per hectoliter of 26, 417-000 litres or 28 cents per gallon. Vittoria wines, 19 cents, Riposto, 19 cents first quality, and like Pachino wines, second quality, 16 cents per gallon.

These prices would indicate for our guidance that with the comparatively small freight both for empty casks and the wine to French ports, it is a hard thing to compete from the Pacific Coast with such sale types. It is true Italy had the largest crop of all grape growing countries in 1886 by a dozen millions of gallons, a full thousand millions, and thus prices are correspondingly moderate. But on the other hand the fostering hand of the Italian Government joins the viticultural efforts of that nation in the care for progress, and it is to be expected that, like Spain, the enormous increase of vine plantations in the last few years, crops tend to expand rather than remain stationary. Only certain kinds of wines are useful for coupage in France. Body, color, alcoholic strength, a frank taste free from a vestige of terroir, absence of coarseness, these are the conditions exacted in wines sought by the French wine trade—conditions that must proceed from he grape of varieties possessing the foundation of all of them. What a poor figure our Mission grape product would be in the silver cup of the French taster!

There ought to be no illusions on the head of our chances for eventually entering into the contest for supplying European markets, and chiefly the markets that took in above 200,000,000 of gallons, mostly of deep colored red wines, last year, those of France.

With the brilliant prospects promised for trade in great Britain with certain of our California red wines, after having heard the opinion of a leading wine merchant of London on a number of samples of somewhat scarce wines, it may be well to continue the researches of a similar nature with samples of what we consider fair average wines, of which large quantities can be furnished. One thing is to hear a favorable opinion expressed on types that when orders for quantities would be given might be found hard to find—that is, wines of as perfect a development as vintages some years ago were susceptible of, wines of several years of age, and at prices that practical trials only could prove to be either remunerative, or rather thinned in the ultimate net result by expenses not calculable at an expertise, in fact prices that are governed by concurrents of European producing countries. That the idea so often expressed in American papers, that European viticulture will, after some period, be a thing of the past through the inroads of phylloxera is an utopian one, may be made clear to any one who will investigate the matter from the opposite part, not the suffering one. Statistics of production and growing new plantations and quotations of prices will show quite unexpected facts. It will be a rather difficult matter to conquer foreign markets. First let us have the right material. We must work on with full force of practice and science to produce what is suited for the world's markets. When we have it, and have plenty of it, then we shall have advantages, and then it will be, let us hope, each year more understood in the home market. Fifty and, after some years, sixty millions of Americans will not be a despicable mass of people to treat to good native wines. To aid the deficiency for half that population of viticultural France, which absorbs more than a thousand millions of gallons of wine and leave this great nation of the American continent on one side, unable to cope with a half hundred millions of wine, would be absurd.

Illuminate the benighted despisers of wine, teach them to kill dyspepsia and live like civilized people, having their glass of claret at their meal—teach the growing generation the proper destination of wine, let wine bibbing cease, let swilling of ardent drinks be relegated to outcasts—let every person consume a few ounces of wine at the family board as the most appropriate beverage for an intelligent diet—and the time will be when we need not look to foreign markets for an outlet of our wine crops.

F. PDFF.

EAST BOUND THROUGH FREIGHT.

Forwarded by the Southern Pacific Co., April, 1887.

FORWARDED FROM — IN POUNDS.

ARTICLES.	SAN FRANCISCO.	OAKLAND.	LOS ANGELES.	COLTON.	SACRAMENTO.	SAN JOSE.	STOCKTON.	MARYSVILLE.
Bags and Bagging	22,480	.....	.....	.....	.....	.....	.....	.....
Beans	424,520	.....	.....	.....	.....	.....	.....	.....
Blankets and Woolen Goods	9,590	.....	.....	.....	.....	.....	.....	.....
Borax	3,800	76,650	208,470	.....	.....	.....	.....	.....
Brandy	71,000	.....	85,580	.....	82,100	3,100	.....	.....
Bulk Meat	.....	.....	.....	.....	.....	.....	.....	.....
Butter	23,910	.....	.....	.....	.....	.....	.....	.....
Canned Goods	883,250	230,000	50,550	.....	442,550	23,510	.....	4,400
China Merchandise	94,870	.....	.....	.....	.....	.....	.....	.....
Chocolate	.....	.....	.....	.....	.....	.....	.....	.....
Cigars	20,040	.....	.....	.....	.....	.....	.....	.....
Clothing, California Manufactured	27,870	.....	.....	.....	.....	.....	.....	.....
Coffee, Green	665,330	.....	.....	.....	.....	.....	.....	.....
Copper Cement	20,770	.....	.....	.....	.....	.....	.....	.....
Drugs and Herbs	48,100	470	3,010	.....	.....	.....	.....	.....
Empty Packages	.....	.....	100,000	.....	.....	.....	.....	.....
Fish, Pickled	.....	.....	.....	.....	.....	.....	.....	.....
Fruit, Dried	73,280	.....	.....	.....	2,800	.....	.....	.....
" Green Citrus	22,430	.....	4,482,580	624,750	.....	.....	.....	.....
Fuse	8,480	2,416	.....	.....	.....	.....	.....	.....
Glue	27,940	7,290	.....	.....	.....	.....	.....	.....
Hay	.....	.....	.....	.....	.....	.....	.....	.....
Hides	173,600	.....	95,250	.....	40,700	.....	.....	.....
Honey	44,440	.....	60,300	.....	.....	.....	.....	.....
Hops	12,140	.....	.....	.....	55,150	.....	.....	.....
Horses	.....	.....	60,000	.....	22,000	.....	6,000	.....
Leather	100,550	.....	.....	.....	9,340	8,830	.....	.....
Lumber	213,240	39,940	.....	.....	.....	.....	.....	.....
Machinery	35,590	.....	.....	.....	.....	.....	.....	.....
Matting	.....	.....	.....	.....	.....	.....	.....	.....
Merchandise, Asiatic, in bond	67,370	.....	.....	.....	.....	.....	.....	.....
Miscellaneous	231,300	28,430	23,130	1,420	18,130	32,920	6,550	4,740
Mohair	6,800	.....	.....	.....	13,970	.....	.....	.....
Mustard Seed	32,050	.....	.....	.....	.....	82,390	.....	.....
Oils	.....	.....	.....	.....	.....	.....	.....	.....
Oils, Cocoanut	.....	.....	.....	.....	.....	.....	.....	.....
Oils, Whale	44,380	.....	.....	.....	.....	.....	.....	.....
Powder and Explosives	1,020	.....	.....	.....	.....	20,630	.....	.....
Pickles	.....	25,580	.....	.....	.....	.....	.....	.....
Quicksilver	.....	.....	.....	.....	.....	71,000	.....	.....
Raisins	57,670	.....	58,470	200,130	.....	.....	.....	.....
Rice	.....	.....	.....	.....	.....	.....	.....	.....
Salmon, Canned	24,880	.....	.....	.....	.....	.....	.....	.....
Shingles	372,790	91,500	.....	.....	.....	.....	.....	.....
Silk	463,300	.....	.....	.....	.....	.....	.....	.....
Silk Goods	13,960	.....	.....	.....	.....	.....	.....	.....
Skins and Furs	.....	.....	.....	.....	.....	.....	.....	.....
Sugar	1,315,260	.....	.....	.....	.....	.....	.....	.....
Syrup	86,870	.....	.....	.....	.....	.....	.....	.....
Tea	492,250	.....	.....	.....	.....	.....	.....	.....
Tobacco Leaf	.....	.....	.....	.....	.....	.....	.....	.....
" Dust	.....	.....	.....	.....	.....	.....	.....	.....
Vegetables	1,219,090	.....	212,510	.....	218,600	.....	.....	.....
Whalebone	36,130	.....	.....	.....	.....	.....	.....	.....
Wheat	.....	.....	.....	.....	.....	.....	.....	.....
Wine	3,142,560	1,300	891,030	.....	316,460	95,590	9,580	1,600
Woods, Valuable	.....	.....	.....	.....	.....	.....	.....	.....
Wool, Grease	1,388,470	.....	45,660	.....	6,020	6,870	.....	.....
" Pulled	18,620	.....	.....	.....	19,680	.....	.....	.....
" Scoured	334,590	.....	.....	.....	.....	.....	.....	.....
Totals	12,370,530	503,570	6,376,540	826,300	1,247,500	344,340	22,130	60,830

Recapitulation.

San Francisco.	Oakland.	Los Angeles.	Sacramento.	San Jose.	Stockton.	Marysville.	Colton.	Grand Total.
12,370,530	503,570	6,376,540	1,247,500	344,340	22,130	60,830	826,300	21,751,740

WM. T. COLEMAN & CO.

SHIPPING AND COMMISSION MERCHANTS.

SAN FRANCISCO OFFICE:
MARKET AND MAIN STREETS.

NEW YORK OFFICE:
NO. 71 HUDSON STREET.

—AGENCIES AT—

91 MICHICAN AVENUE, CHICACO, ILL.
FLAVEL WAREHOUSE, ASTORIA, OR.
NO. 75 NORTH SPRINC ST., LOS ANCELES, CAL.
54 DRURY BUILDINCS, LIVERPOOL.
NO. 4 BISHOPSCATE STREET, Within E. C., LONDON.

Sole and Exclusive Agents for following Brands of Salmon:

COLUMBIA RIVER.

Booth & Co, Black Diamond, Coleman Flag, McGowan Bros' "Trap" Brand, Fisherman's Pkg Co, Aberdeen Pkg Co, White Star Pkg Co, Jas. Williams & Co, Thistle Pkg Co, Columbia Canning Co, McGowan & Sons' "Keystone" brand, Seaside Pkg Co, J. W. Hume "Autograph" brand.

OUTSIDE RIVERS.

WACHUSETTS PKC CO,
"SILVERSIDE" BRAND,
BATH CANNINC CO,
CARDINER PKC CO,
HERA PKC CO,
"TOMAHAWK" BRAND,
SUNNYSIDE PKC CO.

FRASER RIVER.

BRITISH AMERICAN PACKINC CO.,
BRITISH COLUMBIA PACKINC CO.,
ENCLISH & COMPANY.

SKEENA RIVER.

BRITISH AMERICAN PACKINC COMPANY

SACRAMENTO RIVER.

COURTLAND PACKINC CO., JONES & ANDERSON.

We also offer For Sale of Other Columbia, Sacramento and Fraser River Salmon:

Ceo. W. Hume's "Flag" brand,
Hapgood & Co.,
I X L,
Pillar Rock Pkg Co.,
Ceo. T. Meyers,
Ocean Canning Co.
Badolett & Co., (Flats),
Washington Pkg Co's "Favorite" Brand,
"Epicure" brand.
Pacific Union Pkg Co.,
Cutting Pkg Co's "Cocktail" (Flats),
A. Lusk & Co's pack,
"Mermaid" brand,
Scandinavian Pkg Co.,
West Coast Pkg Co.,
Warren & Co.,
"Carquinez" brand,
Point Adams,
Wadham's Fraser River.

ALASKA FISH.

Karluk Pkg Co., "Challenge" brand, Arctic Pkg Co., Arctic Pkg Co's "King" Salmon.

We also have the "O & O" brand, an outside river fish, and many other brands, that can be had on application.

WE ARE SOLE AGENTS FOR THE CELEBRATED

Golden Gate Packing Co, "Black Diamond" brand of fruits, Barbour & McMurtry's fruits in glass, Coleman's "Flag" brand of fruit, San Lorenzo Pkg Co, Riverside Fruit Co, Colton Cannery, J. Lusk Canning Co, San Mateo Pkg Co, Sierra Madre Packing Co, Santa Clara Packing Co

Our lines of Canned Fruits and Canned Salmon are incomparable, and we will make prices F.O.B. or C.I.F. for Great Britain, Australia and the Colonies.

OUR NATIVE WINE SHIPMENTS BY SEA.

PER P. M. S. S. CO'S STEAMER SAN JOSE, APRIL 30th, 1887.

TO NEW YORK.

MARKS.	SHIPPERS.	PACKAGES AND CONTENTS.	GALLONS	VALUE
K & K	Drexel & Co.	8 puncheons Wine	817	444
J X	"	2 puncheons Wine		
C W & Co	"	2 barrels Wine	262	229
K & F	Kohler & Frohling	105 barrels Wine	5,214	3,310
J C	C Carpy & Co	17 barrels Wine	850	425
D T	"	15 barrels Wine	750	375
M P	"	25 barrels Wine	1,250	625
"	"	1 half-barrel Brandy	25	50
E G	"	5 barrels Wine	250	100
"	"	4 half barrels Wine	100	50
"	"	1 half barrel Brandy	25	50
F C & Co	Leonormand & Bros.	16 barrels Wine	773	247
V B	Kohler & Van Bergen.	25 barrels Wine	1,247	405
K & H	"	16 barrels Wine	799	405
"	"	1 barrel Brandy	47	95
A in diamond	C Schilling & Co.	100 barrels Wine	4,730	2.100
J P L	"	1 octave Wine	27	23
C D K	Lachman & Jacobi	49 puncheons Wine	5,375	2,370
S K	"	12 puncheons Wine	1,899	767
W in circle	Waldron & Co	10 half barrels Brandy	260	260
C	J Gundlach & Co.	50 barrels Wine	2,315	1,387
"	"	1 barrel Brandy	49	110
K in diamond	"	2 barrels Wine	97	77
W in diamond	"	50 barrels Wine	2,441	1,464
H W L	Williams, Dimond & Co	1 barrel Wine	50	50
Total amount of Wine			29,214	14,855
Total amount of Brandy			406	565

TO CENTRAL AMERICA.

MeG in diamond, S Jose de Guat	J Hart	5 cases Wine		45
G J, Corinto	J F Chapman & Co	1 barrel Wine	50	26
T S, Punta Arenas	E R Lilienthal & Co	1 barrel Whiskey	41	88
W V B, Guatemala	Goldberg, Bowen & Co	4 cases Wine		31
"	"	1 case Brandy		12
E L, Punta Arenas	Kohler & Frohling	3 ¼-casks Wine	99	69
E F & Co, Corinto	B Dreyfus & Co	12 barrels Wine	595	500
R A D, Corinto	"	4 barrels Wine	200	165
J R S, Corinto	"	15 cases Wine		100
"	"	5 cases Brandy		50
A A D, Corinto	"	35 cases Wine		200
A E, Corinto	"	2 half barrels Brandy	52	80
"	"	2 barrels Wine		
"	"	1 keg Wine	117	130
"	"	20 cases Wine		90
J G H, Corinto	"	2 half barrels Brandy	51	125
"	"	6 half barrels Wine		
"	"	1 barrel Wine	212	225
P & Co, Corinto	"	4 cases Wine		20
"	"	3 cases Whiskey		30
"	"	1 case Brandy		10
D M, Corinto	"	1 half barrel Wine		
"	"	10 kegs Wine	217	150
"	"	6 cases Wine		25
P A A, Punta Arenas	"	5 half barrels Wine	135	125
M M, La Libertad	"	3 half barrels Wine	80	90
C de A, Punta Arenas	E de Sabla & Co	4 kegs Wine	68	51
E & E G M, Punta Arenas	"	4 kegs Wine	20	17
M B, Punta Arenas	"	12 barrels Wine		
"	"	10 kegs Wine	420	343
M N, La Libertad	John T Wright	1 keg Wine	10	25
A S, Champerico	McCarthy Bros. & Co.	24 cases Wine		96
V & S, San Jose de Guatamala	Lachman & Jacobi	5 kegs Angelica	25	19
"	"	5 kegs Muscat	25	18
"	"	2 kegs Sherry	10	8
"	"	2 kegs White Wine	10	9
"	"	5 kegs Claret	25	10
"	"	10 cases Claret		28
"	"	2 kegs Brandy	20	42
M V, Punta Arenas	Williams, Dimond & Co	2 kegs Wine	10	10
M D, San Jose de Guatemala	Urruela & Urioste	21 cases Wine		98
J M, Champerica	Wilmerding & Co.	2 barrels Whiskey	77	231
A A D, Corino	"	2 barrels Whiskey	77	270
Total amount of Wine, 147 cases and			2,328	2,724
Total amount of Whiskey, 3 cases and			195	619
Total amount of Brandy, 7 cases and			123	319

TO PANAMA.

J R	Cabrera, Roma & Co	10 puncheons Wine	585	205
L A F & Co	Wilmerding & Co	2 barrels Whiskey	75	228
H S & Bro	"	2 barrels Whiskey	79	276
P	"	1 barrels Whiskey	39	97
F A	L F Lastreto	10 barrels Wine	495	223
"	"	10 cases Wine		45
P H	"	10 casks Wine	571	236
La Casende	B Dreyfus & Co	25 cases Wine		100
E N M	"	20 cases Wine		100
H S B	"	1 barrel Wine	50	35
"	"	10 cases Wine		45
R & S	E A Denieke	1 case Wine	2	4
A C	"	2 cases Whiskey	5	18
Total amount of Wine, 65 cases and			1,703	992
Total amount of Whiskey			198	619

TO MEXICO.

U S S Adams, Acapulco	Goldberg, Bowen & Co	4 cases Claret		140
"	"	4 cases Reisling		16
"	"	4 cases Sherry		60
P D & Co., Acapulco	Urruela & Urrioste	1 cask Red Wine	59	25
F, Acapulco	W Loaiza	1 barrel Wine	50	40
Total amount of Wine, 12 cases and			109	281

TO HAVRE.

C E F Havre	The Schlesinger Co.	1 barrel Wine	60	$48

TO NEW YORK—PER SHIP UNDAUNTED, May 4th, 1887.

R S W	Falkner, Bell & Co	4 barrels Wine	132	50
J C N	Hanley & Snow	4 cases Wine		20
H L S	C C Shattuck & Co	3 barrels Wine		
A B	"	1 keg Wine		
P O	"	1 keg Wine		
E O W	"	1 keg Wine	195	73
K & F	Kohler & Frohling	18 casks Wine	1,928	723
L Bros	Lilienthal & Co	1 ¼-cask Wine	13	5
J P	Wilkens & Co	1 puncheon Wine	155	58
C B & Co	Wilmerding & Co	100 cases Wine		500
B D & Co	B Dreyfus & Co	200 barrels Wine	9,400	3,525
G	J Gundlach & Co	133 barrels Wine	0,536	2,448
A Rich	Whittier, Fuller & Co	2 barrels Wine	95	36
"	"	1 barrels Brandy	49	
E B & V	Lachman & Jacobi	79 half barrels Brandy	2,036	
"	"	2,200 barrels Wine	107285	40,222
Total amount of Wine, 104 cases and			125739	47,660
Total amount of Brandy			2,085	6,322

FOR YOKOHAMA—PER STEAMER CITY OF SYDNEY, May 5th.

H L, Hongkong	B Dreyfus & Co	1 case Wine		5
R S & Co, Yoko	"	1 case Wine		5
K in diamond, Yoko	J Gundlach & Co	10 barrels Wine	494	248
J H in diamond, W, Yoko	S L Jones & Co	2 casks Wine	100	100
L in diamond, Co, Yoko	S Mayers & Co	10 barrels Wine	590	224
"	"	5 cases Whiskey		55
Powers, Nag	S Foster & Co	1 package Whiskey	51	129
C S G & Co	Williams, Dimond & Co	6 barrels Wine	295	185
K I in circle, Yoko	A E Amoy	5 barrels Wine	250	
"	"	1 case Wine		100
1 K in circle, Yoko	"	5 barrels Wine	250	
"	"	1 case Wine		100
Total amount of Wine, 4 cases and			1,978	967
Total amount of Whiskey, 5 cases and			51	184

MISCELLANEOUS SHIPMENTS.

DESTINATION.	VESSEL.	RIG.	GALLONS.	VALUE.
Victoria	Geo W Elder	Steamer	170	$127
Tahiti	C ty of Papete	Barkentine	3,519	1,557
Santa Rosalia	Korrigon	Steamer	101	77
Nanaimo	Empire	Steamer	10	8
Kahului	F S Thompson	Bark	50	50
Honolulu	Mariposa	Steamer	1,945	1,747
New Zealand	Mariposa	Steamer	59	39
Total			5,854	$3,605

Total shipments by Panama steamers	33,974 gallons	$18,900
Total Miscellaneous shipments	133,841 "	52,232
Grand totals	167,815	$71,132

THE CALIFORNIA WINE AND RAISIN INDUSTRIES.

[Bradstreet's, April 30.]

During last year the growth of the California wine and rasin business was something remarkable. The production of each was almost doubled in a twelvemonth; in fact, it is increasing rather more rapidly than the consumption. And for the next few years the increase in viticultural productions will be maintained as the young vines comes into bearing. The wine crop of 1886 was about 18,000,000 gallons, and the raisin pack amounted to 15,000,000 pounds, or 750,000 boxes of 20 pounds each. During the first three months of 1885 the overland exports of raisins amounted to 600,000 pounds; in the same period in 1886 the quantity shipped overland exceeded 1,000,000 pounds, while this year it aggregated 2,870,000 pounds, an increase of more than 450 per cent. in two years. More than half the raisin crop is shipped east from Los Angeles, the southern counties being best adapted for raisin culture. Last month there was a great clearing up of stocks, so that the producers might avail themselves of the low rates of freight existing before the 5th inst., and the quantity of raisins shipped east amounted almost to 1,700,000 pounds. But this quantity has been several times previously exceeded, especially in November of last year, when no less than 5,128,300 pounds of raisins were sent from California to eastern markets. The total overland exports of raisins during the past two seasons, up to March 31 in each year, have been as follows:

	Pounds.
Season 1886-87	12,564,006
Season 1885-86	6,558,750
Increase 1886-87	6,005,250

This shows that the production has been almost doubled within the year. Adding the quantity required for home consumption and exportation by sea, it may be safely assumed that the raisin pack of 1886 amounted to 750,000 boxes of 20 pounds each. The present outlook for the raisin industry, however, is not very encouraging. Freights overland on raisins have advanced 70c. per box. Such a rate will, of course, be prohibitory, and unless some reduction be made, of which there is at present no indication, the California raisins will no longer be able to compete with the Spanish raisins, which are delivered in New York on a freight basis of 5c. per box. In addition to this enormous advantage in favor of the Spanish fruit is the difference in the rate of wages, which is very considerable. As the transportation companies hold out no hopes of any reduction in the raisin tariff, it is probable that the stocks of California raisins now in the eastern markets will be the last that are seen for some time, except small shipments that are made by the Panama canal. Any action that may be taken by Congress toward raising the tariff on imported raisins, cannot come into effect until after the next crop is marketed. Consequently, the present outlook for California is far from encouraging.

While the production of California wines last year was double what it was in 1885, the exports this year show very little increase. There has been an improvement in the shipments by the Panama line of steamers, but a decline in the quantity exported by other sea routes, also in the overland movement, leaving the increase for last quarter, over the same quarter in 1886, at only 20,897 gallons. As with the raisins, there was a rush to get rid of stocks last month, when 1,081,978 gallons were shipped overland; but this was less even by 30,000 gallons than the quantity of wine sent overland in March, 1886, when the low freights began. Ontside of the United States, there seems to be no demand for

California wines, except in the Hawaiian Islands, which took nearly 17,000 gallons this year But even this market will be lost unless a fairer scale of charges be established. The San Francisco *Merchant* has shown that, while the average price of California wines shipped by the Panama steamers is 43¼c. per gallon, the average price of the wine sent to the Hawaiian ports is exactly 50c. more, or 93⅛c. per gallon. The reason for this difference it is difficult to see, as the extra charge for sales in small packages could not fairly amount to 50c per gallon, and Hawaiians are hardly likely to be more discriminating in their brands of California wine than are the consumers in the east. Prices might, with fairness, be more equably adjusted.

The exports of California wine for the first quarter of this year was as follows :

	Gallons.
By rail	1,708,781
By Panama steamers	238,141
By other sea routes	37,484
Total, three months, 1887	1,984,407
Total, three months, 1886	1,963,510
Increase 1887	20,897

The stocks of wine in merchants' hands must be small, as the crop of 1885 was a small one, and must have been entirely consumed. But few sales of the last vintage have been reported. makers holding generally for an advance in prices. But with so large a yield last year, and with hardly any increased consumption to speak of, there is bound to be a large carry-over stock of the 1886 vintage for maturing, unless some very active measures are taken to extend the markets in the east, or to try and develop a market in England. But the high overland freights will militate against any great eastern extension, and will leave the carrying trade mainly to the Panama line of steamers, so that points west of New York will either have to pay the heavy through overland charges from San Francisco, or have their wine shipped west from New York by rail after being received there via Panama.

THE RELATION OF ALCOHOL TO PHYSICAL STRENGTH.

A correspondent sskst (1) Is there not a clashing of authorities in regard to the relation of alcohol to physical strength, as indicated in our recent article on alcohol, food and force? (2) Whose experiments were therein referred to? (3) How it is possible for a dose of alcohol to increase one's working power, if, as Todd and Bowman state, "the use of alcoholic stimulants retards digestion by coagulating the pepsin of the gastric juice, thereby interfering with its action?" He adds that he does not find in his text books any authority for the position that alcohol is a force producer.

There is a serious clashing to be observed among current opinions in regard to the action of alcohol in the human system, due very largely to the fact that the effects of alcohol vary immensely with the dose, but more perhaps to the tendency of men to come to decided conclusions from one-sided or insufficient evidence, and to hold to such conclusions in spite of every evidence to the contrary.

Regarding scientific authority, the only sense admissible—is that of the overwhelming weight, not of human testimony, but of facts, critically determined—we cannot say that the alleged clashing is at all serious. The physiological action of alcohol has been determined with as close an approximation to accuracy, probably, as that of any other substance; and while it is never possible to speak with absolute certainty in such matters, we are justified by fact in saying that the grounds for regarding alcohol for a force producer are quite as substanial as those on which we rest our belief that beef, or bread, or any other food is a force producer.

The failure of our correspondent's text books to recognize this result of recent investigations is due very likely to their having been written before their investigations were made. The latest work of eminence in this field—Pavy's "Treatise on food and Dieteties, Physiologically and Therapeutically Considered"—gives a very good discussion of the *role* of alcohol within the organism, and admits that, up to the time of its publication, the probabilities were, on the whole, in favor of the belief that alcohol is a force-producing food. Investigations still more recently published, notably by Drs. Anstie and Dupré carry the discussion to the point of practical demonstration.

The experiments, about which our correspondent inquires, were those narrated by Dr. Hammond on the address then under review.

As for the quotation from the works of Todd and Bowman, the facts would seem to prove it perfectly correct, with the addition of the first two letters of the alphabet. It is not the use but the abuse of alcoholic stimulants which has the effect described, as every drunkard's stomach shows after a debauch; as excess in alcoholic digestion arrests all the other bodily functions. In excess it is a poison, a very dangerous narcotic poison. Nevertheless in proper doses, properly administered, its use has quite the contrary effect. It facilitates digestion, and is otherwise strikingly beneficial. Its indiscriminate use, however, is always and everywhere to be deplored, since only the few are able to use it without abusing it and themselves at the same time.

Because a little at the proper time is good, too many people are apt to infer that a great deal at any time must be better. It is the logical weakness, so happily hit off in Æsops fable, of the old woman with her hen. Because with one measure of barley the hen laid an egg a day, the thrifty dame reasoned that two measures of barley would make her lay two eggs a day. But they didn't. The hen simply got fat, and quit laying altogether.

As with alcohol, so with tobacco, so with articles of food like tea, coffee, spices and the rest, so with common necessaries like pure air, cold water, exercise, sleep, pleasure, there are ill balanced people who are never able to discriminate between wholesome use and excess. In time, with the spread of real knowledge, with increasing mental and moral culture and the general elevation of the race, such weaknesses may be outgrown. Till then they must be borne with. To attempt their repression by force is more likely to be mischievous than beneficial, more likely to hinder than help the real advancement of society.—*Scientific American.*

PACIFIC BUSINESS COLLEGE.

This institution has been in successful operation in our midst for nearly a quarter of a century. Its spacious halls are well lighted and ventilated, and are furnished throughout with the best walnut furniture and with all the modern commercial college appliances. All the apartments of the College are admirably adapted to the purposes designed. The courses of study include the following branches: Shorthand, Type-writing, Telegraphy, Modern Languages, English branches, such as Spelling, Reading, Grammar. Letter Writing, Algebra, Geometry, etc., Double and Single Entry Bookkeeping, as applied to all classes of business, Plain and Ornamental Penmanship, Commercial Arithmetic, Business Correspondence, Partnership Settlements, Mercantile Law. Business Forms, Actual Business Practice in all styles of keeping Accounts. Each course of study is specially prepared to meet the wants of students, and the several studies are transmitted in the various departments by thoroughly competent teachers, thus guaranteeing fitness to persons of ordinary ability for the practical duties of business life. No person can otherwise so completely fit himself for commercial life and the various demands of trade as by taking a course of study at this model school.

The services of graduates of the Pacific Business College are in demand by business houses all over the Coast; and students state that they find everything conducted as they were taught at the College. Parents are beginning to realize the fact that a business education is essential to a fair start in life. A few months spent in a good, reliable business College broadens the mind and gives young persons new ideas of the world and business affairs, often saving them from business perplexities and financial ruin. Prof. T. A. Robinson, the President of the Pacific Business College, is an estimable gentleman, of great talent and ability, and under his supervision the College is a grand success. By many years of study and experience, Prof. Robinson has ably fitted himself to be at the head of the leading Business College of this Coast.

GRAPES FOR PROFIT.

Among the many paying industries of this valley grape raising will rank among the first in importance and profit. The grape is surely at home in our soil. No irrigation is ever necessary on our damp lands and the yield is greater than in any other part of the country, running from eight to twelve tons per acre and in exceptional cases of old vineyards as high as fourteen tons. A vineyard costs very little more than a crop of corn for cultivating and handling, and yields a sure crop every year. We have the figures in hand from a gentleman who hires all his work done and who keeps an accurate account of every item of cost and income from his place and they show a gratifying result. This gentleman last year made from eighteen acres of four-year old vines, Zinfandel and Blue Elba, $1,890 gross. His expenses, including boxes and items of outlay were $950.50 leaving a net income of $939 50 or over $50 per acre from a vineyard four years old. It is confidently expected that the same vineyard will yield a net income of $1,500 for the present year. We have in mind a large vineyard here that averages a gross income of about $180 per acre and the cost of handling is claimed to be only $20 per acre, leaving a net gain of $160 per acre. This vineyard is thirty-five years old. Among exceptional cases we will name one where $273 worth of grapes were picked and sold from an acre and a quarter of old vines, and where Zinfandel vines yielded $143 per acre at five years old. Many similar cases can be recalled and we unhesitatingly say that grape raising in our valley is one among the most profitable enterprises. We have now four large wineries, with a present capacity for handling four thousand tons of grapes annually, and whose capacity may be increased almost indefinitely. The Ranchito Wine company have each a crushing capacity of one hundred and fifty tons per day and have only to add cooperage as needed. Hence we say there is no fear of a slow market for grapes. Our wines are fast gaining a reputation in the markets, and as our people become more acquainted with grape raising and wine making the wines of our valley will become more popular, and therefore more profitable.

There is no question about vineyards paying handsome profits to their owners, and we can in all candor advise newcomers to invest in them. We have our information from a gentleman well posted in the various industries of the valley, and from our own knowledge can assert that the facts as given are unquestionable. Any one doubting can be satisfied by calling on us and obtaining the figures from the books.—*Downey Review.*

Pruning the Grape Vines.

The *Germantown Telegraph* says that as a rule the pruning of the grape should be very largely done in the fall, soon after the foliage has been dropped, but not to its full extent. There are different systems of pruning and each has its advocate. On some accounts that system which confines the vine most nearly to the ground is very much to be preferred. For this reason the horizontal arm system, which confines the shoots to within a few feet of the ground, seems to possess decided advantages, first because it requires less vines per acre; it saves time in laying; it prevents anything from growing underneath the vines, admits of a free circulation of air, a sure preventative of disease; the fruit ripens more uniformly; it is more conveniently harvested; it makes a symmetrical and properly proportioned vine. In this system the pruning is severe, and if it is done in the fall should not be complete, by two or three buds; that is, cut off at a point within two or three buds of the desired point and leave the end until early spring when the process should be completed by clipping off the remaining buds.

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Southern Grape Culture.

No. 3.

[The Southern Cultivator and Dixie Farmer.]

Mr. C. W. Jenks, of Stephenville, Texas, asks, in the March issue of the *Cultivator*, for an explanation of what is meant by "a light application of wood ashes" to young vines, and inquires whether the ashes should be fresh or "well-rotted." By the latter term I suppose he means to ascertain whether they should be applied in the original dry state or after they have been leached in the usual process of extracting the lye or potash by running water through them. The question of the quantity to be applied depends, of course, upon whether the ashes have been so leached or not, since unleached ashes must contain a larger per cent of potash than the leached. The question, therefore, is the quantity of potash to be used rather than how many pounds of ashes, be they fresh from the fire-place or "well-rotted;" and the real question, as it is now presented, is the limit to which potash can be applied with benefit and without injury to the vines. Such a limit there must be, but I have never found it, for the reason that I have never been able to accumulate wood ashes in sufficient quantity to overcome stinginess in the use of them on any crop. The strength of ashes in potash depends also upon the kind of wood used in producing them, for it is known to all farmers and their wives, who delight in making soap, that the ashes from oak and hickory wood are the best—containing as they do more potash than the ashes of the softer woods. The ashes used by the writer for fertilizing grape vines are obtained by the burning of oak, hickory and pine wood (mostly oak) in the fire places and cooking stove, and very satisfactory results have followed the use of about 600 pounds to the acre or about one pound to the vine. My land is red clay loam with an impermable, tenacious subsoil through which there can be but little leaching of water. During the first three years after planting the vines I have grown peas, the pea-vines being either plowed in or allowed to remain and rot on the soil. Hence the soil, in a young vineyard thus managed, is pretty well supplied with humus, which acts as an absorbent in holding the potash near the surface and feeding it gradually to the roots of the grapes. With such a soil and subsoil it is clear to reason that I am safe in sowing the original, dry, unleached ashes broadcast. If, however, the soil was an open, porous sand, poor in vegetable matter and without a tight subsoil, I should compost the ashes with litter of some kind or the proper manure for grapes. To mix ashes with an ammoniated manure would cause an escape of the ammonia, which would be a waste if the mixture was intended for corn or cotton, but the grapes can spare the ammonia and thus there is no waste. Ashes would benefit horse manure as a fertilizer for grapes by causing a more thorough decomposition of the manure, by freeing it from the gases that are not wholesome for the vines and reducing (if wet or exposed) its nitrogenous parts to the form of nitrates; or, rather, disorganizing the mineral ingredients of the manure from the organic. Too much exposure to rain, however, would, under these circumstances, cause considerable loss, not only of the nitrates, but of the potash itself, by the leaching out of these chemical elements with the water. As in all things else one's judgment and his knowledge of the subject must guide, or simple and safe rules be followed. It should be remarked here that even leached ashes are beneficial to grapes or other fruits, for they are found to contain other mineral elements than the remnant of potash, such as lime, soda, magnesia and the phosphoric acid, all of which furnish food for vines and fruit.

The above remarks would seem to cover Mr. Jenks' inquiry as to the use of liquid manure for grapes. By leaching water through stable manure, for instance, the mineral combinations of the manure are obtained minus the fermentative mass. To such a liquid any soluble fertilizing substance can be added and the same used with good effect, but I can see no advantage to be gained by going to the trouble and the expense of putting the necessary grape-food into the liquid form if it is soluble and available as potash in wood ashes, as the moist earth already contains the necessary water. If the fertilizer to be used is not soluble in water and available to the roots of the plants, applying in liquid gains nothing. Soluble manures may of course have more immediate effect if applied directly to the feeding roots in time of drought.

But there are questions of more immediate importance to the grape-grower at this season of the year than manuring the vines, which latter work had best be done early. Dressings of soluble fertilizers may be made, nevertheless, at any time.

The vines have now been securely tied in the position in which they are to remain during summer, and the young shoots are putting forth from the bearing buds left in pruning as described in the March issue of the *Cultivator*. If the tying of the vines to stake or trellis has not been well done now is the time to complete it. Some tying will be necessary later on when it is found necessary to open out the vines where they are growing in too compact a bundle, or where they are lying on the ground. An earlier mention of the following process of making ordinary twine waterproof and lasting would have been opportune, but it can yet benefit those who do not know it: Place the balls of twine in a pot, puting in a piece of castile soap the size of a hen's egg for every gallon of water. Let the twine be covered with water. Boil about one hour, pour out the soap-water and refill the pot with fresh water. Add a lump of alum the size of an egg and boil for a half or three-quarters of an hour. Wind the twine from the balls into small hanks of such length as when cut will make strings of suitable length for tying and hang out until dry. The twine is thus made water-proof and will hold the vines in position securely through summer and winter, where the same twine used without being thus made lasting would fail before the fruit is gathered. Twine may be prepared in this manner for all out-door purposes, such as tying up flowering vines on the verandah or in the flower-garden.

Grapes now need close and prompt attention if the best results are to be obtained. Upon the tender young shoots as they appear and begin to lengthen out will be found the young forms of fruit. The bunches are already formed, and it needs but a glance to distinguish those that promise development into fine, large and shouldered clusters from those that will be small. A moment's scanning and reflection upon the vigor and condition of the vine, together with the probable or approximate number of bunches or clusters, will enable one to decide whether the vine is about to be overtaxed in the maturing of its fruit. If too much fruit has been started the scissors or fingers can be used at once with great advantage. All imperfect clusters should be clipped or pinched out, leaving the finest and best-shaped; but continue to thin until you have measured the task of the vine. In this two objects should be kept in view, viz., first to leave on the vine an amount of fruit that it can carry to perfect maturity without overtaxing its energies; and, second, the production of stout, healthy, well-developed wood upon which to grow your fruit next year. Thus the grower is managing not only for this year's crop, but that of next year, and the one is as important as the other. A vine allowed to undertake too much will not only fail to produce fine fruit the present year, but will be so impoverished and weakened in the effort that it will be unfit for a full crop the following season. This clipping or thinning of the fruit should be done early in the season, say when the young shoots are about ten inches or one foot in length, at which time each bearing shoot should be pinched or clipped off beyond the last bunch of fruit left to be matured. The rule laid down by Husmann, in his admirable work on "Grape-Growing and Wine-Making," is to pinch off each shoot immediately beyond the last promising bunch of embryo fruit. Other prominent grape culturists say one leaf should be left beyond this last bunch. Thus, where there are three bunches on a shoot, leave four joints of the cane. Either plan works successfully and there is probably no difference in the results. Leaving the fourth leaf, however, is the safer rule. While this pinching off the ends of the shoots is going on every tendril should also be taken out. They serve a useful purpose in the wild, uncultivated vine, but on those that we have tied with twine they are not only useless but work a great deal of mischief. If left on the vine, especially if the single stake system of training is practiced, they will entwine themselves in, through and about the fruit and vines, rendering it impossible to gather the fruit without trouble and breaking the clusters. The originator of new varieties of grapes who will produce a good grape without tendrils will find his fortune made. Perhaps by the vigilant and constant clipping out of tendrils the processes of evolution will cause our vines to discard them of their own accord.

Taking off the ends of the young shoots causes a concentration of the vigor of the vine into developing the fruit, and there is no longer any doubt of the beneficial results that follow. The berries will be larger and the fruit in every way more perfectly de-

veloped. It may be done with impunity as it is carried on with success in this country as well as in Europe. The writer and his neighbors practice it with satisfactory results, and the "up to snuff" grape-growers of the New England and Middle States consider it indispensable to success in the production of fine fruit. No bleeding follows the process, as the young growing shoots do not bleed when cut, as is supposed by novices. Wood of last year's growth will bleed profusely, however, if cut or broken in the growing season. The pinching checks the flow of sap and gives the young fruit a chance to absorb it; yet being more than sufficient to supply the young fruit, this sap forces an outlet, and hence, soon after the checking, we see a lateral, or "sucker," as it is sometimes called, start at each joint opposite every bunch of fruit. These must also be checked by pinching off after the first leaf on said laterals according to Husmann. The Swiss people of this vicinity take out the lateral entirely, however, giving it a side jerk, causing it to snap off at its base where it started at the axil of the leaf on the cane which was first pinched or clipped. At this stage of affairs the forms should be in bloom, but if the work has been delayed it should be done soon after the bloom.

The foregoing describes the summer pruning of the vine; and while those who have had no experience in grape culture may think it a discouraging task, they will find that with experience and practice it is more easily and rapidly done than they at first supposed. Picking cotton is far more irksome and tedious and far less profitable as a rule.

Where the long arm system of training and pruning is practiced, as described in the March issue of the *Cultivator*, it must not be forgotten, while summer pruning is going on, that long arms for next year's bearing must be grown, and for the present they must remain unchecked. All superfluous shoots coming up from the ground, and those growing from the vine near the earth that will not be needed for next year's crop, should be pulled out or rubbed off as soon as they appear. In the cultivation of grapes the soil should be stirred occasionally by plowing shallow, and all grass and weeds should be killed out as carefully as in the cultivation of any other crop. Plow shallow, or the roots of the vine may be injured. The greatest enemy to our vines is what is known as the downy mildew or *Peronospora Viticola*. There are other mildews which attack the vine, but the *Peronospora* is the most common and most destructive. It makes its appearance and does its work of devastation during the wet seasons in this latitude in June and July. We have all seen it in the the form of downy white patches on the under side of the leaf, with corresponding pale green spots on the upper surface which finally turn brown. The mildew is a fungus, an organism or low form of life, resembling vegetable growth in some of its characteristics and animal growth in others. It has a *mycelium* by which it fastens and establishes itself between the tissues of the leaf, shoot and berries, the *mycelium* thus resembling the root of a vegetable plant. The white filaments which we see in the form of downy patches also grow and increase in length and finally bear the germs of offspring. Thus far the fungus seems to be a vegetable, but these germs or seeds are found by microscopists to be capable of motion. They come out of the shell or pod, whichever it may be called, and move off to new quarters on the vine and there go through the whole performance of establishing itself and reproducing its kind with great rapidity—so rapidly, in fact, that a whole vineyard may become invested in a few days. But the best is divested of some of its terrors in the discovery that it is capable of reproduction only in water—that is to say that it is inactive and harmless except when the vines are wet and dripping with rain or dew. It thus appears that we need have but little fear of serious results from the mildew except in wet seasons. If it could see its work in ordinary clear and dry weather there would be no grapes grown in this or any other country where the fungus has existence. Continued wet weather, therefore, is the thing to be dreaded. And even in wet weather there is considered to be no danger of the mildew unless it is already upon the vines or is blown to them by the wind from a neighboring infested vineyard, as the fungus is not a mere spontaneous growth. But the germs of it, the spores, are on the vines already, if the fungus appeared on the vines last year and was not effectively eradicated and destroyed, as it has been found that the "winter spores" of the fungus will survive very cold weather, even when the thermometer has ranged below zero. Once established, its *mycelium* invades the tissues of the vine and there seems to remain, though it be in an inactive or dormant state, until eradicated or killed by the use of some remedy that will destroy it. Such a remedy has been the great *desideratum* of scientific investigation in France and in all the grape-growing countries of the world. A great deal has been written on the subject and many remedies have been published, but the French scientists have been most successful. They find that sulphate of copper (bluestone) in a form mild enough to not injure the vines is death to the downy mildew. Its use in the following mixture has given very satisfactory results: In ten gallons of cold water dissolve five pounds bluestone. In a separate vessel dissolve thirty pounds quicklime in six gallons of water. When the mixtures are well dissolved, after thorough stirring, pour the lime solution into that of the bluestone, pouring slowly and stirring rapidly meanwhile. This remedy is sprayed upon the vines and stakes either with brooms or a spraying apparatus, which can be procured through hardware dealers; a kind called the "cyclone nozzle" is said to do the work most satisfactorily. The remedy should be applied about June 1st as a preventive. Only a few drops or the fine spraying of the upper surface of the leaves of the vine is said to be sufficient to preserve the leaf. If the application of a few drops to each leaf is sufficient, sprinkling with straw brooms would seem to be satisfactory without incurring the expense of an apparatus. The mixture should be frequently stirred when being applied, and a second application for the benefit of new leaves might be made a few weeks after the first sprinkling. It is claimed that one application of this remedy will effectively preserve the leaves of the vine through the entire growing season by preventing the establishment of the fungus in their tissues. If the fungus is not killed and the preserving of the leaf is the only result of the application, this result alone is of inestimable value, for the shedding of the leaves of the vine is probably the most serious consequence of the mildew. When a vine is divested of its leaves its fruit cannot mature and ripen, but will shrivel and dry up, even where the fruit itself is not directly attacked. The latest and best publication on the subject of fungus diseases of the vine is the recently published report of Prof. Scribner, a special agent of the Agricultural Department at Washington. It treats in a very clear and comprehensive manner the various *fungi* that are known to be injurious to the vine. From this admirable work is obtained some of the *data* above written, confirming as it does the information given in other and earlier reports of microscopists, and giving the "whys and wherefores" in a more explicit manner, besides new and valuable information. This information of the myriads of parasites that infest the vine should not discourage the beginner in grape-growing, for the destruction of the grape crop or its serious injury in the south is of rare occurrence and only in continued and incessant wet weather in June and July. While he should know and apply the remedies when needed, and should become conversant with the subject, yet he can in a practical sense adopt in dry weather the platform of a foreign grape-grower of this locality, who when it was suggested that it was the mildew that caused the rotting of his grapes, replied in supreme confidence, "No, no! it's the rain that makes them rot." In the primary sense he was correct, yet he comprehended not the fact that the rain nourished the fungus and the fungus fed upon the *epidermis* or thin outer tissues of the vine and its fruit, lived upon it, permeated it and caused it to "rot"

Greenville, S. C. A. M. HOWELL.

THE RAISIN GRAPE.

In the whole range of fruit culture, there is probably no occupation more profitable and pleasant than the cultivation of the Muscat or raisin grape. Other fruit crops may return a larger net profit occasionally, but for a sure and steady increase, I know of none that excels the grape.

What I have to say on this subject may seem commonplace to those here who have tilled the soil for years, but I think my observations will not be amiss to those who are not, but wish to be, dwellers in our favored clime.

Having been engaged in the culture of the raisin grape for eleven years, I will say that I have not realized, nor have I seen others realize, the enormous profits that we so often read about. The business is good enough as it is, and why not tell the truth about it? The first question usually asked by the intending settler is: What will a vineyard pay? Most people without experience seem to think that all vineyards are alike, and seem to never think for a moment that the cultivation of the grape and the manufacture of raisins is as much of a business as anything else. The old saying that "any fool can farm," does not apply here. A good Muscat vineyard after the fifth year, with good cultivation, will yield from 100 to 150 boxes of raisins to the acre. A vineyard is generally said to be in full bearing after the fifth year, but I cannot tell at what age the vines arrive at their greatest perfection. My vines are now eleven years old, and the last crop was the largest I ever gathered, reaching 150 boxes per acre. One hundred boxes per acre is what a vineyard in good bearing should average, taking several years together. If this point is not reached, it is more likely to be the fault of the owner than the vines. No expensive machinery is required for the making of raisins, or to prepare them for market, though the expense of labor is considerable. Assuming that the fruit raiser does no work, and all the labor has to be paid for, the bill of expenses and receipts will be about like this, if proper judgment be used: The total expense of cultivating an acre of grapes is $15; the curing and packing of an acre of grapes, making 100 boxes of raisins, $55. The average price for raisins for the last four years has been about $1.60 per box. Putting the price at $1.50 per box for the four grades, we have a total net profit of $95 per acre. Many vineyards do better than the above. My own does better. But I give these figures to show what may be expected with reasonably good care. Vineyards have been frequently known to produce grapes enough the first year after planting to pay expenses of cultivation. The second year brings from $30 to $50 per acre gross; third year, $60 to $75.

Vineyard work is pleasant from the fact that everyone on the place is not a drudge from the beginning to the end of the year. The year's work commences about the first of January, and pruning is the first work to be done, and is the most important to have done well. Next comes flooding or irrigating, according to the season, followed by cultivating, suckering, summer irrigation, etc. The season of work lasts from the first of January to the middle of June, when nothing more is needed until picking time, about the middle of September, making about three months of rest. The process of manufacturing raisins is so simple that many failures were made, because beginners were seeking for a process far more intricate. When the grapes are ripe, they are picked and laid on the ground, and when they are pretty well dried on one side they are turned over, and when well cured, they are taken up and put in boxes, ready for packing, and that is about all there is to it. One man can do all the work on a twenty-acre vineyard and do it well, with the exception of gathering the crops.

One thing greatly in favor of the raisin grape is that it is a sure crop. No such thing as failure has ever been known, and, in fact, many circumstances contribute to make it the most pleasant and profitable branch of the fruit industry of Southern California.—C. F. STAMPS, *in Orange Tribune*.

Raisins at Orange.

This is our industry. Throughout the State of California there is no spot so peculiarly adapted to the production of a perfect raisin as is the vicinity of Orange. Here the grape matures from a month to six weeks earlier than in any other locality in Southern California, giving to the producer the advantage of a good curing season. The work is easy and pleasant, requiring only fair judgment and common sense to make it successful. A man with moderate means could not make a more profitable investment than in a Muscat vineyard—no one in which he could find more enjoyable labor.

With good care the yield of one-year-old vines will amount to $25 per acre, the second year to $50 per acre. Mr. W. M. Boring, with no experience in raisin culture, has had this season, from a three-year-old vineyard, gross receipts to the amount of $113.06 per acre, netting $85.35 per acre. Vines continue to increase their yield until the fourteenth year, when they are considered to be in fully bearing, and will yield from $200 to $300 per acre. The grape is the natural product of the soil in this section. It has no enemy, and a good yield may always be relied upon, as it has never been known to fail.—W. J. SHANKLIN, *in Orange Tribune*.

WINE COLORS, AND COLOR-WINES.

At the late Viticultural Convention I exhibited a table of measurements of the color of a number of wines of the vintage of 1886, in order to emphasize the fact that California can produce wines with abundance of color, and that with proper attention to this point in the selection and proportioning of the varieties constituting a vineyard, the dealer need not even be exposed to the temptation of using artificial colors, unless for the purpose of "stretching" by the addition of water, etc. This table is reproduced below, with some additions which add weight to the evidence, and also allow of some generalizations regarding the depth and permanence of the tints belonging to the various classes of wine grapes, and the influence of locality and soil.

The "color at pressing" (column 1), can, of course, be given only for the wines made at the viticultural laboratory. Column 2 gives the color intensities as observed on or about March 1st, in a number of wines sent in for examination, as well as in a number particularly of the deeper-tinted wines made at the viticultural laboratory. Column 3 gives the decrease of color that has occurred between the time of pressing and March 1st, *in per cents. of the color originally observed;* while column 4 indicates the tint or shade of color last observed.

comparison is made by measuring the thickness of the column of wine that will make its color and intensity, viewed toward a white silk disc, exactly equal to that of one of the type discs, which thickness will, of course, be inversely proportional to the intensity of the wine's own color. A convenient numerical expression of these ratios is obtained by assuming the color-intensity corresponding to a wine-layer *four tenths of a millimeter*, or the sixty-second part of an inch in thickness, as 100. On such a scale the colors of all ordinary wines can be readily expressed in percentages falling below 100, while a very few special color-wines will rise above, so that their colors have to be given in figures over 100, expressive of their extraordinary intensity.

It should be farther understood that on such a scale, the color-intensities of deep-tinted commercial wines will range between 20 and 30; ordinary red wines (*e. g.*, most Zinfandels) between 10 and 20; while any wine below 10 will be classed as "light red."

Taking 20 as a satisfactory figure for clarets intended to be used as table wines, and still showing a handsome tint when diluted with water, it will be seen that column 2 shows quite a number possessing many times that amount of color, while all but the Burgundy group range above 20, and could therefore be used to bring up the color of lighter, valley-grown wines, by blending. In nearly all these cases, the

TABLE SHOWING INTENSITIES, SHADES AND PERMANENCE OF WINE COLORS.

No.	Variety.	Grower.	Place of Production.	1 Color at Pressing.	2 Color March 1.	3 Per cent of Loss	4 Present Tint.
475	*Malbeck	J. T. Doyle (¶U. P.)	Cupertino	38.1	27.6	27.6	1st p. r.
545	Malbeck	J. T. Doyle	Cupertino	.....	25.5	.....	3d-4th p.r.
519	Malbeck	C. C. McIver	Mission San Jose	.....	36.0	.....	3d p. r.
552	*Cabernet Franc	J. T. Doyle U. P.)	Cupertino	34.0	23.5	32.5	5th p. r.
593	Cabernet Franc	J. T. Doyle	Cupertino	.....	35.0	.....	2d p. r.
516	Cabernet Franc	C. C. McIver	Mission San Jose	...	50.0	...	3d p. r.
599	Cab. Sauvignon	J. T. Doyle	Cupertino	.....	38.8	.....	1st p. r.
607	Cab. Sauvignon	J. B. J. Portal	San Jose	.....	32.0	.....	3d p. r.
551	*Gros Verdot	J. T. Doyle (U. P.)	Cupertino	85.3	57.0	33.2	2d p. r.
514	Verdot	C. C. McIver	Mission San Jose	.....	57.1	...	2d p. r.
534	*Tannat	Wm. Pfeffer	Gubserville	51.4	40.8	20.6	3d p. r.
517	Merlot	C. C. McIver	Mission San Jose	.....	50.0	.....	4th p. r.
579	Merlot	J. Gallegos	Mission San Jose	.....	31.5	.....	5th p. r.
516	*Grossblaue	J. T. Doyle (U. P.)	Cupertino	40.8	30.0	26.4	2d p. r.
545	*Grossblaue	J. T. Doyle (U. P.)	Cupertino	57.1	26.0	53.3	2d p. r.
483	*Beclan	J. Gallegos	Mission San Jose	41.2	36.4	11.6	1st p. r.
513	Beclan	C. C. McIver	Mission San Jose	.....	36.3	.....	3d p. r.
511	*Carignane	A. Salazar	Mission San Jose	30.3	30.3	.....	1st p. r.
591	Carignane	J. T. Doyle	Cupertino	...	35.6	.....	2d p. r.
...	§Zinfandel	J. Gallegos	Mission San Jose	.....	31.6	.....	4th p. r.
...	†Zinfandel	C. C. McIver	Mission San Jose	.....	23.5	.....	5th p. r.
529	*Zinfandel	H. P. Gregory	Soquel	48.8	27.7	43.2	2d p. r.
...	‡Zinfandel			.....	10.2	8.3	19.0	3d p. r.
507	*Teinturier	J. T. Doyle (U. P.)	Cupertino	54.0	40.0	26.0	2d p. r.
542	*Teinturier	D. C. Feeley	Patchen	75.2	67.7	10.0	2d p. r.
92	*Gamay Teinturier	J. T. Doyle (U. P.)	Cupertino	44.4	44.4	0.0	2d p. r.
98	*Sirah	J. T. Doyle (U. P.)	Cupertino	46.5	27.6	40.6	1st p. r.
515	Sirah	C. C. McIver	Mission San Jose	.....	77.0	.....	1st p. r.
79	*Mondeuse	J. Gallegos	Mission San Jose	31.7	27 3	14.6	2d p. r.
518	Mondeuse	C. C. McIver	Mission San Jose	.....	80.0	.....	2d p. r.
520	Petit Bouschet	C. C. McIver	Mission San Jose	.....	154.0	.....	1st-2d p.r.
524	*Crabb's Burgundy	J. T. Doyle (U. P.)	Cupertino	45.4	27.3	39.8	2d p. r.
488	Lenoir	H. B. Wagoner	Livermore	66.6	37.0	45.9	orange-red
533	*Pfeffers's Cabernet (Robin Noir)	Fresno Vineyard Co.	Fresno	.	30.8	.....	red
527	*Pfeffer's Cabernet	Wm. Pfeffer	Gubserville	12.0	11.2	7.0	5th red
541	*Burgundy	C. Weller	Warm Springs	16 3	7.1	56.4	3d red
496	*Burgundy (Chanche Noir?)	J. S. Fowler	Patchen	10.5	8.9	15 2	3d red
570	*Petit Pinot?	J. Gallegos	Mission San Jose	10.2	7.8	24.0	3d red
519	*Pinot St. George	H. M. La Rue & S'ns	Davisville	5.3	(?)	(?)	orange-red
544	*Meunier	J. T. Doyle (U. P.)	Cupertino	12.6	8.2	35 0	3d red
		J. T. Doyle (U. P.)	Cupertino	13.6	13.6	2.0	3d red

* Wines made at the viticultural laboratory; § average of three analyses; † average of four analyses; ‡ average of wines from grapes from Vina, Sacramento, Davisville and Patchen; p. r. means purple red; ¶ University Experimental Plot.

In commenting upon the above figures it may be proper to restate their basis, as explained in the Report for 1886, pages 26 and 133. The standard of comparison is the French color-scale devised by Chevreul and adopted by the Government as well as by manufacturers in France. A portion of this color scale, represented by 10 little disks, and including the tints of most red wines, forms the basis of comparison, the colors running from simple "purple red" through five numbered shades of the same to "red," and from this through numbered shades toward orange-red. The analysis as well as the tasting test shows that these same wines will also serve to complement the deficiencies of the last-named class of wines in other respects, especially as regards tannin and bouquet.

The most prominent color-wines shown in the table are, in the order of their intensity, the Petit Bouschet, Mondeuse, Sirrah, Verdot, Merlot and Cabernet Franc. Contrary to the general impression, the two samples of *Lenoir* do not show any extraordinary merit in this respect. The Livermore sample, it is true, gave quite a high reading at pressing, but lost nearly half of its color between that time and March 1st. The Fresno sample gave even less at the latter date. At the same time it will be noted that the tint of the Lenoir is altogether different from that of the Bordeaux varieties. At first a full red, it rapidly fades toward the orange-red as it deposits its color, and at this time the latter is almost identical with that of unadulterated "cherry-juice." But if the Lenoir possesses no special merit in the way of either kind or quality of color, it is difficult to see on what ground it should be preferred to a dozen other varieties here enumerated that give as much or more color of the right tint, fading much less, and unassociated with the peculiar flavor that always clashes more or less with the Bordeaux type at least, while it is not a heavier bearer, to say the least, than several of the noble Bordeaux wines have now proved to be.

The latter, it will be noted, all fall within the "purple-red" shades of color, which is also shared by the Teinturiers, as well as by the Jura and Piedmontese grapes; and of course this, and not a red or orange-red, is what is looked for in wines representing these types. Hence, the Lenoir has not a proper place among them, upon that ground alone.

As shown on Table 6 of the Viticultural Report for 1886, the Pinots proper, including the Meunier, all run into shades of red, and the intensity of their tints is quite low relatively to the Bordeaux varieties, being somewhere between 10 and 15, which is only about one-third of the general average of the varieties shown in the above table. Among the latter, the "Crabb's Burgundy" holds quite a high place, both for the intensity and permanence of its *purple-red* tint; and this, with its habits in fruiting, may be considered as definitively removing it from among the group of "Burgundies," even in the widest signification of that much-abused term. On the other hand, the peculiar tint of the Robin Noir or "Pfeffer's Cabernet," as well as its relatively low intensity, would assign it a place near the Pinots, and shows that it needs to be blended with some one of the purple-red varieties in order to make its wine take a place among the Bordeaux type which it otherwise resembles.

The influence of locality upon the intensity of tints is very strikingly exemplified in a number of instances, but more particularly in the case of the wines from Doyle's level upland vineyard at Cupertino, and the same from McIver's hill land at Mission San Jose, also between the latter and Gallegos' level upland at the same place. In the cases of the Malbeck and Cabernet Franc, and especially in that of the Sirrah, the color is markedly higher in McIver's wines than in Doyle's, but in the Verdot the color is the same from both places. As between Gallegos and McIver, the latter's Mondeuse exceeds Gallegos' nearly one to three, and in the case of the Merlot, five to three; but the Beclan from both is identical, and Gallegos' Zinfandel exceeds McIver's in color by eight points, on an average of four and three samples respectively. It thus appears that local superiority in color does not necessarily hold good for *all* varieties, however great the difference may be in some of them.

The most intensely colored wine of all thus far observed is McIver's Petit Bouschet, which has in effect the appearance of red ink, and exceeds by 92.5 per cent., the deepest tint otherwise noted at the same date. This wine can be diluted with six times its bulk of water and still retain a deeper tint than the majority of Zinfandel wines in the market; alongside of it, cherry-juice dwindles into insignificance, and can only hold its own on the score of its 19 and odd per cent. of untaxed alcohol. At the last measurement, made April 18, this wine still held 124 ont of the 154 of color observed March 1st.

It does not, of course, follow that this grape will carry the same, or any similar proportion of color elsewhere. No other sample of its wine of the same vintage has been received, and consequently no direct comparison can be made; but the remnant of wine from Natoma grapes of 1884, recently measured, shows but 13.0 of color, and was noted at the time as somewhat disappointing expectations in this regard. It is obvious that with respect to color, as well as other qualities, different localities will need to be specially tested, in order to determine the varieties that will yield a satisfactory outcome.

But whatever may be the experience of a given locality, it is certain that with wines such as these and a number of others in the table, noted for their abundant bearing, there can be no excuse for the use of either cherry-juice or aniline dyes, under pretense of catering to the public demand for color. With due care on the part of vineyard-owners, and fair offers for color-wines on the part of wine-blenders, there need be no lack of color in California wines.

Permanence of Color.—While column 2, above, shows at a glance the highest degree of color existing at the time of last reading, column 3 is also very instructive in showing the relative degree of *permanence* in the several varieties. Here the smaller figures, of course, show the greater degree of permanence; and among them we find the Gamay Teinturier with a zero to its credit—meaning that from the time of pressing (September 30th) to March 1st, or during five months, it had lost no appreciable amount of color; that color being, moreover, quite double that of the common run of deep-tinted wines. Doyle's Teinturier, which at first showed 10 points more than the Gamay, had, on March 1st, fallen 4.4 points below it, losing 26 per cent., while Feeley's Teinturier, starting with 75, in falling to 67.7 had lost only 10.0 per cent.

It here seems that locality had materially influenced not only the original depth of tint in the same variety, but also its permanency; both may, however, have been somewhat influenced by different degrees of maturity. Yet, in the two samples of Grossblauer, No. 516, the earlier sample, gathered barely ripe, and showing only 40.8 of color against 57.1 of the more mature sample No. 545, has maintained its color so much better than the latter, that on March 1st it stood four points above it, thus indicating that the gain in color by greater maturity is not always maintained.

The full record of observations on the colors of 47 red wines made from different varieties of grapes at the University laboratory in 1886, is reserved for future publication. It is very evident, however, from the facts here shown, that so long as the public demand for deep-tinted wines continues, the detailed study of the behavior of each variety in this respect in different localities, under different treatment, and especially in different combinations or blends, will remain a matter of considerable pecuniary interest to growers.

E. HILGARD.

Berkeley, May, 12, 1887.

AMERICAN WINES.

An address by B. F. Clayton, Editor of the *Wine and Fruit Grower*, delivered before the Eighth National Agricultural Convention, New York, February 8, 1887.

GENTLEMEN OF THE CONVENTION:

If asked as a physician to classify wines, I would divide them, according to their hygienic effects upon the human economy, into two classes:

First—Light, dry red and white wines, produced directly by fermentation, from the juice of the grape, with or without the addition of sugar, according to requirements, and so perfected and finished as to leave no free sugar in suspension to set up fermentation in the stomach. These wines I would denominate as beverage or table wines. Such wines may be safely drank by all, old and young, as a substitute for tea and coffee, and especially by people of dyspeptic tendencies and without any risk of inducing intemperate habits or creating a thirst for strong drink. These should constitute the great bulk of wines of commerce, and should be cheap and abundant.

In the second class I would put the heavy sweet wines such as Port, Sherry, Malaga, Madeira, Muscatel, Angelica, etc. These wines are useful in medicine, and may be used with benefit by old and feeble persons and invalids needing tonic and stimulating treatment, as dessert wines, and for sauces and flavors in cookery. These wines have more or less free sugar in suspension, and to maintain their character as sweet wines, a certain per centage of alcohol must be present, varying in quantity in different climates, but generally not less than 16 per cent. As a rule, the process of fermentation will not develop sufficient alcohol to permanently insure the wines against troublesome after-fermentations, and for this reason distilled spirits of some kind are added to secure the character of the wine against change. These wines are known as alcoholic wines, and are not used generally as beverages. Nevertheless, from the fact that they are used as medicine by the sick and old, and in the preparation of food by all persons, it is evident that the alcohol used for the purpose of fortification should be of the purest quality, and the least injurious to the system of all the alcohol to be found in commerce. Sweet wines fortified with poisonous and impure alcohols, are injurious to the human system either as food or medicine, and a subtle and dangerous enemy to the consumer, calculated to create habits of intemperance and a thirst for stronger drinkr. Pure spirits from grape wine are unquestionably the best agent to use in fortifying sweet wines, and no other should be employed.

THE BILL BEFORE CONGRESS.

Speaking as a scientist and expert in the manufacture and treatment of wine, I offer the following proposition of a technical and scientific nature, in favor of the Senate Amendment of the Fractional Gallon Bill (H. R., 4833), and known as "The Sweet Wines Bill."

I. Spirits from grape wine, known as brandy, have a natural elective affinity for grape wine, both in its character as a composite substance, and for its separate elements; and while acting in the nature of an antiseptic, preserving the life of these different elements in their purity, it at the same time contributes desirable characteristics of its own in the form of ethereal solutions of the volatile oils of the grape known as the Bouquet, and becomes thoroughly incorporated with the kindred elements of the wine, thus forming a homogeneous body, or substance, as it is natural to suppose they would from their identity of origin.

II. Spirits derived from grain or substances other than the grape, cannot have any other office to fill in the manufacture of wine than that of an antiseptic, and therefore sustain the same relation to wine as do salicylic acid, benzoic acid, naphthaline, sulphite of lime, and other substances of that nature. Spirits of this character, if absolutely pure, contribute no quality to the wine except to greatly heighten its action upon the nervous centers, inflame the mucous membranes, and produce diseases known as alcoholic dementia and alcoholic ulceration of the stomach. In a medical point of view, therefore, wines fortified with spirits of this character are as injurious to the human system in proportion to the quantities taken as ordinary alcohol or rectified high wines. Leaving out the question of sanitation, these spirits do not become incorporated with the wine in the sense that brandy spirits do; and if they have any flavor or bouquet derived from the substance from which they are made, their presence in the wine injures its quality and market value, and will banish it, as it ought to, from the shelves of respectable merchants and relegate it to the slums.

III. All distilled alcohols are technically denominated poisons, and experiments instituted in the French hospitals upon dumb animals have determined their relative strength as agents for the destruction of animal life; at the bottom of the scale, and the most swiftly fatal in its effects are spirits of potatoes; next above is placed beetroot spirits, and next above are grain spirits, and so on up to spirits from the grape, which are the most innocuous, as shown by the experiments of all distilled spirits known at the present time. Experiments made by the French savant, Pasteur, upon pigs, some being fed upon brandy daily, others on the various other spirits mentioned, have proved this classification correct; the pigs fed on the lower classes of spirits manifested all the symptoms of alcoholic disease common to men who become inebriates from the use of low and impure spirits, became unhealthy, and many of them sickened and died; while those fed on grape brandy remained healthy, thrived and grew fat, and when killed, their meat, in appearance and quality, was a model of excellence and beauty.

IV. The alcohol of fermentation, *i. e.*, the natural alcohol of wine produced by fermentation, is not technically denominated a poison, is essentially a different alcohol from that of distillation, and is known in science as œnanthic alcohol. It will not produce the diseases peculiar to the excessive use of distilled alcohols, which are technically denominated amylic alcohols. A rational treatment, therefore, of this question of fortification would seem to indicate that any addition of distilled alcohols of any kind to wine, should be considered in the light of a necessary evil; that light, dry wines, both red and white, and intended for use as table wines, ought not to contain alcohol other than that of fermentation; that the use of distilled alcohol is permissible only in the construction of sweet wines where it is desired to retain a certain portion of free sugar in suspension, and only enough should be used to maintain their character permanently as sweet wines; and furthermore, in selecting spirits for such fortification, those least injurious to the human system should be given the preference, and the use of all others ought to be rigidly prohibited by law.

V. The question of temperance or intemperance, in the light of these facts, becomes a scientific question. Grape wine in its purity, properly made and handled, free from distilled spirits, is a natural and healthful beverage. It does not produce inebriety or the diseases resulting from alcoholism, and may be beneficially substituted for tea and coffee and ice water, in this country especially, where dyspepsia is so common as to be known as a national disease. All enlightened physicians will bear testimony to the truth of this statement, as a scientific proposition. Science points clearly the way for the physician in treating it as a medicine; for the consumer in using it as a beverage; for the legislator, considering it in its relations to public sanitation, and as a question of public policy Science declares, in plain terms, that a natural wine is not only healthy, but often in a high degree medicinal and curative in its effects upon the system. Science declares with equal positiveness, that natural wine is a food product of the highest grade, adapted in an eminent degree to the sustenance of man in his various avocations; and science, too, throws the strongest light on the path of the legislator, showing him in unmistakable terms that it is his highest and imperative duty to make every honorable effort to protect the public health by preventing the use of poisonous material in the preparation of food products and beverages intended for general use, and especially where there are other substances and materials not unwholesome, or at least injurious, that may be substituted, and where the use of unwholsesome or poisonous substances is instigated by greed or gain, and for the purpose of dishonorable competition in trade. It shows him further that where necessary evils exist—as, for instance, the presence of distilled spirits in wine—such evils may and should be limited to the minimum proportions, and shows him how it may be done.

This question, therefore, is easy of solution in the light of science, and it so happens that science is on the side of those most deeply interested, and on the side of an honest and honorable adjustment of every phase of the question.

This much for the hygienic and technical aspects of the question involved. I turn now to the political and commercial considerations, which should have weight in deciding the action of legislators and others interested. I will consider:

1.—SWEET WINES FOR EXPORTATION.

(*a*) Under the present system of collecting Internal Revenue, only tax-paid spirits can be used for fortifying wines.

(*b*) Fortification must be practiced where the wines are first made, and producers cannot tell whether their goods will find markets at home or abroad; hence, those which may ultimately be exported cannot be separated and provided for with free spirits at the time of production.

(*c*) In order to permit exportation of sweet wines free of tax, free spirits must be permitted at the time of production, incidentally granting them free also for domestic use.

(*d*) The great increase in vintages will cause immediate over-production for home consumption; (unless avenues for exportation are opened) distillation beyond normal demand will be forced and unhealthy competition in the spirit market will be provoked as well as loss to producers, who cannot afford to distill good wines beyond the limited market demand for fine brandy.

(*e*) The market in this country for sweet wines is small; the aggregate of the foreign demand is large, and but few countries can compete with California for sweet wines; hence the opportunity for commerce is relatively large.

(*f*) Sweet wines receive an addition of spirits to preserve sugar from fermentation None require to be fortified higher than 24 per cent. of alcohol—the limit placed on foreign wines by the tariff; generally none are fortified higher than 22 per cent. The ordinary amount of distilled spirits to accomplish this, in addition to the natural strength of wine is from 10 to 12 per cent. of added spirits, being 50 per cent. strong in alcohol, and taxed ninety cents per gallon, makes the tax on fortification average about twenty cents per gallon of wine.

(*g*) Sweet wines, such as Port, Sherry, Malaga, etc., taxed in this way incidentally 20 cents per gallon, cannot be exported and compete against foreign sweet wines which are imported without tax.

(*h*) It is therefore impracticable to export American sweet wines so long as fortification must be practiced with tax-paid spirits.

2.—SWEET WINES FOR DOMESTIC USE.

(*a*) The tax on imports makes no distinction between fortified and unfortified wines. A Claret containing 10 per cent. of alcohol is taxed the same as a Port Wine containing 24. Therefore, no tax is levied on spirits added to for wines.

(*b*) There is no tax specifically levied on domestic wines, the tax on sweet wines being only incidental to the use of spirits necessary in fortification. It is plain that the Government did not intend to tax any domestic wines.

(*c*) If domestic sweet wines are to be taxed differently from wines not fortified, then the tariff on foreign fortified wines should be so changed so as to tax the spirits added to them. This relief to domestic producers would, however, be insufficient as their sweet wines, taxed for fortification, could not be exported.

(*d*) Justice, therefore, requires that the same rule that applies to foreign wines should be extended to domestic wines, viz.: the spirits used in fortification should be free both for domestic and foreign markets.

3.—THE LOSS OF REVENUE.

(*a*) Of the class of pure, sweet wines covered by the amendment, not more than one million gallons are now produced in this country; hence, the loss of revenue, by granting free spirits for fortification could not exceed $200,000; it would probably be less, as in some cases, where brandy might not be accessible some grain spirits (tax paid) would be used. This reduction of revenue would not be a serious loss to the Government, while its remission would avoid an act of injustice to producers who cannot under existing laws extend their commerce.

4.—RESTRICTION TO GRAPE SPIRITS.

(*a*) All genuine wine makers desire to use grape spirits to fortify wines in order to preserve and ensure their quality. Good grape spirits, free of tax, cost generally as much as grain alcohol, tax paid; hence, if any one pretends that he prefers grain alcohol, he can use it, tax paid, as cheaply as others can use free brandy.

(*b*) The vineyards are capable of producing all the brandy they need. An

attempt to force grain alcohol upon them through competition in lower price of material, will be a hostile interferenee in favor of one industry against another, resulting in deterioration of the quality of wines and damage to the vine grower. It would also complicate the operations of the law by multiplying unnecessarily the points of difficulty.

5.—PROVISIONS AGAINST FRAUD.

(*a*) No fraud can be committed under this amendment, which is not possible under existing law.

(*b*) The provisions against fraud are more severe than under existing law.

(*c*) The incentive to fraud, where grape brandy is distilled, would be removed by this amendment, if enacted, and honest men can then compete in production where now the unscrupulous have all the advantage.

(*d*) With respect to these provisions, the Commissioner of Internal Revenue writes that they could not be improved for the purposes intended.

6.—FORTIFICATION OF ANY WINES FOR EXPORTATION SOLELY, AT THE TIME OF EXPORTATION, FREE OF TAX.

(*a*) The provisions under this head are self-evidently just, but they are insufficient to provide for exportation of sweet wines free of tax. Sweet wines must be made, and more or less matured before exporting. After they are on the market, exporters may select such grades as they desire to export, at which time there can be no relief granted.

(*b*) After Sweet Wines are made and matured, and distributed in commercial centres, there can be no way to determine what quantity of spirits was used in fortication, nor whether the tax was actually paid. A drawback for export would add another incentive to fraud, and still further place the Sweet Wine trade in control of the unscrupulous.

7.—THE QUESTION OF POLICY.

(*a*) The Government cannot in justice seek to collect revenue so as to restrict legitimate industry, nor insist on a law which works such injustice for so small a revenue.

(*b*) The Government does not intend to tax genuine wines, nor does it discriminate intentionally between the classes of still wines, as is shown by the tariff on foreign wines.

(*c*) The Government does intend to make laws for the benefit of all industries recognized as legitimate, and to correct all unintentional acts of injustice, so far as legislation is concerned.

(*d*) Denial of the relief asked for will in effect prohibit exportation of sweet wines, discriminate against domestic products [which are taxed for spirits in fortification in favor of foreign products, not taxed for such spirits], force unnecessarily distillation at a loss to producers, and create uncalled for competition with other spirit interests to the injury of all. The loss to industry will be large, the gain of the Government too small to consider seriously. By forcing distillation, the placing in the market of beverages light in alcohol will be discouraged, and the production and sale of distilled liquors encouraged beyond ordinary commercial demands, thereby affecting temperate habits.

8.—SPECIAL BONDED WAREHOUSES FOR FRUIT BRANDY.

(*a*) Grape spirits may be placed in special bonded warehouses. This amendment extends the same privilege to apple and peach brandy, the reasons for the same being similar to those which caused the enactment of the law relating to grape spirits.

(*b*) This extension of bonding privileges will remove incentives to fraud, and thereby increase the public revenue.

GENERALIZATION.

In view of the facts stated in the foregoing brief notice of the question at issue, it would seem that all classes and conditions of people in the United States, and especially all American agriculturists, are deeply interested in the decision of Congress in regard to the bills now before it. Sweet Wines find their way into every drug store and nearly all grocery stores, and from thence into almost every household in the land. There are few things in commerce that have such a direct bearing on public health and morals. The well-being, the physical and moral development of our people, will be influenced very largely by the expedition of this product of our farms into the channels of domestic economy. How important is it, then, that every safeguard should be provided against tampering with such sacred interests by mercenary and greedy interlopers, seeking to pile up private fortunes at the expense of the health and morals of the people, which constitute the very life-blood of the nation! No question ever protrudes itself into the halls of legislation more important than the protection of food and beverage against adulteration and fraud. Such considerations tower above party ties and State lines, and reach up into the realms of pure statesmanship, where every legislator may properly act on his conscience and highest judgment as a citizen of a great nation charged with the duty of protecting and defending its greatest and most vital interests.

THE SCALE.

[Riverside Press and Horticulturist.]

At a meeting of the San Diego Historical Society, the following interesting letter was read from the New Zealand entomologist, who named the cottony cushion scale :

THE MUSEUM, WELLINGTON, (New Zealand), March 5, 1887.

DEAR SIR : I much regret that I can give you no more certain information as to the original home of the Icerya Perchasi than this : That New Zealand is certainly not its home, and that Australia probably is. It came to New Zealand about the year 1877, and first appeared in Auckland upon a hedge of prickly or (kangaroo) acacia, an Australian plant. When I first saw it there, in 1878, it had almost destroyed the hedge (which was about twenty yards long) and the insects were clustered in hundreds on the dying plants. I did not know then as much as I do now about coccids ; but I advised the owner strongly to burn every stick of the hedge. He neglected my advice. At that first visit Icerya was on that hedge alone, as far as I could see. I visited Auckland again four years afterwads, or so, and Icerya had then spread over a large area about the city and numbers of different plants. Since then it has invaded, with terrible effect, a great portion of the North Island of New Zealand, and the warmer parts of the South. It is now firmly established, and the supine carelessness of the people allow it to ravage whole districts at will. But it is certainly, as the above shows, not a native of New Zealand.

I understand that it appeared at the Cape of Good Hope some years ago (long before it was established in this country), and the people there called it the "Australian Bug." As the course of traffic by Ira is usually from the Cape to Australia, I suppose it must have been taken there by people going to the diamond fields from Sydney or Melbourne.

In 1880 (I think) I was on a visit to Melbourne and took a run for a day up to Ballarat. There I saw, on various trees in a garden, numbers of coccids, which, I believe, to have been immature icerya. I was not in a position at the time to bring away any specimens, nor even to make more than the most cursory observation. But if these were not Icerya Purchasi, they were something very closely allied to it.

On the whole from the above facts, I feel convinced that Australia is the country which has made to us and to you a present of this remarkably objectionable pest.

I am bound to say that I have never seen the Icerya Sacchari of Mauritius alive. I have received specimens in spirits, and they do not agree with Icerya Purchasi. But might there not be two in Mauritius?

If so, the exportation of sugar from that island to Australia, to the Cape, to California and New Zealand, might well account for Icerya Purchasi in all those countries. I have several times tried to obtain some information from Mauritius, but with no effect.

Now, as to natural enemies. As far as our experience goes, Icerya Purchasi has none such in this country. The only coccids which I have found attacked by parasites here are some lecanids (chiefly of my genus tenochiton), one or two diaspids and a dactylopius. Birds do not eat icerya, and, in fact, we have nothing here to check its increase, to my knowledge. Whether the hymenopterous parasites of tenochiton will some day attack icerya cannot now be said ; but everybody will devoutly hope that they may, and soon.

I shall have great pleasure in forwarding to you a copy of a work now in the press on New Zealand coccids, which will be out, I hope, this month. If it were not too impertunate, I would venture to ask you to send me whatever publication of the same kind you could easily let me have from California. I remain yours faithfully,

W. M. MASKELL.

THE GRAPE CROP OF 1887.

[Santa Clara Valley.]

The weather has been remarkably propitious this season for the prosperity of the grape crop, and with the increase in size of the young vines during '86, it is fair to assume that the crop will not aggregate any less than in that year, even more perhaps. It is encouraging to notice the care displayed by a great many in the work of their vineyards in the selections for new plantations and more particularly in the grafting, but of worthless varieties into better ones, generally of much higher quality. This gives indications of a steady progress in our industry, a move forward that is very encouraging and that should be accompanied with another, more important still, in the manufacture of wines. Many projects for the relief of the vine-growers have been agitated in the last few months, all possessing merits, and in every case, reasonably sure to produce some good. But with a negligence as strange as it is unwise, few if any of those plans have been put in operation. Within four months we must be ready to handle a large crop of grapes and what are the facilities at hand. We are all familiar with the difficulties of those who sought a market for their grapes last season and the prospect of this one is a very dismal one, if the same happy-go-lucky style of doing business prevails. It seems obvious to the least intelligent observer, that to wait until August to dispose of grapes is suicidal policy, as many of those who bought last year may not be able to empty their cellars at remunerative prices in time for the next crop. What would be the result of such a condition of things ? Another fact must be taken into consideration, and it is that neither vine-grower or wine-maker can expect to realize a fair price for his wine, if offered for sale before it is fit to consume as long as the only purchasers are the ordinary class of San Francisco dealers. Some one will ask why it is that France, Italy or Spain can dispose of new wines at fair value; that is because they are bought by parties who have traded in those wines for 20 or 30 years past at least, and have had ample proofs of their intrinsic value. Another important reason is that in those countries they do not change their modes of fermentation or wine-making without some very weighty object in view, such as the improving of their wines, they have passed the experimental stage long ago, in fact it might be disastrous to their interest to change their minds. With us, unfortunately, each one is possessed with a mania of his own and resents any advice or admonition. So much for the necessity of adopting more uniform rules in wine-making. But, by all means, the most important improvement to be introduced in our wine-making is the plan of keeping our wines over at least one year longer than it was customary to do heretofore. There has been no difficulty in disposing of sound wine of '85 at good prices during this spring and that because, being fit for immediate use, it has an instrinsic value in any market that can be reached.

Some alarm has been felt on account of the low prices obtained for large quantities of wine recently, but so far as we are able to judge the quality of such wine was mostly of an inferior character and evidently intended as a cheap substitute for the adulterations of eastern wine makers, it is not legitimate trade. Unfortunately for us, the same wine is sent east under the general appellation of California wine and does us incalculable harm. Our aim should be therefore, to cease making anything but sound wines of good quality, and include in our plans, the storage of our crop for 18 months to 2 years. We had occasion heretofore to give the advice to every vine-grower to make some wine, if on a small scale, not only to familiarize himself with the different details of the business, but to obtain correct sample lots of wine that can be used afterwards as proofs of the quality of the produce. While it is time that in many cases, individuals are unable to accomplish all these things, it is none the less possible to effect combinations of capital and knowledge sufficient to turn our valuable grape crop to good account, and retain it here until a fair price is received for it. A very important item of expenditure has also been eliminated by recent trials and it is now understood that our native redwood is used very extensively for cooperage by some of our prominent wine-makers in other parts of the State, and that it has given entire satisfaction when the necessary care has been taken to properly prepare it for use. Thus it is that no more excuses can be found for those who practice the policy of staying at home and trusting to luck for a solution of our present problem.

L. D. COMBE.

CONDENSED MUST.

Concerning the movements and propositions of Dr. Springmühl, whom we have unfortunately been unable to see personally since his return from the various sections of the State, the *Examiner* says:

As is pretty well known by careful readers of the dispatches, Dr. Springmuhl has recently spent some time in Los Angeles and at Fresno, in looking up the wine interests, and in casting about for a location for at least one plant of machinery for making grapes into condensed must, a process of which he is the famous inventor.

An inspection of those localities being made, the doctor visited the vineyards of Sonoma, Napa and Sacramento counties, including the great Vina ranch of Senator Stanford which is just now in charge of the successful vineyardist, H. W. McIntyre.

"I went up there," said Dr. Springmuhl, just before leaving on his return to his home in London, "to see about establishing works for the condensed must process. We have concluded to put one plant in Northern California, and one in the south. J. De Barth Shorb has, by special arrangements with me, arranged to establish works at Los Angeles, and I am to take all the condensed must he can make.

"There may be, eventually, works established at Fresno, too.

"I have met, in the brief week or so I was north, nearly all the vineyardists of that part of the State. I had long talks with them.

THE MACHINERY.

"A plant of machinery for the reduction of grapes in condensed must will be established at one of the three points in Northern California, probably in time for the handling of this year's product. The places we are considering are Senator Stanford's Vina ranch, Natoma in Sacramento county and at the location of the Swiss colony, near Healdsburg.

"Vineyardists at all three points have expressed a willingness to put money in the plant, and I am expecting that they will do so, but if they don't I will put it in myself. The machinery costs about $25,000 and the whole plant about $100,000, and eighty tons of grapes a day can be treated with a force of but five men. On this there would be a profit of from 25 to 33 per cent by exporting to England.

"We would prefer not to build, but only to buy the condensed must; but, as I said, we will put in all the money ourselves if the people at whichever place we select do not do it.

"The condensed must process is a most important consideration in the manufacture of claret intended for export. In England, as elsewhere, light, good clarets are highly prized. I consider the matter more from a scientific standpoint. I introduced the condensed must process in Italy and Spain, and the success there is very great. In Italy from 2,000 to 3,000 tons are produced during the season.

KEPT FRESH AND PURE.

"By this process the condensation, or must, is always kept fresh and pure, and being reduced to one-third its original bulk an immense saving is made in transportation. All you have to do is to add two-thirds more of water, and you have fresh grape juice."

Dr. Springmuhl exhibited to the *Examiner's* representative a small jar of the condensed must. It was of a dark golden color, looking much like thick, rich honey. Although made three years ago, it seemed just as fresh as though just manufactured.

"The skins are also preserved," said the doctor, "by pressing them and mixing them with the condensed grape juice. This process has been used for some years now in the southern European countries. The must has been sent hitherto to France and made into French wines and brandies, but lately it is being sent to England. The must on its arrival is taken and fermented at once. The great advantage of the must is in the reduced transportation and the entire freedom from export duties.

"I think the condensed must process a great thing for California, especially, because you produce grapes so much cheaper here than we do in Europe.

"I was very much pleased with what I saw in Northern California, and I have no hesitancy in saying that of the two sections of the State I think Northern California far better for wine growing than the south. You can produce light fine wines and clarets in the north, while they are heavy in the south. I should say the north was by all odds the best, in point of climate and other essentials.

"I am going home to have a machine made, and will bring it over as soon as possible. I may have more than one made, and I will return in September or October, if they can be completed in time, as I hope they can. I would prefer to make the machines in San Francisco, and I think after I get the first one or two to going here I may arrange to do so, or at any rate to manufacture them in Chicago.

GOOD WINE IN DEMAND.

"As to a market and a demand for California wines, there is no trouble about that. Why, if you made all your grapes into as good clarets and light wines as some I have seen here, London alone would take, in a single day, all you have got. The whole crop of California would be little compared with the demand.

"In Spain the condensed must plants of machinery are portable and suited to the grade of a railroad track, so that they may be moved about at will."

Speaking of the machinery used in condensing the must, the doctor said:

"The vacuum pump for the condensing apparatus corresponds to the "vacuum pan" of the sugar refineries, with such modifications as the special object demands. As in sugar-boiling, the evaporation is divided into two separate stages: a preliminary one, in which the fresh must is deprived of about half its water, after having undergone a preliminary warming up in an open vat.

The half-finished must is then transferred to a second vacuum pan in which the exhaustion is not only kept at the highest possible point, but the operation is aided by means of a revolving stirrer.

It is by this means possible to reduce the must by a temperature not exceeding 104 degrees Fahrenheit.

"For the preservation of the pomace of black grapes intended for the making of red wines," said the doctor, "the latter is pressed very dry and then, if possible, dried a little in the air, it is then put in casks and thoroughly mixed with the concentrated sirup or must.

THE AIR PUMP.

"The air pump must be of the best construction, and large enough to be thoroughly effective."

Dr. Springmuhl several years ago issued a work on the wines of Southern Europe, which has ever since ranked as an authority. He will now issue a volume on California viticulture and will illustrate it by numerous views of California vineyards, which are to be furnished by a committee of nine men specially delegated to make the collection.

The same committee will make a collection of California wines and forward to Dr. Springmuhl for analysis, the report of which is to appear in the forthcoming volume.

PLANTING THE VINE.

[Rural Californian.]

When life begins to show itself in deciduous vegetation and trees, and shrubs take on leaf and blossom, the vineyardist may bestir himself, for the season of planting the vine is at hand. Various methods of doing this are in use. In France, a deep furrow is opened with the plow, into which cuttings are dropped so that the tops will rest on the earth turned out. Upon this another furrow is turned, so that the foot of the cutting will be deeply covered. That country has excess of moisture, and a cutting will grow under almost any conditions, but with us more care must be taken. The work must be so done that the foot of the cutting will be firmly imbedded in moist earth. If the planting is too deep, the lower end will decay and the roots will start, if at all, from the second joint. Fourteen inches in very warm land and ten or twelve in clayey loam are safe depths. The planting bar in use is made of a piece of steel one and a quarter inches wide, three-quarters or seven-eighths thick, twenty-one inches long, sharpened to an edge in the width on one end, with two holes six inches apart on the other to receive quarter-inch bolts. This is fastened by the bolts to a handle of Oregon pine, two and a half inches wide, and one and a half thick, dressed square, and receiving eight or nine inches of the steel bar on each side, and leaving twelve or thirteen of the bar projecting below the wood. The handle above the top of the steel is about four feet long and dressed round. A half inch hole is bored through the width of the wood just above the lower bolt, and a round bit of iron, ten inches long, is firmly fixed upon which to place the foot. With this implement excellent and very fast work may be done. A coal oil can with a wire bail is useful to carry a supply of cuttings. With the bar the planter makes a hole in the cross, places therein a cutting and passes down the bar about one inch from the cutting, and presses the earth thereto until it is perfectly firm, the second hole being carefully filled. This is the usual way of doing the work. A better and surer one is the following: Let one man make the holes, a boy coming after place a cutting in each, a man or boy with a barrel of water on a sled drive between the rows and pour about one quart of water into each hole, so as to carry in as much earth as possible. The ground may be levelled and the holes filled at leisure, to prevent baking. Mr. Rose has recommended filling with fine, dry sand instead of water, and his method would answer quite as well. Good planting is also done with a long, narrow spade, opening the earth with the blade to a depth of twelve or fourteen inches, pressing to the front side so as to leave an opening behind, dropping in the cutting and allowing the earth to close in on the same on the withdrawal of the blade.

The planting done, the tops should be cut off one or two buds above the surface. The ground must be nicely cultivated, all weeds suppressed and the earth stirred with the hoe about the young plants. Suckers coming from underground buds should be removed. Staking is not necessary the first year, if at all.

GRAFTING THE VINE.

It is sometimes desirable to change the variety of the grape, and this may be done with very little loss of time, and with great gain in profit. Vines are often barren, or the fruit ripens unseasonably, or a variety is not desirable for the purpose intended, in any of which cases it is easy to have what is wanted by grafting. Perhaps you have some precious and costly variety and wish to multiply cuttings rapidly; you can do this by cutting off a few old stocks and inserting scions of the kind desired. This is done with so much ease and certainty, and the results are so beneficent, that the wonder is that our people, who are so progressive in everything else, have not more generally grafted the vine. Besides the time is not distant when the phylloxera will make its appearance amongst us and we shall need to re-stock our vineyards with resistant vines. It is a great mistake to suppose that Mission vines are resistant to this pest. The roots of both Mission and Muscat are so soft and porous that they will be the first attacked. The root wood of Malvoisie is hard and will be apt to resist the attacks of the insects much longer than any vine we have. The only safety, however, is in providing ourselves with an ample stock of resistant cuttings by graft upon some old vines. Californica, the wild vine of our mountain valleys, will probably suit us best. With these we can quincunx our vineyards, graft them with the best varieties when the stocks are one or two years old, and in the spring of the second or third dig up and make firewood of the old vines. Then we can laugh at phylloxera and have young vineyards of imported varieties. "In time of peace prepare for war."

Grafting is done by removing the earth around the old stocks down to the main lateral roots, cutting or sawing off the same about two inches above these roots, splitting the stumps left in the ground and inserting in this cleft a scion of the desired kind; the split should be on one side of large stocks, if but one scion is to be used (one is better than two) and held open with a small wedge. Into this opening the scion is inserted about two inches of its length and so that its inner bark or cambium will correspond exactly with that of the stock. Herein is the chief secret of success. A cutting is used long enough to leave one bud above ground and beveled or cut thinnest on the inner side, so that when it is inserted in the split and the wedge is removed the edges of the stock will close upon it and hold it firmly in place. If this is well done no tying is needed. The sawed or cut surface and all cracks should be covered with a mastic made of clay and fresh cow manure, tempered with water. The earth is then filled in, great care being used not to distub the graft. A three-foot stake should be set in at each vine for tying up the rampant growing young shoot. The writer has had Mataro grafts on one-year-old Muscat stocks make a growth of ten feet in length, a diameter of one inch and bear ten pounds of grapes the year of grafting. The second year they bore a full crop—more to the vine and acre than six-year-old Missions or Malvoisie.

The time of grafting is a matter of importance. The stock should be more developed than the scion to furnish an ample supply of sap. If these conditions are reversed the graft will put forth its leaves and dry out for want of nourishment. "The horse will die while the grass is growing." B. H. TWOMBLY.

TUSTIN, March 14, 1887.

THE

PURE WINE LAW,

— WITH —

Comments and Explanations.

NOTE.

To the Board of State
Viticultural Commissioners:

GENTLEMEN—To answer at once the numerous inquiries put to us concerning the Pure Wine Law of California, now going into effect; I have thought proper to place in the hands of every viticulturist, wine-maker and dealer, the followiug copy of the law with the appended explanations and instructions.

Yours Very Respectfully,
JOHN H. WHEELER,
Chief Executive Viticultural Officer.
SAN FRANCISCO, May 25th, 1887.

Substitute for Senate Bill, No. 219, Adopted in Senate February 17, 1887—An Act to Prohibit the Sophistication and Adulteration of Wine, and to Prevent Fraud in the Manufacture and Sale Thereof.

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. For the purposes of this Act, pure wine shall be defined as follows: The juice of grapes fermented, preserved or fortified for use as a beverage, or as a medicine, by methods recognized as legitimate according to the provisions of this Act; unfermented grape juice, containing no addition of distilled spirits, may be denominated according to popular custom and demand as wine only when described as "unfermented wine," and shall be deemed pure only when preserved for use as a beverage or medicine, in accordonce with the provisions of this Act. Pure grape must shall be deemed to be the juice of grapes, only, in its natural condition, whether expressed or mingled with the pure skins, seeds, or stems of grapes. Pure condensed grape must shall be deemed to be pure grape must from which water has been extracted by evaporation for purposes of preservation or increase of saccharine strength. Dry wine is that produced by complete fermentation of saccharine contained in must. Sweet wine is that which contains more or less saccharine appreciable to the taste. Fortified wine is that wine to which distilled spirits have been added to increase alcoholic strength, for purposes of preservation only, and shall be held to be pure, when the spirits so used are the product of the grape only. Pure champagne or sparkling wine is that which contains carbonic acid gas or effervescence produced only by natural fermentation of saccharine matter of musts, or partially fermented wine in bottle.

SEC. 2. In the fermentation, preservation, and fortification of pure wine, it shall be specifically understood that no materials shall be used intended for substitutes for grapes, or any part of grapes; no coloring matters shall be added which are not the pure products of grapes during fermentation, or by extraction from grapes with the aid of pure grape spirits; no foreign fruit juices, and no spirits imported from foreign countries, whether pure or compounded with fruit juices, or other material not the pure product of grapes, shall be used for any purpose; no aniline dyes, salicylic acid, glycerine, alum, or other chemical antiseptics, or ingredients recognized as deleterions to the health of consumers, or as injurious to the reputation of wine as pure, shall be permitted; and no distilled spirits shall be added except for the sole purpose of preservation, and without the intention of enabling trade to lengthen the volume of fortified dry wine by the addition of water, or other wine weaker in alcoholic strength.

SEC. 3. In the fermentation and preservation of pure wine, and during the operations of fining or clarifying, removing defects, improving qualities, blending and maturing, no methods shall be employed which essentially conflict with the provisions of the preceding sections of this Act, and no materials shall be used for the promotion of fementation, or the assistance of any of the operations of wine treatment which are injurious to the consumer or the reputation of wine as pure; *provided*, that it shall be expressly understood that the practices of using pure tannin in small quantities, leaven to excite fermentation only, and not to increase the material for the production of alcohol; water before or during, but not after fermentation, for the purpose of decreasing the saccharine strength of musts to enable perfect fermentation; and the natural products of grapes in the pure forms as they exist in pure grape musts, skins, and seeds; sulphur fumes, to disinfect cooperage and prevent disease in wine; and pure gelatinous and albuminous substances, for the sole purpose of assisting fining or clarification, shall be specifically permitted in the operations hereinbefore mentioned, in accordance with recognized legitimate custom.

SEC. 4. It shall be unlawful to sell, or expose, or offer to sell under the name of wine, or grape musts, or condensed musts, or under any names designating pure wines, or pure musts as hereinbefore classified and defined, or branded, labeled, or designated in any way as wine or musts, or by any name popularly and commercially used as a designation of wine produced from grapes, such as Claret, Burgundy, Hock, Sauterne, Port, Sherry, Madeira, and Angelica, any substance or compound, except pure wine, or pure grape must, or pure grape condensed must, as defined by this Act, and produced in accordance with and subject to restrictions herein set forth; *provided*, that this Act shall not apply to liquors imported from any foreign country, which are taxed upon entry by custom laws in accordance with a specific duty and contained in original packages or vessels and prominently branded, labeled, or marked so as to be known to all persons as foreign products, excepting, however, when such liquors shall contain adulterations of artiffcial coloring matters, antiseptic chemicals, or other ingredienta known to be deleterious to the health of consumers; *and provided further*, that this Act shall not apply to currant wine, gooseberry wine, or wines made from other fruits than the grape, which are labeled or branded and designated and sold, or offered or exposed for sale under names, including the word wine, but also expressing distinctly the fruit from which they are are made, as gooseberry wine, elderberry wine, or the like. Any violation of any of the provisions of any of the preceding sections shall be a misdemeanor.

SEC. 5. Exceptions from the provisions of this Act shall be made in the case of pure champagne, or sparkling wine, so far as to permit the use of chrystalized sugar in sweetening the same according to usual custom, but in no other respect.

SEC. 6. In all sales and contracts for sale, production, or delivery of products defined in this Act, such products, in the absence of a written agreement to the contrary, shall be presumed to be pure as herein defined, and such sale or contracts shall, in the absence of such an agreement, be void, if it be established that the products so sold or contracted for were not pure as herein defined. And in such case the concealment of the true character of such products shall constitute actual fraud for which damages may be recovered, and in a judgment for damages, reasonable attorney fees to be fixed by the Court, shall be taxed as costs.

SEC. 7. The Controller of the State shall cause to have engraved plates, from which shall be printed labels which shall set forth that the wine covered by such labels is pure California wine in accordance with this Act, and leaving blanks for the name of the particular kind of wine, and the name or names of the seller of the wine and place of business. These labels shall be of two forms or shapes, one a narrow strip to cap over the corks of bottles, the other, round or square, and sufficiently large, say three inches square, to cover the bungs of packages in which wine is sold. Such labels shall be furnished upon proper application to actual residents, and to be used in this State only, and only to those who are known to be growers, manufacturers, traders, or handlers, or bottlers of California wine, and such parties will be required to file a sworn statement with said Controller, setting forth that his or their written application for such labels is and will be for his or their sole use and benefit, and that he or they will not give, sell, or loan such label to any other person or persons whomsoever. Such labels shall be paid for at the same rate and prices as shall be found to be the actual cost price to the State, and shall be supplied from time to time as needed upon the written application of such parties as are before mentioned. Such label when affixed to bottle or wine package shall be so affixed, that by drawing the cork from bottle or opening the bung of package, such label shall be destroyed by such opening; and before affixing such labels all blanks shall be filled out by stating the variety or kind of wine that is contained in such bottle or package, and also by the name or names and post office address of such grower, manufacturer, trader, handler, or bottler of such wine.

SEC. 8. It is desired and required that all and every grower, manufacturer, trader, handler, or bottler of California wine, when selling or putting up for sale any California wine, or when shipping California wine to parties to whom sold, shall plainly stencil, brand, or have printed where it will be easily seen, first, "Pure California Wine," and secondly, his name, or the firm's name, as the case may be, both on label of bottle or package in which wine is sold and sent, or he may, in lieu thereof, if he so prefers and elects, affix the label which has been provided for in Section 7. It shall be unlawful to affix any such stamp or label as above provided to any vessel containing any substance other than pure wine, as herein defined, or to prepare or use on any vessel containing any liquid any imitation or counterfeit of such stamp, or any paper in the similitude or resemblance thereof, or any paper of such form and appearance as to be calculated to mislead or deceive any unwary person, or cause him to suppose the contents of such vessel to be pure wine. It shall be unlawful for any person or persons, other than the ones for whom such stamps were procured, to in any way use such stamps, or to have possession of the same. A violation of any of the provisions of this section shall be a misdemeanor, and punishable by fine of not less than fifty dollars and not more than five hundred dollars, or by imprisonment in the county jail for a term of not exceeding ninety days, or by both such fine and imprisonment. All moneys collected by virtue of prosecutions had against persons violating any provisions of this or any preceeding sections shall go one half to the informer and one half to the District Attorney prosecuting the same.

SEC. 9. It shall be the duty of the Controller to keep an account, in a book to be kept for that purpose, or all stamps, the number, design, time when, and to whom furnished. The parties procuring the same are hereby required to return to the Controller semi-annual statements under oath, setting forth the number used, and how many remains on hand. Any violation of this section, by the person receiving such stamds, is a misdemeanor.

SEC. 10. It shall be the duty of any and all persons receiving such stamps to use the same only in their business, in no manner or in nowise to allow the same to be disposed of except in the manner authorized by this Act; to not allow the same to be used by any other person or persons. It shall be their duty to become satisfied that the wine contained in the barrels or bottles is all that said label imports as defined by this Act. That they will use the said siamps only in this State, and shall not permit the same to part from their possession, except with the barrels, packages, or bottles upon which they are placed as provided by this Act. A violation of any of the provisions of this section is hereby made a felony.

SEC. 12. This Act shall take effect and be in force ninety days after its passage.

This law goes into effect and become operative on June 5th, 1887.

In section ten of the above law will be found the following:

"It shall be their (those employing the stamp) duty to become satisfied that the wine contained in the barrels or bottles is all that said label imports."

As there are many dealers who wilt employ the stamp on wines, bottled or packed by them in small packages; which wine they receive from others in larger packages, coming to them covered by the State stamp of purity, the question arises as to the liability of such bottler and what would constitute in the eye of the law, the "duty" of the said bottler in determining that the wine employed was true to label.

The answer to this question has been kindly furnished to me as follows, by Attorney General Johnson:

SACRAMENTO, May 19th, 1887.

J. H. WHEELER ESQ.,
204 Montgomery St., San Francisco.

Dear Sir:—Answering your inquiries as to the Act to prohibit the sophistication and adulteration of wine, &c., approved March 7th, 1887.

You make a hypothetical case for my opinion: "A buys an adulterated wine from B, with a pure wine stamp over the bung. A bottles the wine and puts the pure wine stamp on the bottle, believing the wine to be pure. Subsequently the wine is found to be not pure. Is A then liable?"

It won't do for A to trust implicitly B or his stamps. The Act requires some diligence on A's part. It says that it shall be

his duty to become satisfied that the wine contained in the barrels or bottles, is all that said label imports as defined by this Act.

A therefore must not be guilty of criminal negligence. That would be as bad as if A's intent was to palm off adulterated or impure wine.

But if A makes a reasonable effort in good faith to satisfy himself that the wine is all that the label imports and is satisfied after using due diligence he would not be guilty of a misdemeanor, if he was mistaken or imposed upon. It is the good faith of A and the use of due ditigence and scrutiny in his investigation, which the law requires. I do not think an analytic test is necessarily required to be applied by A. That might not at all times be practicable. But he must recollect that there is a duty cast upon him to satisfy himself by available and reasonably reliable means that the wine is what the label imports, and he must be satisfied.

An analysis however would be the most satisfactory way to test the wine.

Very Truly Yours,
G. A. Johnson,
Attorney General.

Other than this the law seems to be sufficiently clear to need no further explanation. Particular attention is called to Section 6, which renders the sale of anything purporting to be wine—in the absence of a written agreement to the contrary—void and the vender liable for damages if it be not pure as speeified in the law. According to the framers of this law, this whether it bears the pure wine stamp or not, is the effective clause, and coupling with it the liberal recompense to the informer and the prosecuting attorney, we have incentive sufficient to greatly facilitate its enforcement.

WINE ANALYSIS.

Whenever it becomes necessary or desirable that a wine be analyzed for the benefit of a dealer, vine grower, or any person whatsoever, pursuant to the enforcement of the above law, a sample of the same may be sent to the Secretary of the Viticultural Commission, by whom an analysis will be procured from the State Analyst and a ready report made as to its purity. The machinery for this latter work was obtained in an Act passed by the State Legislature entitled:

An Act to Provide for Analyzing the Minerals, Mineral Waters and other Liquids, and the Medicinal Plants of the State of California, and Foods and Drugs, to Prevent Adulteration of the same. Approved March 9th 1885.

This law provides that the Governor of the State shall appoint one of the Professors of the University of California, as State Analyst, whose duty it shall be to analyze all articles of food, drugs, medicines, medicinal plants, &c., manufactured, sold or used in this State, when the same shall be properly submitted to him. The law then prescribes the methods by which the samples of various articles shall be obtained and submitted for analysis, and specifies that the Board of State Viticultural Commissioners shall have the privilege of submitting to the State Analyst samples of wines, grape spirits or liquids or compounds in imitation thereof for analyses, as follows:

Any person desiring an analysis of such products may submit the same to the Secretary of the State Viticultural Commissioners, who will transmit them to the State Analyst in the manner prescribed. The analyses shall be made and the certificate of the same shall be forwarded to the Secretary of the Viticultural Commission. This certificate, as the law reads, shall be held in all courts of this State, as prima facie evidence of the properties of the articles analyzed by him.

Thus it may be seen that there lies within the reach of every wine-maker or dealer, an easy means of obtaining without expense uncontravertible evidence wherever fraud is supposed.

Unfortunately, this law appropriated no money for the carrying on of the work required. Realizing the importance of such a bureau and its maintenance, however, the Viticultural Commission has shared its endowment with the State Analyst and will continue to do so in order to lend all of the aid they can to the support of the law. Pursuant to the requirements of the Act, W. B. Rising, Professor of Chemistry at the State University was duly appointed State Analyst. An assistant has been employed, and he is now ready for and engaged in the examination of wines, the purity of which can be quickly determined and the report made available in a few days after delivery of the samples to our Secretary.

Concerning the expense of maintaining the State Analyst's Bureau, it is hoped that the Board of Regents of the University, in their manifest desire to aid the cause of viticulture, and in view of the liberal endowment made them in the last Legislature, will come to the assistance of the Commission in the support of the analytical work.

THE STAMPS.

Section seven provides that on application the necessary stamps shall be furnished by the controller.

Here again, the Legislature made no appropriation with which to purchase the plates necessary for printing the stamps and the liberality of the Viticultural Commission is drawn upon, they having consented to supply the first cost.

One hundred thousand stamps have already been printed by the State Controller and will be ready for distribution when needed. Their cost will be $1.50 pr. M. with expense of delivery added. The stamp for bottles may be easily affixed thereto, that placed over the bung of a barrel will need the protection of a piece of tin such as is ordinarily affixed to the bung of a barrel previous to shipping.

The following committee of vine growers to see to the enforcement of the law has been appointed by H. W. McIntyre, President of the State Vine Growers' and Wine Makers' Association. Hon. M. M. Estee, Napa; J. B. J. Portal, San Jose; Capt. Chamon de St. Hubert, Fresno; J. H. Drummond, Glen Ellen; H. A. Pellet, St. Helena; Jacob Schramm, Calistoga; H. A. Meriam, Los Gatos; B. H. Upham, San Francisco; A. Erz, Anaheim; Julius P. Smith, Livermore. To these others will be added soon. This committee will proceed to collect miscellaneous samples of wine found throughout the city and state, which, if proving spurious, will be turned over to the district attorney and the case submitted to the courts.

The pure wine Act, at the time of its passage by the last Legislature was the subject of considerable criticism and dispute.

It was discussed at great length before the public, but, having ended in adoption and approval, it is to be hoped that the little inconvenience it may make a few will be amply compensated for by its good effect on the general industry. If it opens the way to any fraud we may be sure this clause will be used by the enemy; to counteract the effect of which every good feature of the law must be brought into requisition.

Many demanded the use of certain materials in preparing wine, which materials to them seemed harmless, but which had to be denied in order to exclude other more damaging adulterants. For example, we may well afford for the market within our own State to abandon the use of ordinary grain spirits in fortifying wines if by the law we are able to stop the extensive and unhealthful practice of stretching produced by the same means.

Nor must we forget the effect of this Act in enlarging the demand for grape spirits, and thereby causing the distillation of poor wines, which would otherwise be fortified by neutral spirits, and usurp the place of better wines. By the Act a native spirit is substituted for an imported one.

The healthful effect of our wines and a consequent increased local consumption, will be greatly promoted by substitution of grape spirits for cheaper poisonous spirits.

Several have already indicated their intention of using the State stamp on small packages. On bottles, particularly, will the practice be adopted, and here it will be of use. When the public demand the pure wine stamp on the bottles, as they will do when knowing its value and finding some merchants who employ it; the trade will be forced to supply them pure wine, and that under a California label. A large portion of the native wine sold in bottles, goes today to the public with a ficticious label of foreign import. The presence of the stamp will bring to public recognition the name and trade mark of California producers, where heretofore the bottle has been branded "Chateaux La Rose," "Chateaux Margaux" or "St. Julien."

Whether the use of the stamp on large packages going out of the State will be harmful or otherwise,, the use of the same on bottled wines must certainly result in good.

It has been suggested that the Controller's list of those dealers making application for the stamp will prove a valuable directory for the use of purchasers. It is to be hoped it may.

Dealers have now had ample time for working off their suspicious products, and every opportunity has been given those, who—perhaps with honest motives at first—have been forced into the use of cheapening processes by harmful competition, to start anew on a fair, square basis with an easy redress from others competeing by dishonest means.

Whatever effect this law may have, it will aid in forming a standard of excellence founded on quality and not alone on price. The latter has proved the ruinous measure by which our wines have been guaged and marketed; a measure by which they have been caused to degenerate rather than advance. Good wine continues to improve and will pay to keep. Poor wine will rapidly deteriorate, and if not allowed to be drugged, must go either to the distillery or be made into vinegar.

If this law becomes effective, which depends mainly on the patronage of the wine-drinking public, it will double the California market for good wine. Its success will send the poor wine to the distillery, the sale of which has dragged down the price of the better product to ruinous figures; figures which preclude the possibility of marketing any choicer grades for the general public

HOW TO AVOID FROST BY PRUNING.

Application has been made to Chief Executive Officer, J. H. Wheeler, for information as to the best method of escaping frost, in answer to which we find in the Commission letter book, the following:

Office of the Board of
State Viticultural Commissioners,
San Francisco, May 19th, 1887.

H. F. Hubley, Colfax:

Dear Sir:—I hope in a future report to treat of frost in detail, and the best means of ameliorating its effect. In the meantime the following may serve as a grain of assurance and consolation. Where already employed I have found this method successful.

In the regular winter pruning leave as many long canes (untrimmed) as you desire spurs. Tie these up to the stake to avoid interferenee in cultivating. On the approach of warm weather the terminal buds will put forth, and those near the base of the cane remain dormant.

Prune these long canes to short spurs about the last of April, and in three weeks the dormant buds of the short spur will be out with a "show" of fruit—not, however, (as you observe) till all danger of frost is over. By this treatment, the grapes ripen a little later but early enough in interior sections.

To meet an objection which naturally arises, viz., that this sudden checking of the growth in seasons of no frost produces a lasting evil effect on the vitality of the plant, I should counsel the pruning to short spurs of one-half of the canes, such, that in the event of there being no frost, the growing shoots on the short spurs will prevent a complete shock at time of pruning off the long canes.

Then, too, if the frost appears, the crop may be adjusted to the strength of the vine, the length of the season, etc., by leaving more or less buds on the short spur formed the last of April. The cost of this second pruning is of little importance—one man pruning and gathering the brush for four to five thousand vines in a single day. The labor consists simply in cutting off the canes and gathering them, the two operations being performed at once.

Yours very respectfully,
J. H. Wheeler.

TROUBLE IN GERMANY.

Washington, May 14.—Commercial Agent Smith reports from Mayence, that Perenospora, which is a pest as rapacious as phylloxera, has made its appearance in the vineyards of Germany, threatening to accomplish on the Moselle and Rhine, what phylloxera has failed to effect—the destruction of the vineyards on the banks of these rivers—and vine dressers are filled with alarm for the future. The Chamber of Commerce of Goblenz, has called the attention of the Government at Berlin to this pest, and asks that the remedy adopted in America of burning the leaves upon which the insect has fixed its seat, be employed by the police.

John H. Wheeler, the Chief Executive Officer of the State Viticultural Board, said yesterday that he thought this alone would be worth a good deal to California wine-growers, as it would call the attention of all foreign wine-men to the excellence of the wines produced here.

THE SAN FRANCISCO MERCHANT

ISSUED FORTNIGHTLY ON FRIDAY MORNING BY
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CHARLES R. BUCKLAND, - - - Editor.
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FRIDAY..... MAY 27, 1887

CALIFORNIA WINES.

The benefit of getting out of old ruts is shown by the republication in the New York papers of the *Alta's* notice of the prominence given to California wines by the Palace Hotel, which was followed immediately by inquiries sent here from leading New York hotels for the Palace wine list and information as to the source of supply of its wines from first hands. It is also a gratification to know that the consumption of these noticed wines at the Palace has increased 200 per cent. since they were listed in the place of honor.

There is no end to the demand that can be created for our pure wines if we give them the consideration which is their due. Abstract disquisitions are worthless. What people need is one concrete illustration as the *Alta* has given in this case.—*Alta.*

[If the Palace would reduce its price list about 50 per cent., and not charge French wine prices for California wines, then their consumption would increase another 200 per cent. and another 200 per cent. on top of that. What injures the business is the outrageous price charged at such places as the Palace for California wines.—EDITOR MERCHANT.]

In Madrid (Spain) the civic authority now publishes the names of wine dealers on whose premises wine is found that contains substances that are hurtful to health.

THE EFFECT OF THE FROST.

The more we have heard concerning the effect of the frost at the beginning of this month, the more are we inclined to think that the damage done by the untimely visitor has been under-estimated. The loss in Napa County will amount to fully one-third of the whole grape crop. In Sonoma county there will be a loss of one-fourth. In Placer and Tulare counties the loss has been very heavy. Near Sacramento and Stockton the damage is scattered about in an almost unaccountable manner. In Alameda county the damage is slight and chiefly confined to the low lands at Pleasanton. In Santa Clara county the vineyards on the low lands have suffered.

The frost seems to have been rather a peculiar one. On the first morning, vineyards that were smoked escaped all damage. On the second morning, the frost was hardly expected and the fires were generally allowed to go down. But later, about seven o'clock in the morning, a cold breeze sprang up, which lowered the temperature suddenly, and the damage was done between seven and nine o'clock. Similar reports, showing that the foregoing was the case, have been received from different sections.

The proportion of losses that we have given above are from present indications. But it must be remembered that all danger has not yet passed. One gentleman writes that he will not be surprised if the loss in Napa county amounts to one-half of the grape crop before the vintage. It must be remembered that where vines have been only partially frosted, and the clusters appear to be uninjured, they are subject to coulure at the time of blossoming, which is now at hand. It will probably be found, later in the season, that the berries drop off to a great extent, and the bunches will be very straggly. This was the case a couple of years ago, in a somewhat similar season, when the vintage was reduced fully one-half. The cool weather too, that has been recently experienced, is not favoring the vintage in the bay counties.

Taking all things into consideration, we do not look for a larger yield of wine this year than we had last year. We certainly do not think the amount will exceed 20,000,000 gallons as compared with 18,500,000 gallons in 1886. Our estimates have invariably been correct in the past, and we think that we are safe in our estimate of the coming vintage. Holders of wines should not be too ready to sell. The wine that they hold is the best ever produced in the State. It should be remembered also that of the new vines that are coming into bearing, here is but a small proportion of wine grapes, most of them being vines that produce table or raisin grapes. There will also be a certain quantity of condensed must manufactured this season which will tend to relieve the market. The export trade continues to be even more satisfactory than we had anticipated. Notwithstanding the high overland freight rates that rule last month, there were shipped East by rail, 445,112 gallons of wine, and 25,000 gallons of brandy. The total shipments of last month by all routes amounted to more than 600,000 gallons. This month the exports will probably be still larger. Knowing well how small is the supply of marketable wines, and considering the superior quality of the last vintage, and the assured shortage during the coming vintage, we feel confident that wine makers will realize prices that they little anticipated a few weeks ago.

FALSE CHINCH BUGS.

The insect, which is a small grayish brown bug, feeding on the foliage of the grape vine, has made its appearance in several districts of the State. When disturbed, the false chinch bug quickly drops to the ground and hides beneath particles of earth. In fact, the surface earth sometimes becomes so filled with them as to appear alarming to the proprietor. To destroy them this peculiarity may be made available by putting some fine straw about the base of the vine, into which they will seek hiding places. The straw may be afterward raked up and burned.

To otherwise stop their damage to the foliage the vine may be sprayed with a solution of 1 lb. paris green to 150 or 180 gals. water. This applied to the vine at or before the time of blossoming will not contaminate the fruit. If done later, the fruit, to avoid any danger, may be removed and destroyed.

Their appearance in former years has never resulted in serious damage as they have been found only on a few vines in spots from which they have spread but little.

HEAVY BEARERS.

The experience of the past season has shown that amongst our heaviest bearers may be classed the Sauvignon Vert and Colombar, which, in some instances, have yielded more than ten tons to the acre, bringing very good prices for the grapes. As a rule, a very heavy yield affects the quality of the grapes, but with the varieties mentioned this seems not to have been the case, and the excess of quantity has far more than compensated for any loss in quality. These varieties always bring good prices and may be regarded as among the most important white wine varieties in the State. This should not be overlooked by those who are replanting or who are setting out new vineyards.

The French Government has sanctioned a law whereby margarine, oleomargarine and fat for food are not allowed to be sold under the name of butter. Fines from 50 to 3,000 francs and to 6 months imprisonment, also confiscation of the fraudulent article are imposed for these frauds. The Austrian Parliament has an analogous law under advisement. American Viticulture needs the same protection afforded the American pure butter producers.

France produced in 1886 of a total of 1,980,423 hectolitres of alcohol from all kinds of saccharine fermentations, 15,722 hectolitres of alcohol from wine. Great Britain imported from France in 1882, a quantity of Cognac equal to 46,582 hectolitres. The Weinlanbe in which these figures are given does not state the amount of Cognac imported in 1886 in Great Britain.

Hon. H. A. Pellet informs us that he has not agreed to take the management of the Wine Storage Company, and that the daily papers were wrong in stating that he had accepted the position.

Considerable space is given in this issue to the Pure Wine Bill which comes into effect in a few days and is of present importance.

Mr. J. B. J. Portal, Mr. John Bergin and Mr. R. Heney, Jr., have started on a tour of inspection to ascertain what damage has been done by frost. Mr. Portal states that so many contradictory reports have been published that he wishes to verify them. He commences by contradicting the report that no damage was done in Santa Clara county by frost, and states that the vineyards on the low lands suffered considerably.

Heavy shipments of wine were made this week to New York by the ship "Reuce" amounting in all to 91,000 gallons. The exports for this month will be about the heaviest during the year and will make a total of about 750,000 gallons. This helps to clear the market and make room for last year's wine that is now held by the makers.

Dr. Springmuhl, when on his visit to San Francisco, went to the California Sugar Refinery where he was much pleased and surprised at the machinery he saw in operation there, and its completeness. He confessed that he had learnt something that would be useful to him in adapting his condensed must machinery.

While the question of storing wines is agitating the minds of wine makers, it might not be amiss for them to communicate with Mr. Tobin, who has very complete and large cellars at the corner of Stockton and O'Farrell Streets. These cellars have been specially fitted for wine storage, and are very centrally located.

We have not yet heard of anything definite being done in regard to the proposed wine storage business in the old refinery building, at the corner of Eighth and Brannan streets. The names of the parties interested have not yet been announced, and no lease of the building has yet been signed.

Healdsburg and Cloverdale seem to have escaped all damage from the frost. Great damage, however, has been done in Chiles and Conn Valleys, Howell Mountain, in Napa Valley from Lodi to Calistoga, below Oakville and near Napa, from Glen Ellen up through Guillicos and Santa Rosa.

An exhibition of pulverizers for mildew treatment has been held at Epernay. There were about fourteen exhibitors of pulverizers with ten exhibitors of tools and machines. The reports of this exhibition will be looked for with interest by vineyardists.

The value of the exports of wines and liquors from the Consular District of Lyons, France, was almost the same during the first four months of this year and last year. The figures were: 1887, 162,462, 20 francs; 1886, 162,589, 65 francs.

We believe that Mr. Merriam of Cupertino sold all his white wine at 30 cents per gallon, and his clarets at 22½ cents per gallon. This is encouraging news for those who have not yet sold.

Mr. W. F. Lawry, of the New Zealand Loan and Mercantile Agency, estimates the surplus of wheat for export in the Australasiam Colonies at 246,000 short tons.

English capitalists have organized in London a Cyprus Wine Company, Limited, to help viticulture in the island of Cyprus.

SOME VINEYARD EXPERIENCE.

[Rural Californian.]

We all learn by the experience of others, and we are always glad to make room in these columns for the *practical* experiences of men who are planting vines and fruit trees. A correspondent of the *Herald* gives his failures and successes in the following letter:

As you take great interest in viticulture, and as the season of planting and grafting is at hand, the results of an extended and costly experience may not be uninteresting to your readers. I say "extended," because for five years I have lived in a vineyard doing every kind of work—planting, suckering, topping, sulphuring, cultivating, gathering and pruning. I say "costly," because I made two magnificent failures before I scored my first moderate success. During my labor I carefully studied the nature and habits of the vine.

The first thing to be considered in planting a vineyard is

A SUITABLE SOIL.

A heavy soil, with a large portion of clay, a rich loam of sand, with a subsoil of clay or vegetable drift, is the true home of raisin grapes, the Muscat and Sultana. Here they will yield great crops of the very finest fruit, with berries and clusters of enormous size. Ten tons to the acre on six-year-old vines, planted eight feet apart each way, is not an uncommon crop. There is no danger of *coulure* or the dropping of the young berries, which is so common with Muscats on a soil of mixed sand and gravel. They will not mature so early on the rich lands as on the gravelly soil, but if left on the vines until by the scale they show about 24 per cent. of sugar, they are the perfection of raisin, distilling or table grapes. This relates more especially to Muscats. The writer has had Sultanas that reached 33 per cent, of sugar. The experience of our best cultivators, among whom may be mentioned Dr. Congar, of Pasadena, Dr. Stillman, of Lugonia, and Major Merriam, of San Marcos, is that raisin grapes will not continue to yield paying crops on a soil composed mainly of sand and gravel, or what the French call *graves*.

Where the raisin grape will not thrive, there is the true home of the wine grape. That fine old gentleman, D. B. Wilson, once said to the writer: "Your wine must taste of the rock and not of the mud." The best wines in the world are made in the Medoc, a country as like that between Santa Monica and the Salt works as one country can be like another. The vineyards are planted on the east slopes of the sand dunes, to shelter them from the raw winds of the Atlantic, and are constantly subjected to fogs and the chilling air of the ocean, yet there are produced, in a soil of sand and gravel, with a slight admixture of comminuted ocean shells, vintages that surpass in excellence anything known, and command fabulous prices in the markets of the world. On the *plans* or rich lands adjacent to these, along the Gironde and Garonne, wines greatly inferior are produced even from the same kind of grapes. Consul Newmark, in reporting upon the wines of Cote d'Or, says that those of the mountain and hillsides are vastly superior to those of the adjacent plains. The wines of the Cucamonga vineyard, planted in a soil largely made up of decomposed granite, have long had a reputation for excellence enjoyed by no other locality in Southern California. A grape that, at Florence or Downey, would yield an inferior wine, would at Pasadena, San Gabriel or Azusa, make a very excellent one, while the former places would greatly excel the latter in the production of Muscats and Sultanas. L. J. Rose, in the Los Angeles Viticultural Convention in 1883, said that he had been buying Muscats for twenty years, and that the best he had ever bought came from about Downey, the largest bunches, the largest berries, and that they had plenty of saccharine.

Where the orange thrives and makes the cleanest foliage and the fairest fruit, the finest varieties of wine grapes may safely be planted. Muscats and Sultanas are gross feeders, require plenty of room, and are not particular about the quality of their food, so the quantity be ample. The choice wine grape is a delicate feeder, needing but slight nourishment, but that must be of the best. It will find a congenial soil all along the southern slopes of the Sierra Madre, from Pasadena to San Gorgonio, in a few spots in the Santa Ana valley, with a very large area in San Diego, Ventura and San Bernardino counties. It is not by any means certain that the eastern slopes of the sand dunes, between Santa Monica and the Palos Verdes hills, will not be covered with vineyards of the best Bordeaux varieties. Soil, rather than climate, seems to control in either branch of viticulture.

B. H. TWOMBLY.

Tustin, March 10, 1887.

How The Interstate Law Injures California Industries.

NEW YORK, May 10.—The *Tribune* is responsible for the following: Opinions vary somewhat among dealers and shippers of California products, as to the effect of the Interstate Commerce Act upon their business. A reporter called upon some of the largest houses in this line yesterday, to ascertain their views regarding the workings of the law. It is generally believed the law will work disaster to the native produce business between California and the East, but will not materially affect West bound traffic.

Delafield, of the firm of Coleman & Co., was found in his office on Hudson Street. He expressed the opinion that the law would be injurious, if not disastrous to the business of the firm, as it would practically prevent the shipment of any California product to Eastern markets. "Take, for instance, raisins," he said. "The raisin industry of California is now a flourishing one, but it is still in its infancy. There is a tariff on foreign raisins which enables us to bring our raisins to the East, and sell them to advantage in competition with the foreign article; but under the working of the interstate law, the freight upon raisins from California is so increased as to offset all the advantage the tariff gives us. It has just the same effect that repealing the duty on foreign raisins would have, and the same is true of other California products." Delafield was of the opinion that rates would be reduced soon, though they would not be so low as formerly. "The industries of California are too important to be brushed aside," he said.

The Report of the Fourth Annual State Viticultural Convention is now published and ready for delivery. Single copies are one dollar each, but special rates can be obtained for five copies or more.

TABLE GRAPES AT ORANGE.

I have growing about fifty varieties of table grapes. Some are five and some are six years old. They have produced more or less fruit for the last three years. Some kinds last year made too much wood and blighted, that the two preceding years bore well.

Whether long or short pruning is best, has not become in all cases evident. Hence, an opinion as to the comparative value of a particular variety, future experience may modify. In making up an assortment of grapes to be grown for home use, we need to consider flavor, time of ripening, color, vigor of vine, and reliability as to bearing. All these characteristics vary according to climate and soil.

In the light of such experience as has been had, I should, if required to set out in a garden say forty vines, plant on soil like my own, as follows:

Five Muscat of Alexandria, 2 Mission, 4 Rose of Peru, 1 Black Cornechon, 4 Emperor, 1 Calabre, 3 Flame Tokay, 1 Muscat Frontignan, 3 Muscat Hamburg, 1 Verdale, 2 Sultana, 1 Golden Hamburg, 2 Chasselas Thomery, 1 Chasselas Florence, 2 Chasselas Dupont, 1 Muscat Rose, 2 Parsley-leaved Chasselas, 1 Hanstrilta, 2 Black Hamburg, 1 Agawam. This list includes about an equal number of early, medium, and late vines. The Flame Tokay colors up on gravel soil, very finely, as, in fact, other of the above varieties do when allowed to mature. Like the Rose of Peru, it has a certain crisp taste that is agreeable to many, and it does not pall on the taste like some higher flavored sorts. The Tokay is more liable to sunburn than other varieties, but that can be obviated, in the case of a few vines, by a little extra care.

Black Cornechon is a coarse grape, but it is late and unique in appearance. Muscat Hamburg, called in some places Black Muscat, is a fine grape, and is raised for shipment, as are also the Rose of Peru, Emperor, Cornechon and Tokay. The Muscat Hamburg, like the Black Hamburg and Cornechon, appears to be less vigorous than the Muscat of Alexandria, Rose of Peru, Emperor, Chasselas Florence, Muscat Rose, and Flame Tokay, but as prolific as any. Chasselas Thomery is a very high-flavored, prolific wine-colored grape, but feeble grower. Chasselas Dupont and Calabre are fine also, but rather weak growers. These weak growers should be planted in the outside row, and away from the strongest kinds mentioned above. They should also be fertilized and not allowed to bear until five or six years old. Agawam, an American sort, is a beautiful and delightful grape, but the vine is too weak and the crop perhaps uncertain. Trained "en chaintre," and set away from other vines entirely, it would probably be a success. Fine Iona grapes are raised at Westminster, and the Iona is worthy of trial by those who have loam soil, as it is one of the best. A vine that bears an abundance of fine grapes is a good thing to have. But a vine that does not bear, however excellent the variety, is a superfluity and an expense. New-comers should keep this in mind, and go slow about planting many vines of sorts that have not been thoroughly tested. The Parsley-leaved Chasselas is on the whole, perhaps, the most valuable of the early white varieties. It has been grown here for years, and is of good quality, though not best.—J. W. OSBURN, *in Orange Tribune.*

The one topic in viticultural circles, throughout California, has been the death of Charles Kohler, the pioneer wine-maker of the State. Mr. Kohler was in the prime of life, and apparently in the best of health only a few minutes before he was stricken down. In the afternoon, he had been at Napa visiting some of his old vineyard friends. Besides his large wine cellars in San Francisco and in New York, Mr. Kohler was interested in vineyards in five or six different counties of California. He was one of the most upright and honorable men engaged in the business, a fact that is readily testified to by all who ever had business dealings with him. He never broke his word. He was always to the front and ready to assist any movement that would tend to promote viticultural interests. His wines were noted for their purity and it was often said, in answer to a question put by strangers, "Where can I get some good California wines?" "Go to Charles Kohler's." His private life was as pure as his public life, and there has never been such universal and deep regret at the death of any old Californian as there was upon the death of Charles Kohler.—*Wine and Spirit Review.*

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OUR NATIVE WINE SHIPMENTS BY SEA.

PER P. M. S. S. CO'S STEAMER CRANADA, MAY 14th, 1887.

TO NEW YORK.

MARKS.	SHIPPERS.	PACKAGES AND CONTENTS.	GALLONS	VALUE
G A W	C Carpy & Co	6 boxes Wine		$28
H R M	"	25 barrels Wine	1,173	400
"	"	1 half-barrel Brandy	25	50
P A B	"	15 barrels Wine	720	300
"	"	1 half barrel Wine	25	10
E M F	"	24 barrels Wine	1,152	400
"	"	1 barrel Brandy	48	100
F A	E Gamier	30 barrels Wine	1,472	610
A P	"	19 barrels Wine	928	349
"	"	1 barrel Brandy	44	99
B B	"	10 barrels Wine	492	173
P G	"	8 barrels Wine	392	172
"	"	1 half barrel Brandy	23	53
K & F	Kohler & Frohling	190 barrels Wine	9,364	4,860
H C	Leonormand Bros	6 barrels Wine	293	139
A V Co	C Schilling & Co	175 barrels Wine	8,274	3,309
"	"	15 casks Wine	1,639	655
"	"	30 barrels Brandy		
"	"	90 octaves Brandy	3,660	6,954
E B & J	Lachman & Jacobi	75 barrels Wine	3,713	1,739
A V	"	20 barrels Wine	1,030	360
B B	"	25 barrels Wine	1,273	385
Half diamond	"	15 barrels Wine	772	350
P L	"	15 barrels Wine	774	355
E V	"	50 barrels Wine	2,551	964
A in diamond	"	15 barrels Wine	769	272
F A	"	50 barrels Wine	2,580	781
S Bros	"	25 barrels Wine	1,263	382
J L C	"	3 half barrels Wine	84	79
"	"	1 keg Brandy	10	23
J R LeCount	"	1 cask Wine	50	43
Varroni	Williams, Dimond & Co	56 cases Wine		225
Total amount of Wine, 6 cases and			40,783	17,345
Total amount of Brandy			3,810	7,281

TO CENTRAL AMERICA.

R A R, Corinto	Cabrera, Roma & Co	3 cases Wine		$15
"	"	9 cases Wine		79
A J M, Champerica	Urruela & Urioste	4 kegs Wine	40	35
N M, Champerico	"	2 kegs Wine	40	36
R & H, Guatemala	B Dreyfus & Co	51 cases Wine		200
D K, Acajutla	"	7 kegs Wine	103	100
"	"	1 keg Brandy	10	50
J & S, San Jose de Guatamala	Eug de Sahla & Co	75 cases Wine		308
C S, Champerico	E L G Steele & Co	12 cases Wine		47
A E J, Corinto	J Gundlach & Co	3 kegs Wine	30	20
"	"	6 cases Brandy		43
"	"	1 keg Brandy	15	31
T F d M, Amapala	John T Wright	2 kegs Wine	20	18
M N, La Libertad	"	1 keg Wine	10	8
A & S, Amapala	"	6 kegs Wine	60	60
B G, Champerico	McCarthy Bros. & Co	20 cases Wine		80
V A, Champerico	"	20 cases Wine		45
"	"	1 keg Wine	10	12
L & Co, Champerico	"	1 barrel Whiskey	36	41
D K, Acajutla	Wilmerding & Co	1 half barrel Whiskey	26	93
O R, Guatamala	"	1 half barrel Whiskey	39	134
R & H, Guatamala	"	1 half barrel Whiskey	40	98
A G M, Guatamala	"	1 half barrel Whiskey	36	126
J M, La Libertad	Williams, Dimond & Co	2 cases Wine		
"	"	1 barrel and 1 half barrel Wine		140
"	"	1 half barrel Whiskey	26	90
Total amount of Wine, 182 cases and			393	1,203
Total amount of Whiskey, 16 cases and			25	124
Total amount of Brandy, and			202	584

TO NORWAY.

B & Co, Christiana	J Gundlach & Co	26 barrels Wine	1,311	$725

TO MEXICO.

J M, San Blas	J O Meyerink	3 cases Wine		12
A E C, Manzanita	S Lachman & Co	16 cases Wine		
"	"	2 kegs Wine	34	105
A V, Mazatlan	A B Gonzalez	1 half cask Wine	30	29
L G & Co, Tonulu	Cabrera, Roma & Co	3 barrels Wine	60	45
P D & Co, Acapulco	Urruela & Urrioste	1 cask Wine	59	25
P A B, Tonulu	Kohler & Frohling	7 quarter casks Wine	113	96
H W E, Tonulu	"	9 quarter casks Wine	145	116
Total amount of Wine, 23 cases and			591	428

TO PANAMA.

J C	Lilienthal & Co	25 cases Whiskey	866	225
J R	Cabrera, Roma & Co	15 half puncheons Wine		303
P	B Dreyfus & Co	20 cases Wine		
"	"	8 kegs Wine	1,223	550
P H	L F Lastreto	10 barrels Wine	668	229
Total amount of Whiskey, 25 cases and				225
Total amount of Wine			2,659	1,082

TO HONOLULU—Per O. S. S. Co.'s Steamer Australia, May 24th, 1887.

G W M & Co	Lilienthal & Co	5 cases Whiskey		40
"	"	5 cases Whiskey		35
"	"	20 kegs Wine	200	180
"	"	50 kegs Wine	250	225
H J	Arpad Haraszthy & Co	6 barrels Wine	298	200
"	"	93 5-gallon kegs Wine	465	465
"	"	40 10-gallon kegs Wine	400	400
"	"	25 cases Wine	63	100
G W M	Geo. Thacher & Co	5 cases Wine	25	20
H S N Co	S Foster & Co	12 cases Wine	30	48
W C. P	B Dreyfus & Co	14 half barrels Wine		
"	"	45 10-gallon kegs Wine		
"	"	20 5-gallon kegs Wine	932	750
L & Co	Spruance, Stanley & Co	5 half barrels Whiskey	132	265
"	"	13 cases Whiskey		114
L & Co	Lachman & Jacobi	7 half barrels Wine		
"	"	10 kegs Wine	296	282
H S	Wilmerding & Co	5 cases Whiskey		50
W S L	"	4 barrels Whiskey	167	292
E H & Co	Kohler & Frohling	35 10 gallon kegs Wine		
"	"	30 5-gallon kegs Wine		
"	"	9 casks Wine	1,067	848
Total amount of Wine			4,026	3,518
Total amount of Whiskey 28 cases and			299	796

MISCELLANEOUS SHIPMENTS.

DESTINATION.	VESSEL.	RIG.	GALLONS.	VALUE.
Victoria	Geo W Elder	Steamer	291	$380
Japan	Oceanic	Steamer	1,076	589
Honolulu	Saranac	Bark	1,442	1,218
Nanaimo	Wellington	Steamer	30	24
Victoria	Willamette	Steamer	234	243
Honolulu	Mary Winkleman	Barkentine	94	80
Total			3,167	$2,494

Total shipments by Panama steamers	45,800 gallons	$20,783
Total Miscellaneous shipments	7,193 "	6,012
Grand totals	53,002	$26,795

GRAPE-LEAF BLIGHT.

[By F. Lamson Scribner.]

The disease here named "Grape-leaf Blight" is analogous in nature to the disease of the strawberry called "Strawberry Rust," or to that of celery, popularly referred to as "Celery Blight." In each case the special external characters are induced by fungi of the same group.*

In a visit to the vineyard of Col. G. F. Needham, of Seabrook, Md., June 15 of the present year, it was observed that several varieties of grapes of the Riparia class had their lower and more shaded leaves more or less thickly covered with rounded or irregular brown spots, varying in size from 1-24 to ¼ of an inch in diameter, with a clearly-defined darker colored and slightly thickened or elevated border. The discolorations extended through the thickness of the leaf, but while the diseased areas on the upper surface were perfectly smooth there could be seen, with the aid of a pocket lens, on the under side numerous projecting hair like points. These indicated the presence of some parasite, and removing one of these fine projections and examining it with a power of 250 diameters, it was seen to consist of a closely-packed bundle of slender unbranched tubes with rounded and somewhat irregular spreading tips. Each of these tubes, which are collectively termed hyphæ, had several cross-walls or septa, and they appeared to spring from a cushion-like base or stroma, attaining the height of from 150*u* to 300*u*. Upon the tips of some of the hyphæ were attached elongated and somewhat club-shaped spores (30–90*u* by 6–8*u*), rounded at the thickened apex and tapering abruptly below into a slender stalk-like base. These spores, like the hyphæ, were of a pale olive brown, and were divided by cross-walls into from 3 to 13 cells. When sown upon a drop of water they germinate readily, sending out slender filaments from either extremity or from the lateral walls of the component cells, several filaments often issuing at once from the various parts of the spore. Should one of these germinating spores fall upon the surface of a leaf and find there the conditions favorable to its further development, the germ-tubes would penetrate the epidermis, and, spreading more or less extensively within the tissues, produce the characteristic brown spots by killing the cells from which they absorb their food. As the disease progresses the tissues of the leaf in the vicinity of the spots become affected, changing to a pale green or yellow, and finally the whole leaf perishes. In the process of development the mycelium of the fungus within the leaf forms a condensed growth in the air-spaces just beneath, or rather just above the stomata or breathing pores of the lower surface, and it is from these condensed masses that the column of slender tubes or hyphæ above described arise and pass out through the opening of the pores.

This "Blight" when prevalent may cause considerable damage to the foliage, and consequently to the vine, but unless the season be a very wet one it is not likely to do much damage, excepting perhaps in low or damp situations or upon vines improperly cared for.

The form of this fungus above described is the only stage in its development yet known. What other spore-forms there may be, or how the fungus passes the winter, remains to be discovered. Aside from the specimens found by myself in Maryland, I have seen others from New Jersey and South Carolina.

This fungus has been named *Graphium clavisporium*, B. and C., but all the specimens I have seen so ticketed accord perfectly with *Cercospora viticola* as described by Saccardo in *Sylloge Fungorum*, IV, p. 458, and are in all respects like the fungus described and figured by Viala in *Maladies des Vignes*, under the name of *Cladosporium viticolum*. Through the kindness of my friend Mr. J. B. Ellis, of Newfield, N. J., I have been enabled to examine European specimens of the *Cercospora viticola*, and I find the points of resemblance between this and our *Graphium clavisporium* so close that I have been led to regard them as one and the same; and, believing it a good *Cercospora*, I have adopted the name given it by Saccardo.

*It would be well to restrict the term "Rust" to those plant diseases caused by species of the order *Uredineæ*, *e. g.*, "Wheat Rust;" and although the term "Blight" has been used to designate the diseases caused by fungi of the order *Perisporiaceæ*, it may be well to adopt for the latter the general term "Powdery Mildews," and limit the use of the term "Blight" to diseases caused by *Ramularia*, *Cercospora*, &c.

A large force is now employed in the Agricultural Department at Washington putting up seed for congressmen, each statesman getting 7,000 packages of seed with which to make his calling and election sure with his farmer constituents. Seed dealers are kicking mightily against this free distribution, which comes in competition with their trade.—*American Elevator and Grain Trade.*

GRAPE-LEAF SPOT.

[By F. Lamson Scribner.]

In the latter part of May, and from that time until past midsummer, the leaves of almost any variety of grape in the open vineyard may be seen to be diseased by what is here designated as "Grape-leaf Spot," the direct result of the action of a fungus allied to that which causes the Black-rot.

Attention was first called to this malady by Dr. George Engelmann in the *Transactions of the St. Louis Academy of Sciences*, June 5, 1878. After describing the external and minute characters of the fungus, Dr. E. remarks that this parasite marks its appearance just before and during the flowering period, and attacks, as far as he had observed, only the leaves, which, when abundant, it kills and thus cripples the vine. Believing the fungus to be undescribed, the doctor named it *Depazea Lacruscæ*. I am indebted to Prof. C. V. Riley, United States Entomologist, for samples of the leaves studied by Dr. Engelmann; and the fungus upon them, as kindly determined by Mr. J. B. Ellis, is the *Phyllosticta Labruscæ* of von Thumen.

The diseased spots are of a clear reddish brown, sharply defined by a narrow and darker colored border. They have a rounded outline and vary in size from 1-10 to ½ an inch in diameter. When the spots are numerous they often run together, forming irregular brown patches that sometimes cover a considerable portion of the area of the leaf, but the circular outline of the original spots remains visible even when the patches have extended so far as to embrace nearly the whole leaf.

When the spots are few and scattered, little injury results although the tissues included by them are completely killed. Those leaves, however, that have been more severely attacked, and upon which the spots are numerous, are very quickly destroyed.

If one of the diseased spots be closely examined, there will be seen scattered over the surface, but most abundant in a sort of ring just within the border, a large number of minute black bodies. These can be seen with the naked eye, but they are most clearly discernible with the aid of a pocket lens. These black bodies are the perithecia or spore cases which are formed upon the mycelium within the tissues of the leaf and pushed up through the epidermis, and are similar to those described under Black-rot. They are filled with a vast number of minute round or ovoid spores which escape through a minute opening or osteolum, at the top of the peritheeium. The latter vary from 70*u* to 130*u* in diameter, while the spores are from 8*u* to 10*u* in their greatest length. The latter are clear, and appear to be filled with granular transparent contents. These spores are attached to the walls of the perithecia by very short stalks or basidia. Among the many perithecia that I examined one only was found filled with what have been called spermatia.

It is very probable that this fungus lives through the winter in the affected leaves, and in the spring develops into some sphræiaceous form producing ascospores. Whether this form is known or not I cannot say, but it is certain that no connection has ever been traced between the *Phyllosticta* under discussion and any more perfect stage.

The same conditions which favor the development of the Downy Mildew and the Black-rot, also favor the Leaf-spot disease, but the injury inflicted by the latter is by no means comparable to that occasioned by either of the former; however, it belongs with the parasites injurious to the vine, and grape-growers will be interested in knowing its nature and in being able to recognize it

There is another but less common species of *Phyllosticta* (*P. viticola*. v. Thum., *Septoria viticola*, B. and C., *Sacidium viticolum*, Cooke), which produces similar spots upon the leaves of *Vitis vulpina*. In this case the minute black bodies, or perithecia, are abundant on both sides of the leaf—in *P. Labruscæ* they occur only on the upper surface—and each spore has a large and clearly defined transparent vesicle.

No remedies are known for either the "Leaf-blight" or "Leaf-spot" diseases, but it is very probable that the general treatment advocated for the Downy Mildew and Anthracnose will have a direct tendency to limit their development.

HOW TO DRINK WINE.

Mr. Matthew Arnold never made a wiser remark than when he wrote that "Wine used in moderation adds to the agreeableness of life—for adults at any rate—and whatever adds to the agreeableness of life adds to its resources and powers." That is the philosophy of epicurism in a nutshell. Wine, however, should not be taken before work as a stimulus, but only after work, to prevent the brain from morbidly brooding over its problems or troubles, to insure deep sleep, and to supply the nutritive nerves with extra power.

But the most important thing to remember in drinking wine is, after all, that its essence, its soul, lies in the perfume or "bouquet." On this bouquet the commercial and gastronomic values of wines depend almost entirely. Old wines are, as a rule, the best, because age mellows their tartness, and intensifies the perfume. Tokay is considered the queen of wines, because, while its percentage of alcohol is smaller even than that of Bordeaux and Burgundy wines, it has a rich and almost exquisite bouquet, which the art of the chemists is as powerless to reproduce as the fragrance of a wild violet.

To know how to drink wine is a thing next in importance. It is an art but little understood by the multitude. Unlike beer, it should always be sipped; and the smaller the quantity at a time, the more delicious will be its fragrance. Dealers in genuine wines (*rarœ aves*) have a habit of placing before an intending purchaser several samples in small glasses. If he gulps down the whole glass at once, he will in all probability not get the choicest brands; for the dealer justly reasons that would be throwing pearls where they would not be appreciated. Such a drinker is like a tourist who "does" the whole gallery in the time that should be devoted to a single picture. Epicures allow their Chambertin or Leoville to melt on the tongue, as it were, and roll down the throat slowly, all the while enjoying the fragrance by exhaling through the nose (unconsciously).

It should be added however, that in the case of wine, as in fruit, the external odor is also of much importance. Hence, the wider the glass, the larger is the evaporating surface and the more luscious the bouquet.—*Contemporary Review.*

The Report of the Fourth Annual State Viticultural Convention is now published and ready for delivery. Single copies are one dollar each, but special rates can be obtained for five copies or more.

FORTY-NINERS IN THE EAST.

EDITOR MERCHANT:—The interest taken by the press here in the reunion of the venerable men, who before September 9th 1850 entered into California, has doubtless caused that the million who now live in our beloved state, are at this hour posted about the particulars of the movement which was followed by yesterday's festivity, the excursion on the steamer Corcoran, commanded by the popular Captain Blake, a hale forty-niner, to Marshall Hall on the Potomac, the farm of another forty-niner and whilom California representative in the National Congress, Col. J. Mackibben. The particular interest which that delightful and inspiring trip has for California grape growers, will be set forth in these few lines. The writer would have neglected a bounden duty, had he not at once asked for permission to offer homage to the men to whom the rising generations cannot but look up to with feelings of reverence and endearment. That from our bountiful vineyards the proof might be given the pioneers that our agriculturists are just as ardent in their endeavor to obtain from the soil the noblest of its products, seemed but too natural. Mr. Crabb's wines therefore, were the fittest beverage for the occassion. To sharpen the appetite for the chief dish of the banquet, planked shad, the big bottles of old rye were on a small table, while some good imported wines were laid out together with the good products from Crabb's To Kalon vineyard on the larger table, where the pioneers and guests, more recent Californians, helped themselves. Now, I saw but few go to the familiar bottles on the small table, and there was no sign of snobbery by preference for labels of exotic inscription. Curiosity led to taste our home grown wines and the unanimous expression that they were good, found full confirmation in every one putting our California wines to a practical test.

After the call to dinner was obeyed most readily, it was the wine of California that enlivened the cordial speeches and exchanges of reminiscences during the dinner. For two full hours no one abandoned his seat; hilarity and whole-souled utterances, complete feelings of happiness, would not allow any one to absent himself. The most agreeable tone continued during the home trip, and it was with regret that the voyage was ended when the landing in Washington was reached. That among the hundred odd men only one single instance of too much (and whisky before dinner did it) was experienced, speaks highly for good, pure wine in relation to the cause of temperance. A contrast as great as could be imagined in this country, was exemplified on this occasion, where the cup of love, the cup of grape-juice, was the true inspirer of feeling happy without intoxication—against the rude rule of the generation now growing, and arrived at manhood and wedded to either of the extremes, whisky or water, who often loudly assert that to have a good time means to get full, and have plenty, have too much. Here were those gentlemen, none below the half century of age, who had the good things at discretion—and discretely, gentlemanly they used them. Songs and laughter, the happiest feeling were the result of that truly brotherly gathering; not one word that could disturb harmony—none of those brutal consequences of ardent drinks, but liberal toasting with that noble gift of Providence, good, light wines. Only such were served and some champagne. This will redeem the sins of the many young fellows who last winter abused at the Chinese Embassy reception in a disgraceful manner of hospitality, by knowing no bounds in quantity.

Could the movement of recognition but spread rapidly, that good home-grown wine has the exhilerating effect that allows of measuring one's dose and not abusing of it, it would do much good. The army of the Cumberland on the 12th inst. partook liberally of California wine, on a plank shad dinner occasion on the Potomac, and I have not heard that the 250 gentlemen despised the home product. We have the duty to act by furnishing the east with good wine only—and to watch that that plague adulteration will not spoil our endeavors to familiarize Americans with the true American product. Let your indifferent wines go to the still and not defile our reputation any longer. Keep good wines for Americans and thereby help our cause of progress and purity.

F. PDFF.

WASHINGTON, D. C., May 15th, 1887.

POPULARIZING NATIVE WINES.—California Wine Man—"I wish, sir, you would try to popularize native wines. They are much superior to the imported article."

Hotel Man—"I have them on my list."

"Very true, but you have not sold one case in six months. Can't you think up some way to induce guests to try them?"

"Let—me—see. Well, yes. I'll put the price up to $10 a bottle."—*Omaha World.*

KOHLER & FROHLING'S NEW CELLARS.

[Bonfort's Wine and Spirit Circular.]

Messrs. Kohler & Frohling inform their friends, by circular, of the removal of their business place in this city, from No. 6 Barclay street, to the new and elegant buildings at Nos. 41, 43, and 45 Broadway, and Nos. 15, 17, 19, and 21 Trinity place, which have only just been completed and are attracting the attention of every passer-by, by their magnificient granite frontage and tasteful architecture.

The rapid expansion of Messrs. Kohler & Frohling's business had outgrown the capacity of their old premises in Barclay street, which they op ned three years ago, and they had been obliged to store their wines in a number of warehouses all over the city. They have been looking around for some time to obtain premises spacious enough to hold their entire stock under one roof, and are now to be congratulated in having been so eminently fortunate in the accomplishment of their purpose.

The cellars running from Broadway through the entire building to Trinity place are unquestionably the finest wine stores we have seen in the city of New York. The dimensions of the cemented floor are 200x75 feet, large enough to store a quarter of a million gallons of wine in wood. This large quantity is contained in eighty casks holding 500 gallons each, twenty-six holding 3200 gallons and thirty holding 2500 gallons, besides a number of puncheons holding 150. The perspective vista of these avennes formed by casks is a most interesting sight to the beholder. The cellars have an excellent light from above through sky-lights, and are fitted with gas and electricity, and with all the improved appliances in the shape of utensils, steam pumps, etc. Besides this spacious locality for the storage of wines in wood, Messrs. Kohler & Frohling have rented another cellar adjoining the main premises at No. 15 Trinity place for the purpose of bottling. This cellar is also quite large, measuring 28x165, and connects with the larger one through openings pierced in the wall.

The offices are located on the floor above the cellars, being connected with the latter by a stair-case inside the offices. They are light and spacious, measuring 28x40, and are elegantly and conveniently fitted up and furnished.

The facilities which a business place of such completeness enables Messrs. Kohler & Frohling to offer to their customers cannot fail to contribute to the prosperity of their business, and we have much pleasure in congratulating them upon its acquirement.

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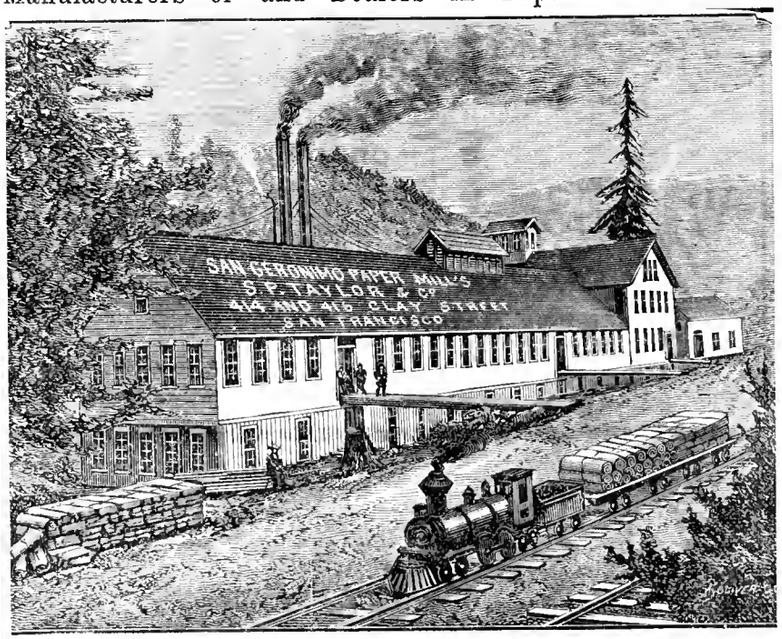

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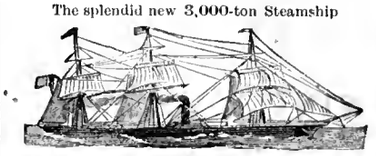

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VOL. XVIII, NO. 4. SAN FRANCISCO, JUNE 10, 1887. PRICE 15 CENTS

Effects of Mildew on the Vine, and the Influence of Efficient Treatment.

By Messrs. MILLARDET and GAYON, *Professors in the Faculty of Sciences of Bordeaux.*

[*Journal d' Agriculture Pratique*, Oct. 29, 1885.]

We already possess important information relative to the influence of mildew on the vegetation of the vine, on the fructification, and on the quality of its products. But, until now, for want of a really efficient treatment, it has been impossible to determine this influence with exactitude; that is to say, by means of the immediate comparison of vines attacked by the scourge with vines perfectly healthy and comparable as to age, soil in which they grow, etc. Thanks to the treatment recently made known by one of us, this gap can now be filled.

The specimens upon which these observations were made, the results of which are given further on, were selected by ourselves scarcely eight days ago (October 2) in the vineyard of the Chateau Dauzac, in Médoc, of which M. Nathaniel Johnston is proprietor. Whether they belong or not to the plots submitted to the treatment, they represent the average conditions of the vegetation. The vines from which they came were near each other, of the same age, and planted in soils of the same nature, so that the observations resulting from their study are comparable.

The figures which have been added to this note represent two vines of *Cabernet-Sauvignon*, both fifteen years old, and come from two adjacent rows of vines, one of which was treated in the middle of last July, while the other received no treatment. Dug up with care, they were immediately photographed the same size. At the first glance we recognize on one of these vines the disastrous effects of the disease, and on the other the truly marvelous efficacy of the treatment.

This general impression is confirmed still more by the following circumstantial account of the observations, which account gives the relative weight and number of the leaves, branches, grapes, etc., borne by the treated and the untreated vine.

	Leaves.			Clusters.			Branches.		
	Number.	Total weight.	Average weight.	Number.	Total weight.	Average weight.	Number.	Total weight.	Total length.
		Grams.			*Kilos.*			*Grams.*	*Meters.*
Treated vine	424	290	0.684	18	1.570	0.0877	18	632	14.00
Untreated vine	42	15	0.357	14	0.827	0.0590	13	415	7.01
Difference	382	275	0.327	4	0.743	0.0287	5	217	6.36

The comparative study of the musts furnished by grapes of treated and untreated vines of the same variety gives results no less interesting and exact, especially as the grapes were picked at the same time, in the same vineyard, from vines of the same age.

Name	Vines.	Yield in must.	Specific gravity.	Sugar, per liter.	Acidity per liter (estimated as sulphuric acid.)
		Per cent.		*Grams.*	*Grams.*
1. Malbec or Cote Rouge	Treated vines	66.9	1,080	177.0	5.1
	Untreated vines	65.3	1,043	91.8	7.7
	Difference	1.6	37	85.2	2.6
2. Cabernet-Sauvignon	Treated vines	71.3	1,075	178.6	4.6
	Untreated vines	70.2	1,053	116.2	6.3
	Difference	1.1	22	62.4	1.7
3. Cabernet-Franc	Treated vines	71.8	1,084	188.6	5.6
	Untreated vines	70.5	1,050	103.0	7.2
	Difference	1.3	34	85.6	1.6
4. Petit-Verdot	Treated vines	70.8	1,080	175.0	7.9
	Untreated vines	68.4	1,037	39.4	9.3
	Difference	2.4	43	135.6	1.4

It will, moreover, be well to mention the considerable difference between the color of the grapes and must of the treated and untreated vines. While the color is normal in the first, in the second it is much below the usual tower limit.

In conclusion, we will remark, how great the difference is in the alcoholic richness of wines and vines treated and untreated. In fact, from the quantities of sugar recorded in the preceding table, we may infer that, according to the varieties, wines of the first class will contain from 8 to 10 per cent. of alcohol, while the alcoholic content of wines of the second class will vary between 2 and 6 per cent. only.

This last observation comes to the support of a remark already made by one of us, to wit, that since the appearance of the mildew the alcoholic richness of the wine has decreased throughout the southwest, one year with another, 3°, or one-third of its absolute value. Since this period, numbers of proprietors have made wines of 2° to 3° which it has been necessary to reenforce by foreign wines of high alcoholic standard in order to give color and preserve them. This year the effects of the scourge are so formidable that a large number of proprietors will not harvest anything. Especially in Gers the vine has been stripped of its leaves since the end of July, the grapes are still sour, and the wood not ripe. If these vines do not die in the course of a year, which is possible, we can at least assert that they will not be able to produce a crop under two years.

OCTOBER 10, 1885.

TREATMENT OF MILDEW AND ROT.

By M. MILLARDET, Professor in the Faculty of Sciences of Bordeaux.

[*Journal d' Agriculture Pratique*, October 8, 1885.]

Since the appearance of mildew in France (1878), I have not ceased to study *Peronospora viticola* in the hope of discovering a weak point in its development which might enable us to become master of it.

I noticed in the course of my investigations that the summer spores or conidia of this *Peronospora* easily lose their power of germination. This observation, and the failure of all treatments tried up to that time, led me to formulate this conclusion: That a practical treatment of the mildew should aim not to kill the parasite in the leaves which are infected by it, which appears impossible without killing the leaves themselves, but to forestall its development by preventively covering the surface of the leaves with various substances capable of depriving the spores of their vitality, or at least of hindering their germination. Therefore, three years ago I was seeking a substance that would serve the purpose I had outlined, when chance placed it in my hands.

At the close of October, 1882, I had occasion to pass through the vineyard of St. Julian, in Médoc. All along the road I followed, I was not a little surprised to see that the vines still bore leaves, while everywhere else they had long since fallen. There had been mildew there that year, and my first impulse was to attribute the persistence of the leaves along the way to some treatment which had preserved them from the disease. In fact, examination enabled me to ascertain at once that these leaves were covered, in great part, on the upper surface, with a thin, adherent layer of a bluish-white, pulverulent substance.

Arriving at the Chateau Beaucaillou, I questioned the steward, M. Ernest David, who told me that the custom in Médoc is to cover the leaves, at the turning of the grapes, with verdigris or sulphate of copper mixed with lime, to keep off marauders. The latter, seeing the leaves covered with coppery spots, dare not eat the fruit hidden beneath, for fear it may have been contaminated by the same substance.

I called the attention of M. David to the fact of the preservation of the leaves just mentioned, and communicated the hope, to which this observation had given birth, of finding in the salts of copper the basis of the treatment for the mildew. At first M. David raised several objections, but afterward he entered so completely into my ideas, and aided me so efficiently, that I must ascribe to him the best part of the ultimate success.

The following year (1883) I made various trials in my garden, both with the substances named and with others. M. David repeated the most of these experiments at

Dauzac, in Médoc, on the estate of M. Nathaniel Johnston, of which he is the steward.

The experiments were continued in 1884, but by an unlucky chance the mildew appeared to so slight an extent in the vineyard where the experiments were made that it was impossible to judge accurately of the value of the various treatments which had been applied.

Nevertheless, as a certain report was noised abroad of the sulphate of copper treatment, I decided to communicate to the Agricultural Society of Gironde the results obtained. May 1, 1885, I published the exact composition of the liquid to be used (based on the trials of M. David), together with instructions relative to both the mode of application and the most favorable time for treatment.

After this communication, several large proprietors of Médoc did not hesitate to apply, on a large scale, the treatment which I had extolled.

M. N. Johnston, to whom I had communicated my ideas in 1882, and who, for two years, had kept pace with the experiments of his steward, M. David, entered into the matter with decision, and he alone had 150,000 vines treated on his two estates of Danzac and Beaucaillou. Everywhere the results have surpassed my expectations.

At present, October 3, the vines treated have a normal vegetation. The leaves are healthy and of a fine green; the grapes are black and perfectly ripe. On the contrary, the vines not treated present the most miserable appearance. The greater part of the leaves have fallen and the few that remain are half dry; the grapes, still red, can be used to make nothing but "piquette." The contrast is startling. I will add that my colleague, M. Gayon, professor of chemistry in the Faculty of Sciences, kindly consented to examine the musts produced both by the grapes from the vines treated and those from the vines not treated. He found in the same variety (the Malbec).

Constituents.	Vines treated (grams per liter).	Vines not treated (grams per liter).
Sugar	177.0	91.8
Acidity, estimated as sulphuric acid	5.1	7.7

The fact that these experiments were conducted as methodically as possible adds still more to their value. In each plot treated may be found, as control evidence, several rows of vines not treated. I will state, moreover, that the treatment was given by preference to the varieties most sensitive to the mildew—the *Malbec*, the *Cabernet-Franc*, and the *Petit-Verdot*—so that its effects on varieties less subject to the disease could be only still more satisfactory. Finally, I will add that this year the disease has shown an exceptional severity.

All these considerations, it appears, sufficiently authorize me to affirm, in the most express manner, the efficacy of the treatment mentioned against a scourge which, up to this time, has baffled all efforts both in Europe and in America; that is, the mildew, properly so called, and the *rot* or mildew of the berry. But more: The close analogies which exist between the *Peronospora* of the vine and that which causes the disease of the potato and of the tomato lead me to hope that henceforth we shall have a real prophylactic for these last affections.

The experiments of this year show with how much reason I insisted, in my communication of May 1, to the Agricultural Society of the Gironde, on applying the treatment preventively; that is, upon the first appearance of the mildew in the vineyard. All who have treated vines which were already somewhat seriously attacked have reaped much less benefit from the operation.

There is a final important point to be considered. In spite of all precautions some drops of the coppery mixture may fall upon the grapes. Will copper be found in the wine? And if found there, may it occur in sufficient quantity to injure the public health?

My colleague, M. Gayon, has promised to assist me in settling this question. A preliminary analysis, made by him, of 800 grams of grapes from treated vines, has not shown copper to an absolute certainty. Researches will be continued in this direction, and I hope soon to be able to submit the results to viticulturists.

ON THE DESTRUCTION OF THE MILDEW BY SULPHATE OF COPPER.

By M. A. Perrey.

[From the *Comptes Rendus* of the Academy of Sciences, Paris, October 5, 1885.]

On the 25th of September, 1884, I communicated observations to the Academy which proved the destructive action of sulphate of copper on the mildew. After having shown the immunity procured to young plants by dipping stakes into a copper solution, I took exception to the practical value of this mode of preserving the vine, which is neither applicable to vines not staked, nor sufficient for the protection of those with large arborescence, and is in all cases quite costly. By experiment, I have this year found a method of employing the copper salt which has made its efficacy certain, and permits of its economical employment in all cultivated fields. It consists, by the aid of a spraying machine, in spreading upon the upper surface of the leaves, in the form of a vapor, a solution of crystallized sulphate of copper, 5 parts to 100.

My experiments were carried out under the following conditions. Toward the close of July, or perhaps earlier, the mildew was noticed. Nevertheless when I reached, Burgundy, August 8, the vines still had a superb appearance; at rare points only had the action of the mildew been detected, and the proprietors of the vineyards believed they were secure from all danger. But by examing the under surface of the leaves on a great number of apparently uninjured vines, I was enabled to make out the presence of the parasitic fungus, and to detect some characteristic reddish spots.

The sulphate of copper treatment was made in five plots, on the following dates, August 8, 9, 11, 12, 23, 29.

From August 8 to 28 not a drop of rain fell, and the dew did not moisten the leaves once. From August 15 to 22–'3 I could follow the development of the parasite in its slow progress; from the 22d–'3d to the 28th the development make rapid progress. The vines continued, however, to present a general green hue, which began to grow yellow only toward the end of the period. The progress of the mildew was exactly the same on the plots treated and on the surrounding vines. A rainy period set in August 28. At the close of the first week in September there was a radical change in the appearance of the vineyards in all the region. From their brown color one might now mistake them, at a distance, for plowed fields. The leaves had fallen in great numbers, and those which remained, largely brown-edged, had a dull green center, like leaves detached from the stem and artificially dried.

On September 15 I visited my experimental fields. The first, in the form of an elongated rectangle, was set with Gamai-Mourot six years old. It contained one hectare. A narrow path separated it longitudinally into two portions; to the left was a half hectare not treated; to the right a half hectare treated from the 9th to the 22d of August. The difference in appearance struck one at the first glance: to the left the stocks had kept only a few leaves, which were withered and burned; to the right they had preserved two-thirds of their normal folisge, the injury being almost exclusively near the root of the vine. The leaves, which were spotted upon the margin, remained a brilliant green, and but for the purple patches which are always present at this season upon the leaves of vines of this variety, their appearance was the same on September 13 as at the commencement of the rains.

She second experimental field contained 25 acres set to Mourot. This vineyard which was remarkably fine at the end of July, had suffered exceptionally by August 12, at which date the treatment was applied to the half most injured. September 13 the part not treated was lost, not a leaf remaining to bring the berries to maturity. The part treated, and the one most diseased on August 12, was indeed not in a flourishing condition, but the vines, stripped below, were still quite green and tolerably well provided with folisge above.

Two other plots, one inclosed in a very old vineyard of Gamai, treated August 8, and the other inclosed in a vineyard of Pinot, layered that winter and treated August 25, showed at a distance by their greenness, and nearer by the abundance of leaves, in marked contrast to the burned and defoliated background of the vineyard.

In a word, before the rains, the mildew made the same progress in all the vineyards, whether treated or not; the rain came on, acting as an indispensible auxiliary to the treatment, and while the vines not treated were defoliated in a few days, the subsequent progress of the mildew on the others was radically arrested by the diffusion of the copper salt.

September 25, the day before the vintage, I made a new visit. The difference in appearance, verified on the 13th, was still more pronounced. The vines not treated had lost the remnant of their leaves, while the vines treated had suffered no appreciable loss, except those of the second plot. But the essential difference between the two classes of vines now rested chiefly in the condition of the wood and berry. On the vines not treated, the wood, surprised by the early fall of the leaves, was not well matured; the shoots of the year, of a clear brown at the base, but still herbaceous for a great part of their length, were sometimes even broken under the weight of the terminal bunches. On the vines treated, the ripening of the wood, improved by three additional weeks of vegetation, gave to the shoots a woody character and a brown color, which extended almost to their extremity.

The advantage to the berry, which was shriveled and easily detached on the vines not treated, but plump and firmly attached to the bunch on the vines treated, at once struck even the inexperienced eye. The vine-dresser estimates, quite exactly, that the saving due to the treatment is, on an average, one-fourth in both quantity and quality; that is to say, a vine treated would yield 4 hectoliters (11 bushels), worth 100 francs, while a vine not treated would yield 3 hectoliters, worth 75 francs. Applied at the beginning of the disease, the treatment would have given, according to the estimate of the vine-dresser, a gain of one-third in quantity and quality. To sum up, my treatment did not entirely prevent injury, because it was applied only after the mildew had begun to develop and was followed by a long period of absolutely dry weather. But it did have a remedial effect, the efficacy of which was made certain by the first rain, and demonstrated in the preservation of the leaves, the ripening of the wood, and the growth and maturing of the berry, in a manner that was more striking in proportion as the disease was more advanced. In Burgundy it will be expedient to apply this treatment from the 1st to the 15th of July. Experience alone will decide whether one treatment will be sufficient, but it appears probable that one is enough.*

As a matter of economy I shall attempt to substitute the sulphate of copper solution for sulphur in the treatment of *Oidium*. In conclusion, I may add that the greatest number of the vineyards in our region have been treated to sulphur this year, and that the sulphuring, applied in the customary way, has not in the least, or not appreciably, checked the encroachment of the mildew.

*The spraying machine which I have employed is made at Paris, by M. Duffour, and is entirely of red copper, with well-soldered joints, copper being the only metal that resists the action of the copper solution. It is made in a simple and solid manner, and costs 20 francs. It might receive to advantage some modifications, which will be elaborated with a view to the approaching season. With this instrument the treatment of one hectare, planted to 15,000 vigorous vines, consumed less than 100 liters of the solution, and required 45 hours of labor. I give these figures to keep within the limits of the actual results obtained, but with the conviction that the time which suffices to cover the hectare with flowers of sulphur, which is one-half less, will also suffice to cover it with the copper spray; it will only be necessary to give a little wider spread to the jet of the spraying machine

TREATMENT OF MILDEW BY SULPHATE OF COPPER.

Observations made by Mr. Muntz.

Journal d' Agriculture Pratique, Nov. 12, 1885.]

Mr. Hervé Mangon, on the 12th of November, presented a note from Mr. A. Muntz on the treatment of mildew by sulphate of copper.

The observations of Mr. Muntz were made in Dordogne, Gironde, and Lot-et-Garonne, on the four estates possessed by the National Anti-Phylloxera Society. The disease began to show itself in this vineyard toward the middle of July. Immediately, *i. e.*, from July 16–20, a sulphate of copper treatment was applied. A period of very hot weather, coming on at this time, checked the development of the fungus; consequently, no appreciable difference could be observed between the portions treated and those which were not. But the rains at the beginning of September brought on a new invasion of the mildew, much more energetic than the first; the leaves dried up and fell in a few days. It was then that the action of the sulphate of copper became manifest, "all the vine-stocks which were treated in the month of July have kept their leaves; they form oases of verdure in the midst of vineyards entirely stripped; the grapes which they bear have ripened, while those of the vines not treated have been arrested in their development and ripening." Mr. Muntz has found 9.40 parts in 100 of sugar in the must of the vines not treated, and 15.30 parts in 100 in that of the vines treated; the first contained 9.60 per cent. of acid and the second 5.20 The treatment in the month of July consequently preserved the vines from invasion

in the month of September. According to Mr. Muntz the treatment was applied in the following manner:

About 25 cubic centimeters of a solution of sulphate of copper (1 part to 10) were distributed upon each vine by means of a small hand-spraying machine. The vines were planted in rows, at a distance of two meters, or at the rate of 5,000 to a hectare. The treatment was given to 1,070 vine-stocks, taken at eight different points in the four estates. The Jurancon variety was selected as being the one most subject to the attacks of the mildew in that region. The cost of this treatment, which was made under conditions very unfavorable to economy, amounted to only 24.4 francs per hectare. The manual labor, estimated at fifty-nine working hours, represents about 15 francs of this total.

The following observations were made during the progress of the experiment. The too free application of a solution of sulphate of copper may produce red spots on the leaves, but these spots disappear after a few days.

A solution of sulphate of copper, 5 parts in 100, appears to give results almost as advantageous as one of 10 parts in 100.

The additional labor of applying the solution to the lower surface of the leaves is unnecessary.

Young shoots developed after the application of the sulphate of copper are not protected; the ends of the shoots, on which leaves develop after treatment, are entirely stripped.

A treatment made during a high wind gives less satisfactory results.

No copper was found in the wine from the treated vines. The mixture of lime and sulphate of copper gives results which are perhaps even more striking, for in this case the copper remains applied to the leaf in an insoluble form, and is not carried away by the rain. But then there is risk of having copper in the vintage.

According to Mr. Muntz the most economical method of treating vines planted in rows consists in the employment of a small cart, drawn by a horse or a man, the wheels of which set in motion a double bellows communicating with the reservoir holding the solution. The liquor is projected sidewise on both rows at the same time by several atomizing tubes which spray the stocks throughout their height. Under these conditions the cost of treatment would be lowered to 10 francs per hectare.

LARGEST VINEYARD IN THE WORLD.

The San Francisco *Spirit of the Times* says Northern California's first vineyard was planted when the region surrounding it was a howling wilderness of tall grass, shrubbery and forests, and Indians and wild game were plentiful. The venturesom vineyardist who planted his grape in this part of the State was Peter Lassen. His vines were set out at what is known as Vina, Tehama county, about 100 miles north of the city of Sacramento. Lassen was one of the oldest pioneers, and many of his vines were planted forty years ago. They have attained a wonderful size and yield abundantly. The property then fell into the hands of a German named Henry Gerke, a practical vineyardist, who made addition to the plant until there was 75 acres under grapes. He built a winery and became noted throughout the Pacific Coast for the excellence of wine produced. The Gerke vineyard soon became known as one of the largest in California, and furnished employment to a large number of men. But the property once more changed hands by Senator Stanford purchasing it in September, 1881. His interest and enthusiasm in the development of Northern California was great, and his vast wealth permitted him to proceed on a most extensive scale. His purchase was not confined to the vineyard alone, but thousands of acres of adjoining land was bought until now his possessions amount to 56,000 acres. He worked a complete revolution on the ranch. The most experienced wine-growers were employed and set immediately to work to overhaul the old vineyard and set out new vines. Hundreds of men were put to work preparing the land and from 1882 to 1884, 1000 acres were added to the vineyard, and since then more extensive additions have been made, until now he has nearly 4,000 in vines, 3,000 in full bearing, making the largest vineyard in the world. It is intended to make still further additions, and in a few years the Vina vineyard will have no less than 5,000 acres.

HOW TO CLARIFY WINES.

Mention was made some time since of a method which had been hit upon by D. R. Prevost for the clarifying of wine by the addition of a small quantity of pure extracted honey to the juice of the grape. The gentleman referred to has been experimenting by the admixture of honey with various kinds of liquor, and was very much surprised to see that, no matter how clear and pure the liquor treated might have been originally, a heavy deposit of impurities was precipitated to the bottom of the vessel used. It then struck him that the discovery might be of value in the clarifying of new wines, and a series of experiments showed that in a surprisingly short time every single particle of impurity in a cask of wine could be precipitated and drawn off, while at the same time the quantity of honey used was so small, and it also settled with the impurities in the liquid, that no trace was left of the presence of any foreign substance in the wine.

The method of using the honey is as follows: A quantity of the pure extracted honey, in the proportion of one ounce to each gallon of wine to be treated, is heated slowly and mixed with some of the liquor, whether wine, whisky or brandy, that is to be treated. The mixture must not be allowed to boil, as that would have a deleterious effect, but simply heated until the two substances are thoroughly incorporated. After cooling, the exact quantity necessary as mentioned should be thoroughly stirred in the wine. In a few days a grayish deposit will commence settling to the bottom and in a comparatively short time, from two to three months, every particle of impurity will be found to have precipitated into a thick, mucilaginous substance, from which the clarified liquor may be drawn off. Wine so treated for three months will resemble in appearance and flavor that which is two or three years old, and will sell in the market for a correspondingly advanced price. The discoverer of the process has experimented with all sorts of liquors and with uniformly good results, and is confident that he has hit upon a boon for the small wine makers of the State.—*Shingle Springs Independent.*

The Report of the Fourth Annual State Viticultural Convention is now published and ready for delivery. Single copies are one dollar each, but special rates can be obtained for five copies or more.

WINE STORAGE.

EDITOR MERCHANT.—While we are casting about for any projects to help the wine-growers out of their difficulty, it may also be necessary for them to consider and endorse those that promise to give the greatest amount of good. While we agree with those who think that the condensing of must for shipment to Europe would relieve the grape market to a great extent, we would prefer to that plan, the one discussed at the last Viticultural Convention, and being now under way in San Francisco, of storage warehouse for wine. One of the many difficulties that beset us, is the necessity of providing new cooperage for not less than 12 to 15 million of gallons this fall, and with that, storage for at least half of it, and perhaps more when next spring comes. We contend that the warehouse plan is the only one by which the capitalists may and will help the wine-growers on something like an equal division of the profits. Any enterprise that has for an object to buy and sell will fail to relieve the wine-grower until a sufficient amount of competition become established, as the buyer either of wine or grapes will buy cheap irrespective of the selling price.

By the storage system, the warehousemen and the capitalists who make advance are both interested in obtaining a good price for the wine to make their business popular and prosperous. The system would enable many to keep their wine until fit to consume while they are unable to do so now; and these wines kept side by side, with younger ones of the same kind, would cause these to be appreciated at their rue value, at a time when they are in a condition to be shipped to a long distance.

It would put a premium on wine of good quality as they come along side of inferior grades, and would thus be an incentive to good methods of wine-making, and to individual efforts and individual reputation. We have much hope of the English and even the French market for our wine, but we must first prove the quality of our wines at the time they are ready to be consumed, and then guarantee to a certain extent that the younger wines are a counterpart of the old. This guarantee is more acceptable from a third party than from the wine-grower himself. In short I am decidedly in favor of a plan that will establish more rapidly and thoroughly our reputation as wine-makers, and not only as grape farmers; the plan adopted by the San Francisco Company is undoubtedly excellent and no man would be more likely to make it popular with the producer than Mr. Pellet, if, he as we fondly hope, he may be prevailed upon to accept the office of superintendent. His name with us would be a guarantee of no mean importance. L. D. COMBE.

San Jose, June 4th, 1887.

WINE FOR COMMUNION.

The general assembly of the Union Presbyterian Church, on May 28th, decided in Philadelphia to adopt *unfermented* wines for communion purposes.

The wise clerical gentlemen never gave it a thought that such an anomalous expression as "*Wine*" the result of fermentation, "*unfermented*," would perhaps pass muster in the dark ages when alchimy yet took the place of the science of chemistry, but, that in our days such a liquid is called *must*.

The associations of salicylic acid, sulphurous acid, mustard flour, boiling of must, grape milk and other ingredients, processes and concoctions are inseparable from so called unfermented wine, as would be, like in our Angelica, alcohol added to subdue and extinguish fermentation.

A dabbling at least in chemistry should be required to form part of the education of the gentlemen who search Hebrew and Greek parchments for truths. They should at least be instructed in the nature of fermented beverages, in order to be able to judge properly of what Providence has bestowed on mankind as a truly beneficial and nutritive product. They should be instructed in the simple art of judiciously and properly using wine in order to instruct by word and act in the use of this most innocent blessing. But nay, total abstinence to the extreme of putting a Mohammed's doctrines for barbarians over the command of the founder of the religion the Presbyterians pretend to follow, this, at the end of the 19th century, is the version of the theological faculty of the said denomination! It is a step back—a few centuries back, to come to such unseemly decision, by which a slap in the face and a kick in the rear is applied to every progressive grapegrower, and a most discreditable testimony is given that the parishioners of the assembled clergymen of Pennsylvania are incapable of being entrusted to a sip from the loving cup of pure light wine, such as the people to which our Redeemer belonged had been wont for ages to use.

While any step in the direction tending to cause enmity of Americans to the product of the vineyard is a new blow to our industry, while the press in many a State chimes in with the ignoramuses who are sure that such a thing as sobriety is impossible in this country, it seems unmanly to let the cruel deception of prohibition pass without criticism. For heaven's sake, when will ignorance about proper eating and drinking be diminished and wine assert its right to be regarded as an aliment by every person who has the dignity of a firm will? The intemperate and fanatical assertions of total abstainers in the United States are regarded as ridiculous, nay degrading, in civilized countries where wine never made people intemperate, but ardent drinks are held to be the fountain of drunken habits. Why should wine be thought the equal of distilled drinks? F. PUFF.

GRAPES AND IRRIGATION.

[Marysville Appeal.]

The erroneous impression prevails in this locality that neither fruit-trees nor vines can be successfully grown in the foothills without irrigation. Meeting Fish Commissioner Routier last evening he was asked what he thought about it, "Certainly," said the ex-Senator, with emphasis, "grapes can be grown in the foothills without irrigation. Wherever you find native trees or bushes growing in the hills, the vine will flourish with no other supply of water than that which falls from the heavens. And the quality of the wine made from unirrigated grapes is much better than that from grapes that have been irrigated, altthough the quantity is not so great.

All native trees and bushes found in the foothills have grown from seed dropped upon the surface of the ground. If nature thus supplies so luxuriant a growth, how much better is the chance for the vine planted and cared for by man! He plows and pulverizes the soil, and keeps it free from weeds and all intruders that could do harm. His careful culture of the surface retains the moisture of the soil, while in its natural state the ground dries out. You see everything is in favor of the cultivated grapevine over the wild bush or tree. Not only the vines, but also the olive, fig, almond and other fruits and nuts will flourish in your foothills."

THE WINE OF THE FUTURE.

[Ridley's Wine and Spirit Circular.]

If it be true that coming events cast their shadows before them, and further that they invariably develop in accordance with these early presages, it would seem as if a change of grave importance were hanging over the wine trade, not only of this country, but of the world at large. The usual dictionary definition of wine is the "Fermented Juice of the Grape," but if we are to believe the writer of the subjoined letter it is a definition which is not likely to hold good much longer, in that it will not by any means be sufficiently comprehensive to include the motley tribe which are likely one day to masquerade under the cognomen. We are quite aware that popular theory amongst certain *quid nuncs* and uneducated persons has from tine to time attributed wonderful sources to certain wines which we have happened to know tull well were in exact accord with the description of the "great Lexicographer." We have heard it stated in public places that the branded goods of a famous Champagne house who are *sans peur et sans reproche*, were invariably made from apples in Whitechapel. We have even read an account of how Jamaica Rum was generally obtained from shoe leather in New York. Such statements we have, of course, immediately placed to the debit of the ignorant division, who, rather than confess themselves uninformed are ever ready to start theories to which they give utterance as facts, and which, no matter how absurd in their *prima facie* entity, make their authors appear as wise among their fellows. Such statements or suggestions we rank as the offsprings of warped or undeveloped intellect, but the letter we have under notice is seemingly written in good faith, and looks very much as if the compiler were himself the victim of the *canards* which are so freely circulated to the detriment ol the trade. We therefore reproduce it in its original form:—

BJORNEBORG, FINLAND.

Gentlemen:—Having learned during a visit to England that your firm carries on a large Spirit and Wine Wholesale Business, I herewith take liberty to address myself to you concerning a matter which will become of very great an importance for this as well as for other northern countries. I have this winter learned, and after investigation found it to be reliable, that a German gentleman has got over the technical difficulties in making *a good wine* from wood berries. Particularly the bilberry (Myrtillus nigra, or also sometimes called Vaccinuim Myrtillus) gives a wine very like and testified to be of quite as good a quality as Bordeaux Wine, sold in France at fcs. 150 per hogshead. The quantities of berries which can be got in Germany, is, however, not large, as the extension of the forests is small compared with the northern countries, and also the southern position is not so favorable for such wild berries. I consider the cost of producing such wine to be here about 30 penni per bottle. It makes one cross to see the large quantity of wood berries which here grow rotten every year. I have negotiated with the inventor (he is still the only possessor of the secret) about the *sole right* to make such Wine here in Finland (not including Russia, which has entirely other laws, money, duties—duty exists also between Russia and Finland—language, &c.) I can, no doubt, get it at a very low price, as the German gentleman in question already has a business of this kind at his residing place and hardly knows much about the northern countries. The produce has, of course, a more severe competition to withstand in Germany, which is a grape-producing country. Berry-wine is now used in a great many hotels, in hospitals, and also in the German Navy. I have got a great many testimonials about it. The making of wine can, of course, be carried on in a very small scale, but as I don't know any particulars of wine making and treatment, as is also the case with every one else in this country, where no grape and berry wine has been produced, and as I wish that no want of capital should put a stop to the extention of the business, I were desirous of entering partnership with some gentleman of large means and possessing some knowledge of the trade. The import duty on wine is here: Champagne and all other sparkling wines per bottle 3 mark 60 penni; other wines imported in bottles 1 mark 60 penni; and any wine in casks (without regard to the percentage of alcohol, as is the case in England), per 20 Finnish lbs. or 8½ kilograms, including the cask, 3 mark 80 penni—1 Finnish mark @ 100 penni is = 1 franc. Only gold is here legal payment. The duties are here about 2½ times higher than Sweden and Norway, and consequently a wine business here gives a much better return. In order to give favorable terms for the export of dried fish to Spain and France, Sweden and Norway have been forced to very low wine duties. The import of wines reached here 2,619,000 marks year 1885. Here is mostly bought cheap wines, and consequently the quality is according to it. Russian wines pay the same duty as other ones. I dare say I know this country better than any one of this town. I send now also two books published by me on my own account. My family is originally Swedish, and Swedish is also my native language though I also speak Finnish. I refer to the Mayor or Borgmastar Edward Molander of this town (he knows German and some French, but no English). If any one of your firm or any friend of yours, having some knowledge of the wine trade, were willing to negotiate, with a view to partnership, please write to me about 23 *instant to Charing Cross Hotel.* I were obliged if you also would give references. I am in a few days going to England and will then show samples, testimonials, &c., of the wine and give information about laws, &c., of this little known country. You will find a description of Finland in Murray's guide-book of 1887 (if now ready, it has lately been revised here and ought to be correct), and in Almanac de Gotha of 1885 and 1886 but not much in the one of 1887. I have seen in Whitaker's Almanac, that the consumption of spirit and wine in England is more than 20 per cent. less than ten years ago, and suppose on account of it that this trade is suffering from a great depression. I have the honor to be, Gentlemen,

Your very obedient Servant,

EUGEN JARNEFELL.

This place is at 61° 30′ northern lat. am convinced this business is no hazard play; the head question is the QUALITY OF THE WINE.

On reading the above we cannot but feel, however, wild and impracticable may be the scheme, that it was penned to some extent in good faith. The internal evidence seems to our mind to show that the writer is really of opinion that a grand future existed for "Bilberry Wines," although his information when in England must have been seriously defective if it led him to address the House to whose courtesy we are indebted for the precious document. In admitting so much, however, we must also own that the Finlander has a fair idea of protection so far as "number one" is concerned, since without capital himself he only invites to participation in the scheme, those whose coffers are sufficiently well-fitted to bear the brunt of the battle. Moreover our worthy fabricator does not go to the length of explaining in what way his product is to be used; we know that he proposes to concoct a "wine," but is the said product to figure before the public as Jarnefell's Bilberry Wine, or does he expect the English merchant to vend it as St. Julien, St. Estephe, or the product of other districts of the Medoc, to which, according to his account, it bears so striking a resemblance. If the former be the idea, we recommend, for the sake of his own purse that Mr. Jarnefell should confine his efforts to Finland and not attempt to extend them to England, where insular prejudices, even to the extent of scepticism as to the virtue of Bilberry Wine, are still in great force. Ignorance, we are repeatedly told, under certain conditions, is bliss, but in the present instance we fancy that it may, as with a modified form of itself—a little learning to wit—be classified as a dangerous thing. Ignorance, we presume, allowed the writer to address upon the subject the House who kindly handed us the letter, and it is to Mr Jarnefell's ignorance of the London trade that he has courted the present *denoument* of his schemes. Like the female sex, the Finlander has condensed a great deal into the post-script, in this he asserts the business is no hazard play, and that the question is one of the quality of the wine. We can quite understand that there would be no "hazard" in the investment proposed, for had we personally been cajoled into such an investment, we should, in our earliest moments of sanity, have written off the sum as a bad debt; in the same way we can quite believe that the question is the quality (save the mark) of the wine, which we can conscientiously think will of itself be capable of preventing any development of the trade in England. As to the "German gentleman" who is the fortunate possessor of the secret, we wish him joy of his knowledge and power. If the sons of the *Vaterland* prefer Bilberry Liquid to the "good Rhine Wine," by all means let them take it; but let them know what in reality is the concoction they are drinking. With the practical common sense of the Teutonic race, however, we can scarcely imagine Germany fostering a son, whose apparent intent is to deceive the parent, and unless it can be foisted upon the indiscriminating and unthinking portion of the public, we cannot believe that Mr. Jarnefell, and his gentlemanly German prototype, will obtain more of public favor than the merits of their goods is likely to warrant.

BARREN VINES.

Prof. Angoes, who is a recognized authority, explains the cause of barrenness of vines to be unsexuality. In some cases the anthers are defective with a good stigma, in which case the planting of a fertile vine which is perfect in bloom and that is bisexual like the Concord, will induce full productiveness by cross-fertilization. If, on the other hand, as is sometimes the case, the stigma is imperfect or defective the fertile male pollen will be wholly inoperative and no influence of culture or pruning will reach the cause with any certainty. The surest plan is to grub out the vine and plant a good one in its place.—*Monticello Farmer.*

ANOTHER CHECK.

Extreme teetotalers, we are afraid, will come to the conclusion that the case of the bishops is hopeless. Only the other day, the Bishop of Manchester said, at a temperance meeting, that he had found a glass of wine with his meals to be essential to the continuance of his health and strength, and now the Bishop of Lincoln has been scandalizing the sensitive teetotal body in a similar way. Preaching at the Diocesan Conference of the Lincolnshire Branch of the Church of England Temperance Society, he stated his opinion that alcoholic liquors are "the gift of God." His lordship was immediately taken to task by the secretary to the Spalding Lodge of Good Templars, who stated that the sermon had caused a heated controversy in the southern part of the county, and he replied as follows: "I trust it is quite sufficient to say that I believe there is a special work for total abstinence to do, and I wish the society God's blessing—yet I can only support the temperance movement upon an honest recognition of the double basis." We are glad to see that men of position and influence are at length beginning to protest against the bigotry and attempted tyranny of the teetotalers. As we have said before, it is only necessary for a few authorities like the Bishops of Manchester and Lincoln to make a bold stand in favor of freedom and reason, and others will be encouraged to disregard the violent language with which they may be assailed, and to give effect to their own convictions upon what is known as the "drink question." One thing is certain, and that is that the thorough-going teetotalers will in future regard the bishops with sublime contempt. It is bad enough, in their view, for a man to be guilty of the cardinal sin of moderate drinking, and any one who has the audacity to defend the custom must be given up in despair. They are unable to see that the terms temperance and moderation are synonymous; but the community as a whole are not so blind, and, while the cause of true temperance is making substantial progress, we may hope to see the methods and language of the blustering section of the total abstainers fall lower and lower in public esteem.—*London Wine Trade Review.*

A CASK BORER.

While at Beringer's cellar, recently, we were shown a little insect which does great damage to wine casks, particularly pipes and puncheons, by boring into the wood and causing leakage. It is a little beetle-shaped insect, about the size of an ordinary house fly; it will light on a puncheon and bore right into the wood, throwing around itself as it enters a circle of sawdust, the same as a gimblet would make. Where they bore into the side of a cask, the hole thus made can be usually pluged up, but ordinarily they enter in the joint of the head, where lies the weakest point of the cask and where it is next to impossible to repair the damage. In this way much valuable oak cooperage is ruined. These borers appear for a few weeks in the Spring and then disappear. They are more plentiful where there are oak trees near at hand. The only remedy found is to keep careful watch of the cooperage and kill the insects. Mr. Beringer says they do not enter his underground cellar.—*St. Helena Star.*

THE VINEYARD FROM THE BEGINNING TO ITS MATURITY.

[C. H. Bronson in the Vineyardist.]

The first point is location, which is to be had on the sloping hillsides of our beautiful lakes, Seneca or Keuka, while some of the most favored slopes of Pleasant Valley and the northern hillsides succeed well with the earlier varieties, Catawbas doing well and ripening to perfection near the Pleasant Valley wine cellars. The second point is quite as essential to the success of the vineyardist—the soil. It used to be said that grapes would grow on the poorest soil we had. It now takes the best, and that needs to be fed liberally from year to year. All soils are not good for all kinds of grapes Delawares, when once thoroughly established, do best on clay or heavy clay loam, while Concords do well on most any soil, yet they do best on clay loam. Catawbas do best on our loose, gravelly, naturally dry and porous soil, with a good healthy exposure to plenty of fresh air and sunshine. Ionas seem to do best on a clay loam or black muck soil. I speak of these four varieties, as from my standpoint I consider them the only grapes to properly cultivate. All grapes succeed best on lands well cultivated and properly drained. Grapes do not want wet feet, nor will they do well with them, for with the ground wet it is cold and unhealthy, which causes the vines to decay, and soon they die with premature old age, which will not be the case on lands well drained so that heat and air can penetrate the roots.

The next important step is preparation of the soil. It is presumed at this point that it is drained. Deep plowing is best, following in the same furrows with a good subsoil plow, breaking the ground to the depth of fifteen or eighteen inches at least, so that in setting the roots no basins will be formed. This subsoiling does not throw the sub-soil to the top; this is not the object, but simply to loosen it up so that the young and tender rootlets of the first year's growth can easily penetrate it and make a good healthy growth the first year, which they will not do, if this is not done. Under the old way of simply plowing and dragging the holes in the hard subsoil, a basin was formed, and if the holes were not very large, which almost invariably was the case, as it is so much easier to make a small hole than a large one, the young roots could not penetrate the hard walls of their cell. Consequently they would seek the softest and most easily accessible spot, and climb up the sides, grow along on the top of the subsoil, until, perchance, there appeared to be a crevice, they would dive down into it, and seek what they must have to live and do well, namely, moisture; and they will go down until they find it. All of this means, of course, and you understand, applies to land of heavy clay subsoil, and not to gravelly, loose soil.

Next comes the selection of the varieties, which the vineyardist must determine for himself by carefully noting where the frost line reaches, the exposure to sunshine and air, a plenty of which you must have.

The next highly important step to be taken is the selection of roots. I would have a good first-class yearling root in preference to any other, the cutting from which it grew twelve inches in length, with from four to six good healthy small roots, with plenty of small fibrous roots attached to them, and those roots at the bottom. I should not object to a second course four inches above them, but not much nearer the top, as that would insure what I do not want, surface or saccharine roots. These roots I would trim to from from four to six inches in length, and cut the tops to two buds. We now have the roots ready to set.

The hole should be dug at least fifteen inches deep, so as to completely take in the root, so the crown will come a trifle below the surface when the ground is leveled. I would then set it perpendicular, spreading them out straight in the ground; not have them all in a heap. A doubled-up root will not make a good healthy vine. I hold that what is worth doing at all is worth doing well, and when you plant a vineyard you are doing something not only for yourself but for your children. Cover the roots of the vine with fresh surface soil. Now, if you have it handy, you might add some well rotted manure or fertilizer. Put in a handful or two, taking care not to have it too near the roots, because if you get in too much heat it will cook the roots and kill them. This mistake is often made. We now have our vines set.

Cultivate thoroughly the first year, and cut back in the fall to two buds. Mulch them, and be sure to do this, and do not by any means neglect doing it well. Give them a start and keep them growing, not let them get stinted, for if you do you will never have a paying vineyard. Break out all but two canes and let them grow. Trim again to two buds, mulch again, this time a little stronger, as your vines now cover more space, the roots reaching out further and wanting more food. The third year trim them to what is known as the one standard system, long enough to tie straight up to the first wire. Let four buds grow this year, and if you see a vine that is making a sickly growth break out two of these. If it does not look as though it were doing well, break off the fruit if it has any on. The fourth year, if the vine has made the required growth, trim with two arms of about eight buds, according to strength of the vine. Let me caution all to never overload a vine, as this is one of the greatest curses to a vineyard. This will be apparent to the skillful eye by noticing the feeble growth of the vine and unhealthy look of the fruit, which will be small and shriveled. When you see this do not hesitate, but at once pull off the fruit, and if you think necessary, cut off some of the arms of the vine, which will no doubt save the vine and insure a good crop the coming year.

I have trimmed vines from the first of November to April, and see no difference in the time of trimming. If grape vines have been neglected, the earlier they are trimmed the better.

The bleeding which follows late pruning is not so injurious as it appears to be, but it is better to avoid it by fall or early spring pruning. It is not so disastrous to the vine unless persistently followed.

Cloverdale we understand withstood all damage from frost, most fortunately for the vineyard proprietors, but we think that the people there are making a very grand mistake. Their wines are very strong in saccharine and somewhat lacking in acid, so we would recommend them to thoroughly test vines of the Burgundy, Sherry, Madeira, Marsala or port wine types. The wines of the above district are excellent, but they alter, from the excess of saccharine, the supposed quality of the vine from which made. For example, there a claret grape will more probably produce a so-called Burgundy, a Rhenish wine will have a sherry tendency, and the residents of the Bourgogne ape their Oporto brethren. The Feher Zagos should be tabooed, as it is a vine that in no way produces high-class results.—*Sonoma Index Tribune.*

ADULTERATED OLIVE OIL.

[London Grocer's Gazette.]

In a report on the trade of Leghorn during last year, Consul A. P. Inglis makes some remarks on the exportation of adulterated olive oil in what are commonly known as Florence flasks. This trade, he tells us, has been further developed. Whereas, formerly, the practice of certain firms was to put in these flasks the lowest quality of olive oil, not produced in Tuscany, but in other districts, such as the Romagna, mixed with cottonseed oil, of late cottonseed oil pure and simple has been sent out, the cases being branded as "olive oil" of superlative quality. As, however, cottonseed oil is to be had cheaper in England than in Italy, a step further has been taken, and the empty flasks packed in the usual cases are now being sent to London to be filled there with cottonseed oil, which is, of course, sold to the public as olive oil of fine quality. There was a time when really good and pure oil was imported in Florence flasks, but competition and the beating down of prices by importers in England have resulted in the present practice. Neither the flasks nor the cases in which they are packed have at any time borne the brand of the exporter, the importers objecting to such marketing as being prejudicial to their particular interests. Hence, the best firms in the Leghorn export trade have stood on the same level, so far as the English public has been concerned, as the firms practising adulteration. The result is, Mr. Inglis observes, that the Florence flask trade, a specialty of Leghorn, as the flasks are procurable only in Tuscany, has been utterly discredited, and the leading firms engaged in the olive oil trade have abandoned the use of such flasks. Persons who buy oil in Florence flasks may now know what to expect. Mr. Inglis adds that it is not an easy matter to get genuine Lucca oil of fine quality in England. The demand is chiefly for cheap oil, and public ignorance is traded on to a great extent.

Referring to this subject, our contemporary, *Industries*, in a recent issue, gives a ready means of detecting the adulteration of olive oil by cottonseed oil. The refining of cottonseed oil has made such progress of late years that it is produced quite clear in color, and thus there is no longer a reddish tint to indicate its presence, which can only be proved by chemical analysis. The extent of the admixture sometimes reaches and even exceeds 75 per cent. One mode of readily testing for this adulteration is with nitrate protoxide of mercury, the yellow simple basic salt of this chemical combination being employed ($2Hg_2O$, $NO_5H.O.$). About one-seventh to one-sixth of an ounce of this is dissolved in a cylindrical test glass in about one-sixth to one-fifth of an ounce of nitric acid. On this solution the oil to be tested is poured in such quantity that the test-glass is about two-thirds full. The two fluids are then shaken together for five or six seconds, and the change in color is at once noticed. Cottonseed oil, when treated in this solution, becomes dark brown or almost black, but after a short time the solution becomes colorless and clear. Pure olive oil has a greenish or light yellow tinge, while the solution under the layer of oil assumes a dark red or brown color. Olive oil mixed with 50 per cent. cottonseed oil assumes in this process a brick red to brownish red tinge. A mixture of 25 per cent. makes orange yellow to red yellow. The solution of the mercurial preparations remains for the most part colorless with mixed olive oils, as well as pure cottonseed oil. Pure olive oil should never assume a reddish tinge in this test; the redder or browner it is, the more cottonseed oil does it contain. Thus, a little practice allows of a color scale being formed, by which the presence even of 5 per cent. of cotton oil may be discovered in a few seconds.

WINE MAKING IN CALIFORNIA.

[The Western Broker.]

The prettiest and cleanest employment I ever saw is that of gathering grapes. But it is hard on the back, and in the end is not easy work. Of course, the ugly stumps are entirely hidden by the vines long before harvest time. Indeed, the thousand vines and tendrils and blossoms that branch out from the little black stump in the earliest days of Spring have long before harvest time completely covered every inch of ground with vines and leaves and tendrills that reach almost to your waist. And the stump is one solid mass of luscious grapes. They are all there clinging to the stump, not scattered about over the ground on the long vines that are to be shorn away. But you begin to feel down in the dense mass of leaves and tendrils for your stump, and at every stump you find a little cart-load of grapes.

There are blank rows up and down and across all the large vineyards for the wagons, and one of the prettiest sights in California is the long lines of wagons on the high roads on their way to the wine presses with their great heaps of streaming grapes.

The best hand in the grape field by all odds is the little Chinaman. He grows close to the ground, and so does not have to bend his back like a large white man. Besides, he is very supple-fingered. And it does not take a John L. Sullivan to lift a bunch of grapes. And so when you have decided in your mind that the grape is going to be a conspicuous figure in the political economy of this, the greatest State in the Union, and when you have further decided that the Chinaman is necessary to make it most profitable, you can decide very certainly in your mind as to whether the little brown men are going to go or stay.

If only every white man would hasten to get hold of a little piece of land and plant it all, either till it himself or employ Chinamen to do the hardest part of the work for him, why then this question of cheap labor, so far as California is concerned, would be settled instantly and to the satisfaction of all. When the white man who is now employed, comes to be the employer, why cheap labor will seem in his changed mental vision to be the very best thing that could be bestowed on the commonwealth of California.

And land is so cheap and so ready for the plow, and so accessible, too, by any one of the five Pacific railroads, as compared with the time, when we, the old settlers, put in the best half of the year in crossing the plains!

But, alas, notwithstanding all I can say or do, I fear my fellow laborer will cling to the dirty alleys of the dismal cities, hug his hatred of those who have toiled and braved danger and made life a success. He prefers the pest-house for his children to the green grape-fields, and the sweet air of the roomy west. He prefers making bombs to making bread. Alas, my fellow laborer you are a *bomber!*

PHYLLOXERA IN AUSTRALIA.

The following report from the Phylloxera Board in the Colony of Victoria shows that much more attention is paid to the eradication of this pest in the Colonies than in California:

To the Hon. J. F. Levien, M.L.A., Minister of Agriculture.

SIR:—In compliance with the request contained in your communication of the 17th inst., I have now the honor to report on the visit paid to the Geelong District on the 18th of June last, in company with yourself, Mr. J. Harris, M.L.A., the Hon. Dr. L. L. Smith and the Secretary for agriculture.

2. I have abstained from forwarding an independent report before this date in anticipation that the late Chairman of the Phylloxera Board, Dr. L. L. Smith, would have called the members of that body together in order that a joint document might have been drawn up. That gentleman has, however, furnished you with his own views on the subject without having consulted his fellow members, and I am therefore under the necessity of adopting a similar course.

3. The Moorabool Valley, near Geelong, was visited on the date named, that being the place where the phylloxera vastatrix first made its appearance in Victoria, as nearly as can be ascertained about the year 1875.

4. The land formerly occupied by vineyards known to be infected with phylloxera was inspected, the object being to ascertain whether the insect still existed underground. The first spot examined was that on which a vineyard had been cultivated for some years prior to 1877. In that year the vineyard was found to be infected with phylloxera, and in 1878 was uprooted under the Vine Diseases Act.

5. During the latter end of 1877 the board examined this vineyard, it being then in full fruit-bearing, and an opportunity was therefore afforded for examining the leaves, the wood and the roots of the vines. On the leaves neither the fly nor the galls were met with, but many of the leaves were fringed with a yellow band, indicating, first, that the phylloxera were at the roots of the vines, and second, that it was their first year of attack. On examining the roots it was further found that the phylloxera were present in great numbers and full of activity, and in different stages of development, from the egg to the fully matured insect.

6. When the vineyard was uprooted there was left in the ground a number of roots and rootlets.

7. In the year 1880 the board visited the same place and dug up some of the remaining pieces of the roots, some of which were found at a depth of 18 inches to 24 inches below the surface. The phylloxera were still present, but less in number and in stages of growth, no eggs being met with. The roots, when broken, were succulent, but had changed from a light yellow color to a light brown, thus indicating feeble vitality. The rootlets had decayed and were entirely absent.

8. On the occasion of the late visit in June last I made another examination at the same place of both the lands trenched and untrenched and the remaining vine roots. The latter were found some 6 inches or 8 inches deeper than before, and in a complete state of decay. The phylloxera were entirely absent; the shrivelled shells of the body of the insect were adhering to the decayed root. My investigation on each occasion was conducted on the spot under microscopical examination, and afterwards confirmed by further investigation on the dead subject in my own laboratory.

9. The history of this vineyard has been given in order that it may serve as a basis for the full consideration of this difficult problem.

10. On proceeding up the valley, some ground formerly occupied as a vineyard, 25 acres in extent, was also examined. The vineyard was destroyed under the Vine Diseases Act in the year 1879. The roots and rootlets left in the ground were still perfect, and on being fractured were found to be alive, capable if any wood bud was attached to the roots of sending up to the surface good vine shoots. Both on the roots and rootlets the phylloxera were alive and present in great numbers, but in a state of hybernation. On being exposed to the sun's warmth they became active and moved about. One peculiar circumstance was noticed, viz., that although the phylloxera remained on the rootlets yet the usual swelling was absent. This induced the conclusion that the rootlets were failing in their work of suction from the soil, being evidently in their first stage of decay.

11. The visit was extended further up the valley to the Moorabool Viaduct, a distance of over five miles from the first place visited. A vineyard which was situated near the viaduct was destroyed by the proprietor before the Compulsory Compensation Act came into force, in consequence of the phylloxeræ being detected among the vines by the vigneron himself, but for this laudable act he received no compensation. Only a few roots were found in the ground, and these showed signs of decay. A few phylloxeræ in scattered groups only were found.

12. The whole of my observations in connection with this matter confirm me in the opinion that the insect is the veritable *Phylloxera vastatrix*, and that we have a subtle enemy of viticulture to deal with.

13. Entomologists of the present day are trying to unravel the peculiarities of this interesting but devastating family of the aphis tribe, but there is nothing certain to guide us in arriving at conclusions as to the ultimate end of the underground phylloxera after one species in the cycle of evolution has been destroyed, as is the case in the destruction of the winged insect by uprooting.

14. That the underground phylloxera continues to live, lay eggs, and propagates after this has been accomplished for more than four years is certain from my own observations. It must be remembered that the roots left in the ground are deprived of the means of supplying a sweet and vigorous sap, by the destruction of the superstructural parts of the vine. This sap is evidently their primitive food, the genesis of their vigorous evolution.

15. The microscope reveals existing in these detached underground root pieces a vast storehouse of a clear orange-colored gummy substance, produced by the sluggish movement of the sap. The underground phylloxera lives on this substance. The proof for this statement rests on the following observations:—(A.) The phylloxeræ rest in groups around and in the fissures found in the bark of the root. (B.) On removing carefully one of the insects from its place, the probocis or sucking tube will be found imbedded in this gummy substance through the cracks or fissures of the bark, and the tube has fairly to be drawn from it. (C.) The canal or stomach of the insect is found full of this gummy matter, and its whole body partakes of the color. So long as the root remains succulent or undecayed it will continue to be the means for maintaining the underground phylloxera. The removal of the superstructural vine has apparently ended the life of the fly family belonging to this terrible pest, viz., the winged insect and the gall nests on the vine leaves.

16. What period will have to elapse before we announce the complete clearance of the underground phylloxera in the Geelong District is quite uncertain. Such a welcome result would appear to depend in the first instance on the complete decay of the roots in the soil, or the thorough overhauling of the old vineyards to a considerable depth, probably from 4 feet to 5 feet, every shovelful of earth being carefully sifted. Even then there will be some doubt still remaining as to the complete eradication of the tainted roots. The extent of the danger to which we are still subject from the underground phylloxera is mere conjecture; but I feel certain that there is danger, and would urge vigilance and close supervision over the whole Moorabool Valley and the surrounding district. In a recent work by Dr. Riley, one of the foremost authorities on this matter, I find the following remarks:—"If all winged individuals were destroyed as fast as they issue from the ground we have the spectacle of an underground insect possessing the power of continued existence. Even when confined to its subterranean retreats it spreads in its wingless state from vine to vine and from vineyard to vineyard, when these are adjacent, either through passages in the ground itself or over the surface. At the same time the winged individual migrates to much more distant parts."

17. It is a matter for regret that greater care has not been taken by those employed to uproot the vines. Too many pieces of the roots were left in the ground, and these will considerably prolong the time before the valley can be pronounced clear of the phylloxera.

18. Of the origin of the disease in the valley nothing is known beyond mere conjecture. The systematic close pruning of vines is, in some cases, supposed to have a close connection with the appearance of the disease, and it would be well for vignerons to carefully weigh this phase of the question.

19. With reference to the utilisation of the lands formerly occupied by vineyards, I cannot recommend the growth of fruit trees at present. In my opinion it is a moot point whether in the stress for food the underground phylloxera might not attack other rootlets of a succulent and woody character. This might, however, be decided about September or October next, when activity in the insect in question sets in. The information could be obtained by careful inspection of the roots of fruit trees now growing in the vineyards of the Moorabool Valley.

20. After all the investigations of myself and of the board, extending over the past six years, and reviewing the whole subject as now presented, I would recommend as follows:—

(1.) That the Moorabool Valley be visited periodically, say every three months, by experts, for the purpose of watching any change in the insect, and noting their migratory propensities.

(2.) That strict surveillance be exercised over the old vineyard grounds in the valley. Under no pretence should vine shoots be allowed to exist above the ground, or vines cultivated within the limits now existing under the act, for at least two years and a half. A close inspection of the area might then be possibly made, with the view of reducing or varying the present proscribed district, unless experts should report to the contrary.

(3.) That the infected grounds should be cultivated with bulb or root crops only, such as turnips, carrots, parsnips, mangolds, beet, onions, etc, or else be allowed to lie fallow.

(4.) Should the foregoing recommendations be rigorously carried out, I am of opinion that the phylloxera pest will not spread, and further, that these measures will shorten the time of quarantine for the Geelong District.

21. Should you be desirous of trying what will be probably a more expeditious plan of clearing the infected lands of the phylloxera than any yet adopted, I would suggest that dynamite be employed. The advantages of employing such an agent are obvious. Small charges might be inserted in the centre of 10 feet squares, and as this explosive strikes chiefly downwards as well as laterally, it would have the effect of thoroughly loosening and turning up the soil to a great depth, while possibly the fumes generated by each explosion would have the effect of destroying all insect life. The cost of this process as compared with ordinary trenching would be nominal, and as the infected lands are away from habitations, the experiments might be made without danger, provided the work is placed under the control and direction of persons thoroughly acquained with handling dynamite. I have the honor to be, Sir,

Your most obedient servant,

JOSEPH BOSISTO,

Member of the Phylloxera Board.

The board is adverse, under existing circumstances, to replanting with vines those portions of the Geelong District formerly proclaimed infected with disease. Although £30,000 have been spent in efforts at eradicating the pest, it still exists with great vitality in several places. Up to the present time the disease has been confined to Geelong District, and by continuing the system of quarantine, and resorting to restrictive measures, the disease will be eventually stamped out so as to allow of replanting, but just now this would jeopardise the safety of vineyards in all the colonies. The spread of the disease has been undoubtedly arrested, for the supply of underground vine roots infected with the insect, though not exhausted, is diminishing. If active measures are taken the supplies may be destroyed by trench ploughing or by spade trenching to a depth of 18 inches, and burning the vine roots in the ground. This should be done at once by disinfectants placed in the bottom of the trenches, and six months after this is done to the satisfaction of the board, replanting will be allowed. Many infected vine roots have been found in well preserved condition underground, owing to the careless way in which the work of eradication was carried out.

An interesting letter from Mr. L. D. Combe, of Santa Clara County, is published in this issue. The writer agrees with the MERCHANT on the subject of wine storage and the advantage it would prove to makers.

ABNORMAL DEPOSITS ON VINE LEAVES.

On May 14th a few leaves from a Muscat vine were received from E. H. Loveland, foreman of the Butler vineyard at Fresno. Mr. Loveland's attention had been attracted by what seemed to be a growth of fungus on the leaves and on one side of the trunk of the vine. He wrote that he had noticed the same thing before, but never in such amount as this season.

A preliminary examination of the specimens showed that the leaves, though appearing quite healthy in color, were thickly covered on both sides with a whitish substance occuring in irregular masses, and which at first glance might give some suspicion of a fungoid growth. Examined with a hand-magnifier, however, the material was seen to be of dense character and prone to lift from the surface of the leaf in scale-like particles—in fact, in some places, especially where it had extended over the ribs of the leaf, it had divided and partly lifted itself from the surface as though it had become shrunken and distorted by drying. No features of fungoid growth were discernible. Upon careful exploration with a three-fourth inch objective the marks shown by the hand-magnifier were made more plain, and the whitish masses gave indications of a crystalline structure, manifesting itself in two main forms. The thinner portions were chiefly made up of flattish crystallizations of arborescent form, spreading out upon the surface of the leaf, and the thicker parts were dense white masses covered thickly with acicular crystals. The whole appearance of the material was that of an incrustation held in place by adhesion and by interweaving of the leaf hairs through it, the latter fact indicating that it had come upon the leaf in a fluid state and had thus taken close hold upon the inequalities of the leaf surface. This being the character of the deposit as determined by the microscope, and as no traces of fungoid origin could be discerned, it was evident that the composition of the material, as determined by chemical examination, would be most apt to disclose its source.

The small amount of material which could be scraped from leaves, somewhat less than one grain, rendered it impossible to come to perfectly definite conclusions regarding its exact nature.

The original material contained:

44.3 per cent. insoluble in water.
55.7 " " soluble " "

Of the soluble part:

69.8 per cent, was organic matter and water.
7.2 " " " soluble ash.
23.0 " " " insoluble.

The part insoluble in water contained:

81.1 per cent. of organic matter and loss.
18.8 " " " ash.

The part of the original material insoluble in water consists mostly of lime, with a small amount of magnesia and sulphuric acid. A slight residne resembling mica (probably from the dust of the soil) remains after the treatment with acid. Sulphur is present in sufficient quantities to be easily detected when ignited—doubtless from the sulphuring of the vines.

The soluble part of the original material was slightly acid. On ignition it blackens, and emits a slight odor of burnt sugar. The presence of a little sugar is also shown by the copper test. The soluble part of its ash is strongly alkaline, and consists largely of carbonate of potash with some sulphuric acid.

The insoluble part of its ash consists chiefly of lime with a small amount of magnesia.

The general result of this examination would seem to be that the white substance is a saline incrustation of organic salts of potash and lime. Such a deposit might result from the evaporation of vine sap itself, but its deficiency in gum and sugar and apparent absence of tartaric acid (judging from the crystalline form of the incrustation) renders this supposition unlikely.

OTHER SPECIMENS.

Another specimen sent by J. S. Dore, of Borden, Fresno county, had all the characteristic marks of the specimen from the Butler vineyard, except that the material was less abundant. A specimen from Hiram Hamilton, of Orange, Los Angeles county, differs in some respects from the Fresno samples. The deposit is much thinner, and looks as though drops of thin whitewash had fallen upon the leaf and spread out upon it. It is most abundant upon or near the outer edges of the leaves. Examined with the microscope, the deposit does not show the needle-shaped crystals as in the former cases, but has instead somewhat irregular, roundish masses, sometimes contiguous, sometimes separated enough to show the green color of the leaf surface beneath them. There is, however, no indication of fungoid form or growth, but rather of granular formation, presumably an incrustation. The material was not abundant enough to admit of chemical examination.

A specimen received from G. F. Merriam, of Escondido, San Diego county, resembles closely the one from Orange, Los Angeles county. Mr. Merriam writes: "You will notice along the edges of the leaves something white—as if lime-water had been thrown upon them." In this sample the thicker line of incrustation along what seems to be the part where most of the liquid would collect by gravitation is a noticeable feature.

FURTHER INVESTIGATION NEEDED.

We make this preliminary statement concerning the nature of these abnormal deposits upon vine leaves, because of the interest which has been awakened in them in the localities where they have occurred, and to allay fears which seem to prevail that the peculiar appearances are due to the presence of "downy mildew" (*peronospora vtticola*)—a disease of the vine which is properly dreaded. The wide announcement which has been made of the evil occasioned by this fungoid parasite, naturally renders vine growers alert to detect signs of its encroachment. It may be stated that the "downy mildew" exhibits its presence by marks wholly dissimilar to the characteristics of the incruststion which we have described above. It forms "conspicuous white patches" of a fuzzy or downy character, as its common name indicates. These patches may be very small, but their soft, wooly nature is easily detected. As the disease progresses the patches become yellowish, then brownish, and finally the portion of the leaf affected exhibits all the marks of dead tissue. Sometimes the leaf is almost wholly covered and shrivels and dies. Microscopic examination shows that the fungus has penetrated the leaf substance and destroyed it.

In the case of the incrustation noted above, the material is wholly upon the outer surface of the leaf, merely resting upon it and easily separated from it. Careful examination of the epidermis from which the material has been removed does not show any invasion of the tissue. Nor does it appear from the samples received that the deposit, whatever may be its origin, does any injury to the leaf or its functions. Upon this point we desire more information from those who have observed the occurrence and traced its effects.

We desire more liberal supplies of the material to pursue investigations which we trust may disclose the origin of the peculiar phenomenon. We would also be pleased to have all vine-growers whose attention may be attracted by this announcement, examine their vines and send us specimens of anything which may seem to them to be of the character described. In many cases serious apprehensions may be allayed by determination of the real nature of what may seem to be threatening phenomena, and even when the matter is serious it is well to be advised of it as early as possible. The University Experiment Station is equipped for such work and its facilities are always at the service of the vine-growers and agriculturists generally.

E. W. HILGARD.

Berkeley, June 4, 1887.

MYSTERIOUS DEATH OF VINES.

An investigation into the causes of the mysterious decline and death of grapevines, at certain points in Southern California, has been in progress at the University Experiment Station for several weeks. The work was undertaken to test the results announced last year by reinvestigation, and because the loss and vexation resulting from death of vines continues in the same localities affected last year.

Quite a large collection of vines in different stages of decline was secured from the growers. In some cases the vine was almost lifeless, and had made but the most feeble attempt to break its buds, in others one cane had made a fairly vigorous start, while others did little or nothing; in others still all the buds had thrown out a few inches of very weak cane. Thus we had for examination vines in various morbid states. The examination of this material was also much helped by careful descriptions of the progress of the trouble by the growers and by personal investigation in the field by Mr. F. W. Morse. The results of the examination as to locating the trouble in the vine itself were mainly negative, as was the case last year. Although most careful microscopic examination of the leaves and wood of the affected vines was made, there was no parasite of either animal or vegetable nature found. In fact the tissue of leaf, cane and trunk was found to be perfectly normal, except that there were clear indications of defective nutrition resulting from a stoppage of the sap supply. Why this stoppage occurred, there was nothing in the vines themselves to show. In some samples submitted, a part of the sap ducts were partly or wholly closed with gummy material, presumably the result of condensation of the small sap flow, because of lack of pressure to carry it onward to the nourishment of the newer growth, but there was not, on the whole, nearly sufficient obstruction to prevent the flow of sap had the flow been normal. In fact the decapitation of vines in the vineyard showed that there was in some cases very little sap flowing, and in others none at all. This checking of the sap flow is not the immediate effect of parasite attack, and where it sometimes results as a secondary effect, the tissue of the plant shows the disorganization produced by the earlier invasion of parasite growth. In the cases examined, this source of trouble was plainly precluded, because the tissue was normal and healthy, except in the noticeable deficiency in the sap flow. This fact was determined by repeated examination, both of cross and longitudinal sections of the new growth, the younger wood of the spurs, the trunk of the vine and the roots and rootlets—even to the smallest which could be found on the vines sent to us.

This conclusion is a verification of the results set forth last year by field examination by Mr. Morse and by microscopic investigations in the laboratory—an account of which is given in the Viticultural Report of the University for 1886, to which the reader is referred. His conclusion was that there was nothing found that would indicate a true disease which might increase and spread to neighboring vineyards, but that the phenomena were traceable to more or less accidental and local peculiarities of soil, season, moisture, conditions, etc., which may not recur and produce similar effects for many years. It is altogether likely that the continued decline of vines observed this year is but the natural sequence of unfavorable conditions prevailing in the winter and spring of 1886. Since the loss has been greatest in districts where vines have been longest cultivated, it is possible that the evil has been aggravated by the gradual exhaustion of the soil; pointing to tertilization as at least a partial remedy and preventive by enabling the vines to rally from their enfeebled condition, through the recuperation of the root system.

E. W. HILGARD.

Berkeley, June 4, 1887.

The Australian Vintage

Vintage operations in Australia were seriously impeded by heavy rains. Some musts tested gave the following specific gravities: Muscat, 1,110; Shepherds Riesling, 1,120, Riesling, 1,100; Ancarot, 1,096 Shiraz, 1,094; Malbec, 1,094. Although these weights are below the average, it was believed that good wine would be made. Large quantities of Victorian grapes were purchased by wine makers in Albury, New South Wales, at prices varying from £5.10 @ £7. per ton.

Unseasonable weather still prevails in the country alternating in extreme heat and cold. This week even there was a light frost near St. Helena. These sudden changes are bad for the vintage.

THE SAN FRANCISCO MERCHANT.

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STORING BRANDY.

Some exception has been taken to the appointment of the manager of the warehouse for storing brandy in New York, on the grounds that he is interested in the business and will push sales for those for whom he acts as agent to the detriment of other makers who may be storing brandy in the same warehouse. The benefits derivable from the system of storage are generally conceded. It enables the maker to age his brandy without paying the tax on it, and to obtain advances, thus giving him an opportunity of obtaining better prices than he has been in the habit of receiving. The objection raised to the gentleman who has been appointed, and of whom we have no knowledge whatever, is a mere quibble. Every brandy maker who uses the warehouse in New York has his agent in that city. The agent is informed of the quantity stored there and of the price asked for it, and it is his business to find a buyer. He has as much opportunity to sell as the manager of the warehouse has, and has every opportunity for access to the warehouse. If he is not as good a salesman then the maker in California should look out for a better agent. The objection raised to the appointment is a mere matter of selfishness.

When drinking wine, see that the bottles from which it is taken have the pure wine stamp on them

MR. DE TURK IN THE EAST.

Mr. I. De Turk has recently returned from a trip to the East, where he has been carefully looking into the California wine trade and its possibilities. Mr. De Turk thinks that the question of over-production in California will not trouble us for many years to come, if it ever does. In his opinion there is a large market and a great future for our good wines. What we need is to age them before sending them East for consumption. He finds that the demand is steadily increasing, and that there are many large centers of population where California wines have hardly yet been introduced. He thinks that the pure wine stamp will eventually prove beneficial to California wines in the East, as, when people know that the stamp affixed to a bottle is a guarantee of the purity of the wine, they will ask for it in preference to wine that bears French labels and the purity of which is very problematical. Mr. De Turk sells his wines through the house of Wm. T. Coleman & Co. and their numerous agencies in the East. He is perfectly satisfied with his arrangements with this house and finds that his profits are very considerably larger than when he sold to the jobbers of San Francisco. In the city of Chicago alone he now disposes of 1,000 cases every month. His wine is all sold as it is bottled by himself and bears his own label, the name of Wm. T. Coleman & Co. being placed below it as the agents. In this way the consumers become acquainted with the name of the maker, and thus the demand for that particular brand is constantly increasing. It is in such a manner as this that the wine makers can derive the greatest benefit from their products, and the more makers who handle and dispose of their wines in this way the better will it be for themselves and for the California wine trade generally.

Trouble Ahead?

Experienced wine-makers are already beginning to expect trouble at the vintage, and look for a repetition of the difficulties experienced in fermentation during 1885. The present season is very similar to that of two years ago in many respects. There have been late frosts followed by excessive heat during the same month. Later it will probably be found that the berries are not developing properly and are falling off to a considerable extent. It will be remembered that, during the vintage of 1885, all the trouble came suddenly during the process of fermentation, which was checked without any apparent reason. There was a general rush for information and assistance to the office of the State Commission, where suggestions were given and experiments tried as quickly as possible. In order to avoid any danger of similar experiences this year, wine-makers should be prepared with all known remedies to use in fermenting so that they may suffer as little delay and inconvenience as possible.

It is probable that the Reisling and other long pruned varieties will have a short crop owing to coulure. Reisling seems to be in demand even now, as Mr. Henry Kohler, of the firm of Kohler and Van Bergen, has been looking in Sonoma County for a carload of white wine, and, as far as we were able to learn, he did not succeed in obtaining it.

EASTERN EDUCATION.

It has taken some time to accomplish it, but it is gratifying to find at last that our friends in the east are becoming educated. The Washington *Critic* says:

If Americans would forego for a time their senseless prejudice in foreign wines, especially still-wines—much of which imported into this country is an adulterated mixture of stimulating compounds of unhealthy ingredients—and use instead the native wines of their own country, they would soon become partisans of the home products. California, for example, has some of the finest vineyards in the world, its climate being peculiarly adapted to grape culture, and the wines of that State are rich in body, delicious in flavor and absolutely pure in quality. Americans will find these native wines altogether preferable to the vast majority of the adulterated stuff which is sold in this country as foreign wines. It is only necessary for a fair trial to substantiate this assertion; and then the price of the native wines is an important consideration also, being so very much less than that of the alleged foreign vintage.

EXPERIMENTS.

Mr. J. H. Wheeler, Chief Executive Viticultural Officer, was at Oakville last week to commence a series of experiments for ascertaining what strength of the Paris green wash can be safely applied to vines. In the East, where summer rains prevail, it is recommended that a wash having the proportion of one pound Paris green to twenty-five gallons of water be used. Such a solution would be effective, but probably not safe. Mr. Wheeler is using washes of different strengths, and will submit the grapes to the State Analyst to learn how much arsenic still adheres. Must and fermented wines made from the same grapes will also be examined, as it is possible that while the grapes might be deleterious the wine might not be, as fermentation is a settling process. The results of these investigations will be of importance to grape-growers.

The Warm Weather.

Mr. H. W. Crabb, writing from Oakville on May 28th, said: "Yesterday the mercury stood at 98 and 100 degrees with a strong desiccating north wind, which will dry up the grain of moisture in the little cup that receives the polen in the grape flower, and the berry will not fructify. The loss in this way will, I fear, be great, as nearly all of the varieties are now blooming. The berries may set but will not develop. They will be without seeds and very small."

This is another reason to anticipate a reduction in the vintage. In fact, we hear on all sides that the yield of 1887 will certainly not exceed that of 1886, even if it be as large.

Mr. Harrison stated at the office of the State Viticultural Commission, this week, that he would be ready to receive wine for storage on July 1st, and that he had been offered 1,000,000 gallons from Los Angeles County. The lease of the building has not yet been signed, neither have the names of the capitalists interested in the scheme yet been announced. At present nothing definite seems to have been done beyond holding out hopes, so far unfilled, to the wine makers, and possibly preventing others from entering into the business.

VITICULTURAL STATISTICS.

The following statistical figures may be of use, particularly for those members of the American Press who, caring little for exact reports about wine production, publish all sorts of private opinions, not based on knowledge, about the small importance of our home production vs. an imagined lessening of the product of the grape vine in the Old World. Dr. J. Bersch in his *Wine Gazette of Vienna* asserts the average production of wines to have been last year in

	hl.	or	gallons.
Italy	35,500,000		937,800,000
France	25,063,000		660,500,000
Spain	22,000,000		581,200,000
Hungary	6,000,000		158,502,000
Portugal	4,000,000		105,668,000
Austria	3,678,000		96,950,000
Germany	3,000,000		79,251,000
Russia	2,300,000		60,760,000
Turkey	2,000,000		52,834,000
Greece	1,200,000		31,700,000
Roumania	1,000,000		26,417,000
Switzerland	1,000,000		26,417,000
Servia	700,000		18,492,000
Atlantic Islands	300,000		7,925,000
Total	107,700,000		2,845,000,000

The crops from Asia, South Africa, Algiers, Australia, North and South America may complete the figure of say 3,100,000,000 of gallons as the earth's present average wine crop. Italy sold to France in 1886 about 49,000,000 of gallons and Spain in exact numbers furnished to France 168,379,316 gallons of wine.

A CONTEMPORARY.

Viticulture in Algiers is practically contemporaneous with that industry in California. We began a dozen years or so earlier on the Pacific Coast, but we may say that vigorous planting and attention to improvement in varieties, here dates from about the same years in which vineyards were established and increased in the French Colony on the Mediterranean. Some years ago already the results as to quantity of wines made in Algiers were ahead of the crops of California. The output of 1886 has been in the provinces of

Algiers, from	24,422 hectares,	16,493,374 gal's.
Constantine,	19,130 "	10,185,232 "
Oran,	26,114 "	14,777,167 "
Total, from	69,666 hectares,	41,455,773 gal's.

This is consequently more than double the crop of California. Algiers sent in 1886, 12,899,224 gallons of wine to France.

* * * * *

The crop of cider in France amounted in 1885, to 538,151,235 gallons, while that of 1886, a very small crop, was only 219,281,123 gallons.

The exportation of wines from France in 1886 amounted to:

1,260,297 hl. from Bordeaux.
100,829 " " " in bottles.
1,256,213 " " other parts.
214,930 " " " " in bottles.

2,832,269 hl. or 74,820,050 gallons.

Vines are generally reported to be looking bright and fresh, though they are suffering from various ailments, to a slight extent, in some sections.

Mr. Charles A. Wetmore returned from San Diego this week and reports everything to be booming in the South.

Any communications intended for the editor of the MERCHANT should be addressed to 327 Market Street, and all matters pertaining to the business affairs of the office should be sent to P. O. Box 2366.

MAKERS AND MERCHANTS.

The relations that exist and that have existed between the wine makers and wine merchants are not always of the most amicable character. This is to be regretted as the interests of both are so closely united. It is possible that there may be faults on both sides. It is certain that, whatever the faults are, the breach between the wine makers and wine merchants is widening rather than healing. We had hoped that, at the last convention of the grape growers and wine makers, there was some indication of a more friendly feeling existing between the two, and of a desire to lay aside the recollection of any past unpleasantnesses.

The situation of these two branches of the viticultural industry is briefly summarized as follows: Both have invested their time, labor and capital therein, the one as producer and the other as the medium for disposing of the produce. It is the desire of each to make money in a legitimate manner. The merchant is entirely dependent upon the producer, because if there were no wine to sell he would be compelled to close his store and devote his capital and energies to some other line of business. The maker has hitherto been almost entirely dependent upon the merchant as the medium for disposing of his product. He has been so much occupied in establishing his vineyard, in looking after all the details that are essential in commencing the business, in studying successes and trying to avoid failures, that he has been unable to devote any of his time to the sale of his wine, but has been glad to dispose of it with as little trouble as possible even at a low and barely remunerative figure.

But these relative positions are undergoing a great change and a change that will be a lasting one. We do not mean that there will no longer be wine merchants, but there will be more of them. The producers are becoming and will become merchants themselves. They will sell directly to the consumers, entering into competition with the merchants, and obtaining a much better return for their labors. The merchants have had things pretty well their own way. They have paid as little as possible for wine, and have sold it at a very good profit. Taking heed for the day they have forgotten the morrow. They are now very much in need of old wine and they will have to pay a very high price for it, high compared with the absurb offers that they have recently been making. The exports for this year have been unusually heavy, exceeding the quantity shipped out of the State during any former period. From a variety of causes that we have previously referred to it is certain that the vintage will not exceed that of last year.

It is doubtful whether this year's wine will be as good as that of 1886. We hope that the storage facilities will shortly be completed satisfactorily. The wine makers are learning, and are better able to sell for themselves. The condensing of must will shortly play a very important part in the vintage. It will not be long before very considerable quantities of our wine are shipped to European markets. Taking all things into consideration it is very evident that it will be but a short time before the relations heretofore existing between wine maker and wine merchant have changed very materially to the advantage of the wine maker. The sooner this change takes place the better it will be for viticulture in California.

THE PURE WINE BILL.

This bill has become law, and both wine makers and wine merchants are more or less occupied in studying its various clauses and their possible effect upon the business. The merchants have made the first move to render the working of the bill as objectionable as possible by demanding that the maker or his representative shall be present at the delivery of wines sold to them, for the purpose of taking samples from the packages and having them analyzed. This will cause endless inconvenience to the maker, and may possibly have been intended to do so. What the makers should do in return is to refuse to sell their wines to the merchants. Let them start now and at once commence to sell on their own account. The makers in the country will find that, when they apply themselves to the work, they are fully as able to sell wines as are the jobbers in the city. The merchants are becoming very particular that the wine he is buying shall be analyzed and guaranteed pure to him. But what guarantee do they give that it will pass out of their hands as pure as when they receive it. The bulk of it will be shipped out of the State where the California Pure Wine Bill is inoperative.

Of that sold in the State it is required that the stamp be affixed to the package or bottle in which it is sold. But what is there to prevent its being adulterated before it is retailed out in restaurants for instance, where, in many places, a glass of wine is simply placed on the table and the consumer never sees the bottle from which it is taken. Again there is nothing in the law to prevent California wines, whether pure or adulterated, from being labeled and sold as French wines. Here the merchants have an opportunity to manipulate the wines as much as they like and then sell them without being liable to any of the penalties and provisions of the law. California wine can thus be disposed of and shipped anywhere that consumption demands it. It will be found that the Bill needs considerable amending, and we think that the wine makers will be inclined rather to regret that Messrs. Doyle and Estee were permitted to hurriedly cause legislation on the subject before it was thoroughly understood or discussed, as it will cause considerable annoyance to the makers.

RAISIN EXPORTS.

The exports of last year's raisin pack appear to have ended with the month of April, as none were shipped overland during May. It was the same last year. The movement during April was comparatively small, amounting to only 316,270 pounds, of which over 200,000 pounds were shipped from Colton, Los Angeles and San Francisco, each shipping about one-half of the remainder. There has been a very general clean up of last season's stocks leaving the market ready to receive the new pack. The increase between the exports of the packs of 1885 and 1886 is almost incredible, the latter having almost doubled the former in quantity as will be seen from the following figures:

OVERLAND SHIPMENTS TO END OF APRIL.

Season 1886	12,880,270
Season 1885	6,750,489
Increase, Season 1886	6,129,781

The demand for the pure wine labels is greatly in excess of what was anticipated, and the number already applied for is more than 500,000.

HAWAIIAN AFFAIRS.

The more news we receive from the Hawaiian Islands the worse it is. Restraint of any kind whatever seems to have been thrown on one side, and the end of Kalakaua's reign is being celebrated by a series of follies, extravagances and drunken orgies. Our last files are to hand by a sailing vessel from Honolulu. They expose very clearly the deliberately planned stealing by the King, from a Chinese merchant, of the sum of $75,000. The amount was accepted as a bribe in return for which the Chinaman was to obtain the license for the sale of opium. The license was not given as promised, the bribe has been retained, and King Kalakaua stands on the same low level as the occupants of his prison on the reef who have been convicted of theft. This is a sample of the state of disgrace and dishonesty to which he has fallen.

The next thing we notice is the departure of the Hawaiian man-of-war. The old tub, which was purchased on the instalment plan—only one instalment has been paid by the way—has been fitted up at a cost of more than $100,000. She has sailed on an expedition to Samoa, steaming out of the Honolulu harbor at the rate of two knots an hour. She cannot keep up with the pace at which the King is running. On the night before she sailed, her officers concluded their series of drunken celebrations by an orgey more disgraceful than its predecessors. They fought and drew their arms upon each other; fell down the hatchway—a drunkard unfortunately never gets hurt—and generally made night hideous. Three of these officers were cashiered and their places promptly filled from the numerous crowd of office seekers. The boatswain skipped to this coast with a month's pay and five suits of uniform. One of the new naval officers was taken from the ranks of the army. The first assistant engineer is a boy who has served a few years apprenticeship in the iron works of Mirrlees Watson, at Glasgow. He is as competent to be engineer of a steamer as the paper on which this is written.

Another disgrace to the Kingdom that we notice, was the arrest for drunkenness of the Attorney General of the Kingdom, the man who is supposed to uphold the law and to be the law's representative.

It is no wonder, then, with these things staring them in the face, that the foreign population has become discontented and is being goaded on to desperate revolutionary deeds. One firm and determined move on their part would end all this folly, disgrace and dishonor. It is no wonder that our trade with the Islands is falling off, the exports from San Francisco, for last month, being more than $42,000 less than they were in May, 1886. It is no wonder that many of the former settlers on the Islands are removing their wives and families from such scenes of degradation. It is no wonder that the Portuguese immigrants, even, are leaving in disgust. It is no wonder that the capitalists and property owners are removing their capital and seeking investments in this country. It is no wonder that the whole actions of the King and his adherents have been so aptly caricatured in an illustrated poetical pamphlet that has just been published. This has been widely distributed and widely read to the detriment of every industry and individual in the kingdom. The crash will come and there will be a dire day of reckoning for some. The day is being postponed as far as possible. Sufficient unto the day is the evil thereof. But we hope, even after all this dishonesty, drunkenness and dissipation has run its course, that there may yet be fair days for Hawaii. They will never come, however, during the reign of Kalakaua while he retains his present gang around him, from the traitor Gibson down to the most hardened waif taken from the Reformatory School to occupy, what should be, an honorable position in the Hawaiian navy.

WINE EXPORTS.

That the consumption of California wines is increasing is very evident from a comparison of the exports during the first five months of this year and last year. There has been a decrease of nearly 150,000 gallons in the quantity shipped overland by rail, but this loss is more than made up by the increase in the exports by sea, both by the Panama line of steamers and by miscellaneous sea routes. The latter especially shows a large gain as over 200,000 gallons have been exported in two sailing vessels going round the Horn to New York. There was a considerable decrease in the overland shipments during May when the total amounted only to 160,136 gallons as compared with 445,812 gallons in April. We give the total overland movement as follows:

BY RAIL—1887.

	Gallons.
1st Quarter	1,708,781
April	445,812
May	160,136
Total, 5 months, 1887	2,314,729
" " " 1886	2,463,967
Decrease during 1887	149,238

The shipments by sea stand thus:

BY SEA—1887.

	Panama Route.	Miscellaneous.	Total.
1st quarter...gals.	238,142	37,484	275,626
April..... "	165,951	23,378	189,329
May..... "	45,800	232,590	278,390
Total, 5 mos., '87.	449,893	293,452	743,345
" " '86.	390,626	78,273	468,899
Increase, 5 months, 1887			274,446

Adding the shipments by rail and sea we get the following results:

FIVE MONTHS.

	1886.	1887.
By rail	2,463,967	2,314,729
By sea	468,899	743,345
Totals	2,932,866	3,058,074

Increase—5 months, 1887—125,208 gallons.

The following gentlemen have been appointed by Mr. H. W. McIntyre, President of the Grape Growers and Wine Makers Association, to act as a committee for the purpose of seeing that the Pure Wine law is enforced: M. M. Estee of Napa; J. B. J. Portal of Santa Clara; Captain J. Chamon de St. Hubert of Fresno; J. H. Drummond of Glen Ellen; H. A. Pellet of St. Helena; H. Erz of Anaheim; Jacob Schramm of Calistoga; A. A. Merriam of Los Gatos and B. H. Upham of San Francisco. The Committee met on 8th inst., and appointed a sub-committee to confer with the wine merchants concerning the action of the latter in demanding an analysis of wines sold to them when delivered.

The shipments of wine given in our tables in this issue, amount to 126,706 gallons, of which nearly 92,000 gallons were sent to New York by the ship Riasco. Tahiti took nearly 2,000 gallons, Norway 500 gallons and Australia 100 gallons, these three places being unusual destinations for California wines.

Professor Rising, the State Analyst, will be kept busy for some time in analyzing samples of wine that are sold to or by merchants, or that are sold direct to the consumers by producers.

OUR GRAPES AT THE EAST.

A fruit dealer in an Illinois city some distance from Chicago, said in a recent interview: "Last fall the public got a taste for California table grapes, the price enabling everybody to buy them without the need of mortgaging house and land, with the result that should they be offered in our market next fall at anything like reasonable figures, the demand for them will be enormous." This only bears out what the *Chronicle* has always held that it is only necessary for our grapes and other fruits to be put before the people of the East at a fair price to create a demand for them which will consume the entire product of all the orchards and vineyards that are or may be planted for years to come. The taste for California grapes is one that never wearies, and there can be no question that when freight rates shall have reached a proper level and proper channels of distribution have been secured, the consumption of this fruit among the 50,000,000 people east of the Rocky mountains will aggregate an enormous amount, and provide a remunerative market for every pound of grapes not converted into raisins or wine. There is no danger of being too enthusiastic over the prospect, for nowhere in the East has the market been supplied with our grapes but it has at once been made apparent that were moderate prices only asked, the demand would be far in excess of the supply. And by moderate prices is not meant the disposal of the fruit for three or four times as much as the producer is glad to receive, but say a rate of 10 to 15 cents a pound, instead of the 50 to 75 cents that has been demanded for them in the past.—*S. F. Chronicle.*

AN ALAMEDA COUNTY VINEYARD.

[Pleasanton Star.]

Three miles east of Pleasanton, up the Valley, is the Ruby Hill or Crellin Vineyard. The name of Ruby Hill has been given it on account of the reddish appearance of much of the soil of that section. The ranch contains about 450 acres; 220 acres are now in vines. The land is on a beautiful slope overlooking the valley, and is beyond a doubt the finest vineyard land in this valley. Most of it is free from even winter frosts. During the past winter, vines have been green on some parts of it. Mr. Crellin is a thorough business man, and has introduced the same principles in the management of his vineyard. The boys are imbued with the same spirit, and the result is that their vines of two years are as good as lots of other people's at twice that age. On four-year old vines last year, six and a half tons of grapes were picked off the first and second crops. It is the intention of Mr. Crellin to continue extending his vineyard until all his land is set out in vines, except enough for hay-raising. The varieties set out this year are all of the best and will make the finest of wines. A wine cellar has just been excavated and is 60 x 120. When completed, it will be the largest cellar in this valley. It is being built on the side of a hill, so the grapes can be put in on the third floor, where they will be crushed; on the second floor they will be fermented, and on the first floor they will be stored and aged. Not only can they dispose of their own grapes, but also of their neighbors'. The change now taking place on the land shows what good management will do. There are very few vinoyardists in the State that would not learn considerable by visiting the Ruby Hill Vineyard.

Grape and Wine Chat.

[F. Pohndorff in Washington, D. C., Sunday Herald.]

Chemist wanted who understands making artificial wines, etc. Address Wines, 9 World Office.

With this glaring proof of "artificial wine" necessities in New York, the purists from the Pacific Slope are confronted in the last Sunday's *World* advertisement. Comments are needless.

California Catawbas, sweet and dry, are being advertised in this city. There are in the aggregate not five acres planted in California to Catawba grapes. People there aspire to produce something superior to cultivated wild grapes. Thus there must be a gross error in believing Catawba from California existing, except a single cask the writer knows, made from curiosity. There are names given to liquids which have become household words. Like sweet Catawba, (a mixture of grape juice of insufficient sweetness, sugar, water and grain spirit,) the name of Caliiornia Angelica conveys ideas of luscious tickling of the palate. But there is danger in the cup. Angelica is a cordial, not a wine. It is unfermented, but does not appertain to what unscrupulous smartness declares and ignorance accepts to be a "temperance drink."

Ninety out of a hundred parcels of California Angelica are simply eighty parts of the juico of the imperfect and cheap Mission grape and twenty parts of grain spirit. The minor proportion of California Angelica is the product of really valuable grape varieties, and, to extinguish the action of ferments in their must, additioned with good grape brandy. This product, after being separated from the fleshy and fibrous matters of the grape (the lees) and allowed to become a perfect amalgam through some years' storage, may justify the extremely moderate use of it in the pony glass. But it should never become a daily beverage.

Sweet Muscatel, of the Alexandrian Muscat, and sweet Frontignan, of the grape of that name, high-grade varieties, are made in the Angelica manner. When grape brandy has been used in their manufacture they are wholesome. Yet, as future experience will prove to become convenient, sweet wines of a truly superior nature can and will with ease be manufactnred in California without spirit fortification, by allowing the grapes to develop a saccharine density of up to 35 per cent. Evaporation of watery parts in the grapes by sunning them will effect such improvement. Such wine, however, requires ageing.

But why combine sweetness with the perfect beverage—light fermented wine? Unfermented wine is an anomaly. The acids and salts in a well-fermented grape juice, diluting the wine with water, will answer nutritive, hygienic and medicinal purposes best at the meal. To produce a more amiable taste, a spoonful of sugar in the glass is all that is needed for certain palates.

Demand for good old sweet wines, however, will exist and has to be filled. Other than grape distillates in these wines should be avoided. Our progressive grape-growers will not fail to see their true interests in living up to this truth.

MAKING UNFERMENTED WINE.

A subscriber to the *Bulletin* appeals to the wine makers of California, as follows: Believing that you are not blind to the best interests of your kind, and recognizing the great and growing wine interests in the State, and also the great and growing temperance army, who need some safe, pleasant, unalcoholic drink for the table, and as a healthy beverage, I seek to bring this want and supply together. For this purpose I ask you to put up some unfermented wine—that is, the pure juice of the grape, with no deleterious substance in it. Having all the facilities, you are the proper persons to experiment in this direction. The article sought will be found. Demand and supply always keep company. Suppose you try some of the methods already used by private families, until some better ways are discovered. One of these methods is pasteurizing the juice by heating to 160°, and keeping it there for some time; then filtering or straining it, and again heating to 160° before bottling. It should be put in the bottles hot. To be sure of killing all the germs, the bottles may be washed out with salicylic acid, and the corks to be thoroughly disinfected, may, when closing the bottles, be taken from a hot salicylic solution. No salicylic acid should ever be put in the wine, as its use is opposed to the healthy action of the stomach in the process of digestion.

The reward offered to him who shall discover the best method of preserving unfermented wine is a fortune for himself and an everlasting benefaction of mankind.

ORIGIN OF THE CONCORD GRAPE.

This realy good grape, which is now receiving more attention alone in the United States than all others combined, has a world wide reputation, and is every year eaten and enjoyed by millions of people, supplying by its abundance and consequent cheapness, the poor as well as the rich—cooling alike the fevered lip and parched tongue, is invested with a charm that renders anything said about it interesting. Yet, there are but few people comparatively, who know anything about its origin and wonderful development. We therefore take pleasure in giving our readers a brief history of the Concord, from the lips of its originator, Col. E. W. Bull, of Concord, Mass., in answer to a question put to him at a banquet given in his honor by a company of distinguished horticulturists at Boston in June, 1886.

"You ask me how I got the Concord?"

"At the foot of a wooded hill with a south aspect, a wooded soil and shelter from all winds coming from the north of east and of west, the hill coming down to the road at "Hawthorne's" wayside on the west and to the same road about 1,500 feet east of the "Wayside," forming an amphitheatre of which the road formed the chord—all the conditions favorable to the grape being present, I expected to grow grapes to perfection without difficulty, but this hope was doomed to disappointment; the late and early frosts incident to the valley of the Concord made it impossible to ripen any grape then in cultivation.

The thought occurred to me that it might be possible to improve the native grape by reproduction by seed, and I looked about for the best grape which met the necessary conditions of hardness, vigorous growth, size of berry and bunch, early ripening, and, with these conditions, as good flavor as the wild grape affords. At the foot of the hill before mentioned, a woodland patch, leading to the river, debouched into the open space, and there I found an accidental seedling, which in 1843 bore its first crop. It was very full of fruit, handsome and sweet, and the whole crop—dead rife—had fallen to the ground before August went out. Here was my opportunity. I planted these grapes at once and got many vines, most of them harsh and wild, but one of them bore a single bunch which I found ripe on the 10th of September, 1849, six years from the sowing of the seed. When I found that I had attained such a gratifying success at a leap, so to speak, I resolved to continue my efforts in the hope of establishing the vineyard in Massachusetts, which had been found impossible up to that time. In this I have succeeded, and in establishing a strain of seedlings giving new grapes to the country almost yearly. The marvelous success of the Concord, its adaptability to all soils and climates where grapes can be grown, its patient endurance of neglect, its wonderful fertility in ordinary soils, and its habit of giving to the country seedlings of value, justifies and explains the general acceptance, and foreshadows the time when we shall have, of our own stock, grapes equal to those of Europe.—*Viticulturist.*

WM. T. COLEMAN & CO.

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MARKET AND MAIN STREETS.

NEW YORK OFFICE:
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COLUMBIA RIVER.

Booth & Co, Black Diamond, Coleman Flag, McGowan Bros' "Trap" Brand, Fisherman's Pkg Co, Aberdeen Pkg Co, White Star Pkg Co, Jas. Williams & Co, Thistle Pkg Co, Columbia Canning Co, McGowan & Sons' "Keystone" brand, Seaside Pkg Co, J. W. Hume "Autograph" brand.

OUTSIDE RIVERS.

WACHUSETTS PKC CO,
"SILVERSIDE" BRAND,
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CARDINER PKC CO,
HERA PKC CO,
"TOMAHAWK" BRAND,
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SKEENA RIVER.

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SACRAMENTO RIVER.

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We also offer For Sale of Other Columbia, Sacramento and Fraser River Salmon:

Geo. W. Hume's "Flag" brand,
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Badolett & Co., (Flats),
Washington Pkg Co's "Favorite" Brand,
"Epicure" brand.
Pacific Union Pkg Co.,
Cutting Pkg Co's "Cocktail" (Flats),
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"Mermaid" brand,
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West Coast Pkg Co.,
Warren & Co.,
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We also have the "O & O" brand, an outside river fish, and many other brands, that can be had on application.

WE ARE SOLE AGENTS FOR THE CELEBRATED

Golden Gate Packing Co, "Black Diamond" brand of fruits, Barbour & McMurtry's fruits in glass, Coleman's "Flag" brand of fruit, San Lorenzo Pkg Co, Riverside Fruit Co, Colton Cannery, J. Lusk Canning Co, San Mateo Pkg Co, Sierra Madre Packing Co, Santa Clara Packing Co

Our lines of Canned Fruits and Canned Salmon are incomparable, and we will make prices F.O.B. or C.I.F. for Great Britain, Australia and the Colonies.

OUR NATIVE WINE SHIPMENTS BY SEA.

PER P. M. S. S. CO'S STEAMER STABUCK, JUNE 1st, 1887.

TO NEW YORK.

MARKS.	SHIPPERS.	PACKAGES AND CONTENTS.	GALLONS	VALUE
S Bros	C Carpy & Co	50 barrels Wine	2,450	$885
F M	"	10 barrels Wine	490	180
F B & Co	"	35 barrels Wine	1,715	644
C in diamond	"	50 barrels Wine	2,400	1,200
J C	"	17 barrels Wine	835	310
F B & Co	"	1 barrel Wine	50	20
"	"	1 half-barrel Brandy	27	50
J E	"	4 boxes Wine		12
A F	Bulloti & Perini	100 barrels Wine	4,940	1,200
E & W	Arpad Haraszthy & Co	25 cases Wine		142
"	"	1 half case Brandy		8
C W & Co	Dresel & Co	7 barrels Wine	363	194
J X	"	3 barrels Wine	155	108
A B	"	2 barrels Wine	100	62
"	"	12 barrels Wine	617	353
L W	"	2 barrels Wine	101	75
E V	"	12 barrels Wine	620	450
S Bros	"	15 barrels Wine	774	205
H M	Kohler & Van Bergen	30 barrels Wine	1,493	650
A M M	"	2 octaves Wine	52	42
A S	Bach, Meese & Co	5 cases Wine		26
G G	C Schilling & Co	4 octaves Wine	111	70
"	"	2 octaves Brandy	50	100
N K L & Co	"	1 cask Wine	64	48
J M B	"	1 barrel Wine	49	49
R & Co	"	1 cask Wine	65	32
W in diamond	J Gundlach & Co	50 barrels Wine	2,480	1,240
J B	S Lachman & Co	25 barrels Wine	1,165	495
H D	"	1 barrel Wine	47	33
"	"	1 half barrel Wine	25	26
B & F	"	2 barrels Wine	93	70
P in diamond	"	9 barrels Wine	425	250
"	"	2 half barrels Brandy	53	103
A M	"	5 barrels Wine	236	141
K B	"	5 barrels Wine	233	140
Total amount of Wine, 35 cases and			22,150	9,365
Total amount of Brandy, 1 case and			130	261

TO CENTRAL AMERICA.

J C, La Libertad	Sherry & Co	5 kegs Wine	50	$25
P A, Puntas Arenas	Parrott & Co	1 keg Whiskey	10	32
M A, Champerica	McCarthy Bros. & Co	15 cases Wine	300	165
C A, La Libertad	J H Dickman	8 barrels Wine	250	190
M M, La Libertad	B Dreyfus & Co	3 half barrels Wine	81	100
B H, Champerica	"	18 kegs Wine	180	170
"	"	2 kegs Brandy	20	50
P in diamond, Puntas Arenas	"	8 half barrels Wine	216	250
R R, Acajutla	F Darren & Co	6 cases Wine		48
"	"	2 kegs Wine	20	15
M H C, Puntas Arenas	C Carpy & Co	6 kegs Wine	60	42
J V, La Libertad	John T Wright	2 cases Wine		8
L H, Acajutla	Urruela & Urioste	16 cases Whiskey		128
S G, Puntas Arenas	"	8 barrels Wine	160	144
J S, Puntas Arenas	"	2 barrels Wine	40	25
Total amount of Wine, 8 cases and			1,357	1,183
Total amount of Brandy			20	51
Total amount of Whiskey, 16 cases and			10	160

TO MEXICO.

M, Mazatlan	W Loaiza	1 barrel Wine	48	29
E L, Amapala	Redington & Co	1 barrel Wine	48	85
T Mazatlan	Thannhauser & Co	4 cases Wine		33
Total amount of Wine, 4 cases and			96	146

TO PANAMA.

D C A Co	P O Burns, W Co	1 case Wine		$4
J R	Cabrera, Roma & Co	15 casks Wine	1,782	805
P	B Dreyfus & Co	40 casks Wine	2,300	950
R H	L F Lastreto	10 casks Wine	573	231
Total amount of Wine, 1 case and			4,745	1,990

TO ENGLAND.

W P T W	Arpad Haraszthy & Co	6 cases Wine		$30

TO CANADA.

J H	C Schilling & Co	1 barrel Wine	48	$24

TO NORWAY.

B & C	J Gundlach & Co	10 barrels Wine	495	$421

TO NEW YORK—PER SHIP RENCO.

J C S	Parrett & Co	2 kegs Wine	10	$5
D D	R Andre	3 cases Wine	10	4
G	J Gundlach	401 barrels Wine		
W in diamond	"	100 barrels Wine	24,521	9,195
B D & Co	B Dreyfus & Co	450 barrels Wine	21,110	7,916
"	"	50 half barrels Brandy	1,203	2,706
A in half diamond	C Schilling & Co	141 barrels Wine		
A V Co	"	419 barrels Wine	27,792	10,422
K & F	Kohler & Frohling	364 barrels Wine	18,338	6,876
Total amount of Wine			91,801	34,427
Total amount of Brandy			1,203	2,706

TO TAHITI—PER BRIG TAHITI.

L	E Dolet	1 cask Wine	60	$36
"	"	1 half barrel Brandy	28	19
J B	Victor Paris	11 barrels Wine	550	200
A G	P G Sabatie & Co	1 barrel Wine	50	30
G & S	S Lachman & Co	4 barrels Wine	184	92
J H C	Wilkins & Co	8 packages Wine	154	96
T in diamond	M Turner	4 casks Wine	252	98
V P	J Pinet	10 casks Wine	596	241
S D	"	2 packages Wine	68	28
Total amount of Wine			1,966	821
Total amount of Brandy			28	19

MISCELLANEOUS SHIPMENTS.

DESTINATION.	VESSEL	RIG.	GALLONS.	VALUE.
Kahului	W W Case	Bark	52	$51
Japan	City of Rio de Janeiro	Steamer	2,405	1,250
Africa	Marion	Barkentine	260	217
Victoria	City of Chester	Steamer	442	174
Australia	Zealandia	Steamer	100	100
Honolulu	Zealandia	Steamer	10	12
China	Gaelic	Steamer	57	40
Japan	Gaelic	Steamer	376	193
Victoria	Geo W Elder	Steamer	184	116
Nanaimo	Empire	Steamer	27	69
Total			3,913	2,222
Total shipments by Panama steamers			29,026 gallons	$13,159
Total Miscellaneous shipments			97,680 "	37,470
Grand totals			126,706	$50,629

CONTRA COSTA WINES.

Among the wine counties of California, Contra Costa is destined to occupy a prominent position. Ordinary wine has been made here on a limited scale for many years by farmers and the owners of small vineyards, but it has been only within the past few years that experienced viticulturists have demonstrated by careful and systematic cultivation of choice varieties of wine, and by skillful methods of manufacture, that certain sections of our country are better adapted for the production of the very choicest wines, than are counties already famous for the excellence of their wines and the extensiveness of their cellars. Among the vineyards that are rapidly becoming well known, and one which bids fair to acquire in time a reputation both at home and abroad for the superiority of its vines, is the Las Lomas vineyard, situated about two miles south of Martinez, on the Walnut Creek road, and owned by Mr. E. B. Smith, a viticulturist of many years' experience. His vineyard embraces an area of eighty acres, all of which is rolling and hill land, lying principally to the south and west in a position to receive the full benefit of the sun's genial rays. The soil is deep, rich, moist and mellow, and of a character especially adapted for the production of the finest grapes. The situation is almost perfect, and the view from the higher slopes of the vineyard is entrancing, embracing as it does the wide sweep of the Straits and bay, the Diablo, Ygnacio and San Ramon valleys, the Livermore mountains beyond, and as a centre of attraction, Mt. Diablo rises up in the midst of the diversified panorama, clearly distinct from base to summit, every canon prominent and every winding ridge and jotting peak fully outlined against the blue sky. This vineyard contains the following varieties of vines, all for wine purposes: Black Burgundy, Grenache, Carignan, Malbec, Zinfandel, Petit Bouschet, Teinturier. These are for red wines, the Teinturier and Petit Bonschet being color grapes. For white wines there are the White St. Peter, Johannisburg, Reisling, Franken Reisling and Sauvignon Vert.

In Mr. Smith's cellars is stored a large quantity of wine, principally of last year's vintage. Through the courtesy of the proprietor, a representative was presented with an opportunity to inspect the vineyard and cellars. In the latter are many casks of several varieties of wine, such as the Zinfandel, Reisling, Golden Chasselas, Sauvignon Vert, Sultana, and a very promising blended wine of Grenache, Black Hamburg and Zinfandel. The Reisling, vintage of 1885, is an admirable after-dinner wine, and, with additional age, will stand, we should judge, the most critical test of excellence; a remark which will equally apply to the other varieties, according to their individual desirable qualities for the uses for which they are designed.

We have neither time or space to present our readers with anything but a hasty glance at the Las Lomas vineyard, but it will doubtless prove sufficient to give them a partial idea, at least, of what is being done in this county toward the development of our wine interests, and to what extent the special adaptability of our soil and climate for the production of a superior quality of wines is being recognized.

In addition to his vineyard, Mr. Smith has a fine orchard of ten acres, numerous blackberry and other vines, and several orange trees. He intends planting this winter a small orange and lemon orchard, and perhaps a year or two hence an olive orchard.—*Contra Costa Gazette.*

Another New Cellar.

Sheriff Harris will make his own grapes into wine the coming season. He has heretofore found a buyer in Mr. Chris Adamson, who now will have a sufficient supply from his own vineyard. This makes it necessary for Mr. Harris to build a cellar and for such a structure ground has already been broken on his place near Rutherford. It is located about 200 feet north of his barn, is to be of stone, two stories high with ground dimensions of 60 by 100 feet. M. Franzini, the master mason in charge of Borreo's new warehouse, superintends the work and expects to have it finished by the middle of August. The walls will be two feet in thickness and the cellar will cost, complete, in the neighborhood of $10,000. Its capacity will be from 100,000 to 200,000 gallons. Mr. Harris expects to gather 350 or more tons of grapes from his 84 acres of vines this year.—*Napa Register, May* 27, 1887.

The Report of the Fourth Annual State Viticultural Convention is now published and ready for delivery. Single copies are one dollar each, but special rates can be obtained for five copies or more.

EUROPEAN VINTAGES.

[Correspondence Wine and Spirit Review.]

FRANCE.

The 1886 wines are as a whole characterized by a handsome color and pure, even taste, but leaving something to be wished for in point of body. It is a growth that will sell tolerably well. Mildew had not affected them much, proprietors whose means allowed them to do so having taken timely steps to fight the scourge. This spring, preventive steps against the mildew are again being resorted to on a vast scale.

While all the way to the middle of April the temperature was rather low, the nights being cold and mornings chilly, warm rains set in subsequently, and since then the vines have made satisfactory progress. Whatever there was of night-frosts, during the first half of April, has done no damage whatever, vegetation at that time not being sufficiently advanced. Late as the crop is, the vines are in healthy, vigorous condition.

During the first quarter, there were imported into France 146,608,000 francs' worth of wines against 141,238,000 the previous year, and 7,632,000 francs' worth of spirits against 5,551,000; on the other hand, the export of wine was 54,923,000 against 48,536,000, and of spirits it was 14,798,000 against 16,355,000. It appears from the figures given that, contrary to what was supposed, the import, instead of showing a falling off has increased both as regard wines and spirits, the exports of wines at the same time largely exceeding that of the previous year's first quarter.

PORTUGAL.

During April the wine regions of Portugal were suffering from a prolonged drouth and low temperature; there were night-frosts in various localities killing the sprouting and budding vines, and things began to look alarming for proprietors. Fortunately the month of May has brought the desired relief, and since its commencement torrents of rain have fallen, thoroughly packing the earth, and with occasional sunshine, advancing vines to a state of great promise, so that the outlook for the coming vintage is all that could be wished for.

In southern Portugal the accumulation of 1886 wines is also very considerable, and proprietors dare not add spirit to them, for they could not be sold, hence they have to run the risk of their getting spoiled during the coming summer season, and hence holders in that part of the kingdom are anxious to get rid of their wines, which would go very cheap if buyers could be found, but there are none at present.

AMERICAN WINE.

[The Vineyardist.]

A convention of grape and wine growers was held in Washington recently to organize a national association of those engaged in these industries. It is intended to hold an exposition of American wines and other products of the grape at the same time and place. A preliminary address to the grape growers of the United States has been issued. In this address the following statements are made:

The acreage in vines in the United States has more than doubled within the past five years, and covers at the present time not less than 300,000 acres. Farmers who talked of planting five and ten acres then now take fifty and one hundred with the ease and confidence that a thoroughbred would take a hurdle. The increase in quantity has been outstripped in quality of varieties selected, so that it would not be an exaggeration to say that practically our whole system has been revolutionized within the period named. The capital invested in vineyards and vineyard properties in the whole country at the present time is not less than $100,000,000. The present ratio of increase of planting and investment is about 10 per cent. in three years. This ratio kept up until 1895, will give us, as the result of nine years, $800,000,000 invested in 2,400,000 acres planted; and estimating the product at 400 gallons of wine to the acre (supposing all were made into wine) would yield the round number of 960,000,000 gallons, a quantity equal to the present wine production of France. Yet, startling as this may seem, it is entirely within the realm of possibilities, and depends for its accomplishment upon the question of whether or not there is a paying market.

Wine Labels.

Controller of State Dunn is forwarding the following circular to wine manufacturers throughout the State:

Arrangements have been perfected by which the wine labels authorized by the Act of March 7, 1887, commonly known as the "Pure Wine Bill," will be ready for delivery at this office, June 5, 1887, the date on which the Act takes effect, and will be supplied at the rate of $1.50 per thousand, plus charges for forwarding the same. Blank forms of applications for these labels, in accordance with said act, will be furnished by this office. The price of the labels should accompany each order. Remittances may be made by express, post office, or Wells, Fargo & Co's. money order.—*Santa Rosa Republican.*

THE WINE MAKERS.

The Passage of Some Very Interesting Resolutions.

At a recent meeting of the Santa Clara County Wine Makers Association, the following resolutions were unanimously adopted:

Resolved—That in view of the recent frosts and scorching winds which have so much damaged the grape crop in the northern counties, and the consequent prospect of higher prices, we earnestly advise the wine makers of Santa Clara valley to turn a deaf ear to the agents of speculators, and hold all their sound wine at least until a proper estimate of this year's crop can be obtained.

Resolved—That each member of this Association be appointed a special committee to see that the "Pure Wine Act" be strictly enforced in this county, and that reports of all known violations be made at every meeting of the Association, so that the necessary steps can be taken to prosecute the offenders.

THE GERMAN SPIRIT-TAX.

[Wine and Spirit Review.]

I am now able to give you particulars of the new Government spirit-tax bill, and may state that the committee to whom the bill has been handed over is so composed as to strengthen the influence of the supporters of the bill, giving the latter so strong a majority that there is little chance but that the amendment will be what the Government advocates. The harmony among members of the committee is such as to lead to the expectation that the bill will come to a reading prior to the Whitsuntide recess. Moreover, before the bill turns up for debate, the Government is receiving assurances from the distillers that they approve of its leading features.

The bill reads about as follows: Production for domestic consumption is to be restricted to five liters per capita of the population. Should there, nevertheless, be an excess, the tax on such surplus is to be 70 marks the hectoliter instead of 50 marks. The duty on spirits is to be raised from 70 marks to 150 marks the one hundred kilograms. Should the South German States decline to join the North German distillery districts, the duty to be levied on South German spirits is to be 96 marks the one hundred kilograms, to be collected from the moment the spirit is taken out of bond. A penalty of 5 marks per litre is fixed in case of fraud, and in the event of aggravated fraudulent controvention of the bill a week's imprisonment will be applied. No new distilleries can be established without a special authority conceded by the Government, the latter not feeling disposed to grant concessions of the kind any way for several years to come. The amount which distillers are to be allowed to produce is to be determined pro rata of the average tax they each of them paid during the past five years. In this apportionment, the taxes paid by the year's distilleries are only to be counted one-half, and those paid by grain distilleries only three-quarters Distilleries that have not been regularly in operation during the five years or those being built on April 1, 1887, will have the amount they are allowed to produce under the 50-mark arrangement fixed in accordance with their capacity of output. Should Parliament pass this bill, the Government estimates the revenue to be derived from the tax on consumption at 100,000,000 marks per annum.

OUR COLONIAL TRADE.

[Australasian and South American.]

It should be the object of the United States—and they can really afford New Zealand a much better market for its produce than Canada probably ever will—to improve on their present condition in this respect. At present we are buying kauri through both English and German houses; why not purchase direct from New Zealand? By reducing our present absurd tariff on wool, which we now import in manufactured state from England or Germany, or through English houses, we should be a better customer to New Zealand for the unmanufactured article, and the proposition to take their trade away from us would then meet with no response from New Zealand merchants, however warmly British officials might advocate it. A little more liberality on the part of our government with regard to the remuneration of New Zealand steamers that are now carrying mails to and from the United States without adequate remuneration from our side, would also be appreciated, while the encouragement of a steamship line between Boston or New York and New Zealand and Australasian ports would work wonders in promoting reciprocal trade between the United States and the enterprising colony. As it is, however, the commercial relations between this country and New Zealand are altogether too decidedly in our favor; and while, in our opinion, New Zealand would profit little, if any, by transferring her present trade from the United States to British North America, it behoves us to bring the commercial balance up to somewhere near equality limit. To effect this result, our merchants should earnestly strive, and in their efforts they are fairly entitled to such support as the nation, represented in Congress, can give them by wise legislation on the tariff and shipping laws.

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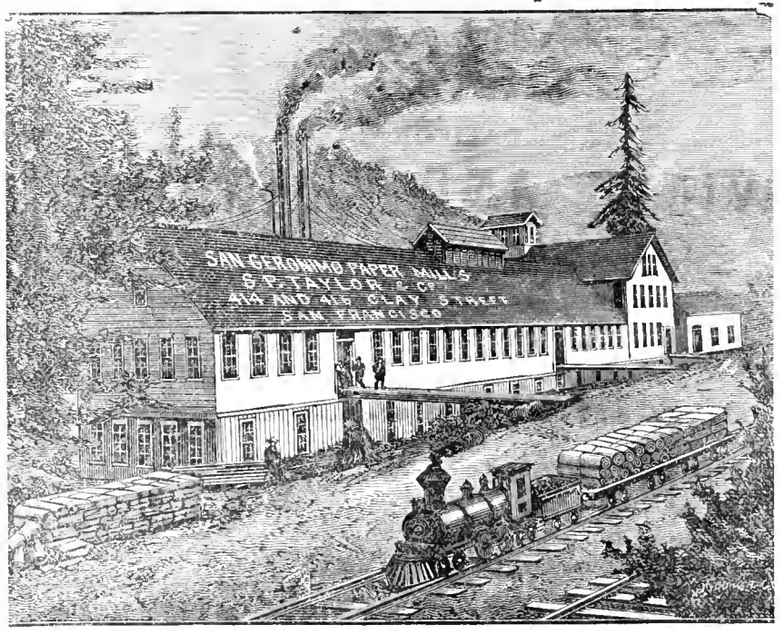

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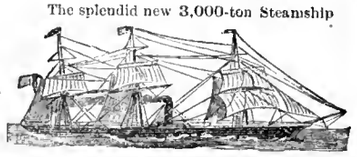

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Action of Sulphate of Copper on the Mildew.

By M. PROSPER DE LAFITTE.

[Journal d'Agriculture Pratique, October 1, 1885.]

September 29, 1884, M. Ad. Perrey pointed out to the Academy of Sciences the property which poplar-wood stakes, soaked for some days in a solution of sulphate of copper, possess of preserving the vine from mildew. The preservation is only relative; the stakes thus prepared only diminish the action of the fungus, their virtue being exerted to a distance not exceeding .25 meter [about 10 inches.]*

In September, 1884, the *Journal de Beaune* printed several communications on this subject:

On the 20th, notes by MM. Ricaud and Pauline; M. Ricaud cites the fact as "recently pointed out";

On the 23d, a note by M. Montoy;

On a date unknown to me, a note by M. Bidand.

M. Magnien, departmental professor of the Cote d'Or, pointed out the same fact on the 25th of September; M. Jules Réginer, president of the *Comité central d'études et de vigilance*, of the same department, has himself made and controlled a number of similar observations on the estates of others.

Who first noticing an oasis of verdure in a vineyard stripped of leaves, had the sagacity to ascribe the phenomenon to the action of sulphated stakes? I do not know, and probably we shall never know. It may have been some worthy peasant who, unknown to himself, possessed the qualities of an observer.

Struck by the number and authority of the testimonies, and tempted by the boldness of a provisional explanation of the facts, I addressed a note to the Academy of Sciences, and resolved to submit to experiment the observations made in Burgundy; and in order that its control might be easier, I chose the nursery of the *Comité central d'études et de vigilance* of Lot-et-Garonne for the theater of this experiment.

Arrangement of the experiment.—I had at my disposal only a square of *Jacquez* planted from cuttings in April, 1885. This square measured 14 meters [46 ft.] on a side, and was divided into ten beds extending east and west, about 1 meter wide, and separated by narrow passages .45 meter wide. I employed the pine-wood stakes in use in the country.

On each bed were five rows of cuttings, including between them four spaces of .25 meter [about 10 inches]; the cuttings were in rows .1 meter apart. The stakes were uniformly distributed on the surface of each bed without reference to the place occupied by the cuttings, and in the following manner: There were four rows of them; two upon the edges of the bed, and two intermediate ones, the four forming three interspaces of .33 meter. The stakes were .50 meter apart in the rows; moreover, the stakes of rows Nos. 2 and 4 were planted midway between the consecutive stakes of rows Nos. 1 and 3. It can be readily computed that, according to this arrangement, no part of the surface of a leaf of *Jacquez* could be more than .25 to .26 meter [about 10 inches] distant from the nearest stake.

Of the ten beds, which we will suppose numbered from South to North, five received stakes which had been soaked in a *cold saturated* solution of sulphate of copper *for four days*; five received stakes not prepared in any way. The first were numbered 3, 4, 6, 7 and 10. The second were numbered 1, 2, 5, 8, 9. By design, in order that visitors might not be influenced by any consideration of symmetry, I made them follow each other irregularly.

The sulphated and unsulphated stakes were all of the same size; total length, 1.1 meter; length in ground, 0.4 m.; in air, 0.7 m.; length of part rising above foliage in September, 0.3 m. The diameter was about .025 m. [one inch.] The data given are sufficient so that, if any one desires, the experiment can be repeated under the same conditions.

I wished to prevent the leaves of adjacent beds from intermingling. For this purpose I surrounded each bed with two horizontal rows of bands one above the other, and wound around each one of the stakes at the margin of the bed. For the beds with sulphated stakes, I used osier bark steeped, like the stakes, in the sulphate of copper solution. For the beds not treated, I made use of ordinary twine. In the applications, as will be noted later on, I attach a very great importance to the final action of these sulphated osier barks.

Facts established.—I noticed the first appearance of the mildew upon my *Jacquez* June 30, and, beginning with this date, I visited my experimental square every five or six days. Up to August 5, the progress of the disease was very slight. I thought I noticed a palliation on the treated beds, but it was so feeble that I always prudently wrote in my note book, "*Conditions not decisive.*" On the 16th of August, I was no longer in doubt. That day I had the honor to receive a visit from MM. Jules Clavé, director of domains and forests, M. the duke of Aumale, and H. Bucan, steward of the domain of Zucco, in Sicily, (I am authorized to use all the names mentioned in this note.) Having conducted my guests to the square of *Jacquez*, without telling them what I had done, I asked them if they observed any difference in the health of the various beds. Without hesitation and without consultation, MM. Clavé and Bucan pointed out five beds as noticeably less diseased than the other five; these were the five beds with sulphated stakes. Then only was I certain of not being misled by a preconceived notion.

From this time the differences were distinctly emphasized. On the 25th, under the pretext of a walk, I requested M. Magen, general secretary of the central *Comité*, to accompany me to the nursery. When in sight of the *Jacquez* I asked the same question. My colleague, who is near-sighted, was obliged to follow all the narrow paths between the beds and take a close view of each bed. The abstract of notes made by him specifies without ambiguity the five beds with sulphated stakes as the finer. In fact, the differences appeared to me more distinct than on the 16th.

On August 28, I received a visit from M. Merle de Massonneau, one of the vice-presidents of the agricultural association of Nérac. M. de Massonneau immediately designated the five treated beds as strikingly finer and greener. The difference was obvious.

M. de Massonneau was so impressed with what he had seen that he took the trouble to return from Nérac on the 31st, to accompany MM. Klein, acting professor in the Faculty of Sciences of Marseilles, and Alb. Laporte, his colleague in the vice-presidency of the association of Nérac. I resorted to an artifice. I handed each one of these gentlemen a sheet of paper bearing the figures 1 to 10 written in a column. Each one of these figures represented a corresponding bed, and I requested them to write opposite, without previous consultation, the words *good* or *bad*, according to the conditions of the bed. When filled there was complete agreement between the two sheets. M. Laporte, in returning his paper said: "My mind was absolutely made up at the first glance." The five treated beds were noted as "*good*," the other five as "*bad*." And yet, abundant rains having come on between the 28th and 31st, the vine reacted against the fungus. Like myself, M. Massonneau found the disease everywhere diminished, and the differences less marked than on the 28th.

The rains continued, and in my visit, September 7, I noted a new attenuation, both of the mildew and of the differences between the treated vines and the others. On the 11th, I received a visit from M. E. Gasson, a large proprietor of the department, who, at the expense of his own vines, knew the mildew only too well. The situation had become very nearly what it was on the 31st; M. Gasson immediately pointed out five beds as finer, and, as usual, these were the five treated beds.

On September 18, the differences were again very marked. The date was approaching when I ought to make to the minister of agriculture the annual report of the *Comité central d'études et de vigilance*.

*In M. Perrey's note to the Academy the following are the most important statements:

In a vineyard in the department of Saone-et-Loire, a plot containing 2,000 vines of Gamai, 4 to 5 years old, was restaked in the spring of 1884. Four hundred vines received old stakes which for several years had not been dipped; all the others received new poplar-wood stakes which for their preservation had been soaked in a saturated solution of sulphate of copper for four days. The old stakes were irregularly scattered over the plot. On September 15, not a single vine of the 410 which were tied to the old stakes retained more than two or three leaves, and these were more or less affected by the mildew. The 1,600 vines tied to the new stakes, on the contrary, retained all their leaves even in the midst of defoliated vines. These 1,600 vines were not absolutely free from mildew, but its effect on them was insignificant and confined to the branches farthest away from the stakes—*i. e.*, more than 10 inches away. The author says that upon these stakes he looked in vain for a vine that was badly injured.

On another plot of vines four to five years old, a part of the stakes were dipped in 1883 and the rest in 1884, but in a somewhat dilute solution. When these vines were compared with those on the old stakes, the preservative influence of the sulphate of copper was plainly visible, but they were not so well preserved as those tied up to the stakes which had been recently dipped into the saturated solution.

In no case did the beneficial influence of the copper reach outward from the stakes more than 8 or 10 inches. Vines closely tied up are said to have escaped entirely.

I asked M. L. Boudet, general secretary of Lot et Garonne, to have the kindness to visit our nursery. MM. Bitaubé, counsellor of perfecture, and Debue, chief of division in the perfecture, both my colleagues on the central committee, desired to accompany us. To each of these three gentlemen I gave a sheet of paper bearing in column the figures 1 to 10, as I had done to MM. Klein and Laporte. The sheets were filled out with entire unanimity, and specified the five treated beds as notably better than the other five. The latter show yellowish leaves, and bear less developed branches. The others, although attacked, have a fine growth and color. The ripening of the grapes on the untreated beds would have been doubtful had there been any, but it would have taken place on the others as though the fungus were not there. Such was the common impression of our visitors.

Up to this time we had only estimates to go by; but on this visit I discovered a material fact, and was able to point it out to these gentlemen: On the beds not treated the leaves had begun to fall, while on the beds with the sulphated stakes not a leaf was wanting.

When we observe the surface of the square, the differences between the beds seem very well marked; but they appear much more so when we examine the borders of the beds, along which the branches stand upright supported by the double row of bands surrounding each plot. The action of the girdles of sulphated osier bark, appears even more efficacious than that of the stakes; but probably because the leaves situated on the borders are less remote from the bands than those in the center are from the stakes, and because they are less sheltered by each other.

Another experiment.—The nursery of the central committee is planted in the garden of the normal school for governesses. A portion in the extreme north of the garden was granted me for experiments, and I separated it from the rest of the property by a ditch running east and west. Along this ditch, at intervals of one meter, I planted a row of California vines, raised from seed. M. Tisserand sent the seeds, asking me to try this variety.* In 1885, these vines were three years old. In 1884, I mentioned them in my report as subject to mildew, and to such an extent that, whatever might be their qualities, they could not, from this fact, be of any importance in our region. These invited a second experiment.

Uniting these vines in groups of threes, I placed the sulphated stakes in the groups of the even rows, starting from the west, and the unprepared stakes in the groups of the odd rows. The branches of the even groups were tied up around the supports by sulphated osier bark, and the odd groups by ordinary twine. The branches grew beyond the tops of the stakes quite early, and according to the groups, I then united the ends of these stakes by strands of sulphated osier bark or by twine. A second row of strings was placed .4 meter below the first. for a long time each of these two strands has been surrounded by a wreath of foliage .10 to .15 meter in diameter.*

On these groups of vines the mildew passed through the same respective phases as on the beds of *Jacquez*, and the same visitors at the same dates verified the same differences between the groups as between the beds. September 18, the groups treated could be recognized from the end of the garden by their vigor and fine verdure.† Upon the wreaths the differences are still more marked than upon the masses of the vines; probably because of the small size of these festoons, the leaves remaining very close to the bands around which the branches twine.

All the vines which figure in this second experiment are, without exception, considerably worse attacked on their east side than on the other three sides. We can there recognize the combined action of the sun and of the dew not yet evaporated in the morning.

DISCUSSION.

I. We have observed that the action of sulphate of copper becomes obvious only when the disease has acquired a considerable intensity. There is, consequently, no reason for astonishment that in 1885 no new information was received from Burgundy, since chance decreed that this year Burgundy should be one of the few districts spared by the fungus.

II. One circumstance is to be noted with regard to our *Jacquez* in the nursery; the square is near the north fence-wall, and consequently faces the side of the wall with a south exposure, being separated from it by an alley 3 meters wide. Against the wall, facing the square, are planted 6 five-year old *Jacquez*, which entirely cover the face of the wall with their branches and foliage. On the south side, by an alley 1 meter wide, the square of *Jacquez* is separated from a square of the same size, planted to *York Madeira*. The west fence-wall is 15 meters from these two plots, and the east wall is about 35 meters from them.

Every year, in whatever part of the garden it might be placed, the nursery of *Jacquez* has been much injured by the mildew; that of *York* has never shown more than a few traces of it on a very small number of leaves. Contrary to expectation, the five-year-old *Jacquez* had always been spared up to this time. Last year, during infrequent visits which I made to the nursery, (I had nothing in particular to observe there), each time I removed by hand the few leaves which were affected—perhaps sixty during the whole season—and that sufficed to give these *Jacquez* the appearance of an immunity comparable to that of the *York*. This year the five-year-old *Jacquez* have already suffered considerably, and the *Yorks* have lost half their leaves, which are dead, while those that remain are little better. This is because the disease developed in our region in 1885, with an intensity never known before. Upon our hills, at a distance of 500 meters, a superficial view does not distinguish the vines from the fields, the colors so much resemble each other.

This being so, it is my conviction that the five non-treated beds of my experimental square owed a relative immunity to the sulphated stakes of the neighboring beds, and I easily inferred that the action of the sulphate of copper showed itself at a distance of more than 1 meter; but that only at a very short distance is it energetic enough to give really practical results. I could not otherwise explain how these five beds, neighboring on the north and south to two such intense centers of the disease, should themselves be relatively so little injured. Bed No. 5 not treated, and the only one between two treated groups, is sensibly less diseased than the beds of the two other untreated groups.

III. In my note to the Academy, previously cited, I thought I ought to caution viticulturists against too great haste in extending to stakes of all sorts of wood the properties recognized in aspen and poplar stakes in general, the only ones which had given rise to the published observations. Pine can now be included in the list of substances that may be used for this purpose; but I still believe an experiment is necessary for hard-wood species, oak and acacia especially, although I am convinced that the experiment would succeed if tried.

IV. Nothing proves positively that sulphate of copper is the only body which can exercise a prophylactic or curative influence on the mildew: and nothing proves that we cannot employ it in different physical conditions. Here is a large field for researches, but they are not within the reach of an ordinary viticulturist.

V. In spite of the number and authority of the witnesses, the discovery made in Burgundy in 1884, has encountered little but incredulity; while some observations entirely opposed have sprung up in other regions. My experiment proves, I believe, that there is nothing contradictory in these. I used eight stakes per square meter—that is to say, 80,000 to the hectare [2.47 acres] In Burgundy, the number of vines per hectare—that is, the number of stakes—varies from 20,000 to 24,000, which is only about one-fourth as many. In regions where the number of vines per hectare is only from 3,000 to 5,000, the conditions are entirely different, for the portions protected by the sulphated stakes are insignificant in comparison with the total area, the luxuriant vegetation of these vines sometimes covering the whole surface of the earth. It is not surprising, therefore, that under these conditions the phenomenon may have escaped the notice of even attentive viticulturists.

VI. Any explanation of the facts observed can be yet only purely hypothetical, and it is best to wait. Still, I ought to say a word upon a question which has been raised, and which concerns the manner of application: Which acts, the buried portion of the stake, or that part in the air? The subterranean action of the stake driven near the vine would extend in a circular manner and uniformly over all the root-system to a certain distance from the trunk, not acting upon one group of roots more than on another; and then the action on the foliage ought also to extend over all the aerial system of the plant. Now, this is not what was observed in Burgundy. Without exception, all observers are agreed in limiting the action of the stakes to the interior of a cylinder having for its axis the stake and a radius of .25 m. It is, therefore, certainly the portion in the air which acts, or at least the action of that part is much the greater. Next year I will submit these views to a direct and simple experiment. It was from fear of confusing all by undertaking too much in so small a compass that I did not do so this year.

VII. Next year the sulphated stakes which have served this year, will show whether preventive or curative virtue remains from one year to another.

Application in vineyards.—Are we, therefore, obliged to use 80,000 sulphated stakes per hectare? Fortunately not.

Let us first consider vines trained upon iron wire. From the above facts, I consider it very likely that simple sulphated osier bark wound along the iron wires will suffice, and we might, if necessary, add one or two supplementary strings fixed simply to the stakes. Elsewhere we can replace the osier bark by large ropes or by those of very small diameter as 2 to 3mm.

Another method: Strips of poplar of small cross-section, say 1 centimeter, or 1½ on a side, can be produced very cheaply by a sawing machine, and when they have been sulphated, it will be enough to tie these little strips to the iron wires, another row of the latter being put on when necessary. In many places in this way the railroad fences are made. These strips should be placed .4 to .5 meter [16 to 20 inches] apart, and might besides be combined with osier bark and ropes.

Let us now consider vines which are pruned in goblet-form: Here the sulphated stake will be the pivot of defense; bands of any sort will complete it. Some tiers of osier bark or ropes placed circularly at distances of .4 to .5 meter from each other, winding around the branches successively, and supported by them, beginning with the stake and returning to it at last to be tied there, will serve, it seems to me, to solve the problem *provisionally*. As happens in all treatments, the beginnings of which were most unpretending, time ought finally to bring its quota of new ideas.

But what will be the expense? The manual labor will be the principal one. It is no small expense, and I ought to once more state the radical difference between vines which yield bountifully and those which yield scantily. For the first, the expense is scarcely to be considered, in any case it is not an insurmountable obstacle, and at present it appears to me that we can protect them with success; as to the others, there is, and always will be, a balance to make up between the receipts and the expenditures.

Other fungus diseases.—At least is it not very probable that any treatment which will be successful against this terrible mildew, which conceals itself in the parenchyma of the leaves, will, a *fortiori*, succeed against all other fungus diseases? However, I affirm nothing, because it is wiser to await experiment; but what progress and what economy do we not owe to Burgundy, if this treatment can replace all others, especially sulphuring, which must be renewed so often!

The *black-rot*, a new scourge which we owe to the American vine, deserves special mention, while waiting for those the vine may yet have in store for us.

The chosen place of this new parasite is the grape berry. Now, the fruit is only a short distance from the base of the fruit-bearing branches on vines in rows, on palings, or on trellises, or even from the vine when pruned in goblet-form; some meters of osier bark or of any sort of rope, will suitably protect all the wood in the vicinity of the bunches.

All these and other considerations suggest themselves, but in this new treatment, as in that for the *winter spores*, I have nothing to claim for myself, unless it be good will.

Any communications intended for the editor of the MERCHANT should be addressed to 327 Market Street, and all matters pertaining to the business affairs of the office should be sent to P. O. Box 66.

*The stakes used were 1.9 meters long; 0.4 meter in ground, and about .045 meter in diameter.

†On September 16, in my absence, M. Lasserre, vice-president of the agricultural association of Agen, and my colleague on the central committee, visited the nursery. M. Lasserre, who was more than skeptical before this visit, wrote me that he observed a superior growth in the treated plantation of *Jacquez*, and was "dumbfounded" when he saw the results of the second experiment.

TREATMENT OF MILDEW BY A MIXTURE OF SULPHATE OF COPPER AND LIME.

By Messrs. MILLARDET and GAYON.

[Journal d'Agriculture Pratique, November 12, 1885.]

The good effects of the treatment of mildew by sulphate of copper and lime are today beyond all dispute. It remains to explain the mode of action of this treatment, why it has been chosen in preference to others, and for what reasons it appears improbable that it will undergo important modifications, although probably susceptible of some improvement.

The observation which led me to apprehend the principle underlying the treatment dates back several years. I was studying the development of the conidia, or anmmer spores, of the *Peronospora*, when I found that these reproductive bodies would not delelop in the water of my well, but when sown in the city water, in dew, rain-water, or distilled water. they continued their evolution uninterrnptedly to the formation of zoospores.

The explanation of this strange fact eluded me for a long time. It occurred to me only at the last moment as we shall see farther on. As the water of this well is heavily charged with calcareous salts, and cooks vegetables badly, at first I thonght its deleterious aetion on the conidia might be due to this peculiarity. But whatever might be the cause of this action, I inferred therefrom that in all easea its extremely feeble and not easily appreciable influences were capable of preventing the development of the reproductive bodies of the parasite.

On the other hand, as I had taken into aceonnt the impossibility of destroying the *Peronospora*, without at the same time destroying the leaves which are attaeked by it, since the parasite grows exclusively in the interior ot these organs up to the moment of its fructification, I had reached this conelusion: that the treatment of the mildew conld only be preventive. It ought to answer, as I have said, "to eover preventively the surfaces of the leaves with various substances capable of destroying the vitality of the summer spores, or, at least, of hindering their germination."

I had, therefore, reached this point when, in 1882, I was a witness for the first time of the fungicide action of a mixture of sulphate of copper and lime, employed from time immemorial in Médoc to prevent maraud-ing.

In spite of the fact that this metal was present in an almost insoluble state, it seemed to me that the agent really active in this mixture must be copper.

Accordingly, during the following year (1883), I devoted myaelf to continuous researches upon the efficaey of various salts of copper (the sulphate, carbonate, phosphate and sulphuret), and the corresponding salts of iron, as well as upon the value of lime in power or mixed with water. These experiments were repeated by Mr. David, in Dauzac, at Mr. Johnston's, who, with a generosity I cannot thank too heartily, had placed his estate at my disposal for these experiments. At the same time mixtures were tried with varying proportions of the sulphate of copper and lime.

In 1884 the same experiments were continued, but without absolutely certain results, because there was only very little mildew at the place where they were made, and it was impossible to judge exactly and comparatively of the effect produced by the various methods of treatment. Nevertheless, the researches of these two years enabled me and Mr. David as well to ascertain that ot all the substanees employed the mixture of sulphate of copper and of lime was the one which produced the best results.

I had been led to give up treatment by the sulphate of iron and even by the sulphate of copper, which, however, appears since to have given quite good results, because the spraying of these solutions is difficult and is harmful to the vine. With doses exceeding in strength ½ per cent. of sulphate of copper and 1 per cent. of sulphate of iron in distilled water, I invariably burned the young shoots and often the leaves, especially if the spray was not very fine, and if the liquid gathered itself together in drops. Moreover, for the end in view the small quantity of the salts deposited on the leaves by this process appeared to me insignificant. In powder, lime alone appeared to be almost inert and milk of lime (only one application) scarcely more active.

For these reasons, in 1885 Mr. David and I turned our attention to the mixture of sulphate of copper and lime, employing the two substances in the proportions which, from the experiments of the two preceding years, appeared to be the best. This is one of the reasons why the result of the treatment has not been as satisfactory anywhere else in Médoc as at Dauzac.

Besides, as to the effects of various treatments with the above-mentioned substances, another method gave results which confirmed those obtained by direct observation in the vineyard.

When we place the conidia of *Peronospora* in contact with pure water, at a temperature above 9°C. [48 Fah.], after an hour or an hour and a half, they emit zoöspores. At first, during three to five hours,* the latter swim about rapidly in the water, then come to rest, settle down, and emit a germ-tube, which pierees the epidermis of the leaf and penetrates into its tissues; so that in pure water, in from six to eight hours after the beginning of the experiment, the infection of the leaf by the parasite is accomplished.

But, if we employ dilute solutions of lime, sulphate of copper or sulphate of iron, we find that the conidia and the zoöspores which they prodnce are remarkably sensitive to their influence. If the solution is a little too concentrated for the development of the conidia, the latter do not emit zoöspores, but die without undergoing noteworthy change. If the liquid is a little less concentrated, some zoöspores are formed; but instead of moving rapidly in the liquid, they drag about slowly, soon come to a standstill without germinating, and quickly perish. If, proceeding in another way, we sow the conidia in a quantity of distilled water to which we add, as scon as the zoöspores are in motion, increasing doses of a solution of sulphate of iron or copper, or of lime of given strength, there comes a moment when the zoöspores stop and are killed.

Experience has taught me that the limit of concentration incompatible with the complete development of the reproductive germs is—

For lime, a solution of 1 to 10,000.

For sulphate of iron, a solution of 1 to 100,000.

For sulphate of copper, a solution of 2 or 3 to 10,000,000.

That is to say, the salts of iron, although very active, are about one hundred times less so than those of copper, and the lime is ten times less active than the iron.

From this it will be understood why the brothers Bellussi, in their experiments with the milk of lime, found it necessary to make five or six successive applications in order to obtain a satisfactory result.

We also see that it will be difficult to find substitutes for the salts of copper on account of the wonderful energy of their action upon the reproductive germs of the *Peronospora*.

The role of lime in the mixture, as we shall see further on, appears to be less important.

Only after having obtained these results has it been possible for me, thanks to the co-operation of Mr. Gayon, to account for the above-mentioned fact, which in reality was the point of departure of all my investigations; I mean the absence of development in the conidia when I sowed them in the water of my well.

This well is 11 meters deep, and the water is raised by means of an old copper pump. An analysis of the water showed 5 milligrams of copper per liter, or more than ten times as much as is necessary to kill the reproductive germs of the *Peronospora*. I ought to add that I have occupied the house six years, and that, up to this time, all the family have drunk this water without the least inconvenience. This fact is interesting, for Mr. Gayon will soon tell you that, as a rule, the wines from the vineyards which have undergone the treatment here discussed, contain but little more than one-sixth as much copper as was found in the water of the well.

There remains for me to mention another obscure fact, but one of prime interest, which only a chemist could make clear. The explanation of this is due also to the co-operation of my learned colleague.

The copper in the mixture and upon the leaves is in the condition of a hydrated oxide, which is generally regarded as insoluble. It is in the form of amorphous granulations that can be seen with the microscope. At first these are inclosed by lime and sulphate of lime. Now, it is shown by the researches of Mr. Gayon that this oxide is slowly but completely dissolved in holding carbonate of ammonia in solution, at the temperature of 15°C.; that water charged with carbonic acid can, at the same temperature, dissolve 40 milligrams of it per liter; and, finally, that at the temperature of 15°C., pure water itself dissolves traces of this same oxide.

The tiny drops of the cupro-calcic mixture, disseminated upon the leaves, act, therefore, like true reservoirs of oxide of copper, preserving the latter for weeks and months under their calcareous crust, and yielding to the dew and rain, which is more or less charged with carbonate of ammonia and carbonic acid, the minute quantity of copper necessary to stop the development of the conidia, which the wind deposits on the surface of the leaves. Therefore, the lime seems to me to play a triple role in the mixture. At the moment of spraying, it behaves like an active mordant, which fixes the preservative drop upon the leaf and causes its close adherence. For some days it is capable of killing the conidia and the zoöspores by its caustic properties. Finally, when it is transformed into carbonate, it serves for the preservation of the stock of oxide of copper.

If the theory which I have just set forth needs proof, we shall find it in the following experimental fact, which several persons have this year verified in Médoc. The treatment has produced its maximum effect only where it has been applied in a preventive way. From the 1st of April last I have strongly insisted on this important point.

In this journal, October 8, 1886, as well as in my communication to the Academy of Sciences on the 5th of the same month, I presented the sulphate of copper and lime treatment as a remedy for both mildew and rot. I may be permitted to give a brief explanation on this subject.

As already stated, it was in 1883 that first of any one in Europe, I described and figured the rot in the Alsatian journal mentioned above. As I have clearly proved, the rot is produced by the development of the mildew upon the branches of the bunch, and in the interior of the berries. This is, I think, the variety of rot most common in America [?] and probably the most important for us. Since this work, of which I have just spoken, I have learned to know another variety of rot, which is a result of the development of *Anthracnose* upon the branches of the bunch. Finally, according to some recent statements which need confirmation, there exists yet a third variety of rot, caused by a fungus of the genus *Phoma*.

When I stated in one of my former articles that the treatment for mildew was of equal service against the rot, I had in view only the first-mentioned variety of rot, that which is connected with the mildew. Thia rot is only an effect, and in preventing the mildew upon the leaves we prevent, at the same time, the invasion of the bunch by the same parasite.

* My own observations and the statements made by Dr. Farlow and others lead me to think this is an error. The zo-ospores usually come to rest and emit a germ-tube, or perish, inside of one-half hour. Conidia, however, keep germinating for some time, and the author may have had this in mind.

GRAPE AND WINE CHAT.

[F. Pohndorff in Washington, D. C., Sunday Herald.]

Exclusion of air from liquids containing acids is the first rule for intelligent wine men. The custom of selling claret in demijohns or keeping claret with a vacuum, or worse, on tap in a barrel, is a sin against common sense. The writer sells his wines bottled under the greatest precantions, and will not be guilty of want of protection of his patrons by allowing the principles of acidification to enter his wines while in his hands.

The cote d'or propagation into the To-Kalon vineyard Pinot blanc, one of the grapes that in champagne are employed for the sparkling wine of that name, is a grand success. Of the first practical crop of 1884 the bulk, only a few barrels, is in the writer's hands, and that grand wine is inaccessible to Californians. Could many connoisseurs examine this wine, derogatory ideas of California viticultural possibilities would easily be set at naught.

Another proof of success is the Cabernet Sauvignon, first product of the To-Kalon vineyard of the vintage of 1884. This wine will be historical. Several gentlemen here, who take a lively interest in the development of American viticulture, have secured most of the small stock and desire also the 1885 and 1886 Cabernets for their table. There is in this Capital a number of men who are judges of good wine and who critically observe progress. Their testimony is highly encouraging, and their opinion would be guiding for thousands of people whom prejudice still moves to abstain from tasting native products, of which trade does its best to maintain the low standard of heretofore.

In this connection it appears proper that the California State law, which requires all wines to bear a stamp of purity, should be made effectual by the trade outside of California. The grower needs no stamp. He would be punished by the impossibility of sale to dealers should he try to adulterate his product? But the handling by two or three or four people, through whose cellars the wines pass in trade before reaching the consumer, will render stamping ridiculous. What a lot of trash of the five-story brick vineyards in large eastern cities will henceforth bear California purity stamps. Submit wines to chemical tests. The consumer ought to do this. Every drop of wine the writer sells will bear analysis. He would not stop to ask for certificates of purity.

F. PFEF.

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First. By an ingenious mechanical application, the "power of resistance" can be reduced to a minimum, and with a single effort, three or four times more power can be obtained than with any other press known at this day.

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Eighth. It is built on the ratchet principle, double acting, the lever working both ways, and can be worked in 6 feet space. It has no lost motion.

Ninth. It does not take any more labor to work the largest size than the smallest one.

Tenth. It presses any kind of fruit as well as grapes.

This press is not an experiment, having been used several seasons in the wine districts of Europe, and also in the United States last season.

It has received the highest award wherever exhibited in competition with other presses.

The main features of the press are the ease and rapidity with which it may be worked, and the great power which it applies; as the press stands on wheels, it can be readily moved from place to place.

In order to introduce our press last year, we placed it at a low figure; with the improvements that we have made this year, we are compelled to raise our prices, but they are yet the lowest on the market, while the press is far superior.

Our press is adapted for large vineyards as well as small ones, as we make different sizes. No. 7, shown in the above cut—the basket will hold 14 tons of grapes after crushing, and 4 fillings per day, its capacity being 56 *tons of grapes in one day.*

"LE MERVEILLEUX"

A representative of the MERCHANT has visited the shop where the Paré Bros. are building their wine presses, the "Le Merveilleux," which is claimed to be the best and cheapest wine press made. The platform or bed rests on a two wheeled cart, which enables the operator to move it to any part of a vineyard, or between the rows of tanks in a wine cellar. The basket is made of the best straight-grained Mendocino Pine staves, riveted to three bands of the finest quality of iron. These bands are each in halves. On one side they are connected by a hinge, and on the other are locked with pins, and, by removing these pins, the basket can be opened to any width required, and the must be removed in a very few minutes. The edges of the staves are beveled, the distance between them on one side being ⅛ of an inch, and on the outside ¾ of an inch. This renders it impossible for the grapes to get jammed in between the staves.

Rapidity is one of the strong points of this machine. It takes only from twenty to forty-five minutes to make a pressure. The "screw" which stands upright in the middle of the "basket," is fastened under the "bed" by a nut which is six inches thick, screwed on and riveted to the end of the screw. The operator moves the large lever which is from five to eight feet long, and moves in a space of six feet backwards and forwards. This pushes alternately two small levers, which in turn catch in the ratchets of the combinations on their *forward* motion, and keeps the wheels or combination steadily falling down the main screw. In commencing to lower the crushers upon the grapes, and when speed is required, the lever is placed in an upper combination, which acts directly on the screw, and in a few movements of the lever it has reached the grapes. The Presses have been calculated to withstand the pressure according to their capacity, so if the smallest is incapable of breaking itself, the largest is equally so.

The main feature of the press is the ease with which it may be worked. Mr. Pare forced the lever as far as it was necessary to go in one direction, using only his little finger, upon shavings which had previously been packed so tight, that it was impossible to run a knife into them.—SAN FRANCISCO MERCHANT, Aug. 27th, 1886.

WINE PRESS EXHIBIT.

The French Wine Press exhibited at the Fair by Paré Bros., attracted great attention from visitors interested in wine-making. This press has no merely local reputation, but comes to us from over the seas endorsed by French wine producers generally, and by the leading journals of France. In the Eastern States it is rapidly supplanting all others, and no doubt in California will do the same. The reasons for this are plain. It is a great improvement over any now offered; it is portable and easily carried on a hand-truck from place to place; it is not expensive, and it does its work thoroughly and well; it requires but little attention, and it is labor-saving. It is called in France "Le Merveilleux," and certainly deserves the name. Certainly, those interested in wine production should at once acquaint themselves with the capabilities of the press, its price, and see it working. By it they will save money, as its expense is comparatively small, compared with the amount and character of work it is capable of doing. We certainly commend an examination of its merits.—*The Weekly Commercial Record*, San Francisco, Sept. 16th, 1886.

EXHIBITS AT THE PAVILION.
"Le Merveilleux" Wine Press.

Among the exhibits at the Mechanics' Fair, which naturally attract the attention of the visitors, whether from the city or country, is "Le Merveilleux" wine press. The wine interests of California are fast assuming enormous proportions, and every year sees an immense increase in the area devoted to the culture of the vine. It is only to be expected, therefore, that any invention coming from an old wine-producing country like France, should have great interest for the residents of California. "Le Merveilleux" is a French invention just being introduced here. It has been patented in all European countries and the United States. The entire right for this country is held by Messrs. Paré Brothers, of this city. The press is manufactured in seven different sizes, varying in price from $120 to $450. It is claimed for it that it is more powerful than any other press now in use; that it does its work more rapidly and with less labor; that it is cheaper, without complication, and not likely to get out of order. Being built upon the interchangeable plan, any part lost or injured can be replaced at small cost.

It is constructed on the ratchet system, and the lever can be worked in a six-foot space, and is so easily operated, that a child of 10 years can work it. The lever works both ways, and thus doubles the speed.—*Daily Journal of Commerce*, San Francisco, Sept. 24th, 1886.

THE SUNSET VINEYARD,
Minturn, Cal., Sept. 15, 1886.

Messrs. Pare Brothers.—GENTLEMEN:—We take pleasure in informing you that we have used your No. 4 press this season, at our vineyard, and find it all that you recommend it. It does the work perfectly and with ease, and in our opinion is perfect in every particular. Yours truly,
WEBSTER & SARGENT.

San Francisco, Sept. 17, 1886.

Messrs. Pare Bros.—GENTS.:—The wine press No. 4 purchased of you several weeks ago, has been tried at our winery and has thus far given full satisfaction.
Yours truly, MT. DIABLO VINEYARD CO.,
By Jac. Levy, Sr.

Anaheim, Cal., Sept. 15, 1886.

Messrs. Pare Bros., San Francisco, Cal.—GENTLEMEN:—The Press came at last, and after giving it a fair trial I find it to my satisfaction. Enclosed please find exchange draft for the same.
Respectfully yours, LOUIS SCHORN.

San Francisco, Sept 22, 1886.

Messrs. Pare Bros., City.—GENTLEMEN:—We take pleasure in informing you that we have used your Wine Press No. 5 this season at one of our Vineyards, and find it all that you recommend it. It works well, and is perfect in every particular.
Yours very truly, B. DREYFUS & CO.

Anaheim, Sept. 27, 1886.

Pare Bros., San Francisco.—GENTLEMEN:—Yours, with shipping receipt and bill, at hand; but the press did not come until a week after, although I needed it badly. As soon as I got it I tried it, and must say that I like the press very well. Enclosed please find check for $140.50. Yours respectfully,
PETER HANSEN.

Pacheco, Contra Costa, Cal., March 15, 1887

Messrs. Pare Bros.—DEAR SIRS:—The "Le Merveilleux" No. 3 press I bought of you is the most powerful instrument to extract juice from grapes—it leaves the pulp entirely dry in a short time. I recommend it to all wine makers. Yours truly,
J. S. HOOK.

Mission San Jose, Cal., Oct. 27, 1886.

Messrs. Pare Bros., San Francisco.—GENTS.:—I have used your "No. 3" "Le Merveilleux" wine press all through my vintage, and it has in every particular given entire satisfaction, both in regard to the ease with which the work was accomplished.
Very truly yours, CHAS. C. McIVER.

I, the undersigned, certify that I bought from Messrs. Paré Bros., a No. 2 wine press, and used it last season, 1886, and it has given entire satisfaction.
Yours truly, A. CHEIGNON,
814 Howard St., San Francisco.

GENTLEMEN:—I take pleasure in telling you that I am entirely satisfied with the press, No. 2 "Le Merveilleux," you sent to me, it does the pressing without interruption. Yours,
B. DISTEL, Mountain View.

Messrs. Pare Bros., San Francisco.—GENTLEMEN:—I used last year one of your presses at the Hon. Jos. F. Black's vineyards of Livermore. I studied it carefully, and I must say it has given perfect satisfaction. It is the most powerful press I ever saw, and the work is very easily done. Yours very truly,
J. MORTIER, Livermore.

FARMERS' AND MERCHANTS' BANK,
Los Angeles, Cal., Oct. 15, 1886.

Messrs. Pare Bros., San Francisco.—DEAR SIRS:—Enclosed please find our check for $335.15, in payment your bill for two wine presses, as ordered by our letter of 30th ult., for

Messrs. Hafen & Niemeyer	$330 00
Drayage	6 00
	$336 00

The parties tell us the presses were received in good condition, and work to their satisfaction.
Respectfully, JOHN MILNER, Secretary.

After trial the Press may be returned to us if for any reasonable cause it is not satisfactory, "and money refunded," as we are satisfied from our experience that parties that have once used them will not afterwards do without them.

N. B.—We are also prepared to fill any orders for Crushers and Separators. For any further information apply to

PARÉ BROTHERS,

BRANCH OFFICES:
Honore Building, Chicago, Ill.
15 St. James St., Montreal, Canada.

OFFICE AND FACTORY:
101 to 107 Mission Street,
Res. 420 Geary Street, S. F.

THE AGRICULTURAL CONVENTION AT THE PALACE OF INDUSTRY, PARIS.

Wines and Brandies from American Vines, reported on by A. M. Desmoulins, Secretary of the Jury.

According to the rule, invariable as yet, it was the "Jacquez" which carried the vote. This plant is decidedly the best hitherto encountered for the production direct. It gives a very highly colored wine, with body and sufficient nerve when it is well made. The foxy taste with which people reproach the American vines tends to disappear, especially as to the Jacquez, in the measure that they become old.

The samples of the Othello, which we have seen, being one sole specimen, have not at all served to impress us highly with this wine so vaunched up in these late times. The wine is weak in color, fails somewhat in body, has a wild taste and remains every way inferior to the Jacquez. Comes this from the exhibitors? We cannot say, but hitherto we have not encountered any better samples.

The Herbemont has not pleased us any better, notwithstanding this grape, fermented with the Jacquez in the proportion of one-third, has produced an agreeable enough wine and of a certain solid quality; it fails in fullness. The other blends which we have had to appreciate do not amount to anything grand, and had better, perhaps, be denounced.

The Cynthiana is a deeply colored wine, deeper sometimes than the Jacquez. The specimens which we tasted did not appear to us sufficiently good; we have tasted better elsewhere, more lively and rich in color particularly.

Samples accruing from the Smesqua, Canada, Black Defiance, Bacchus, Delaware were presented but all were rejected. The major part had no color; tasted disagreeable. These cepages may be good grafting stocks, but unquestionably they amount to nothing as direct producers save, perhaps, the Canada which has to be studied.

Previous to closing, it is proper to mention after a special manner, one sample of Saint-Sauveur wine exhibited outside of competition by the originator of this cepage, M. Gaston Borille, the eminent vigneron and senator of the Herault. It is known that this plant accrues from a particular choice of Jacquez obtained from seeds. The two vines Saint-Sauveur and Jacquez resemble each other, still the first appears the finer, more delicate and approaches more to bottling wines.

Among the many brandies sent, only these of the Cynthiana and Herbemont furnished acceptable results.

The Jacquez does not appear to us to afford any service for the still; its role is sufficiently important—that of a blender—which it, through its puissance of coloration, clean taste and firm body, possesses in a marked degree.

The Jacquez is in fine the best of the American vines we have any cognisance of, and that which has before it the greatest future. J. A. Stewart.

THE PURE WINE LAW.

Editor Merchant:—The N. Y. *Tribune* reporter of San Francisco, who, a few months ago, saw a panacea for all ills affecting the wine industry in the hastily framed injudicious State law requiring a stamp for what certainly needs none, producer's wines, now announces that dealers, who may need the stamp on what they sell, oppose the law and in addition to exacting guarantees for the purity of producer's wines, want an analysis of what their noses and palates can easily find out to be pure or the reverse. Unaccountable things are happening in wine circles. Let a little more light enter into the brains and more instruction in the simple art of discrimination by comparison into the palates of the masses, and trust to consumer's discernment of what is pure and good and what, stamps and analysis in first hands notwithstanding, in second, third, fourth and fifth hand is slush and rank, unwholesome stuff, that on the part of the distant consumer, perpetuates, discarding what in the East has but a poor reputation, so-called California wine.

In addition to literature for the grape growers, let pamphlets be distributed about the proper use and effects of pure wine. Let the full truth be known clearly on every head, favorable or not, about growers and dealers, retailers and saloon men's doings with regard to wine. Let intelligible notes from authorized pens be circulated in every newspaper, in which the true inside of viticulture and wine is set forth for the benefit of the reading public, in order to let both the grown up and the growing generation know what a factor wine should be in the efforts of temperance people to reform the absolutely wrong habits of tippling of strong drinks.

There is a greater need of suasion on the true moral basis of wine consumption, that home-nutrition stands on than squabbling on such ephemeral and imaginative protection means as purity stamps. Let the million know that wine is grown in America, that the grower stands up for the purity of his product, and then, if commerce will be as true as the grower, fear not. The trifling quantity of wine grown in New York will become popular. The chief difficulty that checks consumption is that the great majority of the public knows too little about the thing itself. Laws, national laws, enjoying purity are needed, for the superabundance of miserable stuff palmed off in a shape that disgraces the name of wine in the East, is a hundred fold greater check to progress of American Viticulture than trying to do good by the ridiculous homeopathic means of which so much is made, California State Legislation.

F. Pdff.

Washington, D. C., June 12, 1887.

A GERMAN WINE FRAUD.

The shameless manner in which the public is deceived in the matter of pure wine, was well illustrated in a visit made last week by a representative of the *American Analyst*, to the uptown establishment of one of the largest dealers in this city, in so-called German wine. In full view, on the premises, men were seen filling long necked bottles, such as the German wines are usually imported in, with California wine, and affixing to them labels bearing the name of *Hochheimer* and other favorite imported brands. This liquor is worth, as American wine, about thirty cents per gallon, but it is sold by the bottle as genuine German wine at five dollars per case, or a dollar and a quarter a bottle. Possibly, the average public taste is as well satisfied with the American article as it would be with the genuine—but the fraud is just as great, and the swindle is a very profitable one to its manipulator.—*The Analyst.*

CALIFORNIA PIONEERS.

At the excursion of the California pioneers of Washington and Baltimore to Marshall Hall on the 14 January, 1887, Hon. Wm. E. McLean, Deputy Commissioner of Pensions, in the course of his remarks, said:

The American people are a liberal people, and will hesitate not to reward great deeds which have produced such grand results. You are all *heroes*, and hero worship is salutary. I will not refer, except in a mere casual way, to the millions which California has poured into the world's treasury; but just think for a moment, Mr. Chairman and gentlemen, what she has done for us and for mankind in the production of those seductive wines "which cheer but do not inebriate," of which we have all to-day so liberally partaken. Why, sir, the Vieuve-Cliquot and the gorgeous brands of sunny France, the vintage of the Rhine, Johannisburger, and the Hocks of the old "Faderland" pale into utter insignificance, they become dull and insipid beside the soothing beverages which the vine-clad hills of California have poured upon our table to-day.

When Artemus Ward asked Brigham Young how he liked matrimony as far as his experience went, the prophet, you may remember, made him no reply. Now, if anyone should ask our Chairman, after he has partaken of the delicate Sabbath-school beverages which have been set before us, all of California brand, how he liked California wines, with his large experience in that direction, and, as a connossieur, he would not do like the prophet, remain silent, keep mum, say nothing, but he would say, with that ebullition of joy, which can only come of good cheer, "They are grand—I like 'em. Here is to the Forty-niners, California, and her wines forever!"

HOW TO EAT GRAPES.

Millions of people in grape-raising countries, says the *Boston Herald*, eat grapes as they ought to be eaten, viz., without chewing, or skinning, or seeding, or in any nonsense whatever. But thousands of people have been taught—some to pinch the pulp into the mouth disregarding the skin, others, to dissect out both the seeds and the skin, thus taking a great deal of pains to prevent the grape from being as wholesome as it is delicious. By far, the most agreeable and satisfactory way to eat grapes, once accustomed to it, is to "belt" them about as fast as they can be comfortably swallowed, pressing the grape between the teeth so as to open up the pulp sufficiently to give us all the flavor and to lubricate the bolus. A little practice will enable anyone to eat them thus, and it is then the most agreeable, as it is the only wholesome way. It is want of bulk that makes our food indigestible in many cases. It is obvious that there is a double advantage if this theory be the correct one, for one pound of grapes would "go as far" as two pounds eaten the other way.

THE PURE WINE BILL.

Too much Mission, straight and blended, is abroad. Good God, what trash one sees sold under the title of California wine! The innovation of stamps where they are not needed on grower's products, which, if not pure, would simply be left on producers' hands, will be really of no interest, except as it will be a means in some way of covering very soon what passing through many hands, needs legitimation, crooked stuff, having part of extraction from the legitimate wine in it.

What would be desirable rather than stamps, at least in eastern consuming markets would be *grading* wines, for what is it to attest purity if quality is left out. The average consumer looks to cheap prices, and when from a third or fourth hand a wine is obtained at a very cheap price, then we know what that means. But the public do not know the difference. Upon that axiom turns dealing in wines. If the wine be pure, but poor, a mixture that should go to the still, but only after freed from the extravagance of acids not at all vinous, what does a California legitimation of the original cask avail? Unfortunately wine is a merchandise permitting fooling largely, and fooling will go on, stamp or no stamp.

F. Pdff.

It speaks well for St. Helena brandy that we can ship it to the very heart of the wine growing districts of France; and the shipment by Beringer Bros. of two carloads to Bordeaux and one to Glasgow, recently, will give some idea of the possibilities of the expanding market for the California production, and the bright future for the industry when once the limitless market is fully developed.—*St. Helena Star.*

THE USE OF GASES AGAINST SCALE INSECTS.

Some time ago the Agricultural Department was requested by Messrs. A. B. and A. S. Chapman, Mr. L. H. Titus and Mr. J. C. Newton, prominent orange-growers of Los Angeles county, to conduct experiments with the view of determining the efficacy of certain gases as insecticides—with special reference to the white scale, *Icerya Purchasi*. The following is a summary of results, of which a full report will be published hereafter.

The use of gases for this purpose has been long contemplated, and various appliances have been suggested for the ready application of any efficacious gas. The ease with which gas penetrates to all parts of the tree naturally suggests its use as preferable to washes, which at best leave many parts of the foliage and infested branches untouched, even when sprayed with the greatest care. In order that the gas may be an efficient insecticide, it must be so poisonous that even when applied in small quantities it produces fatal results; for in the application the air confined in the tent covering the tree dilutes the gas to a great extent. Again, the gas must be capable of being generated quickly in sufficient volume. The record below shows that only one of the gases employed fulfilled these conditions to a satisfactory extent. Preliminary experiments with some others having shown their unfitness for the purpose, either on account of expense or because of injury to the foliage, or imperfect action on the insects, their study was not pursued further.

APPLIANCES FOR APPLICATION.

The tent for covering the tree is made of heavy bed-ticking, thoroughly oiled with linseed oil. This cloth serves the purpose best, as it is very closely woven, is pliable and easily folded.

The support of the tent, devised by Mr. Titus, is a very ingeniously contrived scaffolding mounted on wheels, which serve to move it from one tree to another. Its dimensions are 20 feet high, with a base 20x20 feet. Its upper part is 20x12, and carries upon the top a roller made of galvanized iron (6 inches in diameter and 12 feet long), upon which the tent is rolled when taken from the tree. Side guy-ropes are attached to the bottom of the tent and run through pulleys at the upper corners of the scaffold. They are used to open the tent when it is to be dropped over the treee, and to fold it up when it is removed. The lightness of the apparatus allows of its being easily removed by two men, who operate the whole. If necessary, two or more tents can be handled by the same scaffolding, one tent being left over the tree while the scaffolding is moved to the next.

In adjusting the tent, the bottom is placed on the ground about three feet from the tree and covered with earth. This brings the gas to bear upon the base of the tree and the surrounding soil.

The generator in which the gases were produced consists of a heavy sheet-iron cylinder, 11 inches in diameter and 13 inches high. The bottom rests on a plank, and to the top is fitted a movable cover suspended in a frame by a bench-screw. Into the cover are fitted two pieces of gas-pipe—one for the exit of the gas toward the tent, and the other, connected with a pump, carries the gas which returns *from* the tent. Two small reservoirs are also inserted in the cover; in these are contained the solutions which are to flow into the generator for the production of the gas.

In order to establish circulation and to force the gas into the tent, a pump is used, which also serves to exhaust the gas from the upper part of the tent and to force it again through the generator. It is proposed to replace the pump by a small fan-blower, which is much more expeditious than the common pump which was used.

THE GASES EXPERIMENTED WITH.

Among the gases used were chlorine, sulphuretted hydrogen, ammonia, carbon bisulphide, carbon monoxide, carbonic acid, hydrocyanic acid, and carbolic acid vaporized by heat.

Chlorine.—Some preliminary experiments were made in small vessels into which this gas had been introduced. Some infested branches were allowed to remain in them for times varying from 5 to 35 minutes, without any noticeable effect being produced on the insect. Atmospheres more strongly saturated with the gas proved fatal to the insect in a short time. In other treatments extending over 18 hours, with less saturated atmospheres, only a small percentage of the insects was killed. No decided effects were noticeable on the foliage unless the gas was very concentrated.

Carbon Bisulphide.—A lime tree, 12 feet in diameter of top, was treated with the vapor of 2½ pounds of sulphide of carbon for 45 minutes. At the end of this time the insects were lively, and during the treatment had crawled up and collected around a rope surrounding the tree, at the point where the gas was being injected from the hose. It proved that the gas thus used injures neither the insects nor the foliage. It is upon record, however, that in cases where the vapor has not been thoroughly diffused, but was allowed to flow down from an open vessel placed in the top of the tent, serious injury was done to the foliage at points where the undiluted vapor flowed down.

Sulphuretted Hydrogen.—Several treatments with this gas were made on a small scale, the application lasting from 5 to 35 minutes. The effects produced either with diluted or concentrated gas were similar to those produced by chlorine, except that even the concentrated sulphuretted hydrogen did not injuriously affect the foliage. An experiment in which a whole tree was treated in the tent for 45 minutes, with quite concentrated sulphuretted hydrogen gas, showed clearly that the effect was far from being satisfactory; the insects for the moment were stupefied, but in the course of an hour and a half the majority of them were again moving about.

Ammonia.—The vapor from one pound and a half of strong ammonia water was applied to an 11-foot lime tree for 30 minutes. The results were disastrous to the foliage; the leaves were all scalded, and in a few days all dropped from the tree, and even the newer growth of wood was injured. The insects, however, were not perceptibly harmed.

Carbon Monoxide.—Very strong hopes have been entertained by many for the successful application of this gas. Its apparent cheapness and easy production, when the necessary plant is once erected, would recommend it. Unfortunately our experiments show that it is not sufficiently effective to warrant its use. The gas was obtained by forcing air through a small furnace filled with red-hot charcoal, care being taken to cool and to measure the gas before applying it. No appreciable effect was noticeable after 40 minutes. In a duplicate experiment, in which the charcoal was more strongly ignited and continuously introduced into the barrel for 30 minutes, only slightly better results were obtained.

Oxalic Acid.—It was thought that the production of carbon monoxide by decomposition of oxalic acid by heat might be substituted for the previous method of generating this gas. One-quarter of a pound of oxalic acid was ignited, and the gases applied in a manner similar to that of the preceding experiment. Neither the insects nor the foliage were harmed in the least. This experiment has incidentally shown that the vapor of formic and oxalic acids, also produced during the heating of the latter, is likewise ineffective.

Carbolic Acid.—It had been suggested that carbolic acid vaporized by heat would prove fatal to the insect. A dose of half a pound of liquid acid was volatilized in the furnace, and the vapor blown in the vessel containing the infected branch. At the end of 20 minutes all the old insects were still alive, and some of the young ones, just molted, were moving about. An hour later the foliage appeared as if scalded.

Hydrocyanic Acid.—It was only with hydrocyanic, or prussic acid (generated by the action of sulphuric acid on potassium cyanide), that sufficiently fatal effects were secured to warrant a more thorough determination of the time of exposure and quantities of material which would produce the best results. Numerous experiments were carried on for this purpose, and it was shown that even small amounts were effective. It was also shown that even in these small quantities an injurious effect upon the foliage was produced. In the beginning of the experiments, "mining cyanide" of potassium was used. It is a very impure material and contains along with the cyanide a considerable amount of carbonate of potassium. For this reason many of the first treatments were practically ineffective.

Later treatments with pure cyanide were more successful in destroying the insects, but the foliage was proportionally injured. Treatments varying in doses from 4 to 12 ounces of cyanide, and in time from 15 to 60 minutes, showed that the effect produced on the foliage by longer treatment was not proportionally greater than that produced by short treatment. Neither was the effect of longer treatments proportionally more fatal to the insects. It was thus clearly shown that the gas mixture should be of considerable strength in order to insure rapid action.

The effect of the gas was so disastrous to the foliage that it became necessary to find some means of remedying this trouble. This was sought in applying a second gas, which might preserve the foliage. Sulphuretted hydrogen was therefore injected into the tent, together with the cyanide gas, both from the same generator; a portion of the sulphuretted hydrogen being introduced before the cyanide was generated. It was found that the insects appeared stupefied when the tent was raised, but large numbers revived in a few hours. The effect of the cyanide seemed therefore to have been decreased by the sulphuretted hydrogen. The foliage was not preserved, although not so badly affected as by treatments with cyanide alone.

Carbonic acid gas was next tried. Trees were treated with larger doses of cyanide than heretofore used, and the carbonic acid from 1½ pounds of carbonate of soda was at the same time introduced with these doses. The insects were killed and the foliage of a 12-foot tree with the same amount of carbonic acid was slightly injured. Thus it was shown that it would require 1½ pounds of bicarbonate of soda to preserve tree-tops 12 feet in diameter, and that with this protection the deadly cyanide could be successfully used.

The regulation of the doses for the different sized trees so as to produce uniform treatments is calculated on the basis of the results of the experiments which determined the amount of each constituent for a 12-foot tree. The following table indicates the amounts for trees for different dimensions of top, based upon the rates of cubical contents:

Size of Tree, feet.	Cyanide of Potassium, fluid ozs.	Bi-Carbonate of Soda, pounds.	Sulphuric Acid, fluid ozs.
4	.7	.05	.4
5	1.6	.11	.3
6	2.5	.20	1.3
7	4.0	.29	2.1
8	6.0	.44	3.1
9	8.5	.63	4.5
10	11.5	.87	6.2
11	15.5	1.14	8.2
12	20.0	1.50	11.6
13	25.4	1.90	13.5
14	31.6	2.50	16.6
15	39.2	2.92	20.7
16	47.5	3.55	25.2
17	57.5	4.23	30.1
18	67.7	5.05	35.3
19	70.9	5.93	42.1
20	90.5	6.93	49.2

In order to apply the doses easily they are prepared so that the required amounts of each ingredient can be directly measured. The cyanide solution is prepared by dissolving say ten pounds of the solid salt in about two and a quarter gallons of water, warmed nearly to the boiling point, stirring at intervals, cooling, and then diluting to two and one-half gallons. This solution will contain about one ounce of cyanide of potassium to two and one-half fluid ounces of the liquid.

The bicarbonate of soda is pulverized finely and measured off in a vessel marked, so as to designate pounds and fractions of a pound of the solid material. It is then placed in the generator and the dose of cyanide mixed with it, and, if necessary, a little water added to make it into a thin paste. After adding the measured dose of sulphuric acid, the pump is worked slowly at first, and more rapidly after the gas has passed into the tent. The time for each treatment must be determined by future experiments; fifteen minutes seemed to be quite sufficient when the cyanide alone was used, but it may be desirable to extend the treatment to thirty minutes when the foliage is protected by the carbonic acid gas.

It is advisable that the treatments should follow cultivation after about four days, so that all weeds and places where the insect may find lodgment would be destroyed. The insect will then be on, or very near, the tree; the fitting of the tent to the ground is thus also much easier.

The eggs of the insect remained apparently uninjured, wherever protected by the woolly covering. A second treatment, to destroy such as may afterward hatch, will therefore be necessary.

It must not be understood that these experiments definitely settle the mode of operation and the size of the doses to be used. They are merely suggestive of a general plan which can be so perfected in the future that the application of this remedy to other kinds of trees and insects must be attended with good results. It simply remains for the ingenious cultivator to devise the necessary appliances for its use, on a small scale, on all sorts of fruit trees, shrubs and plants.

It must not be forgotten that extreme care in the handling both of this deadly gas and of the cyanide itself is necessary. To inhale the one, or to touch a wound with the other, may lead to serious consequences.

BERKELEY, June 12. F. W. MORSE.

Just after the foregoing was written, the following letter was received from A. Scott Chapman, of San Gabriel, member of the California State Board of Horticulture:

SAN GABRIEL, June 8, 1887.

F. W. Morse, University of California—DEAR SIR: The Board of Horticulture of Los Angeles county have been out to examine the work done by you at Mr. Titus' place and have pronounced it the best "killing" that they have ever seen.

They asked my father (Mr. A. B. Chapman) to go before the Board of Supervisors and make a statement of your work. He went before the board and explained things to them. They then agreed to pay all the expenses incurred by him and Mr. Titus; they further agreed to ask you to come down again and carry your plan to completion, agreeing to pay all your expenses and salary, the same as was done by Mr. Titus and my father, during your previous visit. Very respectfully yours,

A. SCOTT CHAPMAN.

THE HILL VINEYARDS.

A correspondent of the San Francisco *Bulletin* writes as follows:

It is only in the last few years that this industry has assumed a practical shape in this section. Any one who knew this district ten years ago can call to mind the small patches of vineyard that here and there produced the old Mission grapes. That, now, is all changed. As far as the eye can reach you will see thousands of acres of vines, stretching in places far up toward the summit of the Santa Cruz Mountains. Most of these vineyards have been planted within the last five or six years, and are, therefore, only just coming into bearing, but experts concede that this particular section of the foothills produces a first-class grape. This is accounted for in two ways—first, by the richness of the soil and second by the climate of the valley. Commencing near Mayfield and the site of the Leland Stanford, Jr. University, and extending in a southeasterly direction to the New Almaden Quicksilver mines, is a tract of land about six miles wide, known as the Thermal or Warm Belt, in the center of which are nestled the villages of Saratoga and Los Gatos. Within this charmed circle Jack Frost seldom ventures, even when holding high carnival at San Jose.

The traveler, when riding from San Jose into this neighborhood, suddenly feels a gust of warm air in his face, and the change of temperature is quite apparent. It was formerly considered a phenomenon, but careful observation has shown it to be due to the peculiar topography of the hills and ravines, which conducts the cold-air current in certain regular and permanent channels, leaving the intermediate sections unaffected thereby. Here the choicest foreign varieties in known wine-grapes are to be found planted on these slopes, producing such excellent results, that already their fame has been acknowledged even in Europe.

The Zinfandel of this district produces a wine equal to the best Cabernet and Malbec of Napa and Sonoma counties. In type it is between a Bordeaux and a Burgundy, lighter if anything than a Burgundy, but heavier than a Bordeaux, and intense in color with a delicacy of flavor and bouquet. This being the case with the Zinfandel, we may expect something extra fine from the Cabernet family, which are just coming into bearing.

The Trousseau, which is the port wine grape of Spain, is grown quite extensively here and produces an excellent wine. Of white grapes the quantity is small, but the acreage is increasing every year, and the product from the Sauvignon-Vert, the Chasselas and the Riesling are second to none in the State, as was proved at the last State Wine Growers' Convention.

The principal wine company in this section is the Los Gatos and Saratoga Wine Company, A. Malpas, President, which started in a small way about two years ago. It is a stock company composed of the most solid men of the locality, whose vineyards in the aggregate are worth $300,000 to $400,000. The first vintage of the company did not exceed 8,000 gallons, which sold for 35 cents per gallon in that year. Last year the company increased their capacity very largely and made up 80,000 gallons of wine, which found a ready sale at the highest market value, viz., 25 cents per gallon. This year it is their intention to double their present capacity, putting in all the modern improvements in machinery and distillery.

It is the intention of the Los Gatos and Saratoga Company to age their own wines and make a market direct with the East and Europe; in fact, a shipment has been made to France, with the result that the firm are prepared to take the whole of a certain claret made by the company on advantageous terms. As a proof of the value of vineyard property in this neighborhood, a ranch lately changed hands which has been only three years in bearing at the rate of $600 an acre.

FRUIT EVAPORATORS.

We are pleased to chronicle the grand success of the Acme Steam Heat Fruit Evaporators. Those sold last year have by their perfect working produced a furore in their favor, and this year it is difficult to get them from the factory east fast enough to supply the demand. Messrs. Batchelor & Wylie inform us that they bought all the manufactory could make in time for this season's trade, and have sold every machine that has arrived to date, the last, a large sized steam machine, going out to Calistoga June 21st.

Their last car-load for this season is expected to arrive this week, and from the success they have met with we predict this will supply the demand for a few days only, as the season for evaporating is just opening.

This system seems to commend itself to all who take the trouble to investigate the principles upon which it works, as being the simplest, safest and most economical in fuel and operating expenses.

Since last year they have been improved in having galvanized *steel* steam chambers and more space between trays to suit our large California fruits.

ANOTHER REMEDY FOR MILDEW.

[Fruit and Grape Grower.]

Mr. P. B. Crandall at the meeting of the Western New York Horticultural Society recommended salt as a remedy for mildew. He said salt enough to whiten the ground three or four feet around a grape vine has been a preventative of mildew for the past two years; that the same varieties adjoining not thus treated, were ruined by mildew, while those thus treated were saved. His purpose is to make a further test of salt on his own vineyard.

This is a simple and cheap remedy which our grape growers may do well to try on a small scale.

THE SAN FRANCISCO MERCHANT

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FRIDAY.....JUNE 24, 1887

WHERE IS CALIFORNIA?

The results of the representation of Australian wines at the recent exhibition in London is being very substantially recognized. We have frequently referred to the action that was taken by Colonial Wine Makers and the encouragement that they have received from the trade in London. That this encouragement was genuine is shown from the fact that one firm alone, Messrs. Morris & Sons of Brown's Plains, a district about twenty miles from Albury, New South Wales, have received an order from England for 600,000 gallons of wine. This is a large order for one firm of wine makers. It shows that the English market is prepared to receive pure wines from new sources equally as well as the compounds received from European vineyards. If only some action had been taken to have California wine represented at the American Exhibition now being held in London, we might equally well have expected similar orders for our producers, who would not then be so dependent upon the San Francisco trade. It may not, however, yet be too late for the California wine makers to learn the lesson that has been taught them by their Colonial competitors.

Miss Cecilia Pohndorff y Benitez, the youngest daughter of our friend Mr F. Pohndorff, is to be married this month in Madrid to Don Manuel Davila of the General Staff of the Spanish army.

THE SAN DIEGO TERMINUS.

The question has again been raised whether the Australian mail steamers shall make San Diego a touching point for landing and receiving the mails. This depends, to a certain extent, upon the people of San Diego themselves and the Atchison, Topeka and Sante Fe railroad people. If the New Zealand Government decide that the steamers shall run direct from Auckland to San Diego, so as to shorten the time by sea, it will only be on the inducement that can be held out by the southern people of shortening also the time by land. We believe that San Diego is several hundred miles nearer to New York than is San Francisco. This, together with the fact that the Atchison Topeka Company controls its line of railroad as far as Chicago, is an advantage. The line in question will have nobody to consult in arranging for fast special trains which it can start at any time and run at any speed that it desires up to Chicago. From that city to New York there are quick express trains which will also help to facilitate the transportation of the mails. It will also be an advantage if the southern line could start a special mail train within an hour of the arrival of each steamer. One other strong point that the southern route has, also, is that it is free from any danger of snow blockades in the winter, which have frequently been the cause of delay in the starting of the steamers from San Francisco for one and even several days. It will thus be seen that there are several advantages in favor of San Diego being made the point for landing and receiving the Australian mails, and it remains for the people there who are interested in the matter to set forward, in the proper quarter, the inducements that they are prepared to offer on their own behalf.

We believe that Mr. John D. Spreckels, who is President of the Oceanic Steamship company and the contractor for carrying these mails, will visit San Diego early next month. He will naturally examine the harbor carefully to see that it is suitable for his steamers. He will need good wharf accommodation, facilities for coaling, discharging, receiving and storing freight, the assistance probably of a pilot, certain stores and a variety of other things that are incidental to steam shipping. The officials of San Diego may find it advantageous to offer special inducements in these matters, or a remission of their charges. They may even think it to their advantage to offer a money consideration, in the way of a subsidy, so long as the steamers call there. It is for them of course to consider whether the benefits that they will derive in return are sufficient to warrant any such course. There is no doubt whatever that it will be a big advantage for San Diego that that port should be known all over the world as the terminus of the Australian mail service through America. Besides a certain amount of tourist travel it would build up a future commercial connection with the outside world and extend the facilities for connection with San Francisco. As far as the Colonial Governments are concerned they desire to accelerate the delivery of their mails. San Francisco has done nothing to assist them, nor for that matter has the United States Government. If San Diego can come to the front she will show to advantage. The numerous benefits derivable in this connection can not be appreciated at a glance and there are many minor matters that would hardly occur to those who are thinking over the subject without having had the experience. But it is very evident, from the interest that the San Diego people have already taken in this matter, that they are alive and intend to do their best to outstrip San Francisco. They should have their plans and propositions fully matured, and we have no doubt that any inducements they may offer will meet with favorable consideration at the hands of the proper authorities.

WINES IN EUROPE.

Glancing over statistics of the wine trade of Bordeaux, we find that that great market absorbed in—

1882.....	27,720,000	Gallons.
1883	28,040,000	"
1884.....	23,360,000	"
1885.....	28,100,000	"
1886.....	47,308,000	"

of wines from other countries.

The highest figure Spain supplied in one year to Bordeaux was just 21,000,000 gallons, while in the last two years the deep tinted wines from Portugal seem to have proved particularly adapted to blending with Bordeaux growths, and from the figures of 600,000 or 700,000 gallons, last year's importation in Bordeaux of wines from Portugal jumped up to twenty-seven millions of gallons. The magnitude of the wine business of Bordeaux can be fairly judged by such enormous figures. The considerable amount of blending, chiefly for compounding cheap wines for export can likewise be imagined.

The well fermented Douro wines, called dry Port wines, in their natural state of an alcoholicity of about 13%, attracted attention years ago for their excellent qualities and the moderate price asked for them. The 130 gallons at $30 put in London were years ago a value that clashed with higher rates for light Gironde wines in the British markets. Demand for Portuguese deep colored dry reds has of course raised their value and the amount of their importation in Bordeaux, now treble the quantity of blending wines from Spain, prove their usefulness and hence the stability of demand for years to come.

The character of the Portuguese wines adapted to Bordeaux uses is conditioned by the fine varieties that originate them. If at the Natoma Vineyard those valuable varities with which the watchfulness of Mr. Horatio Livermore provided that property, have not become the victims of indifference or inappreciation since that gentleman severed his connection with the company, there should now be there a nucleus for California vineyards of such plants that in Portugal produce what Bordeaux seems practically to value as most useful. Not that we are in particular want of blending wine grapes, if the originals of the Bordeaux type producing varieties will indeed justify our hopes for success in California plantations, but the task of experimenting in search of what is fittest, should be facilitated by ample choice of what is reputed to be good, and where a hit is made elsewhere, our American spirit of progress should not slacken in trials with what experience indicates to be worth trying.

THE ST. SAUVEUR GRAPE.

Monsieur L. Ravaz wrote an article on the St. Sauveur (Savior) grape, in which attention is called to that new hybrid fruit, considered phylloxera-proof, as possessing also remarkable properties as a direct wine grape. The name was given by Mr. Planchon to this variety, which was produced at St. Sauveur a' Lattes near Montpellier.

This grape bears great resemblance to the Jacquez, but its berries are larger than the latter, is full of juice and has less seeds. The character of the Aestivalis is nearly gone and all the signs of vinifera are present in the St. Savior grape. It appears to be a crossing between Aestivalis, cynerea and two viniferas. Jacquez crossed with Teinturier du Cher or Petit Bouschet is probably the origin of the St. Savior grape. The latter ripens at the same time as the Jacquez, a few days before the Petit Bouschet and several weeks sooner than most southern grapes. It is a prolific vine, and the wine is rich in alcohol, of a frank taste and deep color. Samples at the Lyons regimal exposition in 1886 were considered good blending wines of deep black color and clean taste, better than other wines from American hybrids. The resistance of the variety was proved in the vineyard of its origin in the midst of a Jacquez plantation. Like the latter, having phylloxera on its roots, immunity from harm of the louse seemed secured. While Jacquez vines lost their crops and leaves from peronospora the St. Savior vines were free from the same. The few small spots of infection on the St. Savior leaves did not in the least hinder the prosperity of the plant. Twenty-two per cent. saccharine, 3.08 p. m. acids were contained in St. Savior must. A three year's wine of the variety, of fine deep color possessed 10.7 per cent. alcohol, .02442 per cent. acids, 2,653 per cent. extract and 3.9 per cent. residue.

The trials in France showed that the St. Savior vine succeeded well in rich soil in the south and in moist locations in the west and east, and for these regions in France seems of additional importance on account of early ripening.

PACKING GRAPES.

The Government of Cape Colony recently issued a circular or memorandum, describing the method employed in Spain for packing grapes intended for export. The memorandum was issued from the office of the Commissioner for Lands, Cape Colony. It reads as follows:—

Inquiry on the subject was suggested by applications to the Agent-General in London for information as to the best mode of transporting grapes from the Colony for European markets. It was ascertained that grapes from the Almeria District of Spain are shipped to London in perfect condition on the decks of vessels which are constantly from fourteen to eighteen days on the voyage, and that a cask of these grapes was sent from London to South Australia, where they arrived in excellent condition after a farther passage of forty-two days. It is needless to add that the hardest kind of grapes are the most suitable for exportation. Grapes from America (Spain) are packed in barrels made from light oak staves, which, when full, weigh gross from 60 pounds to 70 pounds; 66 being considered a fair average. Properly packed fruit is cut and dried for from twenty to forty-eight hours, according to circumstances. It is then carefully packed in the barrel as follows:—A thin layer of ground cork, as per sample herewith, then a layer of grapes with more cork to fill up all space between the fruit, another thin layer of dust, another of fruit, and so on, till the barrel is full. A gross weight of 66 pounds should contain 46 pounds to 48 pounds of grapes. Ground cork, where the fruit continues sound, is a non-conductor of heat, and in the event of slight decay it will absorb the moisture. But in the case of the fruit going very bad, the amount of moisture would probably be so great that the cork would become saturated.

AUSTRALIAN AFFAIRS.

Advices from the Colonies indicate that business there is sound, though quiet, and that there is a feeling of greater confidence. Money was offering at low rates upon good freehold security and there had been some good sales of station properties. The demand for American lumber was very spiritless and prices were low. The wheat market was firm and flour had advanced $5. per ton. Reports of crop products, from all parts of the Colonies, were very favorable. Prices for wheat were higher, after allowing for transit charges, than in England. The surplus of wheat for export in South Australia was 102,000 tons; in Victoria 81,000 tons and in New Zealand 30,000 and 33,000 tons, making a total of 210,000 tons for export to the United Kingdom. In New Zealand the Government had proposed increased custom duties, but, owing to the dissolution of parliament since the mail left, these have not been carried into effect. In New South Wales, on the other hand, a new customs tariff will go into effect on October 1st which practically makes Sydney a free port, all duties being abolished except on twenty-three articles, the duty on which remains much the same as at present.

WINE STATISTICS.

This country does not yet cut much figure either as a wine producing or wine consuming country. From the Buresu of Statistics at Washington, comes a very interesting report, showing the production and consumption of distilled and malt liquors and wines, not only in the United States, but throughout the world. The total consumption of wine in this country is given, for last year, at 22,067,220 gallons, of which 17,366,393 gallons were domestic wines, the remainder being imported. In France, during the year 1885, the consumption of wine amounted to 901,264,428 gallons. It seems, however, that, while we are yet a long way behind France in the consumption of wine, the per capita consumption in this country is larger than it is in the United Kingdom, the figures being as follows: United States, .38 of a gallon per capita; United Kingdom, .37 of a gallon. In France, however, the per capita consumption of wine amounts to 36.88 gallons. Even if our production of wine were the same as in France, our consumption, in the same proportion, would not amount to half that of the great wine country of the world. France also consumes rather more distilled spirits per capita than the United States, the figures being France 1.42 gallons; United States 1.24 gallons; United Kingdom 1.01 gallons. The following figures showing a decrease in the annual and per capita consumption of wine in France are interesting. Thus:

Year.	Consumption. Gallons.	Per Capita. Gallons.
1883.....	1,389,656,431	36.88
1884.....	1,068,279,942	28.36
1885	901,264,428	23.92

It is found that the bulk of the imported wine in this country costs $1.50 per gallon at wholesale, while $4 per gallon is the cost to the consumer. The average cost to the consumer of domestic wines is given at $2 per gallon. This last estimate is, we think, excessive, as, notwithstanding the fact that case goods bring up to $5, and sometimes $6, the bulk of the domestic wine is sold to the consumer at less than $1 per gallon. The drinking population of the United States is estimated at 25¼ per cent. of the whole, and it is centered in the cities which contain 22¼ per cent. of the total population. The per capita consumption of wine of the estimated drinking population of the United States is 1.4 gallons. The consumption of spirits in this country has decreased since 1882, while the consumption of beer has increased. But the consumption of wine has also decreased, since 1882, from .48 gallons per capita of the total population, and 1.9 gallons of the drinking population, to .37 and 1.4 gallons respectively. The customs revenue derived from wines was, last year, $3,774,349. In the United Kingdom, as well as in France, the consumption of wine has decreased considerably since 1876, when the quantity consumed amounted to 36,160,816 gallons, being only 29,431,282 gallons seven years later. These statistics of decreased consumption of wine are somewhat surprising, but they appear to have been gathered from very authentic sources and must be accepted as correct.

In conclusion, we give the estimated production of wine, according to countries, in 1884:

Countries.	Production. Imperial Gallons.
France.....	765,175,972
Italy	605,000,000
Spain.....	484,000,000
Austria-Hungary.....	187,000,000
Portugal.....	88,000,000
Germany	81,290,000
Russia.....	77,000,000
Cyprus.....	35,200,000
Greece.....	28,600,000
Switzerland.....	28,600,000
Algeria.....	22,000,000
Turkey.....	22,000,000
United States.....	18,000,000
Cape of Good Hope.....	15,400,000
Roumania.....	15,400,000
Servia.....	11,000,000
Australia.....	1,933,800
Total Production.....	2,485,599,772

PLASTER PROHIBITED.

One of the most extensive shippers of wines from Alicante (Spain), Don Luis Penalva, has offered a premium of $2,000 for the discoverer of the means admissible, within the limits of hygiene, to give the wine the properties now obtainable by plastering, that is, to render wines proper for exportation without using plaster of paris. The French Government seems to prohibit from the 1st of August the importation of wines having more than two grammes of sulphate of potash, and Mr Penalva's anxiety to obviate the necessity of plastering is justified in view of the probable French law. One of the advantages of California wines is that our growers never thought it advisable to use plaster. The few instances where it was employed, have at once been denounced, and the people who plastered had done so in all innocence hoping to improve the wines by the process, formerly thought legitimate and harmless.

French wine brokers have induced many wine producers in Hungary to consign their good red wines to French ports. Generally 50 per cent. is advanced by the brokers. The result of this manner of disposing of the product of their vineyards is generally that, with agglomeration of cheaper wines from Italy and Spain, prices are far from reaching the figures hoped for, the wines await purchasers during weeks on the quays, and, to avoid swelling of expenses, are sold at rates which cause many an oath never to venture benefiting brokers in another country, while the lowest price in Hungary would be far above the result of consignments to France.

The intense heat experienced within the past week has seriously affected the grape crop and caused even more damage than the frost. The Zinfandels, which were considered certain to bear very heavily, seem to have suffered the most and are filling out very irregularly. It is now expected that this year's vintage will fall considerably short of that of 1886.

THE GRAPE GROWERS AND WINE-MAKERS ASSOCIATION.

A meeting of this association was held on the 21st inst. An anonymous communication in reference to the way in which wines are tasted was read. It suggested that samples of wine be numbered instead of being identified with especial producers, so that a more unprejudiced result may be obtained.

C. A. Wetmore submitted the following resolutions:

Resolved, That any new movement looking toward the modification of Internal Revenue laws so as to permit the use of any spirits excepting grape brandy, free of tax, in fortifying wines should be vigorously opposed by all friends of viticulture.

Resolved, That a committee of five be appointed to confer with the Board of Regents and to request that body to grant such assistance as may be necessary to enable the State Analyst to perform the duties of his office, and if such efforts fail to devise ways and means through contributions from wine growers or by means of an agreed fee for all analyses required under the Pure Wine Act.

The last sentence provoked considerable discussion, John T. Doyle asserting that the law does not require any analyses, and that the last words were an acknowledgment of the duty to furnish them. He amended the resolution so as to read, "an agreed fee for all analyses of wines"

C. A. Wetmore said that the Regents of of the University had requested the Viticultural Commission to suggest some way by which the State Anylyst could be assisted or paid for his analyses. The Commission appointed Professor Rising and J. H. Wheeler. The latter suggested that a committee from the wine growers be appointed to co-operate with the other committee.

M. M. Estee said he would never furnish an analysis; and if the merchants insist upon such a measure there are other men who could go into the trade and be just as successful as those now engaged in it. He believed that the men who were harping upon the analysis clause of the Pure Wine law were merely attempting to make the whole thing unpopular. He was on the committee for the enforcement of the Pure Wine law, but he was no police officer, and did not intend to act as law officer of the State. The committee, so far as the law is concerned, is unnecessary. He spoke of having heard people suggesting means for evading the law. This he considered disreputable. We should endeavor to enforce the law. Three-fifths of the French wines are adulterated. Let that not be said of us.

Mr. Doyle moved the appointment of a committee of three to visit idle sugar refineries for the purpose of ascertaining whether their plants can be used for experimenting on the condensation of must. Adopted.

The President appointed as a committee to confer with the Regents, C. A. Wetmore, J. P. Smith, M. M. Estee, H. A. Merriam and H. M. Larue.

Mr. Wetmore proposed a substitute for Mr. Doyle's resolution to appoint a committee on legislation, to the effect that a committee composed of the President and Secretary of the State Viticultural Commission and State Analyst be appointed, to report at the January, 1888, meeting of the Wine Growers' Association in what respects the Pure Wine Act is beneficially operative, in what respects prejudicial to the best interest of those having dealings therewith and in what respect it should be amended.

Mr. Doyle submitted a resolution creating a committee of three to get information as to the prospects of relieving the grape market by condensing must..

The President appointed J. T. Doyle, J. H. Wheeler and E. W. Hilgard as the committee.

The resolution appointing five men to wait upon the Regents was adopted, and J. T. Doyle and M. M. Estee were added to the number.

Ch. de St. Hubert, of the committee to visit the wine dealers, submitted the following letter:

SAN FRANCISCO, June 17, 1887.

Captain J. Ch. de St. Hubert, Chairman of Committee Wine Growers' Association—

DEAR SIR: We beg to acknowledge the receipt of your esteemed favor of the 9th inst., in which you ask the dealers to meet the growers for the purpose of discussing the relation of both producers and dealers, and arriving at a plan for carrying out the interest of the law in such a manner as to not conflict with the interests of either party concerned, believing that our interests are mutual, not antagonistic.

In reply we beg to say that the dealers have at no time entertained any doubts as to the relations that should exist between grower and dealer, and that, unlike many growers, the dealers have always supposed the interests of both to be mutual, not antagonistic. To receive this assurance from the growers, even at this late day, is a source of great gratification to us and leads us to hope that in the future we will hear less of the denunciation of the dealers, as was formerly so much the fashion with your association.

In regard to arriving at a plan for carrying out the interest of the law in such a manner as to not conflict with the interests of either party concerned, we can only say that when this bill was drawn up, perfected and introduced in the Legislature the co-operation of the dealers was not sought, and not having been in any way responsible for the law, do not find ourselves called upon to discuss with the creators of this law its provisions, at which we must, of necessity, be at a disadvantage, as its framers and supporters are supposed to be familiar with its true intents and purposes.

In conclusion, permit us to say that this association, while it will give its best endeavors to carry out the pure-wine law in its letter and spirit, in which it hopes to receive your assistance, can see no occasion for a joint meeting of our association to discuss a law so clearly defined, and must, therefore, with great regret, decline your kind invitation to be present at your meeting on June 26th. Very respectfully,

ALBERT LACHMAN,
Secretary San Francisco Wine Dealers' Association.

After a general discussion the association adjourned till the second Tuesday in August 1887.

During March, 777,719 rabbits were destroyed, and 2,800 men were engaged in the work of destruction in various districts in Victoria, Australia. The infested area is still rapidly increasing, and as there is no perceptible falling off in the number of rabbits destroyed, the officer in charge of the rabbit department concludes that the labors of the men employed and the immense amount of money expended by the Government on the work of rabbit destruction are of little value, and suggests that it is a question for consideration whether the rabbit assessment should not be increased or the subsidy to owners decreased.

A WINE MAN'S WAIL.

[F. Pohndorff in Wine and Spirit Review.]

Repetition of history is a necessary consequence of the thoughts and actions of humanity in different stages of development. Retrospection may sometimes cause the reflective man to doubt the stability of institutions that are accessories to, or part of, social refinement and advancement. Thus seeing the opposition on the part of a deluded faction—and that the best intentioned one of the nation—to the production of fermented beverages, condemning, in the barbarous Mohammedan manner, the most moderate use of light wines and beer, can any one believe in real manly and moral advancement? It might nearly be feared that the important branches of agriculture, the production of hops and grapes, have to be abandoned in America in tacit submission to Utopian and fanatical sentimentalism.

Vandalism crushed civilization in Egypt thousands of years ago. Vineyards and the industries of handling their fruit intelligently, and of growing the ingredients of beer, were flourishing nearly five thousand years ago in that historic country, now the property of rulers who keep a nation of fellahs in brutal subjection. Is the submission of freemen of high culture to the whims of partisans who never investigated the nature, the nutritive value, nor the proper use of light fermented beverages, a submission of the majority of votes in entire States of the Union the beginning of an era of decadence? The matter of absolute proscription of articles of diet, recognized by every civilized nation to be the factors of moral and financial well-being, casting ridicule on the nation, is of such sweepingly serious a nature that the true philanthropist must wonder at its possibility, and trembles at the consequent reaction, for the present consequences are simply hypocrisy, and secret tippling that cannot but conduce vastly to foster forbidden appetites. Our Redeemer did not undertake the task of crushing viticulture. He commanded His followers to drink wine. Are we living in a Christian country or is Mohammed the greater authority for Americans who enslave themselves to prohibition excesses?

Dr. H. Brugsch, a few months ago, reported to the Society of Geography, at Frankfort-on-the-Main, the result of recent archæological researches. He stated that in the necropolis at Theba, as well as in that near Memphis, extensive constructions with chambers for the dead have been opened. Massive architecture, columns hewn out of the lime rocks, hieroglyphics on stone tables, which, when deciphered, prove the high degree of culture among those who lived over four thousand years ago in that classic land. The tables in the chambers of the dead prescribed to the priests who had the care of the tomb-cities, the victuals and beverages that were to be kept for the use of the departed, according to the religious ideas and rules. These records show that two kinds of beer, one light colored, and one of dark color, had to be provided. The stone tables equally specify five kinds of wines for the use of the dead. Family legacies imposed the continuation of the cultivation of the different grape varieties that, in those days, had already been the selection for approved qualities of wines. Prayers were prescribed along with the viands and drinks in the chambers of the dead.

Christ blessed the wines. His prohibition followers want to extirpate it—they curse it. A curse has fallen and rested on Egypt, now the prey of the wine prohibiting followers of the false prophet. A curse follows everywhere the destruction of the vine. What so many years ago intelligent Egyptians did, fostering viticulture; what every paternal government in the old world is doing, where the privilege of producing the grape is granted by Providence, we are faithfully doing in our American vineyards. It is a task that occupies men of great intellect and equal honesty. We are working for the best of the nation—trying to put our own national industry on a level with the best attainments abroad. To be commanded halt! by those who degrade the dignity of the nation, by considering every one a born drunkard, is certainly a bad prospect for success. But let us hope that common sense will not long stand maltreatment. With increasing production of good wines the next generation will simply smile at the aberration of part of our contemporaries.

The report of the Fourth Annual State Viticultural Convention is now published and ready for delivery. Single copies are one dollar each, but special rates can be obtained for five copies or more.

☞**Dividend Notice.—San Francisco** Savings Union, 532 California st. cor. Webb. For the half year ending with June 30, 1887, a dividend has been declared at the rate of four and thirty-two one-hundredths (4 32-100) per cent. per annum on term deposits and three and six-tenths (3 6-10) per cent. per annum on ordinary deposits, free of taxes, payable on and after Friday, July 1, 1887.

LOVELL WHITE, Cashier.

EAST BOUND THROUGH FREIGHT.

Forwarded by the Southern Pacific Co., May, 1887.

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ARTICLES.	SAN FRANCISCO.	OAKLAND.	LOS ANGELES.	COLTON.	SACRAMENTO.	SAN JOSE.	STOCKTON.	MARYSVILLE.
Antimony	23,950							
Beans	518,200				23,450			
Blankets and Woolen Goods	23,400					13,840		
Books and Stationary	15,700	3,650	160		2,540	100	1,250	
Borax			22,400					
Brandy	11,700		7,570		17,310	17,200	27,740	
Canned Goods	335,090	93,430			106,870	44,900		
China Merchandise	106,890							
Cigars	13,540							
Clothing, California Manufactured	39,530							
Chicory							30,100	
Chocolate	13,390							
Drugs and Herbs	6,840							
Dry Goods	11,750							
Empty Packages	102,070		121,220					
Fruit, Dried	4,600							
" Citrus			3,188,610	260,330				
" Deciduous					150,790			
Fish, Pickled	72,790							
Fuse	35,540							
Glue		13,630						
Hair	10,470				1,840			
Hides	20,620		81,410					
Honey	7,190		3,630					
Hops	23,980							
Horses	60,000				60,000			
Leather	66,270				14,620	13,000	280	
Lumber	102,340							
Machinery	24,580							
Merchandise, Asiatic	40,960							
Miscellaneous	154,700	12,530	21,480	21,570	18,700	10,070	2,470	3,040
Mohair	12,550		610,920		11,650			
Mustard Seed								
Oils								
Oils, Cocoanut								
Oils, Whale								
Pickles								
Potatoes	720,680							
Powder and Explosives		20,220				20,630		
Quicksilver								
Raisins								
Rice	25,000							
Salmon, Canned	22,660				106,940			
Shingles	167,210				25,440			
Silk	261,170							
Silk Goods	19,480							
Skins and Furs	26,200						190	390
Sugar	2,758,740							
Syrup								
Tea	584,210							
Tobacco Leaf								
" Dust								
Vegetables	439,390		182,000		964,040			
Whalebone								
Wheat								
Wine	1,049,110	4,910	171,450	500	247,790	74,090	51,300	210
Wool, Pulled	24,550				51,590			
" Scoured	86,550							
" Grease	1,880,010		73,850		143,050	130,000		
Woods, Valuable								
Totals	9,923,700	58 370	4,484,700	282.400	1,948,620	206,830	113,330	3,640

Recapitulation.

San Francisco.	Oakland.	Los Angeles.	Sacramento.	San Jose.	Stockton.	Marysville.	Colton.	Grand Total.
9,923,700	58,370	4,484,700	1,948,620	206,830	113,330	3,640	282,400	17,021,590

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Hapgood & Co.,
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Pillar Rock Pkg Co.,
Ceo. T. Meyers,
Ocean Canning Co.
Badolett & Co., (Flats),
Washington Pkg Co's "Favorite" Brand,
"Epicure" brand.
Pacific Union Pkg Co.,
Cutting Pkg Co's "Cocktail" (Flats),
A. Lusk & Co's pack,
"Mermaid" brand,
Scandinavian Pkg Co.,
West Coast Pkg Co.,
Warren & Co.,
"Carquinez" brand;
Point Adams,
Wadham's Fraser River.

ALASKA FISH.

Karluk Pkg Co., "Challenge" brand, Arctic Pkg Co., Arctic Pkg Co's "King" Salmon.

We also have the "O & O" brand, an outside river fish, and many other brands, that can be had on application.

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Golden Gate Packing Co, "Black Diamond" brand of fruits, Barbour & McMurtry's fruits in glass, Coleman's "Flag" brand of fruit, San Lorenzo Pkg Co, Riverside Fruit Co, Colton Cannery, J. Lusk Canning Co, San Mateo Pkg Co, Sierra Madre Packing Co, Santa Clara Packing Co

Our lines of Canned Fruits and Canned Salmon are incomparable, and we will make prices F.O.B. or C.I.F. for Great Britain, Australia and the Colonies.

OUR NATIVE WINE SHIPMENTS BY SEA.

PER P. M. S. S. CO'S STEAMER SAN BLAS, JUNE 15th, 1887.

TO NEW YORK.

MARKS.	SHIPPERS.	PACKAGES AND CONTENTS.	GALLONS	VALUE
M G	Wm. Hoelscher & Co	5 barrels Wine	191	$143
L L	C Carpy & Co	10 barrels Wine	500	200
E P	"	10 barrels Wine	500	200
C in diamond	"	50 barrels Wine	2,480	600
S Bus	"	50 barrels Wine	2,485	900
B B	Leonormand Bros	5 barrels Wine	238	66
C B	"	1 cask Wine	62	40
F C	"	1 barrel Wine	49	39
H W & Co	"	60 barrels Wine	2,993	1,317
A P	"	40 barrels Wine	1,925	577
C V	"	1 barrel Wine	50	30
"	"	2 kegs Wine	20	20
J, W in diamond, W	Arpad Haraszthy & Co	22 barrels Wine	1,112	575
L L	"	2 barrels Wine	100	100
C W H	"	1 cask Wine	60	75
B & Co	P Claudius & Co	8 cases Wine		25
P L	C Carpy & Co	10 barrels Wine	491	200
G D	J C Amelung	3 barrels Wine	150	100
T J P S	Kohler & Van Bergen	14 barrels Wine	697	
"	"	1 case Wine		420
J K	"	33 barrels Wine	1,644	990
H in diamond	J Gundlach & Co	2 barrels Brandy	106	238
"	"	6 puncheons Wine		
"	"	2 quarter casks Wine	1,128	600
G	"	70 barrels Wine		
"	"	6 half barrels Wine	3,595	1,613
"	"	11 half barrels Brandy		
"	"	5 barrels Brandy	508	1,157
V K	S Lachman & Co	2 barrels Wine	95	76
A W	"	2 half barrels Wine	52	46
B S	Lachman & Jacobi	30 barrels Wine	1,509	453
F A	"	25 barrels Wine	1,260	381
A in diamond	"	15 barrels Wine	755	266
A V	"	20 barrels Wine	1,018	360
S in diamond	"	25 barrels Wine	1,260	356
O H	"	20 barrels Wine	1,000	461
E V	"	40 barrels Wine	2,009	750
E B & J	"	10 barrels Wine		
"	"	1 cask Wine	570	357
M & B B	"	4 barrels Wine	198	191
"	"	1 barrel Brandy	48	101
B H	Williams, Dimond & Co	1 barrel Wine	52	25
Total amount of Wine, 9 cases and			30,268	12,564
Total amount of Brandy			662	1,498

TO CENTRAL AMERICA.

Ade C, Champerica	McCarthy Bros. & Co	6 packages Claret		$24
L G, La Libertad	E L G Steele & Co	1 barrel Wine	47	40
E & Co, Puntas Arenas	Harrison & Co	2 kegs Wine	40	24
"	"	20 cases Wine		60
E & Co, San Jose de Guat	"	5 cases Wine		19
S & S, Champerica	Schwartz Bros	10 cases Wine		40
"		3 packages Whiskey		72
A & S, Amapala	John T Wright	4 kegs Whiskey	40	160
J L E, Amapala	Cabrera, Roma & Co	44 kegs Wine	680	625
M R, Corinto	Montealegre & Co	8 packages Wine		68
B B & Co, La Libertad	Bloom, Baush & Co	10 packages Whiskey		150
"	"	5 cases Wine		20
C A, Amapala	Sherry & Co	2 kegs Wine	10	9
C H, San Juan del Sur	H Davis & Co	1 barrel Wine	49	36
J L, Guatamala	B Dreyfus & Co	4 half barrels Wine	109	75
L P Z, Champerica	Parrott & Co	12 cases Wine		36
M J G, Champerica	E A Derricke	4 cases Whiskey	10	40
L R M, Champerica	Urruela & Urioste	26 cases Wine		100
Total amount of Wine, 92 cases and			935	1,176
Total amount of Whiskey, 13 cases and			50	422

TO PANAMA.

P	B Dreyfus & Co	40 casks Wine	2,318	$950
J R	Cabrera, Roma & Co	50 puncheons Wine	3,500	1,026
Total amount of Wine, 1 case and			5,818	1,976

TO MEXICO

V & Co, Acapulco	L F Lastreto	2 barrels Wine	100	$55
"	"	1 case Brandy	5	9
A V, Manzanilla	W Loaiza	1 half cask Wine		13
A B & Co, San Blas	Thannhauser & Co	6 kegs Wine	96	84
A H & Co, Acapulco	Urruela & Uriost	10 cases Wine		37
Total amount of Wine, 11 cases and			196	189
Total amount of Brandy			5	9

TO ENGLAND.

G M F, Liverpool	Arpad Haraszthy & Co	22 cases Wine		$99
"	"	1 case Wine		5
G & Lon, London	"	4 casks Wine	240	150
W P T W, Wiltshire	"	12 cases Wine		40
Total amount of Wine, 35 cases and			240	294

TO GERMANY—PER BARK C. R. BISHOP, JUNE 8TH.

E L O, Bremen	H H Dittmer	1 barrel Wine	50	$25
"	"	1 half barrel Wine	28	28
D K, Bremen	C Kittelburger	1 barrel Wine	50	40
A K, Bremen	"	1 barrel Wine	50	50
V in diamond, Dresden	C M Volkman	6 barrels Wine	292	292
P S, Hamburg	Schacht & Lemcke	2 kegs Wine		
A H, Hamburg		1 keg Wine	39	50
A M, Germany	Albert Mueller	1 box Wine	10	20
L in diamond, Bremen	Wm. Lichtenberg	1 cask Wine	63	30
F H, Bremen	J Ziegenbern & Co	1 case Wine	25	10
L in diamond, Bremen	J Gundlach & Co	45 barrels Wine	2,226	890
D in diamond, Bremen	"	5 barrels Wine	248	109
S & J, Hamburg	A Klanber	1 case Wine	2	5
L B, Hamburg	F Rosenbaum	2 barrels Wine	57	57
K & V B in diamond, Bremen	Kohler & Van Bergen	122 cases Wine		
"	"	5 octaves Wine		
"	"	5 kegs Wine	161	1,235
"	"	1 case Wine		8
"	"	1 octave Wine	27	45

TO GERMANY—CONTINUED.

R B, Bremen	C Schilling & Co	4 kegs Wine	68	$45
G S, Bremen	"	1 barrel Wine	48	39
C H, Bremen	"	2 kegs Wine	34	32
H B, Bremen	"	1 keg Wine	17	16
L K, Bremen	"	1 keg Wine	17	16
J C, Bremen	"	2 kegs Wine	39	25
H W, Bremen	"	1 keg Wine	17	16
J H D, Bremen	"	1 keg Wine	19	18
H R, Bremen	"	2 barrels Wine	97	78
C S, Bremen	"	2 casks Wine	133	95
V B, Bremen	"	40 cases Wine		160
F S E, Bremen	"	7 kegs Wine	147	136
W T, Bremen	"	1 keg Wine	16	16
T N S, Bremen	"	2 kegs Wine	31	28
C S, Bremen	"	1 keg Wine	17	16
F E M, Bremen	"	2 kegs Wine	27	30
D, Bremen	"	2 barrels Wine	94	
"	"	1 octave Wine	17	66
F S M, Bremen	"	2 kegs Wine	23	20
T R, Bremen	"	5 barrels Wine	238	145
E S, Bremen	"	3 kegs Wine	45	54
V, Bremen	"	50 barrels Wine	2,514	1,132
Total amount of Wine, 165 cases and			6,988	5,074

TO FRANCE

E B & Co, Havre	G Bustelli	2 half barrels Brandy	57	$40
C, Havre	Chas Loufrane	50 puncheons Wine		
"	"	1 barrel Wine		
D, Havre	"	4 barrels Wine	8,030	3,292
C, Havre	"	5 barrels Brandy	243	500
W W, Paris	J Whearty	1 barrel Wine	50	20
Total amount of Wine			8,080	3,312
Total amount of Brandy			300	540

TO NORWAY.

B & Co, Christiana	J Gundlach & Co	25 barrels Wine	1,232	$493

TO HONOLULU—PER O. S. S. Co's STEAMER AUSTRALIA, JUNE, 21, 1887.

G W M & Co	Lilienthal & Co	40 cases Whiskey		280
"	"	5 cases Whiskey		40
"	"	5 cases Whiskey		35
E H & Co	Kohler & Frohling	7 casks Wine		
"	"	30 kegs Wine		
"	"	40 kegs Wine	967	794
W, L in diamond, S	S Lachman & Co	8 barrels Wine	413	377
G W M & Co	Spruance, Stanley & Co	25 cases Whiskey		220
N C P & Co	"	25 cases Whiskey		250
W S L	"	22 cases Whiskey		186
W & Co	Jones & Co	2 cases Claret		10
H J	Arpad, Haraszthy & Co	7 barrels Wine	350	300
"	"	52 kegs Wine	520	460
"	"	10 kegs Wine	50	60
"	"	5 cases Wine	12	15
"	"	5 half barrels Brandy	55	62
G W M & Co	Paul O Burns W Co	155 kegs Wine	1,050	851
"	"	40 cases Wine	96	242
"	"	1 barrel Wine	40	35
"	"	2 cases Brandy	5	30
"	E F Evans & Co	20 cases Whiskey		200
W S L	A Fenkhausen & Co	25 cases Whiskey	60	181
W C P	B Dreyfus & Co	60 kegs Wine	600	
"	"	70 kegs Wine	350	
"	"	7 half barrels Wine	188	960
"	"	5 half barrels Brandy	132	140
P G C	D G Camaimos	1 barrel Wine	20	9
G in diamond	Donald Gedge	70 kegs Wine	450	388
Total amount of Wine, 2 cases and			5,126	4,501
Total amount of Brandy			192	232
Total amount of Whiskey, 14 cases and			60	1,392

MISCELLANEOUS SHIPMENTS.

DESTINATION.	VESSEL.	RIG.	GALLONS.	VALUE.
Hilo	Hazard	Brig	193	$80
Mexico	Newbern	Steamer	1,112	452
Victoria	Geo W Elder	Steamer	32	30
Liverpool	John McDonald	Ship	10	10
China	City of New York	Steamer	65	39
Japan	City of New York	Steamer	1,153	773
Honolulu	Eureka	Barkentine	188	$211
Kahului	Anna	Schooner	62	62
Honolulu	J D Spreckles	Brig	1,509	1,362
Victoria	Mexico	Steamer	480	467
Honolulu	Forest Queen	Bark	50	50
Total			4,854	8,536

Total shipments by Panama steamers	37,827 gallons	$16,199
Total Miscellaneous shipments	26,397 "	16,916
Grand totals	64,224	$33,115

HOLD YOUR WINES.

It's an open secret that offers have lately been made of thirteen cents a gallon net for 1886 wines, and it is also well known that few, if any, of our growers will sell at such a low price. Prominent winemen are a unit in advising all manufacturers who can to hold on to their wines, either for better prices or for market as two year old wines. They say that small wine makers who have not the room to hold two years' vintage in cellar, might better hold their present wine over and sell their grapes at even low prices than to dispose of their present stock for the purpose of making up the new crop for an uncertain market. It is well known that two-year-old wine, even of a medium quantity, sells readily at twenty-five to thirty cents per gallon, and it will not take much figuring to show the careful producer that he can make more money by holding his wine over, even if he has to sell his grapes, than he can by any other course. It is evident to all that the present state of the market is due to a combination among a few of the large buyers, and it is now down to a question who can hold out the longer, San Francisco wholesalers or the country producers. It is evident that the dealers *must* soon have to replenish their fast depleting stocks.—*St. Helena Star.*

The Report of the Fourth Annual State Viticultural Convention is now published and ready for delivery. Single copies are one dollar each, but special rates can be obtained for five copies or more.

HE STATE VITICULTURAL COMMISSION.

The regular meeting of the Board of tate Viticultural Commissioners was held n the 13th inst. There were present Comissioners Haraszthy, Wetmore, De Turk, Krug and Manlove, Chief Executive Officer Wheeler and Secretary Clarence J. Wetmore. communication was read by Chief Executive Officer Wheeler from Dr. J. A. Bauer elative to his success with the mercurial emedy for the phylloxera in the Hagen ineyard. Mr. Krug was appointed a committee of one to examine this experimental lot and to request H. W. Crabb and the Chief Executive Officer to accompany him o verify the truth of this report. The Chief Executive Officer was also instructed o visit the experimental plot treated by the ommission in Sonoma with the mercurial emedy and to report the success to the ommission.

Commissioner Wetmore replied that in ome places in the South the vines were ying with sunstroke, the same disease that e had reported on last year.

Chief Executive Officer Wheeler reported hat he had received a great many letters bout insect pests doing more or less damage to the grape vines. Also, that he had made experiments at Crabb's Station with paris green and arsenic to show how much could be used without injury to the vines and the fruit. The report will be made later.

Mr. Wheeler read a letter from Regent Rodgers, asking what help the commission would want from the Regents of the University in reference to aiding the State Analyst. Professor Rising, State Analyst, being present, reported that he was being rushed with samples to be tested for purity, and that he needed more help to finish them without delay. On motion, Professor Rising was requested to make out an estimate of the expenses of his office for the next year, and that he and the Chief Executive Officer confer with the Regents of the University, and see what they will be willing to do, and to report the same to the Executive Committee of the commission as soon as possible.

Dr. Manlove then offered the following resolution, which was seconded by Mr Krug, and unanimously adopted:

Resolved, That the Chief Executive Officer is instructed to issue a circular to local resident inspectors throughout the State, calling upon them to report promptly whenever they discover any violations of the Pure Wine Act in the use of materials forbidden by law in the manufacture of wines sold as pure.

Mr. Haraszthy, from the committee appointed at the last meeting to confer with the railroad companies in reference to the London exposition, reported that he had conferred with the managers of the Southern Pacific and requested the Secretary to read the following letter which he had received from C. P. Huntington, dated at New York, June 4th:

Dear Sir:—Yours of the 26th ult. is received, relative to the participation of your commission in any representation which may be made by this company, through Major Truman, at the London exposition.

In answer I will say that it is not definitely determined to send Major Truman to London on that business, but if anyone goes it will be he. There have been, from time to time, doubts in circulation as to whether the exposition would be a success or a failure, and it may require him to go over and see for himself before embarking much money in the venture.

We shall not make any exhibit of California products ourselves, and if we appear there at all it will be a sort of missionary work to make known the advantages of California, in order that we may derive some indirect benefit from it by the attractions for settlers and for tourists. The outlay will be certain, but the returns will be conjectural. However, if we conclude to go any further in the matter, we agree with you that the Major would be as good a representative as we could find, and his connection with the railroad companies would help rather than hinder his efforts to serve your association. I suppose it will be proper in that event that the association should bear a certain proportion of his expenses, outside of the printing, which each interest would provide at its own expense. On this basis there would be no objection to co-operation.

Commissioner Wetmore then offered the following resolution, which was seconded by Mr. Krug and unanimously adopted:

Resolved, That the Secretary be instructed to call on Miss Kate Field and present the thanks of vine growers for the lively interest she has shown in the development of legitimate wine industries throughout the Eastern States.

In regard to the damage done by the frost, Mr. De Turk reported that in his section the frost had skipped about considerably and had done some damage. In Green Valley there had been no damage from frost nor any about Cloverdale; near Santa Rosa and Glen Ellen and in the Los Guilicas Valley the vines had been damaged to a considerable extent.

Dr. Manlove reported that the frost had done a great deal of damage to some of the vineyards in his district, but that the Natoma vineyard had escaped owing to the smoking of the vineyard.

Mr. Krug reported that his Rieslings trained on wires had suffered a great deal from the frost, and that where he got last year twelve to thirteen tons to the acre he would not get three this year. He considered that Napa Valley was good for two-thirds of a crop this year.

Estimates as to the amount of wine that would be made this year were made by those present, and they range from 15,000,000 to 22,000,000 gallons.

The last legislature failed to make any appropriation for analytical and experimental work. The commission decided to keep on with the work and to pay for the same out of the regular appropriation of the board; and the President appointed Commissioners De Turk, Wetmore and Krug, a committee to select wines from different portions of the State to be put in the experimental cellar for ageing.

The election of officers for the following year took place as follows:—President, Arpad Haraszthy; Vice-President, Charles A. Wetmore; Treasurer, Charles Krug; Secretary, Clarence J. Wetmore; Chief Executive Officer, J. H. Wheeler.

GRAPES AFFECTED WITH BLACK ROT.

[Town and Country Journal.]

Some years ago the vineyards of France were devastated by phylloxera, and were cleared out in order to suppress the disease. The place of the destroyed vines was filled with fresh vinestalks from America, under the impression that these would be free from the diseases which had wrought such havoc in Europe. Unfortunately this has not proved to be the case. In addition to the many other diseases to which grapes are liable, a new one has recently been discovered and is now known as "Black Rot." The disease has spread to an alarming extent in America, and in Alabama, Georgia, Indiana, Illinois, Maryland, Mississippi, Missouri, North and South Carolina, New Jersey, Ohio, Pennsylvania, Tennessee and Virginia, the total loss of the crops on many plantations has been caused by the black rot. Little more than a year ago black rot first appeared in France, having been imported among the stocks used for replanting the lands when the old vineyards had been destroyed.

In Europe and America the disease appears early in July, which would about correspond with November in Australia. A livid brown spot upon one side of the grape is generally the first manifestation of the disease in question. This spot increases in size until the entire berry is of a uniform brown color, imparting the appearance of rottenness, although the full contour and nearly the original firmness are retained. As soon as this change has taken place, and often before its completion, the part first affected assumes a darker shade, and minute, black pimples or pustules, smaller than the head of a pin, yet easily seen with the naked eye, roughen the surface. At the same point the berry now begins to lose its fulness, an irregular depression appears which extends quickly into a general withering of the berry, the pimples meanwhile having multiplied so rapidly as to cover the entire surface. The berries now appear dry, hard, shrivelled to one-half or one-quarter their original size, and intensely black in color. In fresh specimens there are slight bluish reflections. The folds of the skin, which is now closely pressed upon the seeds, are raised in strong, prominent, irregular ridges, which are characteristic of this form of rot. Sometimes the first evidence of the disease is the appearance of one or more circular, slightly depressed spots of a deep bluish black color, and the pimples referred to above appear in these spots, and they very quickly assume the appearance previously described. Messrs. Viala and Ravaz, who have published an exhaustive memoir of the disease as it appeared in France, assert that the disease attacks the young shoots and leaves. In their description, however, they clearly characterize the fungus known as Phyllostica Labruscæ, Thum. These authors assume this to be another form of the Phoma; but as no specific connection between the two has ever been demonstrated, their opinion cannot be accepted as conclusive. It is evident that preventive measures alone can be of any value in combating the disease.

Something may be done in limiting the extent of its ravages, but berries once affected are beyond the reach of curatives. The micelium, securely embedded in the tissues of the fruit, silently but surely carries on its work of destruction. Efforts should be made to prevent the production and dispersion of the stylospores by gathering and destroying as soon as possible all affected grapes. It is believed that the fungus passes the winter in the berries, and possibly also in the young shoots. Hence, by gathering or raking together all diseased berries, trimmings from vines, etc., and destroying them, so much infectious material will be annihilated. One treatment instituted in France consists in stirring up the soil of the infected vineyard, and the stocks are singed with a Gallot torch, and then bathed or washed with a ten per cent. solution of sulphate of copper. Success may attend this treatment, more especially if care be taken to destroy all diseased and fallen berries and trimmings. In America the only effective prevention of general application is that of bagging the grapes when about half grown. By this means the spores of the fungus are prevented from gaining access to the fruit, or, if they succeed in this, the absence of moisture on the berries prevents their germination.

DIVIDEND NOTICE.

The German Savings and Loan Society.

DIVIDEND NOTICE.—THE GERMAN SAVings and Loan Society.—For the half year ending June 30, 1887, the Board of Directors of The German Savings and Loan Society has declared a dividend at the rate of four and thirty-two one-hundredths (4 32-100) per cent per annum on term deposits and three and sixty one-hundredths (3 60-100) per cent per annum on ordinary deposits, payable on and after the 1st day of July, 1887. By order.

GEO. LETTE, Secretary.

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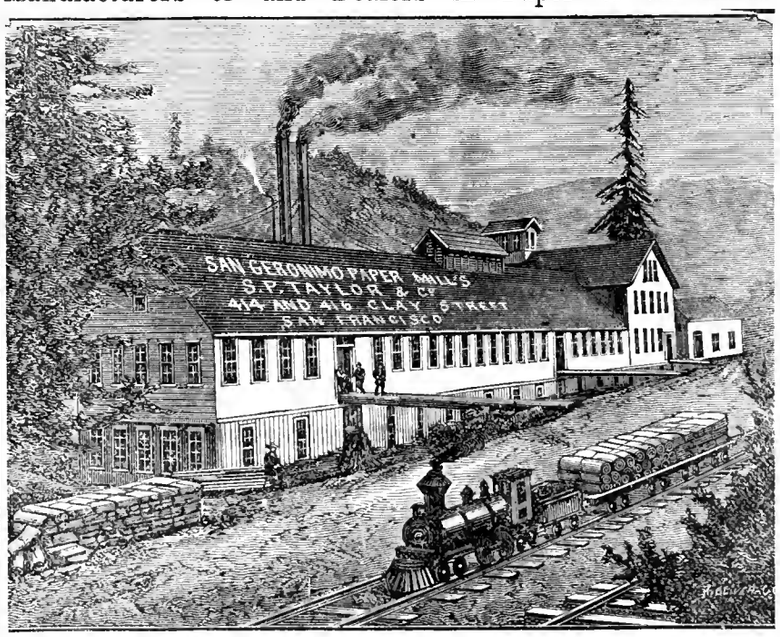

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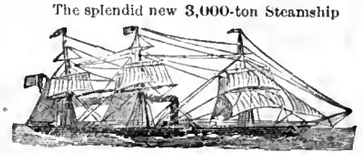

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VOL. XVIII, NO. 6. SAN FRANCISCO, JULY 7, 1887. PRICE 15 CENTS

Report to the Minister of Agriculture on the Treatment of Mildew in Medoc.

By M. Prillieux, Inspector General of Agricultnral Instruction.

The Minister—Sir: For a long time it has been the custom in certain parts of Médoc, especially in the vicinity of Margaux, St Julian and Pauillac, to sprinkle the vines that skirt the railroads with milk of lime, to which is added a salt of copper. Verdigris was formerly employed for that purpose, but, on account of economy, for several years past it has been replaced by sulphate of copper. The purpose of this operation is to prevent children and marauders from picking the ripe grapes which are most easily reached. They are afraid to eat the clusters which hang upon vines spotted with verdigris and discreetly respect them.

In this manner they treat a border from five to ten vines in width.

When the mildew developed in Médoc with considerable severity, it was noticed with astonishment that the borders of the vine-plots, covered with spots of lime and copper, were less severely attacked by the disease than was the middle, which had not undergone the same treatment. Already in 1882 this very unexpected fact was authenticated in the parts of Médoc most violently attacked; but it was especially last year, 1884, that the preservation of the borders, spotted with lime and copper salt, appeared with a striking perspicuity; when, around St. Julian in particular, the disease took an extreme intensity and caused the greatest ravages. While the leaves invaded by the *Peronospora* everywhere dried up and fell prematurely, along the roads they continued green and the grapes ripened.

This year, with the first appearance of the mildew which last year caused such great losses, several proprietors or stewards of vineyards attempted to apply, to the protection of entire vineyards, the method which had seemed to preserve the borders last year. At St. Julian, Pauillac, Margaux and St. Estéppe, the trials made have fully succeeded, and I am happy to have been able to everywhere verify the complete success of an empirical remedy, which chance discovered, but whose mode of action science will have to study and explain.

The first domains I visited were those of Langoa and of Léoville, near St Julian, belonging to MM. Barton. The steward, M. D. Jouet, my old pupil at the Agricultural Institute, had kept me constantly informed as to the observations he had previously made there, and also as to the experimental treatments he had instituted there this year.

The mildew appeared in the vineyard on the 10th of July, and they began to treat the vines at this time.

The liquid used by M. Jouet for sprinkling was obtained by dissolving 25 kilos of sulphate of copper in a Bordeaux cask, containing 225 liters of water, and then adding 25 kilos of lime in the form of milk of lime. Other persons have reduced the amount of sulphate of copper to 16 kilos per cask, about 8 to 100 liters [or about 17 pounds to 22 gallons], and have obtained as good a result at a little less expense. In this way there is formed a somewhat thick, bluish-gray, opaque liquid.* It is poured into pots with iron bails. These are carried by the workmen who make the treatment. They sprinkle the vines by means of small twigs of heath, which are plunged into the liquid and shaken right and left upon the leaves, the workmen, in order not to spatter themselves, walking backwards through the rows of vines.

After their passage we see numerous bluish-green spots spottered here and there on the upper surface of the leaves. This treatment suffices to preserve the vines from the mildew, or, at least, to lessen, to a considerable extent, both the multiplication of the *Peronospora*, and the devastations which result therefrom.

From the time of treatment until the 26th of August, the weather this year in Médoc was very warm and dry. In these conditions, the development of the *Peronospora* stopped. On all the vines, treated or not, the parts of the leaves attacked dried up without extending and without bearing fruit. The vegetation of the vine did not in any way suffer from it.

Immediately after August 26th, and during the first days of September, storms and copious rains followed each other uninterruptedly. Then the *Peronospora* emerged from the torpid condition in which it had remained during the dry weather, and developed rapidly. Finally, toward mid-September, the disease made fearful progress; not only did the Malbec, Verdot and white Cabernet, which are very sensitive to the mildew, shed their scorched leaves, but the Cabernet-Sauvignon was also severely attacked (although it is more hardy). Everywhere around St. Julian and Pauillac the vines lost their verdure; the scant foliage which remained on them was burned, and had a brown, earthy color.

After the drought, when the mildew reappeared with intensity, and developed very rapidly on the vines not treated, it also showed itself on the treated vines, but did not spread over them. Around the dried spots on the leaves which were attacked before the drought, there appeared on the vines treated, as well as on those which had not been, a whitish crown of fructiferous filaments, but the spots did not spread much on the former, and no new ones were formed. After the treatment the parasite was still living in the tissue of the leaf, and even produced spores [conidia], but these doubtless did not germinate, and hence they did not spread the disease. The leaves continued to grow, remaining green up to the time of the vintage, and thus securing the complete ripening of the grapes, while the vines not treated were scorched and destitute of leaves.

In the first days of October, when, with M. Jouet, I visited the vineyards of Langoa and Léoville, the boundary line between the parts treated showed at a distance with the utmost plainness. The rows of vines not treated, which were left for comparison in the treated fields, and, inversely, the rows and islets treated, in the midst of plots not treated, struck the eye in a most remarkable way, especially in the plots of Malbec, in which the disease had entirely destroyed the leaves of the untreated vines.

The treatments at Léoville and Langoa were made upon an area of about 9 hectares. The vineyards of Médoc being laid out by the square meter, nearly ninety thousand vines were thus treated in the domain of MM. Barton. It was especially on plots of Malbec that the treatment was tried. In some places these vines were mixed with white Cabernet and Cabernet-Sauvignon.

On the vines treated the bunches ripened much more completely. The Malbec grapes gave a must which, by the glycometer indicated 11° to 11°.5 quite uniformly, while the Malbecs from plots not treated gave a must which scarcely reached 9°. A plot of white Cabernet of 1½ hectares gave exactly the same results. The must weighed 11°.5 by the glycometer, while the must from the non-treated white Cabernet scarcely marked 9°. Near Pauillac, at the chateau Monton d'Armailhac, M. de Ferran showed me vines that he had treated only between the 15th and 20th of August, which were admirably preserved, even in the midst of fields stripped of leaves by the mildew. As with MM. Barton, the treated vines yielded a must which with the glycometer registered from 2° to 2°.5 more than that of untreated vines of the same variety. The quantity of sulphate of copper employed in the treatment by M. de Ferran was less than at Léoville, being only about 16 kilos per cask of water [225 liters], and the results were as satisfactory.

It was, however, in the domains of M. Johnson, at Beaucaillou in the commune of St. Julian, and at Dauzac, near Margaux, that the treatments were made on the largest scale. At Beaucaillou the results of the operation were somewhat less sharply defined than at Léoville and at Monton-d'Armailhac, because there the mildew developed with a little less intensity; but at Dauzac the experiment was made on a grand scale, and under the most convincing circumstances. At Dauzac everything contributed to give the treatment an exceptional importance, not only because it was tried on a larger area than elsewhere (the five plots treated being equal to a total area of 15 hectares) and upon the different varieties of the Médoc, in a locality severely attacked by the disease, but especially because it was directed and studied with care by M. Millardet, the learned professor of the faculty of sciences of Bordeaux, assisted by his eminent colleague, the professor of chemistry of the faculty, M. Gayon. It is to be hoped that the studies of these two scientists will enable us to explain how the treatment acts, and if it cannot kill the mycelium of the *Peronospora* in the leaves attacked, how, at least, it can prevent the germination of the spores which it continues to produce.

This is a question that, for the present, may be set aside. At this time I propose to set forth only facts of which I have been a witness, and I can state positively that I

*The sulphate of copper is entirely decomposed by the lime, and the liquid used for the treatment holds in suspension oxide of copper and plaster, and in solution, only a little lime and plaster.

have nowhere seen the good effects of this treatment more clearly marked than on the estate of M. Johnston, at Dauzac.

Conducted by M. David, the steward of the domain, I verified the excellent results upon plots of different varieties—Malbec, Verdot, Cabernet-franc and Carmenére. In each instance, in order to show the efficiency of the treatment, M. David had taken pains to keep some rows of untreated vines. An inspection of the domain of Dauzac would convince the most incredulous.

One point appeared to me as especially worthy of mention. Two plots of Malbec did not seem to have been equally protected by the treatment; one had kept the greenness of its foliage much more than the other. M. David was able to give me the explanation, which was that the best preserved plot was treated on the very first appearance of the mildew, while the other was left till the disease had already made some progress. The earlier the treatment the more complete was the preservation.

The liquid employed by M. David for the treatment contains about 8 per cent. of copper. The work is done entirely by men, and he estimates the expense at about 50 francs per hectare [$4 per acre]. In this way he has treated 150,000 vines—that is to say, an area of 15 hectares [about 37.5 acres]. He thinks that 50 liters [11 gallons] of the liquid are sufficient for the treatment of 1,000 vines, provided that in sprinkling the vines, we use only small brooms of heather, not large enough to take up a very great quantity of the liquid. In the beginning of the treatment, in some cases, they wastefully used as much as 150 liters of the liquid, because the sprinkling brooms were too large.

In the treatment of some plots, M. David added glue to the ordinary liquid in the proportion of 6 kilos to 800 liters of water; he believes he has thus improved still more the efficiency of the remedy.

At Dauzac as at Léoville and at Mouton-d'Armailhac, the ripening of the grapes was much more complete in the portions treated than in the parts not treated. To determine this, the vintages were studied and analyzed by M. Gayon, who will doubtless publish the very interesting results of his researches. At Dauzac they mentioned, as an example, the results he had obtained with the little Verdot, the grapes of which in the plots treated gave, on analysis, 175 grams of sugar, while in the plots not treated the grapes contained only 39 grams. This is without doubt an extreme case, but one which shows clearly the efficacy of the treatment.

At quite a long distance from these vineyards, at St. Estéphe at the chateau Salle de Pez, belonging to M. Lawton, I finally visited some vines treated with a success not less complete.

The steward of the domain, M. Trossigére, employed for the treatment, which he made in the ordinary way, 8 kilos of sulphate of copper to 100 liters of water, as at Dauzac, adding thereto 15 kilos of lime in 30 liters of water. The results have been excellent, and on reaching the chateau it is wonderful to see on one side of the road the treated vines covered with verdure, and on the other side the untreated vines of the same variety stripped of leaves.

By this treatment he has very successfully protected even the most tender varieties, such as the Malbec and the white Cabernet. In the domain of Sal de Pez we find a new and most convincing instance of the efficacy of the treatment which has succeeded this year in Medoc wherever it has been tried. But one fact which appears to me interesting to point out is the good result obtained by pure sulphate of copper, *i. e.*, not mixed with lime. Some rows thus treated with a solution containing 8 per cent. of sulphate of copper have given results almost as satisfactory as those which received the ordinary treatment with addition of lime. I wish to mention this fact particularly because it seems to contradict other experiments unsuccessfully made by various persons, and also because it is well to collect all data which may serve to throw light upon the mode of action of the treatment, the efficacy of which is all I propose to establish at present.

At the chateau de Pez the ordinary treatment was made by women paid at the rate of 75 centimes per day. Although in some places the work might have been done somewhat better, nevertheless, on the whole, it was satisfactory. In conditions similar to those at Pez, M. Trossigére thinks that the cost of treatment ought not to exceed 30 francs per hectare.

To recapitulate, by the facts which I have verified in Médoc, it appears to me established that the sprinkling of vines with a liquid containing about 8 per cent. of sulphate of copper, mixed with a milk of lime, stops the progress of the mildew and permits the affected vine to completely ripen its grapes. This treatment is easy to make and inexpensive. It is to be hoped that next year all vine growers will try it. The earliest treatments have given the best results.

The critical investigation of the action of the treatment, discovered by chance, is a very interesting subject for scientific studies; and there is every reason to hope, thanks to the labors undertaken by MM. Millardet and Gayon, that light will be thrown on this subject, which is yet very obscure. Meanwhile, it has given me great pleasure to be able to verify the efficacy of the empirical process which, if the present expectations do not fail, will save French agriculture incalculable riches.

Thank to the labors of scientific men, and to the efforts and sacrifices of agriculturists, in many respects we no longer despaired of saving vines from the attacks of the phylloxera; but up to this time we have known no remedy for the ravages caused by *Peronospora*, and in the South and Southwest the injuries due to this parasite were so great that the vine growers looked upon the future with alarm.

If I have not been the victim of an illusion all through the excursion I have just made in Médoc, we now have for our protection against the mildew a remedy which is as efficacious as is sulphur in combating the *Oidium*.

What is more, it does not seem to me impossible that this unexpected remedy may be of service not only to the owners of vineyards, but also to the agriculturists of the North. The *Peronospora* of the vine is a near relative of that of the potato, and there is no improbability in supposing that the remedy which is efficacious for the one may also have a desirable effect on the other. Already I can bring one fact to the support of this hypothesis. At Chateau Langoa some tomatoes were attacked by a disease which, to all appearance, was due to the development of the *Peronospora* [*Phytophthora*] of the potato, which we know attacks the tomato also. Mr. Jouet treated them like his vines, and he assures me that he also effected their cure.

However isolated this fact may be, it ought to be mentioned so that next year growers of tomatoes, and especially of potatoes, may, on the first appearance of the disease, try experiments in their fields, analogous to those which have been carried out with so much success this year on the grape vines in Médoc.

Paris, October 22, 1885.

CALIFORNIA WINE AND THE AMERICAN EXHIBITION.

[Anglo-American Times.]

A wine merchant in Paris addressing a wine merchant in San Francisco, thus reported on 10,000 gallons of California wine sent to Paris last autumn:—"I believe, aside from prejudice, that these wines, i exhibited, would compete with the petit Bordeaux wines sold in Paris at a very high price—a wine wanting in vinosity and color. Therefore, advise your wine makers to send a display of wines to us to be shown at the exposition of 1889. If sent to me I will guarantee them success." We urged and some papers in California reproduced our articles, a full and well presented exhibit of California wines at the American Exhibition in London. We were the more urgent because an opportunity so good might not again occur for a long period, but unfortunately an impression spread in America from the official attitude towards the Exhibition, which seems to have decided California wine growers not to incur the expense and trouble to make a display where they imagined a failure would result. The Exhibition in Paris will not offer as good an opportunity as that now open in London, where the vintages shown would have been seen and tasted by the thousands from all parts of the world this day assembled in this Metropolis for the Queen's Jubilee. The wine of California would have been supplied at the dinners given by the Members of the Club of Welcome on the grounds. It was a grand chance lost, as we fear, through the failure to appreciate in California what this Exhibition really meant.

Touching California wines, another one of the finest vineyards in the State has been sold to an English company—the Barton—three miles from Fresno, the capital of Fresno County, on the Southern Pacific. There are on this estate 540 acres in vines, with all the means and appliances for making wine. The estate turns out 2,597 tons of grapes, each averaging 140 gallons of wine apart from five of brandy; last season's crop produced over 340,000 gallons of wine, besides 12,200 gallons of brandy. Of the Muscat and Malaga grapes on 28 acres, producing 150 tons, raisins have been made up to 46 tons, and sold in bulk at $100 per ton. Such an estate is of immense value, and there are, doubtless, several of nearly equal worth. There are in California 4,000 wine growers, and 10,000 acres of vines, which furnish employment to over 40,000 persons.

It is true that in very few localities in Southern California can properties like the Barton be created, as they require a combination of favoring circumstances, especially irrigating facilities. Then the land becomes of higher value than perhaps any other agricultural land in the world, for its power of producing is endless, and the quality of the grapes cannot be surpassed. No doubt the market is in America, not in Europe, for it is a protected market wherein are 50,000,000 of European descended people and all the wine of California would be consumed on the continent where all foreign wines must compete at great disadvantage owing to the heavy import charges. But there would be a good market here as well, and what is of more importance to European wine makers, the test applied at the American Exhibition would have given the stamp of excellence by competent judges, while even more important, errors in the manufacture would be detected and corrected; for what California wines require, as do Australian, is the knowledge imparted by long experience of how to deal with the juice of the grape.

The soil imparts a flavor, but an expert alone can tell how it should be sorted, treated, blended and branded. It has been demonstrated beyond doubt that the Californian are among the finest vineyards in the world, and the advice we gave ten or fifteen years ago to young men with a few thousands was to go to France, study on the best French estates with the object of settling in California, having acquired the knowledge of how to select the land, grow the grapes and manufacture the wine, for there was more money in it as we then foresaw and as events have shown than in any other industry on the continent. In drawing attention even then to the extraordinary opportunity California offered to a few young men combining their capital for the purpose, we pointed out that it was a concentrated and civilized industry very different from ranching; for within a compass of a few hundreds of acres they could so handle their capital as to produce an estate worth more than a ranche with thousands of cattle ranging over hundreds of thousands of acres of grass country. Instead of being in the wildest and most desolate parts of the continent they would live among a condensed population, literally under their own fig tree. What better proof could be afforded than the Sunny Slope Vineyard and the Barton estates—which yield in the neighborhood of £40,000 a year, and will yield far more when fully developed.

CALIFORNIA BRANDY IN BOND IN NEW YORK.

[Wine and Spirit Review.]

As we predicted in our last issue, the Treasury Department has adhered to its original decision and authorized Mr. J. D. W. Sherman to establish a special warehouse for the storage of California brandy in bond in New York, despite the objections raised by certain interested parties. A rehearing of the case has taken place since our last, and thereupon the Commissioner of Internal Revenue promply telegraphed the collectors in California to release the goods held by them for further instructions, and several lots of these goods are now on their way East in bond. No one is more interested or will be more benefited by the establishment of such a warehouse as the above than the California grape growers and distillers.

Referring to what the MERCHANT said on this subject, the *Wine and Spirit Review* says: Now the MERCHANT puts the case in a nutshell. The objection to Mr. Sherman was only a "quibble," and no such quibble should for a moment be allowed to interfere with a movement so important that it promises to revolutionize the whole trade in native brandies this side the Rocky mountains, to say nothing of building up an export demand for and business in these goods.

PRACTICAL TREATMENTS FOR THE PREVENTION OF MILDEW.

By G. Foex.

[*Le Vigne Americaine at la Viticulture en Europe*, June, 1886.]

Remedies to Employ.

2.—Podechard Powder.

Good results have likewise been obtained in the Cote-d'Or by the use of a powder made in the following manner: A lime milk is prepared out of, lime, 5 kilograms; water, 10 kilograms; and a solution of sulphate of copper out of, sulphate of copper, 10 kilograms; boiling water, 20 kilograms.

The two liquids are allowed to cool to 25°C. [77°F.], mixed, and then poured upon 100 kilograms of quicklime, which is allowed to slake. This powder probably acts like the copper mixture of Gironde.

This remedy which has given positive proofs of its efficacy in Burgundy, has not been tried in the South, and it is consequently impossible to know yet whether it will prove effective in the climate of that region. Nevertheless, on account of the ease of application, which is greater than in case of the copper mixture of Gironde, it deserves to be tried with care.

3.—Sulphated Stakes.

Stakes sulphured with a view to their preservation, have served to completely protect certain vineyards in the Cote-d'Or. The small number of branches of each vine tied in a bundle of three or four upon the support, and the frequent rains which wash the latter and carry the dissolved sulphate of copper to the leaves which are very near, explain this phenomenon. In order to increase the efficacy of this arrangement, it has been proposed to bind the branches with straw bands dipped in the sulphate of copper. The employment of this means, besides, being quite expensive, has given no result in the vineyards of the Mediterranean region, probably because of the lack of moisture during the summer.

4.—The Audoynaud Process.

Mr. Audoynaud has proposed to apply the copper to the leaves in the form of "blue water" or ammoniacal sulphate of copper, which enables us to get the substance in a very finely divided state, and consequently to greatly reduce the amount required per hectare.* The liquor is prepared in the following manner:

*1 hectare = 2.47 acres.

In a stoneware or glass jar place 2 kilograms of sulphate of copper upon which pour two or three liters of warm water, and stir with a stick or glass rod to hasten the solution. When the liquid is cold add about one liter of commercial ammonia (22° Beaumé), then, in a suitable cask, mix enough water with this liquid to make from 100 to 150 liters, which is the amount that should be put on one hectare. The Riley spraying machine, with a receiver like that constructed by Mr. Vermorel, of Villefranche (Rhone), appears to be the most convenient instrument for distributing this liquid. Although this process has not yet been carried out practically, it is probable that it will give satisfactory results if, like the copper mixture of Gironde, it is applied as a preventative.

Choice of Material.

Sulphate of copper is a salt found in commerce in the form of large translucent crystals of an azure blue. When pure it contains:

Oxide of copper	31.84
Sulphuric acid	32.06
Water of crystallization	36.10
	100.00

The copper being the agent acting upon *Peronospora*, it is important to ascertain the purity of the sulphate purchased. Now, we frequently find in commerce double sulphates of copper and iron, or of copper and zinc, which are sold as sulphate of copper. Mr. Millardet gives the following methods of determining the purity of this salt:

By pouring some drops of lime water or milk of lime into a solution of sulphate of copper (1 to 10) we obtain a sky-blue precipitate from pure sulphate of copper, a rusty blue from the double sulphate of copper and iron and a dirty white from the double sulphate of copper and zinc.

The lime which has given the best results so far is quicklime.

Apparatus and Receptacles for Holding the Copper Compounds.

The sulphate of copper attacks iron and zinc, and ought, therefore, to be kept in vessels of copper, lead, wood or earthenware.

Although the processes which have just been described deserve to be tried in the South (except the sulphated stakes), the "copper mixture of Gironde" is the only one that can be employed immediately on a large scale with certainty of success. Probably its action will not be limited to the destruction of *Peronospora*, but will tend tc the destruction of several other fungus diseases of the vine.

SEARCH FOR COPPER ON THE VINES TREATED WITH THE LIME AND SULPHATE OF COPPER MIXTURE AND IN THE HARVEST.

By Messrs. Millardet and Gayon.

[*Journal d'Agriculture Pratique*, November 19, 1885.]

After having disclosed the treatment of mildew by the mixture of lime and sulphate of copper, described its effects and explained its action, as regards the treatment itself, it was important to give an account of the distribution and persistence of the copper on the plant, and of the duration of its action. From a hygienic point of view it was not less important to determine exactly the proportions of a substance as poisonous as copper which might exist on the grapes, in the must and in the wine. It is to be hoped that, from this double point of view, these new inquiries will not be devoid of interest. The quantities of copper to be determined were so minute that only the most delicate analytical processes were capable of showing them. All the organs of the plant (leaves, etc.) and all its products (must, wine) were first incinerated with care. The ashes were then submitted to electrolysis, with the precautions indicated by Mr. Riche, and the amounts of copper precipitated from their solutions were finally estimated by the calorimetric method. The sensitiveness and accuracy of the method, especially as regards the wine, were established by several control experiments, in which a tenth of a milligram of copper, in the form of the sulphate, added to a liter of pure wine, was always recovered in its entirety.

The following table will give a general idea of the amount of copper found on the various parts of the vine and in its products. The samples of leaves, branches and stocks were gathered during the first half of October.

Tables of Analyses.

LEAVES, BRANCHES, ETC.

Portions Analyzed.	Variety.	Total weight in grams.	Weight of ash in grams.	Milligrams of copper contained in the ash.	Milligrams of copper per kilogram.
1. Leaves not dried	Cabernet-franc	640	17.02	12.3	19.1
	Carbernet-Sauvignon	290	13.96	20.2	69.6
	Malbec	080	20.82	66.0	95.5
	Petit-Verdoa	630	18.20	45.7	24.9
2. Branches and stump	Cabernet-Sauvignon	1,077	35.52	9.8	5.8
3. Grape stems, *i. e.* clusters from which the grapes have been removed.	Cabernet-franc	1,835	35.52	27.6	15.0
	Cabernet-Sauvignon	102	2.53	1.9	18.6
4. Grape-cakes (skins and seeds).	Cabernet-fraoc	1,500	16.66	16.7	11.1
	Various kinds mixed	1,365	26.25	29.9	21.9

MUSTS.

Variety.	Amount of must in centliiters.	Milligrams of copper per liter.
Cabernet-franc	732	1.4
Cabernet-Sauvignon	802	1.2
Malbec	777	1.0
Petit-Verdot	652	2.2

WINES.

Origin of the wine.	Milligrams of copper per liter.
Chateau Dauzac	Less than one-tenth milligram.*
Chateau Pez	Doubtful traces.
Chateau Poujeaux	Do.
Chateau Langoa	Less than one-tenth milligram.

*One-tenth milligram=0.0015432 grains.—Tr.

The grape-stalks were not fermented.

The musts were obtained from the 8th to the 12th of October by direct expression from the grapes. The samples of grape-cake were procured during the tunning, at the same time as the wine; that is, after the end of fermentation.

From these figures it is apparent that, at the time of the vintage, the leaves are the richest in copper, and next the stems of the cluster and the skins. It appears probable from facts upon which it is not possible to insist here, that almost all this copper is simply adherent to the surface of the organs. The musts contain extremely small quantities of this metal. As to the wines, they show only the minutest traces, if any—at most one decigram [1.54 grains] per thousand liters [1,761 gallons].

But, as considerable quantities of copper are introduced into the vintage tubs with the stems of the clusters in certain countries where the grapes are not picked off, and everywhere with the grape skins, it was important to find the cause which determines the almost complete disappearance of this metal from the wine. Experiments, which it is unnecessary to narrate here, made to throw light on this particular point, have shown that the more or less complete absence of copper from the wine must be attributed to the action of fermentation. This metal is precipitated and is found in the lees. Tannin and sulphur added to the musts before fermentation favor this purification of the wine. This last fact is in accord with the statement made some days since, by Mr. Michel Perrett, in reference to the action of sulphur on the soluble salts of copper during fermentation.

The comparison of the total quantity of copper found on the whole vine more than two and one-half months after treatment, with the amount put upon it, gives occasion for remarks not less important than those just read. The following is the result of the analysis of an entire vine, taken at random, in a vineyard at Dauzac, which was treated about the 15th of July. This vine was pulled up the 8th of October. It is the same vine (Cabernet-Sauvignon) mentioned in my article of October 12, as typical.

ANALYSIS.

Part of vine:	Milligrams of copper found.
Leaves	20.2
Branches and stumps	9.3
Roots	1.9
Grapes:	
Stems of clusters	1.9
Grape-cake (skins and seeds)	1.8 } 4.6
Must	0.9
Total	36.0

This 36 milligrams of copper corresponds to 143 milligrams of crystallized sulphate of copper.

We have previously stated that on an average, for the treatment of 3,000 vines 8 kilos of sulphate of copper were used, which gives 2,667 milligrams [41 grains troy] of the salt per vine. After two months and one-half, we found on the entire vine, only 36 milligrams of copper, that is to say, only about 5.5 per cent. of the quantity originally put on the leaves. The remainder, 94.5 per cent. was therefore washed off by the rains and carried into the soil.

It should be stated now that the summer was dry in Médoc from July 10th to September 1st, there being only three or four days of rain or storm. During all this time the amount of copper placed upon the leaves ought not to have diminished much. There remained, therefore, a very considerable provision of copper when the rains of September came on, determining the formidable outburst of the mildew, following which the leaves fell in a few days. It was without doubt these rains which washed off the greater part of the copper put upon the plant in the treatment, so that on October 8th there remained on the entire foliage only 20 milligrams, that is, about 3 per cent. of the original quantity.

What would have occured if the rains of September had fallen in the middle of August, or at the end of July? Would the 20 milligrams of copper which persisted on the leaves have been sufficient to protect them with certainty from the mildew until the ripening of the grape? It is questionable.

For this reason, if abundant and prolonged rains occur toward the beginning or the middle of August, after the treatment and at a period somewhat remote from the ripening of the grape, it would be prudent to make a second application of the preservative mixture.

The Attention of Wine-Growers, and all others interested, is called to the most powerful

INDUSTRIAL EXHIBITION AWARDED TO PARE BROS. "LE MERVEILLEUX" WINE-PRESS 1886

WINE AND CIDER PRESS
"Le Merveilleux,"
(THE WONDER.)

—THE CHEAPEST IN THE MARKET.—

WE CHALLENGE THE WORLD TO SHOW ITS EQUAL.

The latest invention in Europe. First introduced in the United States last year where it has given entire satisfaction as the testimonials will show.

MECHANICS' INSTITUTE SAN FRANCISCO

Patented in the United States, France, Belgium, Spain, Germany, England, Italy, Portugal, Austria-Hungary, Luxemburg, Norway, Sweden and Denmark.

Price List at San Francisco.

Exclusively for 1887.

No.	Diameter of Screw. Inches.	Height of Basket. Inches.	Diameter of Basket. Inches.	Capacity of Basket of Fresh Grapes after Crushing. Tons.	PRESS, Complete. With 2 Wheels $	c.
1	$2\frac{7}{16}$	24	32	$1\frac{3}{4}$	120	00
2	$2\frac{3}{4}$	26	40	$2\frac{1}{4}$	160	00
3	$3\frac{3}{16}$	28	48	$3\frac{1}{2}$	220	00
4	$3\frac{9}{16}$	32	55	5	290	00
5	$3\frac{15}{16}$	$35\frac{1}{2}$	63	8	350	00
6	$4\frac{3}{8}$	$35\frac{1}{2}$	71	$10\frac{1}{2}$	400	00
7	$4\frac{3}{4}$	36	78	$14\frac{1}{4}$	450	00

The above cut shows the Machine complete.

Having secured the entire right for the United States, we take pleasure in introducing this Wine Press to the American public, believing it superior to any other press now in use.

It will be to the advantage of Wine Manufacturers to study carefully the following merits, which we claim it possesses:

First. By an ingenious mechanical application, the "power of resistance" can be reduced to a minimum, and with a single effort, three or four times more power can be obtained than with any other press known at this day.

Second. It does the work more rapidly, and with less labor.

Third. It is cheaper than any other first-class wine press in the market.

Fourth. It has no complicated devices, is so extremely simple in construction and easily operated, that a child of ten years can work it.

Fifth. It is made of the best materials, and by its simplicity is not liable to get out of order.

Sixth. All parts are interchangeable, consequently, any part lost or injured can be replaced at little expense.

Seventh. It will extract the largest percentage of liquid.

Eighth. It is built on the ratchet principle, double acting, the lever working both ways, and can be worked in 6 feet space. It has no lost motion.

Ninth. It does not take any more labor to work the largest size than the smallest one.

Tenth. It presses any kind of fruit as well as grapes.

This press is not an experiment, having been used several seasons in the wine districts of Europe, and also in the United States last season.

It has received the highest award wherever exhibited in competition with other presses.

The main features of the press are the ease and rapidity with which it may be worked, and the great power which it applies; as the press stands on wheels, it can be readily moved from place to place.

In order to introduce our press last year, we placed it at a low figure; with the improvements that we have made this year, we are compelled to raise our prices, but they are yet the lowest on the market, while the press is far superior.

Our press is adapted for large vineyards as well as small ones, as we make different sizes. No. 7, shown in the above cut—the basket will hold 14 tons of grapes after crushing, and 4 fillings per day, its capacity being 56 *tons of grapes in one day.*

"LE MERVEILLEUX."

A representative of the MERCHANT has visited the shop where the Paré Bros. are building their wine presses, the "Le Merveilleux," which is claimed to be the best and cheapest wine press made. The platform or bed rests on a two wheeled cart, which enables the operator to move it to any part of a vineyard, or between the rows of tanks in a wine cellar. The basket is made of the best straight-grained Mendocino Pine staves, riveted to three bands of the finest quality of iron. These bands are each in halves. On one side they are connected by a hinge, and on the other are locked with pins, and, by removing these pins, the basket can be opened to any width required, and the must be removed in a very few minutes. The edges of the staves are beveled, the distance between them on one side being $\frac{1}{8}$ of an inch, and on the outside $\frac{3}{4}$ of an inch. This renders it impossible for the grapes to get jammed in between the staves.

Rapidity is one of the strong points of this machine. It takes only from twenty to forty-five minutes to make a pressure. The "screw" which stands upright in the middle of the "basket," is fastened under the "bed" by a nut which is six inches thick, screwed on and riveted to the end of the screw. The operator moves the large lever which is from five to eight feet long, and moves in a space of six feet backwards and forwards. This pushes alternately two small levers, which in turn catch in the ratchets of the combinations on their *forward* motion, and keeps the wheels or combination steadily falling down the main screw. In commencing to lower the crushers upon the grapes, and when speed is required, the lever is placed in an upper combination, which acts directly on the screw, and in a few movements of the lever it has reached the grapes. The Presses have been calculated to withstand the pressure according to their capacity, so if the smallest is incapable of breaking itself, the largest is equally so.

The main feature of the press is the ease with which it may be worked. Mr. Paré forced the lever as far as it was necessary to go in one direction, using only his little finger, upon shavings which had previously been packed so tight, that it was impossible to run a knife into them.—SAN FRANCISCO MERCHANT, Aug. 27th, 1886.

WINE PRESS EXHIBIT.

The French Wine Press exhibited at the Fair by Paré bros., attracted great attention from visitors interested in wine-making. This press has no merely local reputation, but comes to us from over the seas endorsed by French wine producers generally, and by the leading journals of France. In the Eastern States it is rapidly supplanting all others, and no doubt in California will do the same. The reasons for this are plain. It is a great improvement over any now offered; it is portable and easily carried on a hand-truck from place to place; it is not expensive, and it does its work thoroughly and well; it requires but little attention, and it is labor-saving. It is called in France "Le Merveillenx," and certainly deserves the name. Certainly, those interested in wine production should at once acquaint themselves with the capabilities of the press, its price, and see it working. By it they will save money, as its expense is comparatively small, compared with the amount and character of work it is capable of doing. We certainly commend an examination of its merits.—*The Weekly Commercial Record*, San Francisco, Sept. 16th, 1886.

EXHIBITS AT THE PAVILION.
"Le Merveilleux" Wine Press.

Among the exhibits at the Mechanics' Fair, which naturally attract the attention of the visitors, whether from the city or country, is "Le Merveilleux" wine press. The wine interests of California are fast assuming enormous proportions, and every year sees an immense increase in the area devoted to the culture of the vine. It is only to be expected, therefore, that any invention coming from an old wine-producing country like France, should have great interest for the residents of California. "Le Merveilleux" is a French invention just being introduced here. It has been patented in all European countries and the United States. The entire right for this country is held by Messrs. Paré Brothers, of this city. The press is manufactured in seven different sizes, varying in price from $120 to $450. It is claimed for it that it is more powerful than any other press now in use; that it does its work more rapidly and with less labor; that it is cheaper, without complication, and not likely to get out of order. Being built upon the interchangeable plan, any part lost or injured can be replaced at small cost.

It is constructed on the ratchet system, and the lever can be worked in a six-foot space, and is so easily operated, that a child of 10 years can work it. The lever works both ways, and thus doubles the speed.—*Daily Journal of Commerce*, San Francisco, Sept. 24th, 1886.

THE SUNSET VINEYARD,
Minturn, Cal., Sept. 15, 1886.

Messrs. Pare Brothers.—GENTLEMEN:—We take pleasure in informing you that we have used your No. 4 press this season, at our vineyard, and find it all that you recommend it. It does the work perfectly and with ease, and in our opinion is perfect in every particular.

Yours truly,
WEBSTER & SARGENT.

San Francisco, Sept. 17, 1886.

Messrs. Pare Bros.—GENTS.:—The wine press No. 4 purchased of you several weeks ago, has been tried at our winery and has thus far given full satisfaction.

Yours truly, MT. DIABLO VINEYARD CO.,
By Jac. Levy, Sr.

Anaheim, Cal., Sept. 15, 1886.

Messrs. Pare Bros., San Francisco, Cal.—GENTLEMEN:—The Press came at last, and after giving it a fair trial I find it to my satisfaction. Enclosed please find exchange draft for the same.

Respectfully yours, LOUIS SCHORN.

San Francisco, Sept 22, 1886.

Messrs. Pare Bros, City.—GENTLEMEN:—We take pleasure in informing you that we have used your Wine Press No. 5 this season at one of our Vineyards, and find it all that you recommend it. It works well, and is perfect in every part cular.

Yours very truly, B. DREYFUS & CO.

Anaheim, Sept. 27, 1886.

Pare Bros., San Francisco.—GENTLEMEN:—Yours, with shipping receipt and bill, at hand; but the press did not come until a week after, although I needed it badly. As soon as I got it I tried it, and must say that I like the press very well. Enclosed please find check for $140.50. Yours respectfully,
PETER HANSEN.

Pacheco, Contra Costa, Cal., March 15, 1887

Messrs. Pare Bros.—DEAR SIRS:—The "Le Merveilleux" No. 3 press I bought of you is the most powerful instrument to extract juice from grapes—it leaves the pulp entirely dry in a short time. I recommend it to all wine makers. Yours truly,
J. S. HOOK.

Mission San Jose, Cal., Oct. 27, 1886.

Messrs. Pare Bros., San Francisco.—GENTS.:—I have used your "No. 3" "Le Merveilleux" wine press all through my vintage, and it has in every particular given entire satisfaction, both in regard to the ease with which the work was accomplished.

Very truly yours, CHAS. C. McIVER.

I, the undersigned, certify that I bought from Messrs. Paré Bros., a No. 2 wine press, and used it last season, 1886, and it has given entire satisfaction.

Yours truly, A. CHEIGNON,
814 Howard St., San Francisco.

GENTLEMEN:—I take pleasure in telling you that I am entirely satisfied with the press, No. 2 "Le Merveilleux," you sent to me, it does the pressing without interruption. Yours,
B. DISTEL, Mountain View.

Messrs. Pare Bros., San Francisco.—GENTLEMEN:—I used last year one of your presses at the Hon. Jos. F. Black's vineyards of Livermore. I studied it carefully, and I must say it has given perfect satisfaction. It is the most powerful press I ever saw, and the work is very easily done. Yours very truly,
J. MORTIER, Livermore.

FARMERS' AND MERCHANTS' BANK,
Los Angeles, Cal., Oct. 15, 1886.

Messrs. Pare Bros., San Francisco.—DEAR SIRS:—Enclosed please find our check for $335.15, in payment your bill for two wine presses, as ordered by our letter of 30th ult., for

Messrs. Hafen & Niemeyer	$330 00
Drayage	6 00
	$336 00

The parties tell us the presses were received in good condition, and work to their satisfaction.

Respectfully, JOHN MILNER, Secretary.

After trial the Press may be returned to us if for any reasonable cause it is not satisfactory, "and money refunded," as we are satisfied from our experience that parties that have once used them will not afterwards do without them.

N. B.—We are also prepared to fill any orders for Crushers and Separators. For any further information apply to

PARÉ BROTHERS,

BRANCH OFFICES:
Honore Building, Chicago, Ill.
15 St. James St., Montreal, Canada.

OFFICE AND FACTORY:
101 to 107 Mission Street,
Res. 420 Geary Street, S. F.

ARE WINE CELLARS A BENEFIT TO GRAPE GROWERS?

[J. W. Prentiss, in the Vineyardist.]

There is an opinion abroad that opposition to wine drinking is against the interest of the grape grower. In the first place, although we have the fullest confidence that the coming man will not drink wine, yet he is much slower in his coming than we could wish, and is, perhaps, in the yet distant future. In the second place, there are very few fruit grapes made into wine; as a general thing only the grapes unfit for market are used in wine cellars. If all the wine cellars around lake Keuka should drop out of existence at once, it would not affect the price of fruit grapes one dollar a ton. The wine cellars that buy grapes ship the most that are fit to ship for fruit grapes to market. There is very little choice fruit grapes made into wine, and none of any kind made into brandy.

In the wine of commerce there is probably not ten gallons in an hundred made from fruit grapes, if even made from culls. Yet, if all the wine sold was made from grapes only fit for market they would be comparatively a scarce article. Wine cellars are, therefore, of doubtful benefit to those who grow grapes for the fruit market. In regard to the wine and brandy making it may be said, "half the world do not know what the other half is doing."

In the next place our opposition to alcoholic beverages is mainly a health question —whatever is conducive to health will be to temperance. It must be conceded that we are sadly ignorant on the health question —not only in food but in drink. Tea, coffee, wine, beer, whisky, in every shape and quantity, all are objectionable according to the amount taken, or the idiosyncracy of the person. All are of kin to many other fashionable follies and unwise habits. And yet, with all our dyspeptic producing drinks, they are not worse, if as bad, as the filthy tobacco. And we hardly know whether to impute it to ignorance or obstinacy. Yet at least one medical professor has said "he did not know how much tea and coffee one could take to advantage, or how many cigars one could smoke without going to the bad." And this is another dose from the "established truths of medical science.

Although holding to temperance in all things, yet we are as much opposed to prohibition as advocated, as to saloon liquor selling. Any thing that may be prohibited on hygienic principles are in themselves bad. While there is no fault in the alcohol when properly made, the fault is in the worse than beastly use of a proper article in its place. I would sooner prohibit the freedom of the person who by its use injured his family, his neighbor or the public. We are told that the person addicted to rum cannot stop, though ruin stares him in the face; but we might as well be told a man cannot drop a hot iron. The can not is not the word, but will not is the one; but if he can not or will not, send him to prison until he learns better manners than to abuse his neighbors. Put the blame where the real blame belongs; on the offender first, the drug shops, saloons and doctors as accessories. We are told there is no law authorizing a license for saloon liquor selling. Why then are they licensed? Simply because there is a majority of voters in favor of electing men who will grant licenses—law or no law. Have we not need of missionaries to tell the truth, than law to force people even in wisdom's way?

There is probably but one being on earth harder to drive than man; and this is as it should be. Man, in his natural rights is independent of all others; yet he yields a portion of his individual rights for general good and mutual benefits. But we must not be told we shall or shall not eat meat or drink wine; but we may be told that if we injure others by so doing, by our concession, we may be called to account.

All the faculties in man in themselves are good. Whence then cometh the evil! This is a pertinent question that demands closer investigation than is generally given it. Evidently it is the abuse of those faculties which should produce only good. The cause or reason why only good should produce evil, is the mystery not yet satisfactorily solved. This is a tangled knot for some one to untie. Who will do it?

GRAPE ROT REMEDY.

[Fruit and Grape Grower.]

From a correspondence of A. Russow with F. C. Miller & Son, of New Philadelphia, Ohio, we make the following very suggestive, and we trust, valuable abstracts of their successful treatment of grape rot. They say: "Our grapes rotted badly until we gave them the copperas treatment. We use—

1 lb. ground sulphur.
2 lb. slacked lime.
2 lb. copperas, broken fine.

We apply it from one to three times during the hot, sultry, wet weather. The first application *on the first* appearance of rot, say from 10th to 20th of June, with us. This stops it. Sudden changes of temperature of 30 to 40 degrees, when wet, starts the rot and mildew again, when another application is made. It is sown broadcast on the ground and if accompanied by mildew it is sown over the foliage also, without any injurious effects with us, after a successful use of it for *six years*. We have no special rule as to quantity applied. If used three times, the last one superinduced by the most unfavorable circumstances, 1 pound the first, ¼ pound second, and 1 pound the third time, will about correspond to our use of it. As a matter of safety, in unfavorable weather, it should be applied 2 or 3 times. I do not give it as a *specific* remedy. It does well with us and some of our neighbors. A few report the remedy as only partially successful. Plow your vineyard 3 or 4 inches deep. *Turn the surface well under*, thereby burying all fungus germs. I will be pleased to hear of your success in combatting this terril le scourge."

From enquiries made by Mr. Oscar Reierson, we learn that, by the large quantities, crystal copperas can be bought in New York City for $15 per ton, and probably less, whilst ground sulphur will cost 2 cents per pound—all without any charge for packages. This with lime and freights, would run the cost per ton of this mixture up to say $25, which, at the maximum estimate of these applications would suffice for 888 full bearing vines. Call the product 8 pounds to the vine and price only 2 cents a pound, would yield $117, after deducting the cost of mixture, besides the fertilizing effects, which is considerable. This seems to us a valuable investment, which should stimulate every grape grower to use this mixture liberally.

Any communication intended for the editor of the MERCHANT should be addressed to 327 Market Street, and all matter pertaining to the business affairs of the office should be sent to P. O. Box 66.

THE COLORING OF WINES.

[Sydney Town and Country Journal.]

It is a solemn as well as a ludicrous fact that scientific progress is turned to advantage by the rogue as well as by the honest man (wrote J. E. Taylor, the well-known scientist). There are tricks in every trade, dear reader, except those which you and I happen to follow. Lord Macaulay declared that statesmen made their reputations more by repealing old laws than by making new ones. In a similar way many scientists are rising to distinction, not so much because they are making new and beneficial discoveries, as that they are detecting the rascal and the thief. I am led to make these remarks by the announcement of a discovery that a German chemist, Herz, has found out an easy means for the detection of artificially-colored red wines. Of course there have been, and still are, various means of detecting the artificial coloring matters put into wines. The honest wine merchant is well aware that his customers like to have their eyes pleased as well as their palates tickled; and he does his best to accommodate himself to their wishes without actually poisoning them. Herz shows us how to detect these coloring matters. By his various methods, if magenta is the coloring matter, the wine will froth; if the common poppy has been utilized, it turns a cherry-red; with cherry-juice, it becomes a violet color; the proverbial and useful elder produces a red-violet, bilberries a blue-violet, privet-berries a pure violet, and so on. White wines artificially colored, and red wines mixed with artificial colors, have been successfully examined in the same manner. Treatment with sodium hydrogen carbonate produces with pure wine a brown-red color, with wine colored with pure elderberry a gray-violet, and with bilberry a brownish-green. The colors of red wines, due to the various artificial matters used as mentioned above, were detected chiefly by a saturated solution of tartar emetic, shaken up with the wine. Saturated solutions of sulphate of magnesia, soda, etc., were also employed as tests. It seems, however, that when old solutions of privet and elder are used for coloring, it is more difficult to detect them than new.

A PROFITABLE INVESTMENT.

[San Jose Herald.]

The opportunities for the profitable investment of capital in Santa Clara valley just at present are numerous and splendid beyond all precedent. In the wine business alone many millions of dollars might be invested so as to bring from twenty to thirty per cent. per annum. New wine is now selling at from fifteen to twenty-five cents per gallon, while old wine readily brings from fifty to seventy-five cents. That is to say, probably a million gallons of good sound wine of last season's vintage might now be bought in this county for two hundred thousand dollars which, if kept for one, or two, or three years will bring in the open market from five hundred thousand to a million dollars. And this is no mere speculation. The actual results of the past five years fully demonstrate it to be a fact. And, indeed, much more than even this might be realized in the business by going into it in the regular way, establishing agencies in the Eastern States, and taking the profits of the middlemen as well as the producer. But taking the very lowest estimate of the profits of the wine business, where is the enterprise that promises as much?

And the best of an investment in wine is that it is both solid and permanent. Grapes can always be profitably grown in this county for twenty dollars a ton, and a ton of such grapes as we grow will make from a hundred and thirty to a hundred and forty gallons of wine. There is therefore no likelihood of a lack of material to make wine for about fifteen cents a gallon, which, if properly matured, will in two or three years bring from fifty to seventy-five cents a gallon. These figures, allowing a liberal estimate for all kinds of expenses, will certainly leave a profit of from twenty to thirty per cent per annum on the capital invested.

THE BAUER REMEDY.

We learned with regret that the often mentioned Bauer Quicksilver Remedy against the ravages of the phylloxera has proved itself of insufficient strength to destroy this pest. Messrs. Crabb, Pellett and Krug examined in the vineyard of the first named gentleman, last Tuesday, a lot of Zinfandel roots, planted three years ago, under application of the Bauer remedy and found them covered with the hated animal, about two-thirds of the vines showing apparently the disease, while the other third appeared to be sound and healthy.

Mr. Krug and Mr. Wheeler, by instruction of the State Viticultural Commission, visited, Thursday, the vineyard of Mr. H. Hagen, near Napa, and investigated the vines planted two or three years ago, with the Bauer remedy. They found the same result; the roots covered with phylloxera. Also the roots of the Vitis Californica, Taylor, an American vine, were found to be attacked with great effect, but the Riparia and Lenoir appeared to be free of the attacks of the phylloxera. Both gentlemen were surprised to see in Hagen's vineyard several very old vines, mostly Mission, grafted with different varieties of scions (Chasselas, Burgundy, etc.) the grafts being inserted from three to seven feet (on arbos) above ground. If the grafting above ground is successfully introduced, it would be a grand thing for our viticultural industry, saving lots of money for labor and partial losse of two years' crops.—*St. Helena Star.*

HERBACEOUS GRAFTING.

Herbaceous grafting, as applied to the vine, consists in grafting on the growing wood in midsummer. It is a method which has been known for fifty years past in Central and Eastern Europe, and has recently become common in the region of Hungary. So valuable has the method here described been found that during the past year Von Hermann Goethe, Director of the Royal School of Viticulture at Marburg, has issued a work largely devoted to the subject. Other and more common systems are treated by Professor Goethe, but preference is given to the above named method in that it has opened a new and short way to the establishment of resistant vineyards as well as affording improved facilities for changing objectionable varieties to others of better quality.

The many novel methods of grafting the vine which have been proposed of late

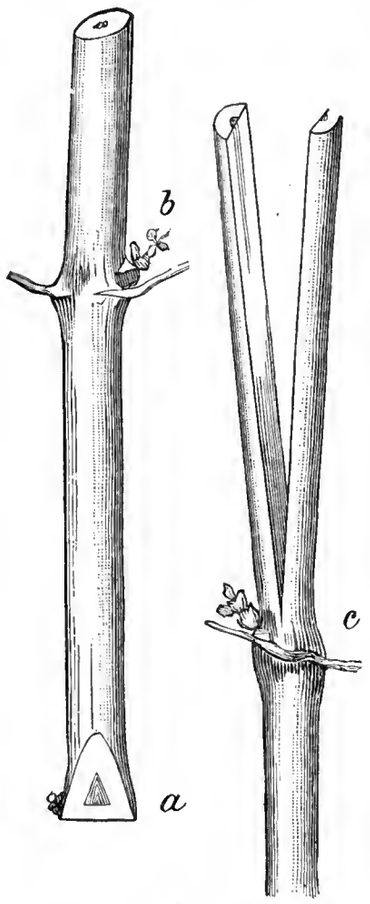

Fig. I.

years and their common failure in practice, have led me to believe that such announcements as that of our esteemed contemporary, Hermann Goethe, must undergo a certain practical test in the vineyards of this State before being generally accepted as fully adapted to our climate.

Before, therefore, proceeding to announce to our vine growers the value of herbaceous grafting, I have thought proper to ask our inspectors and others working with us to this year make a test of the method described in the following—so far, at least, as the lateness of the season may permit—and transmit to this Board the results of their experiments that another season may find us able to adopt or discard the system altogether.

The many advantages obtained from its use, if successful, will become evident to our vine growers as they proceed; advantages which, if the method prove successful in California, our vineyardists cannot afford to be long without.

Believing that the method must depend to a large extent on the care and accuracy with which such delicate work is executed, I have illustrated fully the operation in Figures I, II and III; these, if followed closely with a careful study of the following text, will, according to our friend Hermann Goethe, lead to success.

The period chosen for performing the operations is of the greatest importance. The most propitious epoch found in Hungary ends about the middle of July. As our vines put forth earlier and are now further advanced, it may be plainly seen that there is no time to lose. The information here reproduced came to me so late that instructions could not be issued sooner. In consideration of this fact it is to be hoped that the experiments will be performed immediately and that our experimenters may be particularly careful to use only delicate and rapidly growing shoots for both scion and subject. (The term "subject" is applied to the cane into which the scion is inserted.)

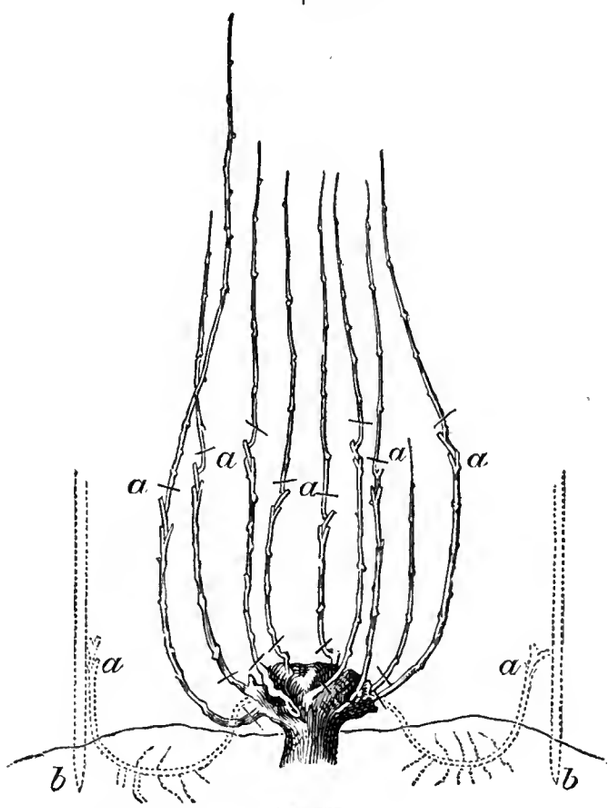

Fig. III.

Experiments in this work have already been begun by me with fair indications of success, but it is still too early to judge their value.

TO OPERATE,

Choose that period in the growth of the vine when the shoots show daily advancement, selecting the most vigorous canes for the purpose. The union should be made at a point on the green shoot, so near to the growing end as to exhibit no white pith when cut. In fact, that part of the cane in which the pith is scarcely distinguishable from the wood and bark is the surest to unite with the scion. It must, however, be strong enough when wound to maintain the scion well in position.

Fig. II exhibits the graft when complete—natural size. Fig. I shows the parts enlarged. The last of June has been generally selected for the work, although some work performed the first of July has shown a loss of only two per cent. When late spring frosts prevail a later period is chosen, as the rapid growth then comes later. This graft cannot be made to succeed on canes attaining a woody appearance, but both scion and subject must be elastic and yet not too soft.

The bud on the scion at *b*, Fig. I, must be examined and found good, and in selecting the scion it is generally safe to choose that bud at the base of the first well-opened leaf found on the growing cane. Lower and more woody scions will not answer. Laterals which show slow growth will not answer for the subject, but may be selected if still growing vigorously. The original canes proceeding direct from old spurs are most commonly selected for the subjects, particularly those which show a bright sappy appearance.

Warm growing weather favors much herbaceous grafting. A cold wind is harmful in checking growth, likewise a dry hot wind, and it is well in hot weather to suspend operations during a few hours in the middle of the day.

Do not graft vines showing a sickly appearance.

The preparation of the scion is clearly shown in the cuts, only be careful to preserve the scions fresh. If necessary to keep them some time, place them in water, thoroughly shaking off the water at time of grafting. Let the cut of the lower end of the scion (*a*, Fig. 1) be made through the bud that the point of the wedge may possess the enlargement necessary to fit the base of the cut in the subject as shown at *c*. The knife in entering the subject should split it just through the middle and descend half way through the center of the enlarged part *c*, Fig. I. Let the size of the scion be near that of the subject, never larger. The leaf joining the bud of the scion at *b*, Fig. 1, should be cut off, leaving the stem as shown in the cut.

In inserting the scion see that the bark of the two parts comes smoothly together at the point and that the tender bark is not broken or slipped. A safe precaution is to spread apart the subject when pushing home the scion.

To tie the graft, use a cotton string; begin to wind at the top and, by drawing it close and tight at the bottom near the bud, you will prevent the scions being forced from place.

This done, six or eight days will determine the measure of your success. By this time the scion bud should have begun to grow, following which all suckers and laterals drawing from the cane on which the graft is placed should be carefully removed, and this latter operation repeated as often as may be required to force all growth to the new part.

The success of the graft is early indicated by the falling off of the leaf atem which was allowed to remain on the scion. As the union grows the string must be loosened. The short time necessary to determine the success of this method gives ample opportunity to repeat the operation several times during the season, if success does not attend the first efforts.

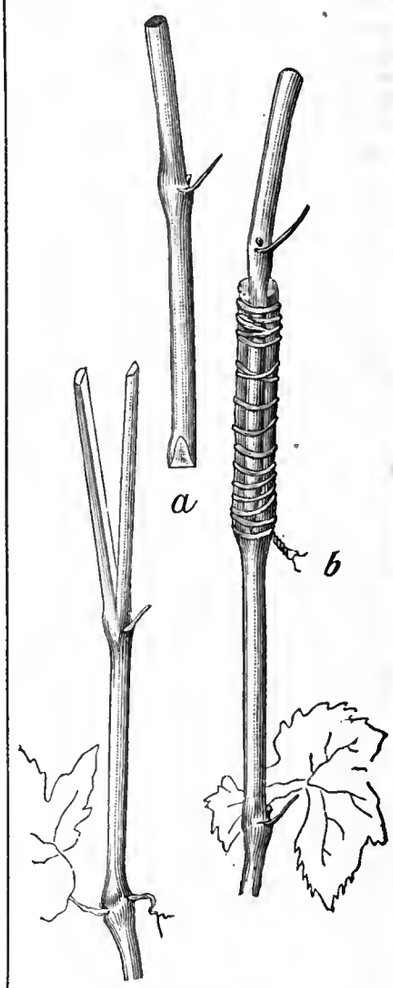

Fig. II.

Grafts made on growing canes of riparia vines two years old have shown good results, though older vines are equally good. Fig. III shows an old riparia vine grafted on its growing parts at *a*, thus producing resistant grafted cuttings well united above to a better variety, which may be planted in the new vineyard the following spring or layered and rooted as shown by the dotted line.

Many other advantages growing out of this method will be explained later if we can determine the success promised by Prof. Goethe. In the meantime we call upon you to experiment carefully and forward your results as early as possible.

Very respectfully,

JOHN H WHEELER.

Chief Executive Viticultural Officer.

BRITISH WINES.

[Ridley's Wine and Spirit Circular.]

We have recently had brought under our notice a matter which, although it may not at the present moment have assumed sufficient proportions to do any great damage to the trade, is likely, if allowed to continue, to delevop into a serious form of unfair competition. We allude to the regulations, —or rather want of them—in connection with the manufacture of British Wines, or, as they are officially known, "Sweets." In the year 1803, the duty upon home-made wines was 49s per barrel, and from this tax during that and the thirteen succeeding years, the income derived by the Exchequer varied from £21,000 to £33,000 per annum. With the reduction of the duty on Cape Wines in 1816, from 6s to 2s 6d per gallon, came a corresponding decrease in the manufacture of the British article.* The tax also was itself reduced considerably, and in time yielded so unimportant an amount, that it was abolished in the year 1832. Since then "Sweets" have, so far as we can learn, been made in this country without tax or supervision; it being understood that slight fermentation of fruit and sugar was permitted sufficient to extract the flavor of the fruit, the "Wine" being made up with water and plain Spirit, upon which latter, of course, duty had been paid. This, allowing the first cost of the basis to be about a shilling a gallon, would make the total cost, if duty-paid spirit were added to raise it to 18 degrees, something under three shillings per gallon to the producer, which considering the difference in quality between the pure juice of the grape and home-made concoctions, would leave the former little cause for fear in the matter of competition. We are, however, given to understand that in many instances the manufacturers of British Wines have of late departed from this rule, and instead of fermenting to about three degrees, which is the unwritten concession granted by the Excise, have gone in for fermenting to the fullest extent they may desire—to twenty degrees or in some cases even higher. Now that such a state of things can be fair and legitimate cannot for one moment be affirmed, for without begging the question as to whether or no the present wine, spirit and beer duties are a tax on alcohol, there can be no doubt that the possession of so many degrees of alcohol free of duty has a very substantial value. We have no wish to appear churlish, and to clamour for another industry to be taxed, simply because our own is so treated. In this it is simply a matter of unfair preference which may in the long run prove detrimental to legitimate trade, nor do we see how the advocates of protection can very well argue in its favor, since the sugar, which forms the principal item, and the greater part of the fruit are foreign commodities. We cannot pretend to say how far this new system has been adopted, since in the absence of Government restrictions, no statistics are kept. That it does exist, however, is shown by the following extract from the circular of one of the manufacturing houses:—

"In their new manufacture of British Wines which they originated at their factory three years ago ——— and ——— have deviated entirely from the usual methods of the wholesale makers of these, inasmuch as they have endeavored as nearly as possible to follow the practice of the makers of the grape juice wines of France, and by adopting a similar process of fermentation have obtained the most satisfactory results."

Here there is no attempt to disguise the fact that the wines are fermented up to a point to insure their keeping without any duty for spirit being paid. We do not know the exact extent to which the House in question may happen to ferment, but we saw the test of a sample derived from one of these manufacturers a few days ago which showed 22° of poor spirit. This surely cannot be right, and the matter appears to be one which authorities would do well in their own interest and as well as in those of the Trade generally to look carefully into. With the present laxity there would seem little reason why every consuming house should not start a small manufactory of British Wines for the purpose of breaking down their Spirits. As we have on several occasions remarked the debatable point in all these questions of duties, is as to whether or not the tax is to be considered one on alcohol or on various distinct articles. That an alcoholic basis underlies the framing of the taxes we cannot but feel, but at the same time it is a very uneven one. How in the present state of the Revenue the incidence is to be levelled we do not pretend to say. At present the tax on beer is roughly speaking 2s per proof gallon, 4s on wine, and 10s on spirit, whilst cider which frequently contains as much alcohol as beer, is allowed to be made or imported duty free, in addition to British Wines to which we have referred. The situation is anomalous enough as it is, and there can be no reason in allowing a fresh complication to arise, to say nothing of the unfairness in competition which it engenders.

*It must be borne in mind that an additional reason why British could not withstand the competition of Cape Wines was that the price of sugar was fully 80s the cwt.; whereas at the present time the cost would not be a quarter of that amount; imported fruit is also immensely cheaper than was then the case.

LIVERMORE VINEYARDS

The Crellin Wine Cellar—Grapes Dropping from Vines.

[Livermore Herald.]

The Crellin wine cellar on the Ruby Hill vineyard is going up rapidly and will be the largest in Livermore Valley. The building is of brick, and will be substantial and first class in every respect. We understand that the Messrs. Crellin are considering the advisability of engaging in the manufacture of must, in which event they will be large purchases of grapes. The business is in its infancy, but from its nature cannot but prove a paying one, and we certainly hope they will engage in it.

An examination of the vineyards during the past week disclosed the fact that there will be considerable injury to the grape crop of this valley by the dropping of the berries. There is but little dropping as yet, but on some varieties a portion of the berries on a bunch are continuing to grow, while others have stopped. These stunted berries will not be perfected and will generally drop. Indeed, in some places, a sharp stroke against the main stalk will bring a shower of these berries already. The trouble seems most apparent on the long pruned varieties, and is believed by good authority to be caused largely by the density of the foliage, and the consequent sweltering in hot weather. How much these difficulties will cut down the crop it is as yet too early to venture an opinion.

Are we not expecting too much of our vineyards? We plant them generally on light land, worn out for wheat, and expect them to begin bearing the third year, and continue increasing the crop till they produce from four to six tons per acre. We never pick off a bunch, and if a few berries drop we consider it a calamity. Now, in this valley the vine is very fruitful, and today four and five year old vines are staggering beneath loads of from thirty to a hundred bunches of grapes. A fruit tree thus encumbered, though with eight times the space from which to draw sustenance, would be relieved of fully half the load by the careful grower. Why not pursue the same course with the vine? It is a willing horse, and willingly bears heavy burdens, but can it always do so? And is not this stunting of a portion of the fruit a protest on the part of the vine against the burden we allow it to bear?

Small Vineyards.

We have frequently had items in our paper concerning the most extensive vineyards of this section, and an Eastean reader writes to ask what can be done on a small vineyard. It is yet too early to give any definite figures for this season, and we are sorry to confess that we did not give the matter full attention last year. However, we have one instance in view which we will give now, and later in the season we will supplement it with others. Mr. I. A. Grout, on lot 28, Central California Colony, had 1,000 vines of the Muscat variety. These vines are set eight feet apart, hence would cover just one acre and a half of ground. Being sick and unable to care for the crop when ready to pick, Mr. Grout sold the grapes to Col. Forsyth, on the vine, for $18 per ton. The latter gathered fourteen tons the first crop, but could not get around to make the second picking, and it is estimated that three tons were allowed to go to waste. For the fourteen tons taken from an acre and a half of vineyard, Mr. Grout received $252, and the purchaser harvested the crop. These vines were six years old from the cutting, and give promise of yielding 23 or 24 tons this season. Mr. Grout also had three acres of 5-year-old wine grapes, from which he sold 13¼ tons of grapes for $230. He set out eight acres to cuttings last season, and their immense growth now almost completely covers the ground, while many of these 1-year-old vines now contain large, perfectly formed bunches of grapes. We would like to compare the actual results obtained the coming season by Fresno colonists with those of any unirrigated section of the world. This challenge is open to all comers.—*Fresno Republican.*

YUMA GRAPES.

A Scheme to Irrigate 1,154,000 Acres of Land.

Mr. George W. Morton, of Yuma, is in this city with samples of grapes, to show what his country can do in this line. Two years some nine different varieties of grapes were set out at Yuma as an experiment. The first year the vines bore, and this was considered wonderful; and this year the vines were loaded and the grapes have been ripe since the 6th of June. On the first day of July ripe grapes were picked from nine different vines, none over two years old and all of different varieties, as follows: Malaga, Mission, Rose Peru, Early Chasler, Black Hamburg, Flaming Tokay, White Muscat, Black Morocco and Blue Malvasia. The fact that the nine varieties were ripe as early as the 1st of July shows what an advantage the country possesses over all the northern points, and experiments are going on to prove the raisin qualities of the grapes produced. From indications it is more than probable that a large extent of territory will be opened up to an industry which is one of the most remunerative on the coast. Mr. Morton brought samples of the grapes with him and will select some prominent place where he can display them.

The great trouble with that country has been the lack of water, but for some time past Messrs. George W. Morton, D. M. Harwood, Robt. McPherson and John W. Dorrington have been engaged in studying up a method by which 154,000 acres of land in Arizona and 1,000,000 acres in Sonora can be irrigated. They have surveyed the route of a canal fifty miles long, which is to take its water from both the Colorado and Gila rivers. This canal will be forty feet wide at the bottom, and will be of inestimable value to the country. Its estimated cost is $1,000,000, and Mr. Morton is here endeavoring to enlist some capitalists in the enterprise, which looks favorable, and if carried out, will be remunerative. The company will be incorporated in a few days, and as soon as the capital has been subscribed the work will be pushed ahead. —*Los Angeles Daily Herald.*

THE GRAPE CROP.

The grape crop of this section is now set, and there is, so far, nothing to interfere with a full production, in tenor with the age of the vines. Last season our crop was cut down one-half by couleur—a most unusual thing, as the grape is one of the surest crops produced in this State. We picked, last season, something over 2,000 tons of grapes, and but for the couleur and some other local causes, would have nearly doubled that amount. This season, all the vines are a year older, many have come into bearing for the first time, and as before remarked, the crop has not been affected in any way. This week, several careful estimates, based largely on last season's crop, have been made by conservative growers, as well as a further estimate of the combined capacity of all our wineries and cellars. The estimates made are all in the vicinity of 5,000 tons—rather above than below. The winery capacity was rated at 3,000 tons, thus leaving a surplus of 2,000 tons of grapes unprovided for. To work up these there should be at least two more wineries—or one of sufficient size to handle that amount. We have but two public wineries, and neither are clear of old wine. One, however, will doubtless be so, before the crop is ready, and perhaps both. There are, or will be, before the beginning of the vintage season —five private cellars, in addition to several small wineries, which may, or may not, be run this season. What we want, therefore, is more cellars, and our growers should take hold of the matter at once. Let the Board of Trade use its influence. We have the best wine grapes in this State, and they must not be allowed to go a-begging for want of cellarage. Let it be known that we have a surplus, and the men will be found to take care of it.—*Livermore Herald.*

It is an ill wind that blows nobody good. The action of the dealers in not coming to any terms with the wine growers, forces the latter to hold their wine, and every day of age adds value to it. If it is held till this time next year it will be worth a fortune to this valley. We should like to see this matter agitated by the entire press of the Napa and Sonoma district.—*St. Helena Independent.*

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FRIDAY.....JULY 7, 1887

Mr. Pohndorff reports that he meets with contined and increasing success in his wine business at Washington. He finds that the people there give him good support in his efforts, as he shows the trne inwardness, and exposes the humbug of the business. The consumers are intelligent classes who stand by purity and quality. It is a pity that more wine makers bave not followed the example set them by Mr. H. W. Crabb and Mr. Pohndorff as they would thus find themselves out of the present precarious position in relation to prices.

The pure wine law is being tested by the merchants of San Francisco. Mr. Henry Kohler, of the firm of Kohler & Van Bergen, refused to label his wines, was arrested for a violation of the law and found guilty. The case will be carried to the Supreme Court, and, in the meantime, the law remains a dead letter and is openly violated by all the wine merchants in town, who, however, demand that its provisions shall be rigidly adhered to by the wine makers. If the usual time for getting a case through the Courts be occupied in this instance, then the Pure Wine Law will be a dead letter, as far as the merchants are concerned, for a year or two to come.

Bonfort's *Wine and Spirit Circular* tries to depreciate prices by saying that "the wine and spirit trade feels the present state of affairs in the small orders of buyers, and the difficulty and expense of getting orders." The jobbers are evidently anxious to purchase.

THE PHYLLOXERA IN FRANCE.

Mr. MacLachlan, president of the Entomological Society, in his annual address, is reported by an English contemporary to have spoken as follows:—In July last I had opportunities of learning more about the ravages of the phylloxera in France, from personal observation and conversation, than I had ever before been able to do. A sojourn of some length in the Pyrenees Orientales brought the extent of the ravages vividly before me. I was in a district once covered with smiling vineyards. Now there are only the dead stocks half concealed by weeds, left in the ground, ghastly reminders of the past. Or occasionally the dead stocks are piled in hugh stacks for firewood, and the vines have been replaced by maize—a poor substitute from a financial point of view. I met men once prosperous proprietors, now impoverished peasants, still clinging to the scenes of former prosperity. The state of affairs there is repeated in very many districts; and it was lamentably evident in that of Angouleme in passing through it by train. The famous Bordeaux district, however, seems largely to have recovered itself; and in passing through it one would not imagine that it also had recently gone through the same ordeal. In this district remedial measures and the introduction of new blood in the form of American stocks, said to be phylloxera proof, have told successfully. And, speaking as an economic entomologist, I cannot resist the opinion (in holding which I think I am in a minority) that the want of introduction of new blood may have had a large share in rendering the vines, cultivated too much "in and in," ready victims to the pest when it first appeared. I am not armed with official statistics; but there appeared to be a hopeful feeling, to the effect that the phylloxera was exhausting itself (as far as France is concerned). Let us hope such is the case. But I met and conversed with intelligent and far-seeing Frenchmen, who held that the future depended more upon what turn the phylloxera might take than upon political affairs. Never before has an insidious insect-pest caused such widespread and continued ruin.

The Santa Clara County Viticultura-Society has been in communication with Dr. Springmuhl, suggesting that the necessary plant to make condensed must be placed in San Jose. Dr. Springmuhl's reply was to the effect that Mr. J. de Barth Shorb, who has the contract for the operation of the machines, has formed a company of capitalists in San Francisco where a factory will be operated and that arrangements could be made with this company. This seems to indicate that Dr. Springmuhl will not return here before the vintage, and probably his own business at the vintage in Europe will prevent his doing so.

Mr. Thos. D. Cone, agent for the Yaryan system of evaporation in condensing must, has returned from a trip to the East. Mr. Cone intends, during the coming vintage, to put up condensed must in small cans, containing about one gallon each, with about half a dozen cans in each package, as there has been considerable demand for the condensed must in small marketable quantities. He is giving this subject considerable attention and will, very probably, appear more prominently before the grape growing community before the next year's vintage.

OUR WINES IN ENGLAND.

As we have already shown there was an excellent opportunity afforded, by the American Exhibition now being held in London, for the introduction of California wines into England. A slight effort was made to do something, but lack of energy and lack of money caused the movement to result in failure. The Australian wine makers, on the other hand, when they had a similar opportunity afforded them, a year ago, were not slow to take advantage of it. They found the necessary funds and they found the necessary wines to exhibit, although the production of wine in Australia is trifling in comparison with that in California alone, let alone the Eastern States. The Australians saw the good point and took the trouble to avail themselves of it. They are reaping the harvest and we are not. One Australian firm of wine makers have alone received an order for 600,000 gallons. Californians might have been in the same fortunate position, but they are not. They have nobody to blame but themselves. It is true that we have not heard very much of the American Exhibition as a whole, probably because there was a general condition of apathy on the part of our manufacturers. But a great opportunity has been lost. There should have been discernment enough in California to foresee the triumph of Buffalo Bill and his retainers. A California wine stall in conjunction with his show would have been an enormous financial success, and worthy of American enterprise. Our wine makers and wine merchants could thus have introduced pure California wines to the notice of all the Kings and knaves in Europe. It would have been a grand scheme and would have paid well.

EUROPEAN WINES.

Information comes from London that French wine growers and French wine and spirit merchants are approaching the apprehension that the recent virtual declaration of the Chamber of Deputies that legislative influence is necessary to prevent the alarming increase of spirit-drinking in France and the Prime Minister's aspersions of the purity of the prevailing beverages, portend disaster to their respective industries, but nobody believes that serious measures will be taken to restrict one evil or remedy the other. The fact is, the frauds committed in the liberal manufacture of spirits in France have decreased largely the demand for those commodities from the long-suffering consumers of French wines in foreign nations, and orders have fallen off to such an extent that exporters have become alarmed lest their business be altogether ruined. Even gullible Americans, who, in spite of the reports of their own Consuls showing the flagrant extent to which adulterations have long been carried on, have hesitated to doubt that expressed raisin juice, cheap wines from Italy, Hungary, Cyprus, Cape of Good Hope, Australia and California can and have openly been "blended" into superior clarets, burgundies and champagnes, have actually begun to believe the evidence of their own senses, and refuse to purchase the trash so long accepted by them as wine.

We regret to notice the insolvency of Mr. William Scheffler of St. Helena, with liabilities amounting to $187,119.64. The assets amount to $193,575, and include $189,000 in stock (par value) in the Edge Hill Vineyard Company. The principal creditors are in New York and in Europe.

NEW YORK PURE WINE LAW.

The following is the text of the law to prevent the sale of adulterated wine in New York:

STATE OF NEW YORK.

An act to define pure wines, half wines, made wines, and adulterated wines, and to regulate the manufacture and sale of half wines and made wines, and to prohibit the manufacture or sale of adulterated wines within the State of New York.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION I. All liquors denominated as wine, containing alcohol, "except such as shall be produced by the natural fermentation of pure, undried fruit juice," or compounded with distilled spirits, or by both methods, except as permitted by section two of this act, whether denominated as wine or by any other name whatsoever, in the nature of articles for use as beverages, or for compounding with other liquors intended for such use, and all compounds of the same with pure wine, and all preserved fruit juices compounded with substances not produced from undried fruit, in the character of, or intended for use as beverages, or for use in the fermentation or preparation of liquors intended for use as beverages, and all wines, imitation of wines or other beverages produced from fruit which shall contain any alum, baryta salts, caustic lime, carbonate of soda, carbonate of potash, carbonic acid, salts of lead, glycerine, salicylic acid or any other antiseptic, coloring matter, other than that produced from undried fruit, artificial flavoring, essence of ether, or any other foreign substance whatsoever which is injurious to health, shall be denominated as adulterated wine, and any person or persons who shall manufacture with the intent to sell, or shall sell, or offer to sell, any of such wine or beverages, shall be guilty of a misdemeanor, and shall be punished by a fine of not less than two hundred dollars, or more than one thousand dollars or imprisonment in the county jail for a term of not less than six months, or more than one year, or by both such fine and imprisonment in the discretion of the court, and shall be liable to a penalty of one dollar for each gallon thereof sold, offered for sale or manufactured with intent to sell, and such wine or beverage shall be deemed a public nuisance and forfeited to the State, and shall be summarily seized and destroyed by any health officer within whose jurisdiction the same shall be found, and the reasonable expense of such seizure and destruction shall be a county charge.

SEC. 2. For the purpose of this act, the words "pure wine" shall be understood to mean the fermented juice of undried grapes or other undried fruits, provided, however, that the addition of pure sugar to perfect the wine, or the addition of pure distilled spirits to preserve it, not to exceed eight per cent. of its volume, or the using of the necessary things to clarify and fine the wine, which are not injurious to health, shall not be construed as adulterations, but such pure wine shall contain at least seventy-five per cent. of pure grape or other undried fruit juice.

SEC. 3. For the further purpose of this act, should any person or persons manufacture with the intent to sell, or sell or offer to sell, any wine which contains less than

seventy-five per cent. and more than fifty per cent. of pure grape or other undried fruit juice, and is otherwise pure, such wine shall be known, branded, marked, labelled and sold as "half wine," and upon each and every package of such wine which shall contain more than three gallons, there shall be stamped upon both ends of such package, in black printed letters, at least one inch high and of proper proportion, the words "half wine," and upon all packages which shall contain more than one quart and up to three gallons, there shall be stamped upon each of such package, in plain, printed black letters at least one-half inch high, and of proper proportion, the words "half wine," and upon all packages or bottles of one quart or less, there shall be placed a label, securely pasted thereon, on which label the words "half wine" shall be plainly printed in black letters at least one-fourth of an inch high and of proper proportion. Should any number of such packages be enclosed in a larger package, as a box, barrel, case or basket, such outside package shall also receive the stamp "half wine," the letters to be of the size according to the amount of such wine contained in such outside package, provided, further, that any person or persons who shall sell, offer for sale or manufacture with the intent to sell, any wine which shall contain less than fifty per cent. of pure grape or other undried fruit juice, and is otherwise pure, such wine shall be known, stamped, labeled and sold as "made wine," and shall be stamped, marked and labeled in the same manner as prescribed in this section, except the words shall be in this case "made wine."

SEC. 4. If any person or persons shall sell, or offer for sale, or manufacture with the intent to sell any wine of the kind and character as described in the third section of this act, which shall not be stamped, marked or labeled after the manner and mode therein prescribed, such person or persons shall be guilty of a misdemeanor, and shall be punished by a fine of not less than two hundred dollars, or more than one thousand dollars for each and every offense, or by imprisonment in the county jail not less than three months, or more than one year, or by both fine and imprisonment in the discretion of the court, and in addition thereto, shall be liable to a penalty of one-half dollar for each gallon thereof so sold, offered for sale, or manufactured with the intent to sell or offer for sale. All penalties imposed by this act may be recovered with costs of action by any person, in his own name, before any justice of the peace in the county where the offense was committed; where the amount does not exceed the jurisdiction of said justice, or when such action shall be brought in the city of New York, before any justice of the district, or of the City court of said city, and such penalties may be recovered in the like manner in any court of record in the State, but on recovery by the plaintiff in such case for a sum less than fifty dollars, the plaintiff shall only be entitled to costs to an amount equal to the amount of such recovery. It shall be the duty of any district attorney in this State, and he is hereby required to prosecute or commence actions in the name of the people of this State, for the recovery of the penalties allowed herein, upon receiving proper information thereof, and in all actions brought by such district attorney, one-half of the penalty recovered shall belong to, and be paid over to the person or persons, giving the information upon which the action is brought, and the other half shall be paid to the treasurer of the county in which said action is brought within thirty days from the time of its collection, and the said one-half shall be placed to the credit of the poor fund of the town or city in which the cause of action arose. All judgments recovered in pursuance of the provisions of this act, with the interest thereon, may be collected and enforced by the same means, and in the same manner as a judgment rendered in an action to recover damages for a personal injury. Two or more penalties may be included in the same action.

SEC. 5. The provisions of this act shall not apply to medicated wines, such as are put up and sold for medical purposes only.

SEC. 6. This act shall take effect on September first, eighteen hundred and eighty-seven.

NEW WINE CELLARS.

In the Donohue building on First Street are to be found the new wine cellars of Messrs. Alfred Greenebaum & Co. The main floor, opening on to the street, contains all the case goods, offices and sample rooms which cover an area of 55 by 130 feet, exclusive of magnificent glass covered court used for the reception and delivery of goods. The size of the cellar is 73 by 140 feet, and here is all the wine stored in wood, besides 25,000 bottles of wine stored in racks and ready to fill any orders at very short notice. All the bottling and racking is done in the cellar, where the bottles are washed by a patent brush machine in place of the old method of using shot. A very important advantage in these cellars is the system of ventilation which was devised by Mr. Haber, one of the firm. An iron ventilating shaft runs from the cellar to the top of the six story building. This, connecting with a small hole in the sidewalk, afforded a continuous cool current of air throughout the cellar, the temperature never exceeding 60°. It is so arranged that the ventilator can be regulated at will, and opened or closed altogether if so desired, and every arrangement made for maintaining perfect cleanliness. Messrs. Greenebaum & Co. are agents for the wines of Captain Niebaum's Inglenook Vineyard, formerly managed by Mr. H. W. McIntyre. These wines have obtained a world wide reputation for quality and purity. They are sold to the consumers in glass only and are protected by a trade mark, every bottle being wired and bearing the seal of the proprietor of the vineyard, and the pure wine stamp. None of the wine sold is less than three years of age, and it is by these methods that the firm are building up such a favorable reputation for the wines that they exclusively handle.

Besides the wines of the Inglenook Vineyard they carry large stocks of the best dry and sweet wines in the State, selected with care from the most favored localities, price being no object where quality can be procured. Messrs. A. Greenebaum & Co. have no doubt the largest stocks of the late new varieties, such as the Cabernet Sauvignon, Malbecs, St. Macaire, Franc Pinot the noblest of grapes of the Gironde, the cuttings of which were procured by Mr. J. H. Drummond direct from vineyards Chateau Lafayette, Margaux and the Clos Vogeot of the Romance. The immense establishment of Messrs. A. Greenebaum & Co. is well worthy of a visit.

THE BARTON ESTATE COMPANY.

In the London *Standard* of June 15th, we notice a prospectus of the Barton Estate Company with a capital of £225,000. The company is formed "to purchase, work and develope, as a going concern, the well-known Barton Vineyard, together with 320 acres of adjoining land, all situate in Fresno County, California." The list of applications for shares and debentures closed on June 20th. Extracts were quoted from a report by a Mr. John Leechman, who had "visited and reported on the property under date of November 27th, 1886."

For the information of other wine makers, we give, gratuitously, the following extracts from the published prospectus in the paper referred to:

"The yield from the Barton 540 acres has been 2594 tons of grapes. Each ton of grapes produces on the average 140 gallons of wine and five gallons of brandy. 2444 tons of the season's crop are being made into wine, and will produce 340,000 gallons, besides 12,200 gallons of brandy. 150 tons of the Muscat and Malaga varieties, the product of 28 acres, have been made into raisins, of which they made 46 tons. These have been sold in bulk at $100 per ton.

"Taking the wine "green" at 25 cents per gallon (at which price 100,000 gallons have been sold, and, but for the purpose of including 200,000 gallons in the sale of the Estate to this Company, all would have been sold at the same price), and the brandy at 50 cents, the product of this vintage would be $91,100. The wines matured would be worth from 70 to 80 per cent. advance on their value when "green."

"The yield of the 540 acres in 1886 has been, as already stated, equal to an average of 4 8-10 tons per acre. As the vines will not be in full bearing till 1880, the crop will show a gradual increase (under normal conditions) up to that year. Judging from what the Barton vineyard has already produced, and from the output of older vineyards of similar varieties of vines in the district, I consider it safe to reckon upon a crop averaging six tons at least per acre in 1889 and subsequently, taking one year with another. On this basis, the 540 acres would yield 3240 tons of grapes, from which 453,000 gallons of wine and 16,200 gallons of brandy would be made annually.

"The Working Expenses of the vineyard ought not to exceed $25,000 per annum."

"A source of large additional profit, apart from the Barton Vintage, is open to the owners, in the purchase of grapes from the small growers in the neighborhood, who have no facilities for making wine. The quantity available of such grapes is large, and they can easily be bought at prices ranging from $15 to $20 per ton delivered at the Wine Press. During last season, $15 per ton was the ruling rate.

"It is the intention of the Company to purchase grapes from the surrounding vineyards for manufacture into wine and brandy, the fermenting vats being of sufficient capacity to manufacture over 600,000 gallons, and at no great cost can be brought up to 1,000,000 gallons capacity.

"The company having acquired additional land adjoining the Barton Estate, intend to plant it with the choicest and most profitable varieties of wine grapes. These at the third year from planting will commence to add largely to the aggregate output of the place.

"In view of the greatly decreased production of French Wines, and the admitted excellence of the wines produced in California, coupled with the extremely low rate per gallon at which the latter wines can be put into the market, the company have determined to take into consideration the question of arranging for the sale of California Wines in London, where it is believed that they will prove very acceptable, as in quality and taste they bear a great resemblance to the popular French and German Wines.

"It will be seen from the above extracts from Mr. Leechman's report, that the wine and brandy produced from the vintage of 1886, if sold "green," was of the value of—

	$91,100
And the 46 tons of raisins.	4,600
	$95,700
Which after deducting the annual working expenses as per report	25,000
Would leave a net profit of	$70,700, or say £14,700
The fixed charges on Debenture and Preference Shares being	£9,900

"At the end of the first financial year, the company, according to last year's yield, making no allowance for material increase of production, or for the 200,000 gallons now taken over, should have in its cellars 340,000 gallons of wine and 12,200 gallons of brandy over eight months old. These wines would be nearly two years old at the end of the second financial year.

"The average annual product arrived at on the figures of Mr. Leechman's report as likely to be produced from the estate alone in 1889 and thereafter, without further planting, from the sale of matured wine and brandy, exclusive of the profit from 28 acres in raisin-grapes and the 20 acres in orchard, will be seen to be—

	$218,430
Deduct annual working expenses	25,000
Total profit	$193,430, or say £39,900

"The net income from the property, as shown by the reports, is largely in excess of the amount required to pay the annual interest on the Debentures and Preference Shares, irrespective of any profit on the manufacture and sale of wine from purchased grapes, and of the larger production of grapes as the younger vines grow older.

"The additional profit which would be derived from the purchase and manufacture into wine of 2000 tons of grapes Mr. Leechman places at $77,400, or £16,000.

"The price to be paid for the Freehold Estate, buildings, plant and machinery, together with the goodwill of the business and 200,000 gallons of wine in the cellars, and for the 320 acres adjoining land now purchased, is 110,000*l.* in cash and the Ordinary Shares. One hundred and thirty-five thousand *l.* in cash will be raised by the issue of 45,000*l.* of Six per Cent. Debentures and Preference Shares now offered for subscription. The Ordinary Share Capital is 90,000*l.* This price includes all preliminary expense, so that after paying for the property, the company will have 25,000*l.* in cash for working capital. The Debentures will be redeemed in twenty years by annual drawings out of profits after payment of the Preference dividend.

"Mr. Barton is prepared to act as Managing Director for a period of three years."

The foregoing will be read with interest. It is to be regretted that the company was not floated in California, and that local capital was not offered an opportunity of investing in a concern that shows such favorable figures.

REFORM WANTED.

EDITOR MERCHANT—The present system of wine committees or say tasting committees, at our annual viticultural conventions is laughably absurd, and not a little mischievous. A number of men are appointed, rightly or wrongly concerns us not, for the express purpose of placing wines. These men have a number of specimen bottles of wine brought before them, each bottle carefully labelled Riesling, Zinfandel or Cabernet, so that no mistake can be made; and to crown all after or under the words Riesling, Zinfandel or Cabernet comes the name of the maker of the said respective Riesling, Zinfandel and Cabernet. Now while there may be some show of reason in labelling a specimen bottle "Riesling" "Zinfandel" or "Cabernet," though what wine taster worth endurance can't as well tell a straight Riesling, Zinfandel or Cabernet wine with eyes shut as not, where is the reason for superadding the name of the maker? This is exquisitely tickling. Note though how it works.

I have a bottle labelled "Zinfandel from Mr. Alpha of the Upsilon Vineyard" brought before me. I try to taste and form a judgment without bias, but all the time I am tasting the thought arises concurrently. Now this Mr. Alpha is our very best and most noted wine maker, don't know; should like to place this as *bon vin*, but should I, and Mr. Alpha what he is? No then, I'll place this "*extra*." Again I have a bottle labelled "riesling, from Mr. Cipher of the Nonunquam Vineyard" brought before me. I try to taste a second time and form a judgment straight but not narrow as Mahomet's bridge, only while I do, "who is Mr. Cipher? will intrude upon me," and where is Nonunquam? Oh, I have it. Cipher is nobody at any rate, and Nonunquam is where they can't possibly produce good wine, this Riesling ought to be extra, but it can't be, I must be wrong; so I'll place it "bon." A third time I have a bottle labelled Cabernet, from Mr. Haslich of the Sonnenseite Vineyard brought before me. I try to taste once more and get at a right verdict, but the ideas "Haslich, Abscheul Abscheulicher, Kerliteufel," grievously press me and I don't place at all what I know is no ordinary wine, but note against its single slight defect "gout de rafle."

I may be answered, no wine taster such as you draw exists—exaggeration is not logic and may be criminal. I reply that we are led most even when at our best by our unconscious trains of reasoning and feelings, and the name of the maker of a wine on a bottle will, unperceived by ourselves, affect us, and by so much mar our conclusions, and that, admitted that I have exaggerated, I still enfold more than one grain of truth. At any rate, the name of the maker of a wine ought not, for the better security of justice, to appear before any tasting committee, to whom the wine and never the man is the finality, and thus be evitated what is not entirely the most silent growl in California, nor the very smallest of the disappointments in it.

How would I improve the present condition of affairs? The answer to this can be read between the lines of what I have already written. But I would say that I would improve it by causing the wine committee to taste blind—that is, I would set before them such specimen bottles only as had not the names of the wines, and positively *not* those of the makers on them. Perhaps blends might be named. However I would add that no wines under one year old should be tasted for the purpose of placing. Since it is a noted fact that the best experts cannot distinguish between a premier cru and a troisieme under one year old, or say between a Chateau Margeau and a St. Estéphe, and only in its second and third years does such a cru bring forth its full glory, and take its seat unapproachably apart.

JOHN A. STEWART.

HOW TO GET A BOOM.

[St. Helena Star.]

We, that is citizens old and young, who have the interest of our county generally and of our district particularly, at heart, meet on the street day after day and invariably the depressed condition of business is the topic of our conversation. We look with just a shade of envy on the prosperity of the southern counties and long to participate in it. Why stand we here all the day idle?" We have all the elements necessary to a boom. No county has superior. A practically unlimited field for the production of the grape surrounds us, and affords us exceptional advantages. The boom can only be induced by an improvement in wine prices—provided we do not allow ourselves to be "improved" out of the advance by the wine brokers and middlemen. To realize that improvement let a million or more gallons of the best Napa Valley wine *of the vintage of* '86 be gathered under one roof and one management. Hold it by helping each other tide over any temporary squeeze, and *use printer's ink* just as Los Angeles did. Let the world know what we have got. Then we will not have to talk about Los Angeles and San Diego.

Think of it! Act upon it! Operate and co-operate! A million gallons of '86 wine in and around St. Helena whose small vineyardists even, have an interest in it. Talk is cheap and such as we have been indulging in for the last year is a delusion. Pull together for the common good, and uncommon good will result. Organize! Everything is at sixes and sevens now and the city wolf fattens on country sheep as he picks them out singly. Let's put ourselves in such shape that "Napa Valley" branded on a cask will mean something all over the world.

AN EASTERN FRAUD.

The following telegram, that appeared in the daily papers, speaks for itself and shows the extent to which the fair name of California is being used in the East for foul frauds:

COLUMBUS (O.), July I.—All of the drug stores and fountains in this city have displayed and have been selling during the warm season what purported to be pure California orange cider. It has been a favorite drink and attracted the attention of the State Food and Dairy Commissioner. A large number of communications came to his office, making inquiry as to the healthfulness of the article, which is bottled and attractively labled. To-day he concluded to answer all these inquiries. He states that he visited a manufactory in this city and purchased a bottle of the orange cider. The sample was submitted to the State Chemist who pronounced it wholly artificial. The commissioner says it is made of acids, sugar and water. The total cost for manufacturing is 17 cents per gallon or 3¼ cents per bottle, sold in the markets at 50 cents.

The alleged cider has grown to be quite an industry and has been sent from here by carloads to all parts of the country and the trade furnished here in a general way. The bottlers here claim that they receive it in barrels from the Pacific Coast. The matter will be laid before the Grand Jury, under a statute regarding adulteration.

A TRIAL PROVES ITS EFFICACY.

The unostentatious manner in which the Carbolic Smoke Ball Company established itself in San Francisco, and placed its remedy before the public, predisposes one in its favor, because it shows that the company has full confidence in the intrinsic merits of the Smoke Ball. This company took offices in a central part of the city—corner of Market and Kearny Streets—put out neat and attractive signs, and then announced to the public, through the press, just what it was prepared to do. The advertisements did not ask people to invest their money in blind faith, but offered free tests to all who suffered from the diseases for which the Smoke Ball was a remedy. The success which attended the trials of the article was perfectly phenomenal. Crowds of persons afflicted with colds, catarrh, etc., visited the establishment and found instantaneous relief, which repeated applications made permanent. The ordinary methods of quack nostrum vendors were avoided by the Smoke Ball Company. Certificates from mythical persons living in far away States were not put forth, but in their place the testimonials of persons living right here in San Francisco, and who have been relieved were published for the benefit of those who might be skeptical. The consequence is that about seven thousand Carbolic Smoke Balls and Debellators have been sold, and the efficacy of the remedy is now a household word in this city. The same results, it may be added, have followed in every place where the company have established an office.—*S. F. News Letter.*

THE LARGEST RAISIN VINEYARD.

[Fresno Republican.]

The Paige and White vineyard is the largest enterprise in raisin-culture. It is to be a vineyard of 640 acres, and is located three miles southeast of this city. The proprietors, Timothy Paige and T. C. White, are well known to many of our readers. Mr. Paige is one of the largest land-owners in California, and Mr. White is one of the proprietors of the raisin vineyard, and has made a specialty from the first of producing fine fruit, which has done so much to advertise the capabilities of Fresno for raisin production. It will be remembered that Mr. White's raisins have taken the first premium for two successive years, and this year were awarded a special gold medal. Mr. White is to have the management of the new vineyard, and if he succeeds in making this great vineyard as complete a success as he has the raisin vineyard, it will indeed become a magnificent property. The entire 640 acres consists of the very finst soil, a medium between the dark red and the white soil. It is bounded on the east by a 60-foot canal and on the west by the Southern Pacific Railroad. It will be surveyed and planted in checks 216 feet square, with a road around each check 18 feet wide. Two roads will run through the centre each way, 50 feet wide. The vines will be planted 12x6 feet, and it will require 340,225 vines to plant the vineyard. The total expenditure up to the time the vineyard will come into bearing is estimated at about $150,000.

WM. T. COLEMAN & CO.

SHIPPING AND COMMISSION MERCHANTS.

SAN FRANCISCO OFFICE:
MARKET AND MAIN STREETS.

NEW YORK OFFICE:
NO. 71 HUDSON STREET.

—AGENCIES AT—

91 MICHICAN AVENUE, CHICAGO, ILL.
FLAVEL WAREHOUSE, ASTORIA, OR.
NO. 75 NORTH SPRING ST., LOS ANGELES, CAL.
54 DRURY BUILDINGS, LIVERPOOL.
NO. 4 BISHOPSGATE STREET, Within E. C., LONDON.

Sole and Exclusive Agents for following Brands of Salmon:

COLUMBIA RIVER.

Booth & Co, Black Diamond, Coleman Flag, McGowan Bros' "Trap" Brand, Fisherman's Pkg Co, Aberdeen Pkg Co, White Star Pkg Co, Jas. Williams & Co, Thistle Pkg Co, Columbia Canning Co, McGowan & Sons' "Keystone" brand, Seaside Pkg Co, J. W. Hume "Autograph" brand.

OUTSIDE RIVERS.

WACHUSETTS PKG CO,
"SILVERSIDE" BRAND,
BATH CANNING CO,
CARDINER PKG CO,
HERA PKG CO,
"TOMAHAWK" BRAND,
SUNNYSIDE PKG CO.

FRASER RIVER.

BRITISH AMERICAN PACKING CO.,
BRITISH COLUMBIA PACKING CO.,
ENGLISH & COMPANY.

SKEENA RIVER.

BRITISH AMERICAN PACKING COMPANY

SACRAMENTO RIVER.

COURTLAND PACKING CO., JONES & ANDERSON.

We also offer For Sale of Other Columbia, Sacramento and Fraser River Salmon:

Geo. W. Hume's "Flag" brand,
Hapgood & Co.,
I X L,
Pillar Rock Pkg Co.,
Geo. T. Meyers,
Ocean Canning Co.
Badolett & Co., (Flats),
Washington Pkg Co's "Favorite" Brand,
"Epicure" brand.
Pacific Union Pkg Co.,
Cutting Pkg Co's "Cocktail" (Flats),
A. Lusk & Co's pack,
"Mermaid" brand,
Scandinavian Pkg Co.,
West Coast Pkg Co.,
Warren & Co.,
"Carquinez" brand;
Point Adams,
Wadham's Fraser River.

ALASKA FISH.

Karluk Pkg Co., "Challenge" brand, Arctic Pkg Co., Arctic Pkg Co's "King" Salmon.

We also have the "O & O" brand, an outside river fish, and many other brands, that can be had on application.

WE ARE SOLE AGENTS FOR THE CELEBRATED

Golden Gate Packing Co, "Black Diamond" brand of fruits, Barbour & McMurtry's fruits in glass, Coleman's "Flag" brand of fruit, San Lorenzo Pkg Co, Riverside Fruit Co, Colton Cannery, J. Lusk Canning Co, San Mateo Pkg Co, Sierra Madre Packing Co, Santa Clara Packing Co

Our lines of Canned Fruits and Canned Salmon are incomparable, and we will make prices F.O.B. or C.I.F. for Great Britain, Australia and the Colonies.

OUR NATIVE WINE SHIPMENTS BY SEA.

PER P. M. S. S. CO'S STEAMER SAN JUAN, JUNE 23d, 1887.

TO NEW YORK.

MARKS.	SHIPPERS.	PACKAGES AND CONTENTS.	GALLONS	VALUE
K & F	Kohler & Frehling	36 casks Wine	5,703	$3,140
"	"	1 barrel Wine		
A V & Co	C Schilling & Co	150 barrels Wine	7,070	3,180
L P	Leonormand Bros	5 barrels Wine	251	75
F B	"	2 barrels Wine	101	68
"	"	1 half barrel Wine	27	
H W & Co	"	25 barrels Wine	1,250	375
B B	"	5 barrels Wine	250	75
"	"	1 barrel Brandy	48	78
E M	"	12 barrels Wine	604	206
"	"	10 barrels Wine	506	152
G F	Williams, Dimond & Co	1 barrel Wine	48	26
Total amount of Wine			15,811	7,297
Total amount of Brandy			48	78

TO CENTRAL AMERICA.

V & ~, San Jose de Guat.	Cabrera, Roma & Co	15 cases Wine		$60

TO YOKOHAMA—PER O S. S. CO'S STEAMER BELGIC, JUNE, 27, 1887.

J C & Co, Yoko	Getz Bros & Co	2 cases Brandy		$13
L io diamond Co, Yoke	S Mayers	10 casks wine	609	213
"	"	7 barrels Whiskey	281	564
G W L & Co, Nag	L T Snow	4 barrels Claret	200	105
R L & Bro, Yoke	B Dreyfus & Co	5 barrels Wine	243	100
Total amount of Brandy, 2 cases and				13
Total amount of Wine			1,052	418
Total amount of Whiskey			281	564

TO NEW YORK—PER P. M. S. S. CO'S STEAMER SAN JOSE, JULY 1, 1887.

G A F	Kohler & Van Bergen	52 barrels Wine	2,589	$2,589
F S	"	5 barrels Wine	246	246
C V	"	5 barrels Wine	251	251
A C	C Carpy & Co	7 barrels Wine	350	120
C in diamond	"	60 barrels Wine	2,968	900
F B & S	"	15 barrels Wine	740	250
A C	"	25 barrels Wine	1,225	350
"	"	1 half-barrel Brandy	25	50
J C	"	10 barrels Wine	490	150
L C	"	12 barrels Wine	600	200
D T	"	3 barrels Wine	150	50
"	"	1 half-barrel Brandy	25	40
E P B	Lenormand Bros	10 barrels Wine	501	150
C S	"	5 barrels Wine	253	76
A L	"	6 barrels Wine	302	127
A B	"	10 barrels Wine	504	189
G R	"	5 barrels Wine	251	96
N M	C Schilling & Co	6 octaves Wine	164	120
G T	Lachman & Jacobi	10 barrels Wine	505	153
J B in diamond	"	25 barrels Wine	1,272	450
E L	"	15 barrels Wine	762	215
P L	"	5 barrels Wine	255	143
F A	"	25 barrels Wine	1,274	401
J S	"	15 barrels Wine	763	229
G	J Gundlach & Co	100 barrels Wine	4,897	1,780
"	"	2 half barrels Wine	54	54
"	"	5 half barrels Brandy	125	281
H R S, Williams	Williams, Dimond & Co	8 cases Wine		28
E S in diamond	"	4 barrels Brandy	169	332
Total amount of Wine, 8 cases and			21,366	9,317
Total amount of Brandy			341	703

TO CENTRAL AMERICA.

B & Co, La Libertad	L F Haas	2 barrels Whiskey	83	$125
W C C, Puntas Arenas	Wo Kee & Co	2 half barrels Wine	52	52
D Z & Co, Puntas Arenas	Montealegre & Co	5 packages Wine	50	50
R A, Puntas Arenas	"	2 kegs Wine	30	30
L & A S, Champerier	McCarthy Bros. & Co	8 barrels Wine	325	80
A F, Champerica	"	20 cases Wine	100	70
F P, Champerica	Urruela & Urioste	4 kegs Wine	80	80
J S, Puntas Arenas	"	4 kegs Wine	40	30
J D, Puntas Arenas	"	4 kegs Wine	80	60
A J, La Libertad	"	1 barrel Wine	33	33
A M, La Libertad	"	6 barrels Wine	201	199
A G D, La Libertad	"	3 kegs Wine	30	30
"	"	1 keg Whiskey	10	30
B & G, La Libertad	John T Wright	4 packages Whiskey		132
S & Co, San Jose de Guat	Schwartz Bros	4 cases Whiskey		62
"	"	3 half barrels Wine	60	48
S & S, Champerica	"	40 cases Wine		230
M M, La Libertad	B Dreyfus & Co	3 half barrels Wine	81	100
J G G, San Jose de Guat	E de Sabla & Co	20 cases Wine		80
De F, San Jose de Guat	"	10 cases Wine		35
S B, San Jose de Guat	"	20 cases Wine		70
F M M, San Jose de Guat	"	9 cases Wine		35
Total amount of Wine, 123 cases and			1,162	1,312
Total amount of Whiskey, 8 cases and			93	349

TO PANAMA.

M M, La Libertad	B Dreyfus & Co	3 half barrels Wine	81	$100

TO ENGLAND.

D J D, London	Arpad Haraszthy & Co	4 casks Wine	243	$110
"	"	2 half barrels Wine	50	32
Total amount of Wine			293	142

TO MEXICO

I M, Acapulco	J O Meyerink & Co	1 barrel Wine	35	$35
A G & Co, Acapulco	"	2 half casks Wine	54	23
T E C, Mazatlan	Williams, Dimond & Co	4 barrels Wine	109	143
H C, Mazatlan	"	1 barrel Claret	65	41
Total amount of Wine			344	242

MISCELLANEOUS SHIPMENTS.

DESTINATION.	VESSEL	RIG.	GALLONS.	VALUE.
Apia	Golden Fleece	Schooner	188	$150
Victoria	Geo W Elder	Steamer	405	400
Mangarera	Nautilus	Brig	2' 0	120
Victoria	Mexico	Steamer	343	221
Honolulu	Alameda	Steamer	245	210
Aukland	Alameda	Steamer	47	33
Tahiti	Tropic Bird	Barkentine	615	272
Total			2,043	$1,824

Total shipments by Panama steamers	39,385 gallons	$18,410
Total Miscellaneous shipments	3,095 "	1,824
Grand totals	42,480	$20,234

WINE EXPERTS.

[The Western Broker.]

Many persons have smiled over the story of the young fellow, says the *New York Star*, who rushed into Delmonico's and ordered a bottle of champagne, adding, "and mind waitah, let it be old." Yet of the average man who has heard this story told, which one could really tell good wine from bad, young wine from old, save as he reads its description on the carte-des-vins, and trusting more or less to the restaurateur or friend with whom he dined. At least one bon vivant can recollect going without ceremony into the Brevoort house with three friends one morning, some years ago, when it was under the management of the elder Waite, and ordering a breakfast which cost $72. Thirty-four dollars of this amount was paid for a bottle each of Sternberger cabinet and Johannisberger, which one of the party pronounced very poor. And yet, comparatively, these wines were worth all that was charged for them, and frequently can not be had for love or money.

But who knows these things and how are they known?

The men in New York acquainted with the value of wines and their gradings are not numerous. They differ from their brethren who taste teas by living to a good old age and remaining hale and hearly. Some of these experts possess an insight into the mysteries of wines and wine-making which would be marvelous by the uninitiated, as, for instance, in many cases, being able to tell from the odor alone, the name, age, and value of a wine.

It is doubtful if any of them could thus identify Pramnian wine of Homer or that other, the product of the Thracian Ismarus, which Maron presented to Ulysses. Perhaps they could tell more about the later Greek wines which come from Lesbos, Tharos, Chios. Eos. Cypre s, and others of the Cyclades, or the wines of France and Spain. It is a curious fact that with scarcely an exception no one of the localities famous for its wine, say in the time of Pliny, now yields a vintage of merit, while, on the contrary, whole countries not then known have become subject to the cultivation of the grape.

These changes are constantly going on, and the wine judges of the past would have great difficulty in deciding on the merits of many wines of to-day, while the judges of to-day—where will they be when the wines of the islands of the Atlantic, the United States, Mexico, South America and Australia reach perfection? But the abilities of the wine-tasters of this age should not be regarded with contempt, for of the wines of France alone there are over fifteen hundred kinds and qualities, and some of these are said to surpass even the most celebrated of ancient times.

The preparation of wine in its origin is generally understood. In some cases the peasants gather the grapes and press them into skins and carry them to market, where they are emptied into casks. In others the grapes are pressed directly into the casks for use. If for export, it is placed on board ship, and on arrival in New York or London is stored in a bonded warehouse. Then comes the interesting period of tasting The sampler starts from the merchant's office bearing an oblong basket divided into little squares just large enough to hold a bottle. He also has a rubber tube or one of tin, with which he draws out the wine from its receptacle. Then back to the store again, where are assembled such members of the firm as desire to test their new purchase. Small pear-shaped glasses of great fineness are placed upon a circular revolving table, and the task begins. Each sample is taken up, examined critically by the light and color, its bouquet inhaled, and finally, after all, a slight, very slight drop is placed on the tongue, but not swallowed. No, indeed, that would never do. If that were the practice wine-tasters would not live so long.

Wine in bottle, which comes to market, is rarely changed. If the merchant knows that label on the bottle is genuine that is enough. And with the largest importers the adulteration or mixing of wine is unknown, but after it is sold and passed into the hands of a jobber the trouble begins. Sherry wine is the most frequently mixed, or, as it is called, "blended," generally with wine of an inferior grade, but the same feature characterizes many other wines. Even champagnes are made up with great doses of soda, etc., until an astonishing compound, not unlike the real article, is produced.

After the samples have all been thoroughly tested the bottles are recorked and labeled with small white tabs, and their description is entered in a book. The opinion of the expert is also there, and can be referred to at any time.

Famous wine cellars have been known principally abroad, but one of the best known in this country was that of Broker Starin. William A. Starin was a connoisseur in sherries. During a long and busy life he devoted himself to accumulating a collection of this wine of different degrees and ages, which it would be difficult to duplicate. No cargo arrived in port without samples being conveyed to his cellars, and no sale of private stock was made without Starin's purchasing such lots as he desired. Some years ago he sold a portion of his collection at fabulous prices. Crowds flocked to the sale from everywhere, and club men vied with other club men in their their efforts to obtain some of Starin's sherry. Twelve dollars a bottle was frequently bid and not enough could be had at that price to satisfy every-one.

Philip Brasher was for many years at the head of the wine trade in New York, and his offices at No. 100 Wall Street were the resort of those who wished to obtain a thorough knowledge of the market. It is related of him that once, as a test of his ability, he was blindfolded and fifteen samples of as many different sherries, graded from the lowest to the highest, were placed before him. Beginning with the lowest grade, he successfully took each one in turn and located them all except the last. "What is that?" he finally asked. It was rainwater.

A VINE-GROWING CONTRAST.

[Santa Rosa Republican]

California grape growers and wine makers may be interested in learning something concerning their vocation as it is practiced elsewhere, under an entirely different system, and a magazine article of a recent date furnishes some interesting facts upon the subject as it is found in Virginia. A hundred years ago Thomas Jefferson had his attention attracted by the similarity of the red hillside soil found at Monticello, hisr country seat, to that which was seen in some of the best wine growing districts of France. He accordingly imported some French vineyardists, and at the same time made what turned out to be the fatal mistake of importing French varieties of grapes. These proved unadapted to the Virginia climate and the experiment ended in disastrous failure. But of late years the effort has been revived and it has been found that native varieties thrive remarkably on those same red hills. Those which are the most popular are the Cynthias, Concord, Delaware, Hartford, Prolific, Ives' Seedling, Herbemont, Alvey, Iona, Diana, Isabella, Clinton, Isabella, Catawba and Norton's Virginia. Not one of these varieties is known here as anything bnt a table grape, and none of them are cultivated to any extent. These are all red wine varieties, and it is only in them that the section noted is found to excel. Of them all Norton's Virginia is by far the most favored by growers. The favorite plan of cultivation and procedure is in small vineyards, the proprietors of which gather and sell their crops to those who make a business of wine making. And here one great difference is met with as between the Virginia and the California grape grower. The latter receives from $40 to $80 a ton at the cellar for his fruit, while the former—well, it is hardly worth while quoting prices here. Those most interested have the facts quite deeply impressed upon their memory.

In prices of land, too, there is a marked difference. In Virginia good grape soil costs no more than $10 to $25 an acre, while in California hardly any can be had inside the highest figure except in the most remote localities. The cost of cultivation, too, affords a marked contrast. In Virginia it is given as follows:

Cost of land, per acre	$15 00
Cost of plants	50 00
Preparation of land	9 00
Cultivation first year	8 00
Cultivation second year	12 00
Cultivation third year	12 00
Cost of trellis	40 00
Total cost end of third year	$146 00

The receipts for the third year are as follows:

2750 lbs. grapes at 4 cents	$110 00
Or 183 gals. of wine at 75 cents	137 25

These figures certainly serve to accentuate the market contrast in the industry as between the two widely separated States. The California grape grower who had to expend $131 an acre, outside of the price of land, to bring a vineyard to maturity, would go out of the business before he went into it.

The $50 paid for plants and the $40 for trellis look to him like a useless waste. On the other hand, were the California assured of 4 cents a pound for his grapes, or such a remarkable figure as 75 cents a gallon for the wine fresh from the press, he might possibly content himself with the high ratio of seemingly needless expense.

All who have gone into the business in Virginia, however, are said to be doing well, and light wines are rapidly taking the place of the fiery corn juice. Evidently the home demand consumes the entire produce since it would not be possible to secure such prices as those quoted in the markets of the large cities for new wine.

VARIETY AND EXCELLENCE OF OUR NATIVE WINES.

[American Analyst.]

From the old days when the semitic husbandman filled the skins of sheep and goats with the juice of the Judean grape, the use of wine has steadily grown. To-day wine culture is world-wide. The vineyards of California, New South Wales, Brazil, and Cape of Good Hope, are the counterparts of those on the Rhine and Moselle in Champagne and Burgundy, and all of the still more ancient ones of Lombardy, Samnois, and Chios. Wine has become an all important fact, and wine-making both a science and an art.

The nomenclature of wines afford a fertile field of study to a thoughtful reader. The oldest names are those of districts rather than of places. Of this class Malaga, Cyprus, Maderia, Tuscany, China and Falernian are instances. These names, though usually restricted to-day to groups of similar vintage, were originally applied to all the vines grown in a certain district, irrespective of quality, flavor or color. The immense development of vineyards by the mediæval church is clearly pointed out in the religious flavor of the names of many wines. Lachrymæ Christi (Tears of Christ); Liebfrauenmilch (Milk of the Virgin); Santa Trinidade (Holy Trinity); Santa Croce (Holy Cross); Santa Maria, Santa Anna and Hermitage, bring up pictures of busy monks cultivating the vines around the numberless monasteries of Europe.

The town or estate where a new vintage is produced often gives the latter its distinctive title. Illustrations are found in Beaune, Binger, Scharlachsberger, Assmanshaeuser, Chateau Y'quem, Chateau Lafitte, and Chateau Margaux; corresponding terms in the American Vernacular would be Rheims, Hammondsport, Dunderberg Pleasant Valley, Sunnyside and Severne. Frequently local names become corrupted. Thus, for instance, Oporto wine changes into port and Xeres wine into sherry. Of late years the names of manufacturers have been applied to their goods, especially to champagnes. Mumm, Heidsieck, Roderer, Pommery, and Moet & Chandon have thus been absorbed in their specific brands. Later still, trade marks have been applied to wines. Instances of this process are Carte Blanche Gold Seal, Hungarian, Crown, and Great Western. In the short development of the wine industry in the United States, the same tendencies have already began to appear. Names from districts are illustrated by New York, Ohio Missouri and California wines; local names by Kelly Island, Crooked Lake, Hammondsport and Santa Barbara. Trade marks are illustrated by Great Western, Carte Blanche, H. B. K., Eclipse and Occidental. One American feature is worthy of notice, viz: the use of the name of the grape for the wine it produces. In a late price list are the following: Catawba, Delaware, Concord, Iona, Scuppernong, Ives Seedling, Tokay, Muscat, Muscatel, Hamburg. The new departure promises well. In Europe attention has been almost monopolized by wine making. Each wine grower has contented himself with the vines of his own neighborhood, and has seldom experimented with strange and foreign growths. The immense work already done in the United in States experimenting and crossing, bids fair to produce, ere many years have gone by, a large number of absolutely new kinds of wine.

THE VINEYARD AND CELLAR.

[Town and Country Journal.]

Stiff clay soils such aa we find in many of the coast districts may, in some instances, require hand trenching; but in a wet season as this good deep ploughing and running a subsoil plough in the same furrows should trench deep enough for all purposes. In preparing the soil, whether by hand trenching or ploughing, care should be taken not to turn up a worthless barren subsoil and turn down a fertile soil. In gritty subsoil, whether of sand or gravel, which abounds in many portions of the colony, trenching for vine culture is not at all necessary. A good deep ploughing, cross ploughing, and thorough pulverisation are all that are necessary in such soils. Again, on the loamy alluvial banks of rivers, such as the Murray, the Hunter and the Clarence, trenching for vine planting is simply a waste of labor. Drainages should be thoroughly attended to in vineyards, except in such localities as abound in gravelly, gritty, sandy, subsoils, which in themselves afford a thorough system of natural drainage. Had there been less trenching and more draining in our vineyards, many of them would have been in a healthier state to-day. Open drains are not sufficient The drains should not be more than 20 feet apart, and should be tile or stone drains, sunk in the ground at least 2½ feet or 3 feet deep. In stiff clay soils a good dressing of sand or cinders would do much good, to help to make the soil more porous and friable, and amenable to sunlight and air. At the end of the month cutting the early varieties may be begun. It is much cheaper in the end to plant out rooted vines than cuttings. When the vines are pruned the earth should be cleared from around the stem, suckers carefully removed, the trunk well scraped down, the scrapings caught on a sack, removed and burned, and the trunk of the vine washed with a solution of lime, sulphur and cowdung. If this method is adopted, insect pests will not be so numerous in the summer. In vineyards, where some of the numerous root insects exist, the earth should be dug away from the roots of the vine, and allowed to remain open to the influence of the atmosphere for a time. All decayed roots should be removed, the trunk washed with the solution, mentioned above, sand or rich loam filled in around the roots, and a fertilizer added back of all. Manure should never come into actual contact with the roots or trunk, but should first of all become a component part of the soil by which they are surrounded, when the rootlets will absorb the plant food from the soil without being injured by the caustic or alkaline action of the mineals which the manure contains.

In the cellar, rack off the lighter classes of wines. It is an open question whether red wines are not better left on the lees till July. Keep the cellar sweet and clean. Put buildings, fences, gates, roads, and ditches in order.

A VALUABLE INVENTION.

Mr. Shamp, with Simpson & Roberts, showed us a pattern for a grape picker which he is making for Mr. Schulte, engineer of the Keith Electric Light Works. Mr. Schulte has made the invention and procured a patent upon it and will probably receive a liberal reward for his ingenuity. The contrivance is so constructed that the grape stem is cut and held until the bunch is laid in the box, and it will be of great advantage to grape pickers.—*Santa Rosa Republican.*

HYGIENIC USE OF WINE.

[Vineyardist]

A recent writer strikes out boldly in the matter of wine drinking with the declaration that all nations have progressed most rapidly in civilization when they reached the daily use of sound wine, says the San Francisco *Alta*. We must cultivate wine drinking, not only as a substitute for the gross distilled liquors, frequently fiery and infernal, but as a hygienic agent, a promoter of health, an important adjunct to the daily diet. Of course this should not be done if such use or any use of wine is proved to be injurious to health or morals, for no industry has a right to flourish at the expense of either. This makes necessary any enlightening discussion, and gives value to all facts that can be found bearing upon this subject. The late Governor Allen, of Ohio, who reached an extreme old age, hale and stout, called wine "the old man's milk," and used it daily, as he insisted, with constant benefit. Much testimony of the same kind is of record, though a generalization cannot be based upon one case or a few cases.

The writer whom we have referred to takes the extreme of his side of the case, and claims that wine gives a certain stamp to the spirit of the people who make common use of it; that the pinnacle of civilization, among no matter what people, has always been reached when it made daily use of wine; that there are numerous physiological advantages in the use of wine; that it is a natural nutriment when it is sound, being neither sour, vinegary, bitter, sweet nor mealy, nor too strong in alcohol, nor too rich in ethers, that act upon the nerves. Such wine, he says, has stimulating qualities, which, if judiciously and therapeutically used, will raise the weakened energies of the sick, aids the convalescent and keeps the well in health. He admits, however, that if its use is abused, it will produce grave inflammatory derangements, fatal to the most hardened wine drinker.

He adds that grape wine is the safest and best form of stimulant, preferable to distillation, for it has less alcohol, and better than the fermentation of the juices of other fruits, because they abound in malic acid, which assaults the ailmentary coatings, while the grape furnishes tartaric acid and its compounds. Conscientious prohibitionists will antagonize all these claims, for they disbelieve in any beverage that contains alcohol. They teach, illustrate it with many examples to them satisfactory, that the use of malt and fermented liquors light in alcohol and rich in sub-acids, or in lupulin or carbonic acid gas, leads surely and shortly to a resort to the distilled liquors, high in alcohol and exhilarating ethers. Whisky carries 55 per cent. alcohol while a sound wine may be as low as 7 per cent. and beer down to 3 per cent. In fact the alcohol in wine and beer is simply the preservative, anticeptic agent, just as sugar is in canned fruit, and the salt, saltpetre and tannin and creosote of the smoke are in hams and bacon. What an enemy of drunkenness and debauchery should consider is the benefit of substituting for whisky these other liquors so much poorer in spirit. It is the testimony of observant travelers in wine countries that a drinker of distilled spirits there is as singular as an opium eater among us. He is shunned by men and pointed at by children. This testimony is backed by emigrants from those countries and it seems to negative the statement that the use of wine leads up to a craving for highly alcoholized and etherized liquors. Indeed some scout it as folly, and say that it would be as sensible to declare that eating biscuit leads to eating opium.

As the vintage of California develops and we learn to control the alcoholic abundance of our rich grapes, and so to produce wines with the minimum of spirit and the maximum of desirable elements, here will be a fine field to study the combat between wine and the American whiskey habit. Our people, long producing no tipple except highly alcoholic distillations, have been the world's champion rum guzzlers, as "rum" is used by the prohibitionist to typify all the distilled liquors. We have wanted something that would sting the palate and make the drunk come.

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The German Savings and Loan Society.

DIVIDEND NOTICE—THE GERMAN SAVings and Loan Society.—For the half year ending June 30, 1887, the Board of Directors of The German Savings and Loan Society has declared a dividend at the rate of four and thirty-two one-hundredths (4 32-100) per cent per annum on term deposits and three and sixty one-hundredths (3 60-100) per cent per annum on ordinary deposits, payable on and after the 1st day of July, 1887. By order.

GEO. LETTE, Secretary.

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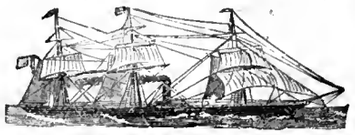

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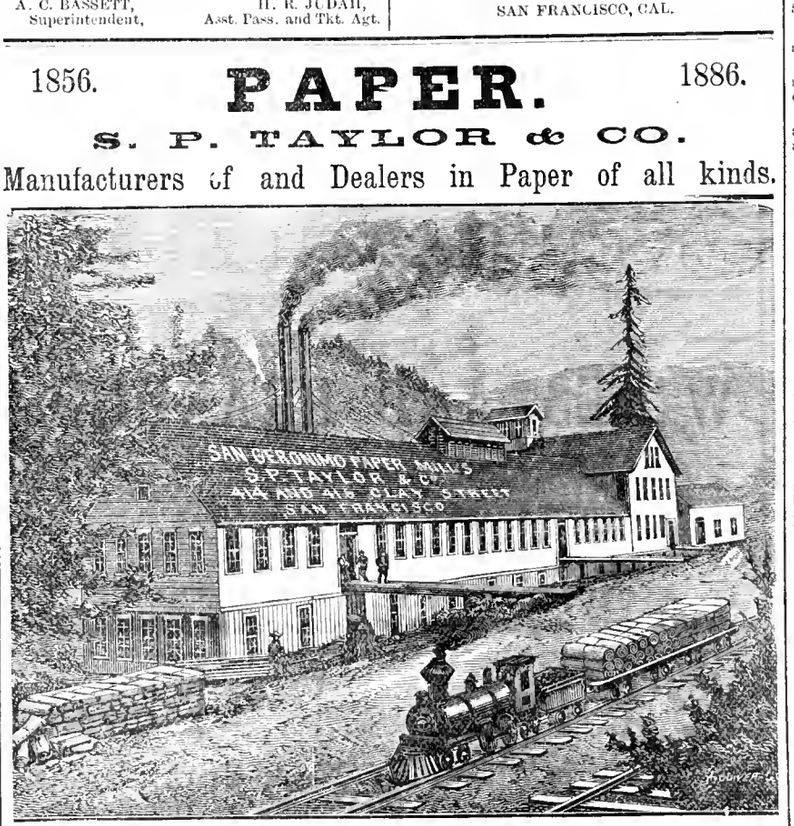

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VOL. XVIII, NO. 7. SAN FRANCISCO, JULY 22, 1887. PRICE 15 CENTS

LOWER CALIFORNIA.

Some Interesting Particulars of the Progress of Settlement.

As so many contradictory reports have appeared regarding the prospects, resources and development of Lower California, we addressed a communication to Mr. C. B. Turrill, who is well known to all the grape growers and wine makers of California, asking him to give us some reliable information as to the country in which he is now located.

The following is Mr. Turrill's reply:

SAN DIEGO, CAL., July 1st, 1887.

EDITOR MERCHANT:—I send you by this mail a copy of our map of Ensenada, and the price of lots. This will give you the information you required on this point.

There will be three towns located on the Bay of Todos Santos which is in many respects a counterpart of the Bay of Monterey. Ensenada located at the northern end occupies a similar position to Santa Cruz. Punta Banda which has just been laid out and situated at a point where the Hot Spring is indicated on the map occupies a position about the same as Monterey. Mid-way between these two at about ten miles from Ensenada, located picturesquely on the bluff of a mesa and overlooking on the one hand the broad Crescent bay, and on the other a large expanse of agricultural country the valley of the Maneadero, is San Carlos City. In my last Folder, entitled "Have a fine home," you will find a description of what this place will be. The entire intermediate country lying between Ensenada and Punta Banda will be directly tributary to each and all of the three cities. The land is productive, is easy watered, and a large portion of it does not require irrigation. This section of the country will in time all be built up and form by means of fine residence sites connecting links in the chain of homes along the entire stretch of the bay, and extending from the water on the one side to the picturesque and circling mountains on the other. This bay of Todos Santos resembles in many respects the Bay of Naples. As you stand at either end looking out across the expanse of water and over against the back ground of mountains, you behold a view of which you never tire. The climate is as near perfection as any climate can be and I can assure you that I know of no place on this coast where it is pleasanter to live and where a man who wishes to cultivate the soil will receive a better return in the quality and quantity of products, and where he can sell them to better advantage. It is a section which will be desirable to the interested producer and to the health of the pleasure seeker. Yesterday I had the pleasure of looking at a rough sketch of the front elevation of the new mammoth hotel that will be erected at Punta Banda. This building will accommodate nearly one thousand guests and is certainly one of the handsomest seaside hotels that I have ever seen. It will be rushed rapidly to completion in order to have it ready to accommodate the people coming during the fall and winter. It is one of those places that will be neither a summer nor a winter resort, but both. It can be occupied the full twelve months of the year; during the winter by those who are compelled to fly from a colder climate to seek a mild equable temperature where they can enjoy fine scenery, sea bathing, mineral springs, and all the numerous attractions that they crave; during the summer it will be frequented by those desiring to escape the excessive heat that pervades many sections of the country and especially those located in the interior of the continent.

From circulars I send you will see that lots in Ensenada are eighty-two by one hundred and sixty-four feet. The corner lots are of sufficient size owing to their location to allow of the building of three or four nice cottages on each lot. The influx of population creates a demand for such buildings and they will readily rent. Lying immediately outside of Ensenada the lands are divided into six and one-fourth acre tracts. One of these will make a nice home for any one and you well know of the beautiful homes of Southern California that have been made on similar tracts of land. Owing to the fertility of the soil and the genial climate, in a few years, this land can be made to yield a sufficient income to pay for the expenses of the home. Still farther out the land is divided into tracts of fifty acres. Under a high state of cultivation this makes a fine farm where a man may have his alfalfa patch and run a considerable dairy on this amount of land, or he may restrict his pasture to one portion of his possessions and devote the remainder to fruit.

I conceive by your question in regard to cost beyond actual purchase money that you desire to know the expense of clearing the land and preparing it for cultivation. This expense of clearing varies owing to the character of the vegetation now on the land from say $1.00 to $4.00 per acre. In many cases the brush that is cleared off will furnish sufficient wood to more than pay for the clearing. In other words, the expense is at a minimum. A great deal of the vegetation can be cleared off by fire and the larger roots taken out and the remainder removed by a plow. I do not believe that irrigation is necessary on but a very small portion of these lands. There are of course those who prefer to irrigate and for those who desire to engage in the luxury of irrigation there is an abundance of water which can be put on the land at a nominal expense owing to the fact that the mesas slope gradually and evenly from the foot of the mountains to the sea, and that the valley lands lie practically level.

As regards the probable after expenses this would depend simply on the erection of such buildings as you might elect and from the putting in of the crops and the raising of fruit, and these latter will not cost more than in the State of California where there are abundant statistics to show all expenses. The trees will yield as soon and will bear as abundant crops.

For those things that are raised there is a good home market and the time is not far distant when the Peninsula of Lower California will export not only to Mexico, but to other parts of the world from the abundance of her yield. At the present time, however, the best markets are right in Mexico. As you well know the tariff of Mexico is the strongest kind of a protective tariff, a tariff indeed so heavy on many things that it practically shuts them out of the country. Those things can be produced on Mexican soil and in Mexican territory; they can be raised on the Peninsula of Lower California, and they can be raised as cheaply as in any part of this State. The supply will create a demand as it has already done, and for a long time to come these productions will find their best market in Mexico. I will instance to you this: flour sells in Mexico at from $10 to $12 per barrel. Wheat can be grown in Lower California of as fine a grade as anywhere on this coast, and the flour can be made as cheaply and as easily. I have seen at prices with freight added. This you will see benefits the colonist in both ways and Ensenada flour being shipped to La Paz, Mexico, by the steamer "Newbern;" this was made at Ensenada from wheat grown in Lower California and sold at La Paz in competition with flour brought in from the United States. I have seen in the same day flour landed at Ensenada that was produced in California. The reason of this is that the producer at Ensenada is able to sell his flour for shipment to La Paz at high figures owing to the heavy duty. Colonists in Mexico have an exemption from duty on those things they require, therefore they can buy the flour for their own use and ship it into Ensenada at California it will explain to you why the flour is shipped from San Diego to Ensenada, and why it is shipped from Ensenada to La Paz and to other points.

In a very few weeks this company will be operating a line of steamers which will make regular trips from San Diego to San Jose de Guatemala. These steamers will stop at all the ports along the coast of Mexico, and by this means will open up the territory of Mexico as a field for the sale of those things raised in Lower California.

As regards the prospects for business in the near future outside of farming I will say that I consider this most excellent, especially regarding manufacturing. Mexico is rich in raw material. She has undeveloped and almost unlimited resources in this direction, and generally speaking nothing is manufactured within her territory. To those people who settle in Lower California this opens up a good field. Under the concessions to the International Company of Mexico manufacturers import their machinery for manufacturing and such raw material as they require free of duty and then can sell their productions as outlined above at all ports of Mexico, in competition with those things that are brought in from outside, and upon which heavy duties are paid.

The conditions are the same in the building up of all new towns. There are men who will go to them, and while every avenue of trade seems occupied, while every branch of industry is monopolized, and while to a casual observer there appears no way by which a man can make a living, they, with a little judgment, will select some branch of industry, some line of business which will be more remunerative to them than many which before has been tried. At

Ensenada there is now a saddlery shop where the other day I bought a saddle of home manufacture for at least two-thirds, if not one-half, what a similar saddle would have cost me in the United States. This shop is selling all it can make and is doing well. There are also other lines of business that have been tried and proven a success. Almost every trip the steamer makes some one goes down to look over the field for a new occupation and in a majority of cases he returns to inaugurate it.

Ensenada, as you understand, is our first town. It has now become pretty well settled up; the majority of our lots have been sold and the people have settled down to the routine of a busy active life. Other towns which we are laying out will offer similar advantages, and it will only be a few months before they will be paddling their own canoes. So the work will go on, both along the coast and in the interior as the railroads are laid out and built for it is only a question of a short time before the Peninsula will be served in all sections with railroads. These will open up the fine and rich interior valleys which in many respects are identical with the interior valleys of the State of California, excepting from the list the great valleys of the Sacramento and the San Joaquin. We have no large valley that is a counterpart of these in every respect. The interior valleys that trend parallel to the coast are more like the San Bernardino valley, or more like the country around Pasadena. The majority of the valleys, however, do not trend parallel to the coast but generally at right angles to it. These, by the means of canyon outlets into other valleys, open toward the sea or, on the east side, toward the Gulf, thus the temperature is modified and the rain fall increased, and you will find it to be a fact that in this Peninsula country there is a greater rain fall than there is in Southern California. The backbone mountain range is lofty and it is a condenser and accumulator of moisture which flows down in the form of streams some times sinking for a time, as in Southern California, then rising to flow on again either as streams or in the form of pools and lakes.

The country so far has been practically settled by Americans. There was a small Mexican population which, owing to the situation of the Peninsula and its isolation, has not, within many years, increased. The immigration has practically been from the United States and to a very large extent from this State. I am constantly in receipt of letters from people in California, especially the southern part of it, who have availed themselves of the great rush to this State and have sold their property and are now seeking a new territory to develop. My mail this morning brings me a letter from a gentleman who has occupied a very prominent position in the colonizing of a portion of this State. He tells me that there are at least one hundred families ready and anxious to move to Lower California and that in a short time he will visit the section and report to them. From this you will see not only the class of people but also the enterprise and industry that is going on to the Peninsula. Our immigration from the east promises to be very large. We have recently made a number of extensive sales for colonies from different parts of the Eastern States.

These people as a general rule are engaged in agricultural pursuits and some in manufacturing. As the Peninsula is very in rich minerals of almost all varieties considerable mining is now carried on and prospecters are going in all the time.

The purchasers have no interest in the company. They buy the land outright and it becomes their own individual property to do with as they see fit. From a pamphlet now in the hands of the printer, and which I will send you as soon as issued, you will be able to form an idea of the personel of the company and I think will gather the information you ask in regard to its operations. The International Company of Mexico was incorporated under the laws of the State of Connecticut by gentlemen who had carefully investigated the property which they purchased from the Mexican Government. One-third of the land which the company owns in Lower California was a grant made in consideration of the company's surveys; the remaining two-thirds was a direct purchase, this being of course government land. The company does not in any manner interfere with, nor do its interests conflict with, property owned by other parties having a clear title to their lands. There are of course some grants of land which were made on conditions, and these conditions not having been complied with the land of course lapsed back to the Mexican Government and from the Government came to the International Company. The company gives all purchasers a guarantee title and acts for the Mexican Government in the sale of its unoccupied lands. In addition to this the International Company has obtained from Mexico the right to build and operate steamship lines, for the construction and operation of railroads and telegraph lines, the building of wharves, etc. By means of this it will render the land which it sells of constant increasing value to the purchasers.

I have already told you that when the land is sold it becomes the individual property of the purchaser to be used as he may elect, therefore any improvements will be at his own expense and for his own convenience and profit.

While it is the policy of the company as far as possible to sell its lands to actual settlers and thus more rapidly build up the country, it can not of course compell any purchaser to locate on his lands or erect buildings; should he desire to hold the land it is his option to do so, he of course being his own best judge whether the land will be more valuable to him by holding it unimproved, or whether he can sell it for more money if he so elects after having improved it.

I think I have answered fully the questions which you have put to me and I shall be glad to respond to any others which may suggest themselves to you.

In conclusion I desire to say that my knowledge of the resources and of the advantages of the State of California, and the great emigration that has set this way, causes me to believe that in the Peninsula of Lower California is found a section possessing all the advantages that one may enjoy in California. Owing to its position, owing also to the progressive spirit that has taken a firm foothold in the administration of Mexican affairs, owing to the benefits that may be derived by operating under Mexican rule, owing to all these and many more advantages, the Peninsula of Lower California is destined to be one of the most important fields for settlement, for enterprise and industry on the continent. The world is now looking toward the Pacific slope, and the tide of emigration can set no farther west, and its northern boundary will be limited by conditions of climate. It must then deflect to the southward. Progress will not be checked until that timeg shall come when it has coursed through Mexico, across Central America, on downward to the Republics and Empires of South America. These are the new fields for settlement; these are the promising sites where new homes will be built. Mexico has quite long sat and seen the march of improvement go by, and she will sit still no longer. Her people are awakening to the fact that they have been living in yesterdays and they have now determined that they want to be found in the van of to-day. Her country is rich in all manner of resources and with but a few exceptions her climate is unexcelled. She will not desire to be absorbed by some other power, but she welcomes gladly the advance of a friendly power that will come and help her people elevate themselves, help her develop those resources which nature has so bountifully supplied, help her take that stand in the congress of nations to which she is entitled and from which owing to the character of the conquest she has been deprived. I am every day more and more impressed with this idea as I see the experiment being tried in Lower California. There I find the scattered Mexican population imbued with the ideas of progress that have been brought to them by the Americans who have settled around them. They are improving their orchards, they are beautifying their homes, they are changing their houses from the old historic adobes to the modern wood structure. Of course in the thickly settled portions of Mexico lying between the Gulf of California and the Gulf of Mexico it will require a longer time to educate the people to the ideas of American progress, but it will not take long for them to hear how their brethren in Lower California are prospering, nor to determine that they wish to do likewise. Therefore I should be glad to have you investigate the Peninsula of Lower California, and on the ground to study the problems of Mexico's future development and then, I am confident, that you will be fully convinced of the great future in store for the inhabitants of the country and for those who come into the country, becoming if they prefer citizens of the Republic of Mexico, or colonists retaining their allegiance to their own country but enjoying those advantages which a most liberal colonization act passed by the Mexican Congress and approved by the President, promulgating the law of progress of the Republic of the United Mexican States.

Very respectfully,
CHAS. B. TURRILL,
Asst. Land Com.

Dr. Deville, of the Agricultural School of Ecully (Lyons), has made wine from Vine-leaves, which he asserts to be nice tasting, by fermenting a solution of crystalized sugar, after immersing the leaves in that solution.

A good three-year-old raisin vineyard, under favorable circumstances, should yield an average of twenty pounds per vine, or over six tons per acre. The yield of grapes when made into raisins would be a little over two tons per acre, worth about $120 per ton. Wine grapes are not as profitable as raisin grapes for several reasons. They yield heavier crops per acre, but the price rules much lower, and they have to be disposed of in a fresh state to wineries or to dealers.—*Fresno Republican.*

A VALUABLE DISCOVERY.

[S. F. Chronicle.]

Now that the season for drying fruit is again in full blast, a problem which has always been encountered presents itself for solution. This is as to the production of light-colored fruit. Every one knows that given two samples of the same fruit, picked from the same tree, and let one be dark colored after drying and the other light, the latter will sell for two or three times as much as the former. This is particularly true of fruit dried in the sun, and every one who has had any experience in the matter knows how difficult it is to produce a merchantable article in this manner. In order to obviate the difficulty and produce dried fruit of a uniform color the use of sulphur fumes has been resorted to. This has the desired effect, but at the same time there is so much difference of opinion as to the amount of sulphur to be used; the method of its application and the length of time for which the exposure should be made, that the results have, as a rule, been far from desirable. Efforts have been directed toward finding some other method of producing light-colored fruit, and if some samples received at this office from Messrs. Bachelder & Coates of Napa are a criterion from which to judge, then the solution of the problem seems to have been reached. This fruit was preserved in what is called a steam evaporator. This is somewhat similar to many other vaporators in use, with the exception that water is placed in a pan or steam generator, and the steam passes up the conducting tubes successfully from one tray to another, each tray having a steam chamber, the bottom being double. The steam heats the trays or pans to 212 degrees, and each one alike, and as it cannot go beyond this, it is impossible to injure the fruit. The trays are not inclosed, and bleaching is necessary. Connected with the mouth, or feed, is a whistle, so arranged that when the generstor needs water the operator will be notified by a continual call from the whistle. When this evaporator is used in a light room the fruit produced is dark-colored, but when the simple precaution is taken of inclosing the machine in a shed with doors and windows so arranged that only sufficient light is admitted to permit of work being carried on, the product is as light-colored as the most fastidious could desire, and is of far better quality than any that has been artificially bleached. If all that is claimed for this process proves true when it is practiced on an extended scale, then the days of the sulphur bath are at an end, and the fruit-growers of California will have secured a boon of inestimable value.

The report of the Fourth Annual State Viticultural Convention is now published and ready for delivery. Single copies are one dollar each, but special rates can be obtained for five copies or more.

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A VIGNERON'S VISIT TO EUROPE.

[Melbourne Argus.]

The Australian Wine Association of Victoria received a progress report from Mr. H. De Castella, of St. Hubert's, who, during his holiday in Europe, has been visiting the viticultural colleges of Conegliano and Breschia. Mr. De Castella wrote:

Our friend Signor Branchi, the Consul of Italy in Melbourne, had given me a letter of introduction to the director of the Viticultural School at Conegliano. I handed it to Professor Bartolomes Moreschi, an inspector of the department of Agriculture of Italy, then at the head of the school, which is undergoing some change of organization. This very accomplished gentleman received me very cordially, and took me all over the establishment. There are at Conegliano two different viticultural schools—one a theoretical one only, for educated young men; the other a practical one, for young workmen. The most important, the superior school, is considered the first of the kind in Italy. A viticultural education is imparted to about sixty pupils, amongst whom are some sons of noble and wealthy landed proprietors in Italy, snd also a few foreigners, attracted by the reputation of the school. The teaching *personnel* of the school is composed of ten professors. At the time I visited the school most of the young men were in the laboratory, busy with chemical analysis of wines. Each had what seemed to me a very extensive supply of instruments belonging to the school, which testified of the solicitude of the state for that institution. The very complete laboratory under charge of the professors, the collection of plates representing the various kinds of vines, and the diseases of the vine, in the rooms where botany is taught, all would have been most interesting to study to one interested in our Dookie Agricultural Farm. To me the principal attraction was the inferior school, the practical one, where young sons of peasants and small farmers are formed for all the cultivation of the country, principally the vine, so that when they leave it they are fit to occupy the positions of overseers and foremen in the very establishments where the students of the superior school can occupy the positions of directors and managers. Being convinced that we will want such workmen schools in Victoria, now that we have in the Dookie school an institution corresponding to the superior school at Conegliano. I asked Professor Moreschi to take me to the inferior school, a little distance away from the first, but also under his supervision. This school is newly built, and stands in the midst of about eighty acres, mostly meadows, small patches of vines here and there occupying the rising ground, their largest vineyard being established on the hill behind the superior school. Altogether, the extent of vineyard belonging to both does not exceed fifteen acres, even the inferior school being specially experimental—1st, of cultivation of various sorts; 2nd, of the various diseases of the vine and of the treatment of these diseases. Here, for the first time, I ascertained that the black spot we have in Victoria, which in certain seasons causes us much alarm, is no other but the *anthachnose* which is now found more or less everywhere in France and in Italy. There it was, absolutely the same as we see it on our Cabernets, our Gousis and our Chasselas. As is the case with us, the *anthachnose* appears in Italy more or less in different seasons. The remedy is an application after pruning with a whitewash brush of a dissolution of sulphate of copper, or sulphate of iron, or even sulphuric acid, in proportion of 10 per cent. to water. Copper is considered best. This washing is more advantageous after the old rough bark of the stumps of the vines is rubbed off with gloves made of soft steel cloth—like the coat of mail of the knights of old—the inside of the glove being the close steel rings, the outside strong leather. This operation is called *décortiquer*. It is very useful in every case, as it destroys the eggs of all kinds of insects which are lodged in the bark, the pirate especially.

The inferior school at Conegliano is self-supporting, but not intended to make money. The boys are admitted not less that fourteen years old, and not older than seventeen. They pay a yearly stipend of £13 10s., which is pretty considerable for their status and for Italy, and proves the high estimation of the value of the practical education they receive. At present they are engaged to serve two years, but it is intended to increase the term to three years, as is already the case in the other schools of the same kind in other provinces of Italy. When they have served their full time satisfactorily, a certain proportion of the fees they paid is returned to them. The regulations affix the number of hours devoted to work daily, these varying according to the season. Four hours a day all the year round are consecrated to the various studies. Here I may as well tell you at once that Professor Moreschi informed me that one of the best workmen's schools in Italy was that of Breschia, and that I went there to study the details of the organization of these most useful practical schools. I will now only cursorily complete for you my visit to Conegliano, and, to avoid repetition, reserve for the description of the Breschia school more detailed information.

To return to Conegliano. When I visited it there were in all thirty-four pupils. All the work on the place is done by them. A plate is fixed at the main door, on which the order of the day and the work assigned to the various boys is written down, so that anyone knowing the squad to which a boy belongs could find him at his special work, thus facilitating the control of the director general. When we called, the number of hours of out-door work was seven per diem. The boys were engaged as follows:—Fifteen were working in the field, pruning, etc.; five were making baskets (the baskets made were for the establishment and for sale); five were grafting European sorts on American two years old rooted plants; plants also for sale. There was at the same time a lesson attended by some of the boys of the superior school; four boys were working at the cooperage making casks, also for sale; one boy on duty at the stable, where they had sixteen head of nice cattle, amongst which a fine bull of Dutch race; the rest occupied at various errands.

The school has an experimental cellar, where wines are made from the various kinds of vines and kept separately. This was the most interesting to me. We went there to taste, but first of all I was told that the wines of the older vintage, 1885, had suffered much from the mildew which raged in that season, and that they were consequently particularly thin and green, which was truly the case. What difference with our Australian wines! We began with white wines. First, the ordinary wine of the country, 1885, very bad; next, those of 1886 vintage, infinitely better; a wine made from Pinot blanc, a nice wine but rather brisky; lastly, a wine made from Riesling, still better, with a delicate bouquet. We passed to the red wines, also 1886, namely, four months old then. (Those of 1885, on account of the mildew, were out of the question.) We tasted first the wine of the country, which they call Roboso—a wonderful, awful, deep-colored beverage—pure tannin, which none but an armor-plated palate can drink! But what a precious thing for making decoctions. A gallon of this will impart sufficient tannin and color to ten gallons of watery French wine of any poor district. Hence, the very high price that undrinkable wine fetches on the spot, and immediately after vintage—100 francs per hectolitre, about 3s. 4d. per gallon! But now comes the marvellous part. In that experimental cellar, alongside that awful Roboso (something our bullock drivers would not drink, and which the Italians delight in, I suppose, because they calculate in *denari* in money the rasping of the throat), there were two barrels of our Cabernet Sauvignon, also made at last vintage. This was simply an excellent wine, so very like our own Sauvignon on the Yarra, a wine which would, as wine, have sold on any market, except in Italy, where they sell their wines as *éléments*. I had two glasses of this delicate wine, even young as it was—one to obliterate the Roboso, the other in remembrance of our own. My guides all agreed to the superiority of the Sauvignon for drinking, but for selling they said it was not worth one-third of the villainous one, merchants coming to them not to buy wine to be resold as wine, but essences to make up their own. "Why should we," they said, "cultivate these fine kinds as long as we can get three times more money for a wine made from doubly producing kinds of grapes?" Thus, the Roboso is the great wine of the country, and, as the able professor told me himself at the time, "At Conegliano, great school but bad wine."

For all that, 3s. 4d. per gallon immediately after the vintage is a fine price. I do not think we have that kind of grape in Australia. But for the prohibition even I would have sacrificed to the false gods, and wished a few cuttings at St. Hubert's. Perhaps, however, fifty years hence, when the cultivation of fine sorts in new countries like our own will introduce abundantly everywhere wines such as those made from Cabernet, the production of wines like the Roboso will cease; the occupation of the blenders will be gone.

This must be the result of the spreading of information by schools such as those at Conegliano, and the result of the rational mode of cultivation and training of the finer sorts of grapes, so as to make them prolific; training which I admired at the Breschia school, the detailed explanation of which will form the principal subject of my next letter.

FRENCH EXPORT WINE.

[Napa Journal.]

United States Consul Gifford, at Bordeaux, warns the American public to beware of French liquors, more especially brandy, for that no pure French brandy is sent hither. After commenting upon the methods employed in making brandy for export, he goes on to say that the labels on the bottles do not represent the quality of the liquid they contain. The dates 1863, 1870, 1875, etc., do not, he says, mean that the inclosed liquid is brandy put up in those years. It means that the liquid has been made to resemble as closely as possible that which was really made in those years, in other words, the brandy sent hither from France is spurious, a concoction put up in the laboratory, in which the taste of good brandy is counterfeited by various chemicals.

It is worthy of comment, that, while the laws against selling spurious wines and liquors in France are rigid in the extreme, little or no attempt is made to prevent the chemical preparation and adulteration of these liquids for exportation. Quite recently, the proprietors of a Paris restaurant were arrested and tried for selling a wine which, by its composition, must have been intended only for export. It was colored with an extract of coal and mixed with plaster of Paris—a pretty combination truly. A man and his children who drank it testified that it had "a very pleasant taste of raspberries," which shows what imagination will do. But even so strong an imagination as this was not equal to withstanding the effects of the wine, and a doctor had to be brought in. The suit was brought by the Municipal Laboratory, and the punishment inflicted a fine of 1,000 francs and one year's imprisonment.

ITALIAN PROGRESS.

No better means for stimulating grape growers in Italy to raise the standard of their varieties and find the proper way of vinifying the product than the choice of the customer from France, who takes wines by the millions of gallons. The neglect by the discriminating purchaser of what has not all the conditions of quality teaches the sinner that he has to reform in order to sell. It would follow that where in the export regions of Italy, poor varieties (after the style of the California Mission) disgrace a plantation, short process would be made with them. It would require only a few years to have every stick grafted over. The beginning of a radical reform in Italy was made in the northern province of Alessandria. Asti wines have established their reputation solidly for the last fifteen years, simply because true intelligence moved people to a sweeping change, and after thorough experiments, the selection of high class varieties was put in practice. The thriving business of the Astigiano Oenophile Society has just changed hands, Sig. Carlo Spessi being now the proprietor. The exports of that firm to South America, sum up a monthly 1000 barrels (60,000 gallons) of wines for consumption.

The Asti wines have become formidable rivals to Bordeaux wines, both by reason of quality and purity, in many markets.

Having the helping hand of the provident and progressive Italian Government, both at home and abroad, growers of wines and dealers are in a condition to make increasing inroads in the foreign wine trade. With nearly a thousand millions of gallons as the 1886 crop Italy has need of exports, for production is in the ascendent and prices are low.

If American viticulture and particularly California aspires to sell wines in foreign markets, no other country will be at as great advantages with regard to quality and cheapness over the more expensive wines of America than Italy, and more than one hope of profits from abroad will be destroyed to the venturesome American exporter by the moderate cost of concurring Italian Wines.

F. Pdff.

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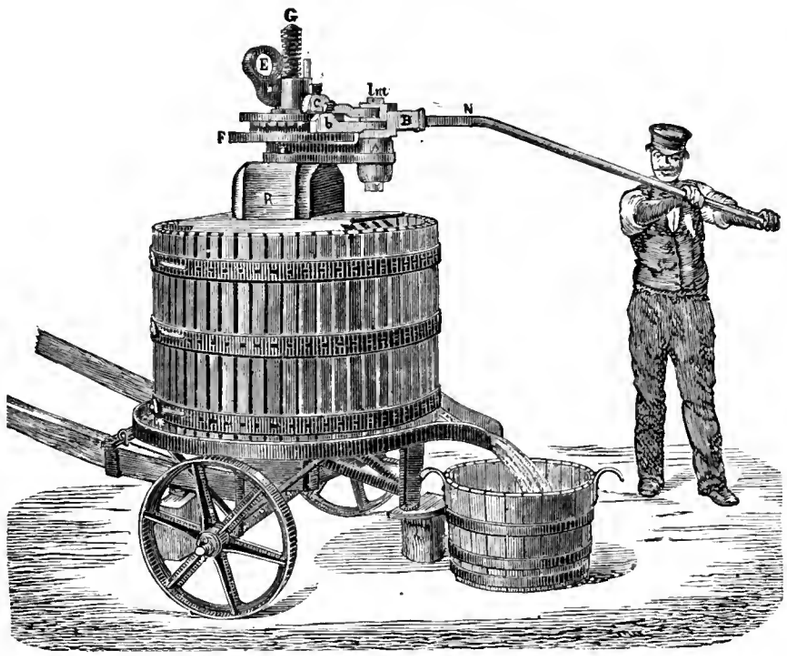

The above cut shows the Machine complete.

Having secured the entire right for the United States, we take pleasure in introducing this Wine Press to the American public, believing it superior to any other press now in use.

It will be to the advantage of Wine Manufacturers to study carefully the following merits, which we claim it possesses:

First. By an ingenious mechanical application, the "power of resistance" can be reduced to a minimum, and with a single effort, three or four times more power can be obtained than with any other press known at this day.

Second. It does the work more rapidly, and with less labor.

Third. It is cheaper than any other first-class wine press in the market.

Fourth It has no complicated devices, is so extremely simple in construction and easily operated, that a child of ten years can work it.

Fifth. It is made of the best materials, and by its simplicity not liable to get out of order.

Sixth. All parts are interchangeable, consequently, any part lost or injured can be replaced at little expense.

Seventh. It will extract the largest percentage of liquid.

Eighth. It is built on the ratchet principle, double acting, the lever working both ways, and can be worked in 6 feet space. It has no lost motion.

Ninth. It does not take any more labor to work the largest size than the smallest one.

Tenth. It presses any kind of fruit as well as grapes.

This press is not an experiment, having been used several seasons in the wine districts of Europe, and also in the United States last season.

It has received the highest award wherever exhibited in competition with other presses.

The main features of the press are the ease and rapidity with which it may be worked, and the great power which it applies; as the press stands on wheels, it can be readily moved from place to place.

In order to introduce our press last year, we placed it at a low figure; with the improvements that we have made this year, we are compelled to raise our prices, but they are yet the lowest on the market, while the press is far superior.

Our press is adapted for large vineyards as well as small ones, as we make different sizes. No. 7, shown in the above cut—the basket will hold 14 tons of grapes after crushing, and 4 fillings per day, its capacity being 56 *tons of grapes in one day.*

"LE MERVEILLEUX."

A representative of the MERCHANT has visited the shop where the Paré Bros. are building their wine presses, the "Le Merveilleux," which is claimed to be the best and cheapest wine press made. The platform or bed rests on a two wheeled cart, which enables the operator to move it to any part of a vineyard, or between the rows of tanks in a wine cellar. The basket is made of the best straight-grained Mendocino Pine staves, riveted to three bands of the finest quality of iron. These bands are each in halves. On one side they are connected by a hinge, and on the other are locked with pins, and, by removing these pins, the basket can be opened to any width required, and the must be removed in a very few minutes. The edges of the staves are beveled, the distance between them on one side being $\frac{1}{8}$ of an inch, and on the outside $\frac{3}{4}$ of an inch. This renders it impossible for the grapes to get jammed in between the staves.

Rapidity is one of the strong points of this machine. It takes only from twenty to forty-five minutes to make a pressure. The "screw" which stands upright in the middle of the "basket," is fastened under the "bed" by a nut which is six inches thick, screwed on and riveted to the end of the screw. The operator moves the large lever which is from five to eight feet long, and moves in a space of six feet backwards and forwards. This pushes alternately two small levers, which in turn catch in the ratchets of the combinations on their *forward* motion, and keeps the wheels or combination steadily falling down the main screw. In commencing to lower the crushers upon the grapes, and when speed is required, the lever is placed in an upper combination, which acts directly on the screw, and in a few movements of the lever it has reached the grapes. The Presses have been calculated to withstand the pressure according to their capacity, so if the smallest is incapable of breaking itself, the largest is equally so.

The main feature of the press is the ease with which it may be worked. Mr. Pare forced the lever as far as it was necessary to go in one direction, using only his little finger, upon shavings which had previously been packed so tight, that it was impossible to run a knife into them.—SAN FRANCISCO MERCHANT, Aug. 27th, 1886.

WINE PRESS EXHIBIT.

The French Wine Press exhibited at the Fair by Paré Bros., attracted great attention from visitors interested in wine-making. This press has no merely local reputation, but comes to us from over the seas endorsed by French wine producers generally, and by the leading journals of France. In the Eastern States it is rapidly supplanting all others, and no doubt in California will do the same. The reasons for this are plain. It is a great improvement over any now offered; it is portable and easily carried on a hand-truck from place to place; it is not expensive, and it does its work thoroughly and well; it requires but little attention, and it is labor-saving. It is called in France "Le Merveilleux," and certainly deserves the name. Certainly, those interested in wine production should at once acquaint themselves with the capabilities of the press, its price, and see it working. By it they will save money, as its expense is comparatively small, compared with the amount and character of work it is capable of doing. We certainly commend an examination of its merits.—*The Weekly Commercial Record*, San Francisco, Sept. 16th, 1886.

EXHIBITS AT THE PAVILION.
"Le Merveilleux" Wine Press.

Among the exhibits at the Mechanics' Fair, which naturally attract the attention of the visitors, whether from the city or country, is "Le Merveilleux" wine press. The wine interests of California are fast assuming enormous proportions, and every year sees an immense increase in the area devoted to the culture of the vine. It is only to be expected, therefore, that any invention coming from an old wine-producing country like France, should have great interest for the residents of California. "Le Merveilleux" is a French invention just being introduced here. It has been patented in all European countries and the United States. The entire right for this country is held by Messrs. Paré Brothers, of this city. The press is manufactured in seven different sizes, varying in price from $120 to $450. It is claimed for it that it is more powerful than any other press now in use; that it does its work more rapidly and with less labor; that it is cheaper, without complication, and not likely to get out of order. Being built upon the interchangeable plan, any part lost or injured can be replaced at small cost.

It is constructed on the ratchet system, and the lever can be worked in a six-foot space, and is so easily operated, that a child of 10 years can work it. The lever works both ways, and thus doubles the speed.—*Daily Journal of Commerce*, San Francisco, Sept. 24th, 1886.

THE SUNSET VINEYARD,
Minturn, Cal., Sept. 15, 1886.

Messrs. Pare Brothers.—GENTLEMEN:—We take pleasure in informing you that we have used your No. 4 press this season, at our vineyard, and find it all that you recommend it. It does the work perfectly and with ease, and in our opinion is perfect in every particular. Yours truly,
WEBSTER & SARGENT.

San Francisco, Sept. 17, 1886.

Messrs. Pare Bros.—GENTS.:—The wine press No. 4 purchased of you several weeks ago, has been tried at our winery and has thus far given full satisfaction.
Yours truly, MT. DIABLO VINEYARD CO.,
By Jac. Levy, Sr.

Anaheim, Cal., Sept. 15, 1886.

Messrs. Pare Bros., San Francisco, Cal.—GENTLEMEN:—The Press came at last, and after giving it a fair trial I find it to my satisfaction. Enclosed please find exchange draft for the same.
Respectfully yours, LOUIS SCHORN.

San Francisco, Sept 22, 1886.

Messrs. Pare Bros., City.—GENTLEMEN:—We take pleasure in informing you that we have used your Wine Press No. 5 this season at one of our Vineyards, and find it all that you recommend it. It works well, and is perfect in every part cular.
Yours very truly, B. DREYFUS & CO.

Anaheim, Sept. 27, 1886.

Pare Bros., San Francisco.—GENTLEMEN:—Yours, with shipping receipt and bill, at hand; but the press did not come until a week after, although I needed it badly. As soon as I got it I tried it, and must say that I like the press very well. Enclosed please find check for $140.50. Yours respectfully,
PETER HANSEN.

Pacheco, Contra Costa, Cal., March 15, 1887

Messrs. Pare Bros.—DEAR SIRS:—The "Le Merveilleux" No. 3 press I bought of you is the most powerful instrument to extract juice from grapes—it leaves the pulp entirely dry in a short time. I recommend it to all wine makers. Yours truly,
J. S. HOOK.

Mission San Jose, Cal., Oct. 27, 1886.

Messrs. Pare Bros., San Francisco.—GENTS.:—I have used your "No. 3" "Le Merveilleux" wine press all through my vintage, and it has in every particular given entire satisfaction, both in regard to the ease with which the work was accomplished.
Very truly yours, CHAS. C. McIVER.

I, the undersigned, certify that I bought from Messrs. Paré Bros. a No. 2 wine press, and used it last season, 1886, and it has given entire satisfaction.
Yours truly. A. CHEIGNON,
814 Howard St., San Francisco.

GENTLEMEN:—I take pleasure in telling you that I am entirely satisfied with the press, No. 2 "Le Merveilleux," you sent to me, it does the pressing without interruption. Yours,
B. DISTEL, Mountain View.

Messrs. Pare Bros., San Francisco.—GENTLEMEN:—I used last year one of your presses at the Hon. Jos. F. Black's vineyards of Livermore. I studied it carefully, and I must say it has given perfect satisfaction. It is the most powerful press I ever saw, and the work is very easily done. Yours very truly,
J. MORTIER, Livermore.

FARMERS' AND MERCHANTS' BANK,
Los Angeles, Cal., Oct 15, 1886.

Messrs. Pare Bros., San Francisco.—DEAR SIRS:—Enclosed please find our check for $335.15, in payment your bill for two wine presses, as ordered by our letter of 30th ult., for
Messrs. Hafen & Niemeyer.....$330 00
Drayage..... 6 00
.....$336 00

The parties tell us the presses were received in good condition, and work to their satisfaction.
Respectfully, JOHN MILNER, Secretary.

After trial the Press may be returned to us if for any reasonable cause it is not satisfactory, "and money refunded," as we are satisfied from our experience that parties that have once used them will not afterwards do without them.

N. B.—We are also prepared to fill any orders for Crushers and Separators. For any further information apply to

PARÉ BROTHERS,

BRANCH OFFICES:
Honore Building, Chicago, Ill.
15 St. James St., Montreal, Canada.

OFFICE AND FACTORY:
101 to 107 Mission Street,
Res. 420 Geary Street, S. F.

THE BEST OF ALL WINES.

Seven Centuries of the Royal Vintage of Clos Vougeout.

THE FAVORITE WINE OF NAPOLEON—THIRTY CASKS THE PRICE OF A CARDINAL'S HAT—A ROYAL SALUTE FOR A VINEYARD.

From a correspondence in the Chicago *Tribune*, we take the following:

It is fitting that the sale of the crown jewels and the sale of Clos Vougeout should occur in the same year. The historian of the year will make the year 1887 notable in France for nothing more than for these two events. The latter, if possible, is the greater of the two. Clos Vougeot is even more than royal. "King, Emperor, Pope of wines," it has been termed. It has been greeted with royal honors. When the restoration of the Bourbons occurred Marshal Gouvion de Saint Cyr led his division of the army through Burgundy. When in the Cote d'Or, it is told, between Dijon and Chagny, close by the old Abbey of Citeaux, he ordered a halt. "Gentlemen," he said to his staff, "let us uncover our heads. We have passed by Nuits, Volnay, Beaune, Pomard, Richebourg, Chambertin, Romanee-Conta, St, Georges. We are now at Clos Vougeot. Gentlemen, let a royal salute be fired!" I don't know that there is another instance on record of a royal salute being fired to a vineyard. Nay, more. It is truly recorded that Pope Gregory XI, gave the Abbot of Citeaux a Cardinal's hat in return for thirty casks of wine from Clos Vougeot, and contended that he was not guilty of simony in selling a holy thing for a price. "For," said he "such wine as this is also a sacred thing." I suppose it is quite safe to say that Clos Vougeot is one of the best three wines in the world, the other two being Johannisberger and Imperial Tokay. The three form a trinity of bibulous perfection, and it is not possible to say which of them is the best. There is no comparison among superlatives. I suppose the latter two are commonly regarded as more choice than the first because they are not sold. Real Johannisberger and Imperial Tokay are never put on the market and cannot be purchased at any price, although secondary grades of Tokay are sold at from $5 to $10 a bottle, and there is a fairly good imitation of Johannisberger sold at the same price. But, as I have said, the prime articles are exclusively monopolized by royalty. Clos Vougeot, on the other hand, is put into the market the same as any other wine. The best grade of it usually brings from $40 to $50 a dozen for new wine and from $100 upward for old vintages. Probably no real Clos Vougeout, even of the lower grades, has been sold for years for less than $20 a dozen.

Seven hundred years have now passed since the Clos Vougeot vineyard was planted by the monks of Citeaux. There was then no idea of merchandise. It was planted to furnish wine to the inmates of the abbey and for a pleasure ground. There were broad, winding paths among the vines, and summer-houses and carp-ponds. And, altogether, the monks must have lived like Princes. After a time, the excellence of the wine became noised abroad, and they began to sell it; and they planted more vines on the ground that had been used for paths and grass plats, and they bought more land. So that presently they had more than 100 acres in vines, and their revenue from it each year was a royal one. When the revolution came in 1789, however, the monks were turned out. Some of them were murdered and their abbey was despoiled. But even then the mad mob had respect for the incomparable vineyard and preserved it from harm. A "citizen" charcoal-burner was established there as manager "for the people," and was fast drinking himself to death when Napoleon came to the head of the State. The famous Commissary-General Ouvrard, then purchased the property. It was he who saved the Government from bankruptcy by timely loans and who kept Napoleon supplied with money all through his career. Despite these services, Napoleon hated Ouvrard bitterly and did all in his power to injure him. Several times, indeed, the Emperor threw him in prison, and only released him when he needed money, which he knew no one else could furnish. Nor did Ouvrard supply Napoleon with money only. He sent him wine from Clos Vougeot, and this was the only wine the abstemious Emperor could drink.

Up to this time the vineyard had been managed exactly as it had been for centuries by the monks of Citeaux. Indeed, up to the present there have not been many changes. But all the changes there have been were introduced by Ouvrard. Chief among these was the suppression of white wine. Thitherto about half the vintage had been white and half red. He mixed them together, and thus made a lighter red wine, containing in itself all the excellence of both the old vintages. He also planted the vines closer together, and thus succeeded in doubling the yield. However, the vintage has never been large. In 1816 it consisted only of five casks. Why? Because the Russian army had visited it the year before, and they alone, of all the world, had laid violent hands upon it. Even the Reign of Terror spared it. But the vandals of Russia galloped their horses over the vines as though they were but weeds. The largest vintage of Clos Vougeot was in 1835, when the yield was more than 700 casks. That was also one of the best in quality. Some of that vintage is still stored in the cellars of connoisseurs. It does not get into the market, of course. If it did it would fetch $25 a bottle. Nowadays the yield is about 350 casks a year, and there is seldom to be observed the slightest variation in quality. Indeed, there is no other vineyard that has so few fluctuations.

When Ouvrard died the property went to his daughter, who was married to the Comte de Rochechouard, son of the Duc de Richelieu. The present owners, who are about to dispose of it, are the Comte de Rochechouard (grandson of Ouvard), the Marquis de Lagarde and the Comtesse de Montalembert. Who will be the next owner? There have been rumors that members of the Rothschild family would purchase it and take the wine out of the market, reserving the entire vintage for family consumption. I have also heard that certain American millionaires are thinking of buying it. Whoever it may be let us hope the historic vineyard will go into worthy hands. Think of it! The King of France waged a long war to wrest it from Charles the Bold. At one time it was devoted exclusively to the Popes, and a layman venturing to taste it was excommunicated. The great Turenne would drink no other wine. Neither would Napoleon. The Duke of Marlborough, the first great Duke, the conqueror of Blenheim, said he cared for no other after tasting this. Adolphe Thiers said the only temptation he ever had to become, if possible, a despot was the desire to possess Clos Vougeot. It was the favorite wine of Louis XIV, and of Charles V of Spain. Nay, it is impossible to say too much of the wine to which Chambertin, Pommard, Lafitte, Margaux and Letour yield the palm.

The deadly phylloxera has not as yet made its appearance in the Clos Vougeot, and the greatest possible precautions are being taken to prevent it from getting in. Many of the vines there have reached a great age without any preceptible change in the quality of their product. Legends are told of some of them dating back several centuries. How true these may be I know not. Cuttings are often sold from the vines of Clos Vougeot for the propagation of vines in other vineyards. But the same yield is never attained elsewhere. The quality changes altogether. What then is the peculiarity of this vineyard? Scientists have puzzled over it in vain. The soil has been chemically analyzed, but no element is found in it that is not met with all over the Cote d'Or. Possibly the secret lies in the method of culture; possibly in the process of manufacture. At any rate, there are certain departments of all this work that are kept hidden from the public, and are carried on by men whose fathers for generations have lived and worked and died on the estate of Clos Vougeot.

ADOLPH HOUSSAYE.

CONDENSED MUST.

[San Francisco Bulletin.]

J. de Barth Shorb, of San Gabriel, has recently been in San Francisco completing his arrangements for condensing must in this State. Concerning the project of which so much has been heard and of which much is expected by viticulturists, he said:

"The proposition is simply that here in this State grapes may be grown in nearly every part, and that a market for them is desired. We propose to offer that market and take the grapes from the *vigneron* at an increased price over what they have been receiving. It is a plan that when properly developed must be of benefit to the whole State. It is a mistake to think that we have been planning it for the south part of the State alone. It will benefit the vineyard men in the northern part fully as much. What is wanted now is for the grape growers in the different sections to get together and organize so as to secure one of these machines in their respective districts.

"Our plan is to act exactly as an insurance company. The grape growers, or *vignerons* is a better term, who want to get some of the benefits of this project, must be willing to come forward and share some of the risks of the venture, if any there are. We have organized as 'The American Concentrated Must Company.' It is not incorporated yet. We have the exclusive right to the Springmuhl process and the use of his machines, not only in California but in the United States. We have a capital of $1,000,000. The men in it are Fred W. Sharon, who is with me in the San Gabriel Wine Co., I. W. Hellman of Los Angeles, Charles Webb Howard of the Natoma Vineyard Company and myself. Dr. Springmuhl came down south because he knew that we would take hold of the project and put it through. He left us on the best of terms, to go to London to arrange for the manufacture of the machines in readiness for this year's vintage and for the disposal of the product. He tried to get the machines made in Chicago and New York, but could not do so, and we finally arranged to have two made in this city. Clot and Meese, machinists on Fremont Street, are now making them according to plans drawn up by Dr. Springmuhl. They will each cost about $25,000. The copper for the vacuum pans, the essential part of the apparatus, arrived recently, and the work is going forward rapidly. The contract calls for the completion of one of the machines by September 20th and the other as soon thereafter during the vintage as possible.

"One of the machines will go south, and one will remain here—that is, in one of the northern vineyard districts. The first one completed will not necessarily go to the south; that depends. The machines are expensive because elaborate. They are elaborate that perfect results may be secured. The peculiar advantage of the process is that the grapes are submitted to a heat in the vacuum pan no greater than 140° Fahenheit, the necessary evaporation and condensation being secured at that temperature. The result is that there is no cooked taste or disagreeable flavor to the product, the condensed must—which has been the objection to other processes. The quality of the wine that is eventually to be made from this product is not injured at all by the process. I have seen and tasted wine made from this must after four years, and I see no reason why it could not be made successfully from must that has been kept a longer time. Each machine has several parts—a grape-crusher, an apparatus to extract the seeds and another to press the skins. The skins are pressed and shipped with the must. Each of these machines will have a capacity for disposing of about eighty tons of grapes a day. The process of condensing is a quick one. In about four hours from the time the grapes from the vineyard are put into the machine, the condensed must will be ready for shipment. It will be shipped in barrels or casks direct to London. Claret-grapes will be made use of chiefly, for claret is the wine of the people. Some other grapes may be used.

"I do not want to appear as over sanguine in my opinions concerning this plan. I have simply stated the facts as they are. I believe that here, by this process and the arrangements made, is an opportunity for the wines of California to enter European markets, and the *vigneron* of this State ought to take advantage of it. The point of the whole matter of market is that this goes into England and France without duty. A company of equal financial responsibility with the one of which I have spoken has been formed to take all the must as fast as we can produce it. I cannot say more about that at present. The London Company, of which Dr. Springmuhl belongs, has agreed to take a proportion. That company has been dealing with the grape product of Italy, making the must by ambulance concentrators, running the machines on cars to various vineyard districts. I do not think this ambulance process would be best in this State. We plan, eventually, to have a half-dozen, perhaps more, of these machines in the different grape-producing sections, to be owned by our company. Dr. Springmuhl is now in London, but we expect him to be here in time to personally superintend the operating of one of the machines at the beginning of the vintage. We can guarantee that generally an increased price will be paid for the grape products. For instance, I told a Fresno man, who last year sold his grapes for $9 a ton, that for that quality of Grapes we could afford to pay $15.

REMARKS ON GRAPE ROT AND GRAPE MILDEW.

By Alexander W. Pearson, *Superintendent Vineland Wine Company, Vineland, Cumberland Co., New Jersey.*

The region known as the "Vineland Tract," in Southern New Jersey, since its settlement in 1861, has been largely devoted to grape culture. The vines, principally Concord, were healthy for some years and yielded profitable crops.

About the year 1869 "the grape rot" appeared in South Vineland, thence gradually spreading and increasing in virulence as it spread. In a young vineyard which I purchased in 1872, then bearing its first crop, the manifestations of the disease were scattering and slight; the next year a greater per cent. of the crop was damaged, and by 1876 the destruction caused by rot was nearly total.

Microscopic inspection showed the disease to be the work of a fungus, now known as *Phoma uvicola* and distinguished by a European botanist (von Thümen) as being of American origin. In his work (Die Pilze des Weinstockes—The Fungi of the Grapevine) he describes this *Phoma* as known to him only through specimens sent from Southern New Jersey and from South Carolina.

It appears usually when the berry of the grape is about two-thirds grown, the dates of its first appearance each year in this latitude varying from June 20th to July 10th. A small, whitish spot, about one-sixteenth of an inch in diameter, surrounded by a brownish areole, appears on or in the epidermis of the grape. The areole enlarges until the entire superficies of the berry is involved. It is then dark-brown and is studded with a multitude of minute black pimples, which are located immediately beneath the outer skin. These are the *perithecia* or seed capsules of the fungus. When they are matured, which is in about twenty-five days from date of apparent infection, they burst, rupturing the epidermis of the fruit, and extrude a mass of spores.

Only familiarity with its appearance beneath the lens can give one a realizing sense of the almost boundless fecundity of this *Phoma*. And this must be comprehended before we can account for the visible symptoms of the disease as manifested in the vineyard.

In the early years of its prevalence certain observers specified as diagnostic of this peculiar rot the mark of but "a single rot-speck on each berry." It now seems that this apparently sporadic character of the initial infection was simply due to the scattered distribution of the germs while they were yet comparatively few in number. After successive crops of the *Phoma* these germs multiplied so that single berries often exhibited numerous "rot specks" or points of initial infection. I have counted seventeen on one grape, and have seen the entire crop of a vine say 25 pounds of fruit, destroyed by a single invasion of the *Phoma*, not a berry escaping.

Some writers have regarded the disease as constitutional, existing in the circulation of the vine and imbibed through its roots, the symptoms developing similarly to the eruption of small-pox in man; but it is now proved that the infecting germ of the *Phoma* floats in the atmosphere, whence it alights upon and takes root in the exterior of the grape. Disseminated by the wind, these germs drift abroad as do the atoms of vapor in a fog, and thus gradually spread from place to place. I have seen this invasion from an old and infected vineyard into and through the rows of a young vineyard planted beside it, the row of young vines contiguous to the old being nearly stripped of fruit by the rot, the next row less damaged, and so on, until the tenth row distant gave scarcely a sign of infection. So, in the uncultivated territory which surrounds the infected region, where new farms are opened and new vineyards planted, which are yet comparatively isolated, and which we see are for a time healthy, we have yearly the proof that the presence of the infecting germ is a prerequisite to production of symptoms of the disease.

In an infected vineyard these germs hibernate upon the fallen and rotted berries and dried petioles of the vine. Their vital activity is developed and their captivity for infection is aided by warmth and moisture. After the germination of the first crop of the *Phoma* in the summer, which is doubtless produced from the débris in the vineyard, successive attacks come during August and September from the spores set free from the perithecia as they mature and rupture in the rotting grape.

But if drought, intense, as it sometimes is in this locality, prevail at the season when grape rot is to be expected, the disease will not appear until there is a moist atmosphere.

I once thought, and so stated, that I had traced the appearance of rot as supervening upon the occurrence of a local shower after a severe drought, during which our vineyards remained healthy; that is, I ascribed it to the actual presence and precipitation of atmospheric moisture, but observations made this summer (1885) convince me that I was mistaken. During May and June drought was continuous, and my hygrometer gave no indication of moisture in the air. While this favorable condition for health of the grape endured there was no sign of disease.

On Friday P. M., July 10, my farm was visited by a local shower tolerably copious. On Saturday, P. M., I found in my vineyards the first signs of rot. On Sunday, A. M., I was visited by neighbors who had been likewise afflicted by the rain. They discovered rot on their vines that morning. I learned that this shower did not extend beyond half a mile south of my place, so on Monday morning I drove southward to ascertain if the vineyards were yet safe where there had been no rain. I asked the owner of one of them: "Any sign of rot with you?" "Yes, found the first yesterday morning." "How long since you had any rain?" "Not a drop for three weeks." Visiting various vineyards in the dry region, I found that the rot had appeared simultaneously everywhere, on July 12th. It was evident that the wetting of the clusters by actual rain was not alone the cause of the fungus.

I have been so puzzled by the vagaries of this epidemic that I have ceased to endeavor to account for various phenomena exhibited by it, and limit myself to the task of trying to prevent its ravages on general principles.

Years ago, while experimenting with sundry chemicals designed in their application to prevent or cure "the rot," I accidentally noticed a vine, one branch of which was trained beneath the shelter of a projecting cornice, while the other ran over a trellis exposed to the sky. The grapes beneath the cornice were sound; those exposed were rotten.

The next spring I built a board roof 20 inches wide, placed a foot above the fruiting canes, along 100 yards of trellis, through the midst of a vineyard of several thousand vines. The vines thus vertically protected were healthy, but clusters and foliage on laterals, projecting beyond the edge of the roof, rotted and mildewed. The trellises on either side of that protected were badly damaged by disease.

Experiments were tried the same season in protecting the separate clusters, by inclosing them in paper-bags, in pieces of mosquito-bar, in old stocking-legs, etc. Grapes thus protected ripened uninjured by the *Phoma*.

Finding my board roofing not wide enough, I next year substituted for it an awning made of common cotton sheeting a yard wide, stretched tentwise along parallel wires. Though the tissue of this was permeable by rains, it preserved all beneath it in health. The cloth awning was removed in the autumn and replaced in May. The same strip of sheeting, costing 5 cents per yard, served four years.

In my experience it protects as effectually against rot as does the bagging of the clusters. Why it does so I do not know. It certainly does not exclude access of the germs, with which at times the atmosphere must teem, and which, as I have ascertained, float upward from beneath the vine more frequently than they descend from above. Nor does the awning shed the rain, which, in heavy showers, filters through it quite freely, drenching both foliage and fruit. However, experience for four years, during which the fruit beneath the awning remained safe in the midst of surrounding devastation, proves its protective efficacy.

While in some respects the paper-bag is the more complete protection to the cluster, defending it against attack and defilement of insects, birds, etc., the awning is yet preferable, because, in addition to saving all the fruit, it also protects the foliage from the grape-leaf mildew, *Peronospora viticola*, another distinctively American fungus more dangerous even to viticulture than is the *Phoma*.

When my vineyards have been swept by the *Peronospora*, the foliage blasted as by a conflagration, fruit and canes failing to mature, all on the covered trellises ripen perfectly, the leaves, wherever thus sheltered, being free from mildew. I have seen very curious examples of this protection in the grape leaves situated close beneath the cover of cloth and partly projecting beyond it, that portion only of the leaf which was not covered being destroyed by the *Peronospora*.

There is yet another advantage which may result from the awning above the trellis, if applied early in the spring; it may save the opening buds from destruction of a late frost, and has done so on my vines.

Three years ago I decided to try other devices against the assault of the grape rot. I selected a block of one thousand Concords, from which, through the summer, I had the symptoms of infection removed as fast as they appeared. All the rotted grapes were picked weekly from the clusters, picked up from beneath the trellis, taken away and burned. The leaves wherever spotted by the *Phoma* were also gathered. The benefit of this disinfection was visible at the vintage, but the difference was yet more manifest the next season, when the vines thus cleaned showed an improvement of at least 50 per cent. in their crop.

The second year I also tried burying all the débris of the vineyard late in the spring with a plow, leaving the soil thereafter undisturbed during the summer.

On each side of the trellis I threw a furrow away from it, then raked the dry leaves and rotted grapes which lay beneath the vines into these furrows, then threw the furrow slice back again and plowed the interspaces, careful to bury all the surface deposits completely. After this the vineyard was left uncultivated and it grew a luxuriant crop of weeds, but it yielded a good crop of grapes also.

The good effect of this suppression of germs of the epidemic, when this vineyard was compared with others adjacent not thus treated, was remarkable. I found, however, upon inspecting the rows during the summer that my men who did the raking had been careless, in some places not doing clean work; besides, the rake teeth failed to catch all of the little rotted berries lying on the ground; some of these remained on the surface, and wherever I found most of this débris, there above it, on the vines, were the most rotted grapes. It was plain that the germs of the *Phoma* floated upwards from their nidus on the soil beneath.

This spring, 1885, I resolved to make the work of disinfection more thorough. Substituting hoes for the rakes, I scraped the surface clean, and then buried everything with the plow, making afterwards a final inspection to see that the job was complete.

For comparison I left one block of vines with the rotted grapes from the previous year unburied, but suffered all my vines to remain uncultivated, after the plowing, which was done late in May.

The result fulfilled my expectation, and has rewarded me for my trouble. I have just finished my vintage, harvesting an average of 20 pounds per vine of sound, healthy clusters, free from rot. With the exception of one hundred vines left for experiment (but which were similarly "scraped" with the rest), the rotting grapes were removed as they appeared. In the block where the infection was left unburied there was fully ten times as much rot as elsewhere. Upon the hundred vines from whence the rotting grapes of this season were not removed there was rather more rot than where the vines were kept continuously cleaned of diseased specimens.

In contemplating the feasibility of continuous removal of diseased grapes from a badly-infected vineyard the task seems stupendous. It must be considered, however, that if the remnant of the fruit left by the rot is to be utilized, the clusters must be cleaned some time, and it is as cheap to clean them while on the vines as after they are gathered. Besides, if the other means of disinfection above described are carefully employed there will not be so many rotted grapes to pick.

In view of the benefit resulting from their removal it is a job which, unquestionably, will "pay."

Of all that may be done, however, the complete burial of the sources of infection and the subsequent non-cultivation of the vineyard are the most important.

I saw an interesting exemplification of this during my tour of inspection of vineyards in July last. I first visited a vineyard similarly treated to my own. Rot had begun in it, but not at all seriously;

one had to search long to find an infected berry. A fourth of a mile farther on I came to two large vineyards infested with those pestiferous weeds known here as "sand burs." To extirpate these the owners cultivated continuously. The vines were upon stakes, and the cultivator had at that date (July 13) already passed through them four times each way. Rot appeared in these vineyards but two days previous to my visit, but its first attack was almost destructive of the crop. Upon most clusters three-fourths of the berries were specked, and on ten thousand vines that had been well set with fruit there were not enough grapes left to pay for gathering.

A little farther on I came to a vineyard which had been cultivated but once, early in June; the grapes on it were fairly good and healthy.

Not far distant from these I found a neglected vineyard which had been neither plowed nor cultivated this year. All of last year's deposit of rotted grapes lay undisturbed beneath the vines, which were not even tied up to the stakes. The crop here was badly rotted, but not so much as where the soil had been constantly stirred. Cultivation, especially in dry weather, evidently unburies and sets afloat germs of the disease which are resting on or are buried in the soil.

These observations enable me to account for phenomena of the rot which were before somewhat puzzling.

A neighbor's vineyard, which was cultivated constantly and which rotted persistently, was situated on a slope descending from high, dry sand down to heavier soil, which, from its position, was naturally more moist. We every year noticed that the rot was worst in the highest part of the vineyard, which seemed paradoxical, because we were disposed to regard the lowest and moistest localities as being naturally favorable to the development of the fungus.

We may now suspect that where the soil was driest and lightest the cultivator most readily stirs up the infecting germs together with the dust. Such was my experience when I cultivated my own vines.

On another occasion when grape rot was exceedingly prevalent, my attention was called to a small vineyard entirely free from rot, while desolation was all around it. It was upon low ground frequently flooded by the rains, abundant that season, the water sometimes standing on it an inch or more in depth for several hours after a hard shower.

That these vines, down in this swamp, should be uninjured by disease while those on the high land around were ruined seemed inexplicable. We may now account for this strange exemption on the plausible supposition that the infecting germs of the *Phoma*, doubtless present in this vineyard as elsewhere, were simply stuck fast in the mud.

The summer of 1885 in this locality has been favorable to the health of the vine. Almost continuous drought, both this season and last, during the critical period of growth has been inimical to the development of the *Phoma*, and the grape crop in consequence has been throughout exceptionally good. Best, however, where the methods of suppression and disinfection described above have been carefully practiced, and worst where summer cultivation has been persistent.

In unfavorable seasons, when atmospheric heat and humidity prevail, it is doubtful whether in badly-infected districts any of the means of protection here suggested may be effectual, at least not unless they are universally and thoroughly employed. The atmosphere becomes full of the infinitesimal germs of the *Phoma*, which will drift everywhere on the wings of the wind. Hence, at such times the attempt of any single viticulturist to protect his vines from rot, provided he be surrounded by neglected and infected vineyards, will be almost useless.

A few years since, during a hot and humid August, I proved the fact of this general prevalence of the infecting germs by removing from the bags in which they were inclosed perfectly ripe, healthy clusters of white grapes and exposing them upon the roof of an out-house, remote from the vineyard. In a few days the clusters were spotted by the infection. I found that I could not take grapes from the paper bags which had protected them, pack them and ship them without endangering their infection even by this trifling exposure. They caught the disease while on the way to market.

Whether the vine may be so nourished by special fertilizers as to fortify it constitutionally against assaults of these destructive fungi is a very interesting question, and many illustrations of the plausibility of this proposition might be adduced. For example, in the cultivation of the grape, in this region at least, we notice that wherever the soil of the vineyard is least fertile and the vines are most unthrifty, there they are most damaged by the depredations of fungi. An enormous and exhausting crop of fruit one year will be apt to invite a fungus eruption the next. I have seen a liberal manuring over a portion of a vineyard maintain that portion in reasonable health while the unfertilized vines adjacent were ravaged by rot and mildew.

The grape diseases in Southern New Jersey themselves afford a striking example in general of the injurious effects of insufficient fertility. The soil here is mainly a deposit of sand and gravel from the waves of the sea and is comparatively sterile. Of two important elements, analysis shows it to possess merely "a trace." These deficiencies are lime and potassa. Under these conditions rot and mildew have, in seasons favorable to their development, swept all before them. In other parts of the State, on a different soil, and where lime and potassa had been liberally applied in fertilization, though rot and mildew were yearly present in the vineyard, they worked but little harm. Thus, for example, in one of the most fertile counties of the State, a viticulturist informed me a few years since that he "had some considerable rot in his vineyard," but he had harvested 19,000 pounds of grapes from 1 acre of Concords.

Contrast this with the yield of an acre of Concords on the land of one of my neighbors. The vines, ten years old, were well set with fruit, but it rotted. I bought the crop; total, 156 pounds.

In one of my vineyards some years ago I estimated, on June 30th, that I had 20 pounds per vine set on four thousand vines. Rot began July 5th. I finally harvested about 2 pounds per vine. I mention these experiences just to let outsiders know what *Phoma uvicola* is capable of doing.

We may get instruction upon this subject of vital resistance to disease germs from the grape vine itself. Certain varieties are seen to be especially subject to fungus attacks. Why? It is said "because they are less hardy; innately more liable to disease; the skin of the fruit is too thin the foliage is not leathery enough," etc. Other varieties are healthy under almost all conditions. Why? "Oh, they are hardy sorts. The skin of the grape is thick, and not easily penetrated by the fungus germ. The foliage is tough, and defended by a peculiar fuzziness, so that the spores of *Peronospora* cannot root in it." But these explanations do not exactly explain. For example, the Ives Seedling is reputed "hardy," and usually is so. I have many vines of this variety, and their fruit has never rotted, though Concords growing among them were badly diseased. Yet, on neighboring farms, growing upon sandy knolls, where the soil might be termed exhausted (if there was originally anything to exhaust), I have seen the Ives Seedling completely riddled by rot. It was evident here that it needed something more than its thick hide and hardiness to save it.

I have a grape which I have named the "Ironclad," derived from a native (apparently a cross between Riparia and Labrusca) growing near the Schuylkill, west of Philadelphia. It is thick-skinned, and, like the Ives, possesses nearly 20 per cent. more of saccharine matter than does the Concord. I have fruited it for ten years, growing among Concords that rotted totally, and it has neither rotted nor mildewed, though its foliage is peculiarly smooth and devoid of down. This season, to check its rampant growth, I allowed it to carry an enormous load of fruit, and growth was also weakened by drought. Under these conditions it has rotted a little and mildewed considerably, indicating that simply over-bearing, with defective nutrition at the time, will invite an attack of disease.

From such observations as I have been able to make during the past three years of various experiments over a tolerably widely extended grape culture, I am much disposed to believe that by giving the vine a full supply of all the elements of nutrition —ammonia, phosphate of lime, potassa and lime—and by a general adoption of the means of disinfection which I have indicated, we have little to fear from grape rot.

That other grand terror of viticulture, *Peronospora viticola*, or American grape leaf mildew, may be similarly managed. I have found this season that vines best nourished resisted it best.

There is no benefit from any method of disinfection which I have tried. Sulphur is inefficient, and the burial of the vineyard débris and subsequent non-culture, which are of avail against the *Phoma*, are useless here. When atmospheric conditions favor the development of this pest it spreads like a prairie fire. I have seen the foliage on ten thousand vines completely blasted by mildew within three days after its appearance. Our only defense against *Peronospora* will be in constitutional, prophylactic treatment. Of the value of this I have this season had proof. Mildew struck my vines in September, too late to affect maturing of the fruit. Part of the outside row of one vineyard is beside a piece of ground which had been well fertilized with lime, bone-dust, marl, stable compost and muriate of potash. This part of the row resisted the mildew, and I can account for it only on the presumption that the health of those vines was secured by the vigor imparted by this extra nourishment obtained by their roots extending into the rich soil.

While there is not a leaf left on the rest of the vineyard this piece of a row yet holds its foliage green at this date, October 20th.

I have stated that the cloth awning over the trellis protects against both rot and mildew, though why it does so is not easy to explain. Other examples of protecting influences not less curious may be seen here yearly. In the village of Vineland are many grape vines grown in the gardens around and among the houses. These vines have no vertical protection, yet they are generally exempt from mildew. Some observers ascribe this immunity to radiation of heat at night from surrounding buildings. Others think it due to shade from the rays of the early morning sun.

On the farm adjoining mine I have noticed a row of grape vines growing along the west side of and about 10 feet distant from a brick house. That part of the row directly west of the house is never damaged by mildew, but the extention of the row of vines north and south of the building mildews badly. So far as I can judge these vines in the early morning are all equally drenched with dew (which is profuse here in August), but the vines shaded by the house from the east do not get the sun until about 9 o'clock A. M., by which time the dew is mainly dried off by the atmosphere. It is apparent that the presence of the building is in some way protective. Vines deeply planted seem less liable to disease. Those ordinarily rooted from short cuttings or from layers, and then planted at the usual depth of, say six inches, extend their roots horizontally and do not penetrate far down into the soil. Summer drought affecting this superficial root system will check vigor of growth and disease will follow. Hence, a deep mulch of any substance which will restrain evaporation has been found a defense against both rot and mildew. In the most successful vineyard which I have seen the vines were planted deeply. Holes, nine feet apart each way, were dug four feet in diameter and three feet deep. The vines, one-year-old rooted cuttings, were set at the north side of the bottom of these holes. The roots were covered with two or three inches of soil, and then a sprinkle of fine bone-dust, say a pint, was worked in over the entire bottom of the hole. This was done in early spring. When growth began, this soil in the bottom of the holes soon was matted with a luxuriant growth of grass and weeds. The vine, as it grew, was trained up toward the top of the hole; another dose of bone-dust was scattered over the vegetation beneath, which was then buried beneath six inches of soil. In a few weeks another growth had developed; the vine was trained farther upwards, and the hole filled with another six inches of soil, until by autumn these successive fillings of bone-dust and soil had brought the holes full up to the general level of the vineyard, and the vines were well grown above the surface. Here was formed for these vines a root system reaching nearly four feet beneath the top of the ground, twice the depth of the average rooting of our vineyards. The vineyard bore last year its first full crop, and this season the crop might be termed more than full. Clusters and berries, extra large and numerous, growth of vines rampant, regardless apparently of a sixty days' drought which pinched adjacent vineyards; there was scarcely a sign of mildew, the vines maturing perfectly an enormous load of fruit, and holding their foliage green until it was killed by frost. They gave convincing proof that this method of founding a vineyard, though seemingly troublsome and expensive, "will pay."

Of course, for planting grape vines for profit, selections should be made of those varieties which have shown themselves most vigorous and hardy. There are favored localities where the more delicate sorts will succeed, but over the general expanse of our country we must grow hardy grapes to make grape culture practicable as a business.

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FRIDAY.....JULY 22, 1887

AUSTRALIAN AFFAIRS.

Latest advices from the Colonies do not show any particular improvement in business, though a change continues to be looked for. It was reported that the Messrs. Rothschild had made an offer of £5,000,000 for the famous Mount Morgan gold mine in Queensland. The New Zealand Loan and Mercantile Agency Company reports a better demand for salmon and firmer prices. There was inquiry for good American flour, in quarter sacks at from £10 to £10—10s, the advance in wheat helping to strengthen prices. Reports of the growing crops are very satisfactory, and it is believed that the acreage sown to wheat will be larger than in any previous year. In all the Colonies, feed for stock is in splendid condition and unusually forward. The prospects appear good for sheep, cattle and all cereals. A good season in the Colonies should create a better demand for American products and manufacturers.

E. H. Rixford, Secretary of the Grape Growers' and Wine Makers' Association, states that the report of the last annual Viticultural Convention is now in the hands of the printer, and every member will be furnished with a copy. As the Association has not sufficient money to complete the publication, every member who has not paid his annual fee is requested to do so, and then there will be sufficient funds for the purpose.

THE HALF YEAR'S WINE TRADE.

Having before us the figures showing the exports of California wines during the first half of the present year, and their comparison with former years, it is not out of place to make some general remarks concerning the business.

To begin with, the quantity of wine exported from the State during the first half of the present year is larger than it was in the same period of 1886. But the increase has not been a very large one, 397,036 gallons, and is less than the increase in 1886 over 1885, during similar periods. This shows very conclusively that the business of the present year has not extended so rapidly as the production. The vintage of 1886 was double that of 1885, but there will be nothing like any such proportionate increase in the consumption of the wine. One feature in this year's export movement that we did not expect to see is that the shipments made overland are less than they were up to June 30th, 1886. It must be remembered that freights by rail were exceedingly low last year for several months. On the other hand there was a very large overland movement this year before the Interstate Law came into effect, which, it was thought, would equalize matters. But this has not been the case as far as the wine trade is concerned. On the other hand the shipments of wine by sea were nearly 500,000 gallons more up to June 30th, than they were in the first six months of 1886. It will be remembered that the shipments by the Panama line of steamers fell off considerably last year and were less than in 1885. This was due to the overland freights, and the advance in this direction recently has operated in favor of the steamship line.

But it is in the miscellaneous shipments by sea that the largest gain is to be noted, and a comparison of these figures for the first half of the three years is full of interest. Up to June 30th, 1885 only 42,233 gallons of wine were shipped by sea by miscellaneous routes. In 1886 this wss more than doubled, the quantity exported for the half year being 86,126 gallons. But it remains for the present year to show the remarkable increase of 600 per cent in this direction as the shipments made up to the end of last month aggregated 515,746 gallons. On referring back to former tables that have been published in the MERCHANT it will be found that several large shipments, of 100,000 gallons each, have been made in sailing vessels going round Cape Horn to New York. This apparently detracted from the overland trade, and these heavy shipments to New York by sea were begun just after the operation of the Interstate Commerce Law.

In addition we find that the trade has increased in other directions, notably to the Hawaiian Islands which are now consuming in the neighborhood of 100,000 gallons of California wine annually. Heavier shipments have also been made to Tahiti, to European ports and to Asiatic ports. Small shipments, evidently sample lots, have also been made to other places and may ultimately be the means of inducing considerable trade. Comparing, then, the trade of the first half of this year with the two preceeding years we find that though there was an increase of almost 400,000 gallons in 1887 over 1886, yet it was nearly 650,000 gallons less than the increase in 1886 over 1885. The exports of wine last year were very large and hardly warranted, as we showed at the time, by the demand in the East. It is probable that the 1885 vintage is pretty well consumed by this time, and it is well that it should be so as the wine was not of the best quality and cannot be compared with that of last year. We could not expect reasonably that the exports should yet continue to increase in the same proportion that they did last year, and we think on the whole that there is no cause for complaint in the wine trade of the present year. We give the exports during the first half of three years as follows. Thus:

SIX MONTHS ENDING JUNE 30TH.

BY SEA.	1887.	1886.	1885.
Panama Stmrs..	533,609	475,103	554,894
Miscellaneous....	515,746	86,126	42,233
Totals by Sea....	1,049,355	561,229	597,127
By Rail.	2,575,035	2,666,125	1,584,869
Totals, 6 Mos...	3,624,390	3,227,354	2,181,996

It will be seen from the foregoing figures that there has been an increase of 1,500,000 gallons in the half year's exports since 1885, which must be considered very satisfactory. Although the consumption of wines has not gone ahead so quickly as that of raisins, still our wine makers have good grounds for satisfaction.

It may be asked what are the prospects of the business. We think that they are decidedly good and far more encouraging than the wine makers have experienced for some time past. It is true that matters have looked somewhat gloomy of late, but this is nearly at an end. The wine of 1886 in makers' hands is the best that has ever been produced in California. The bulk of what has already been sold was the inferior wine that brought only low figures, at which an attempt was made to fix the price for the whole. This effort has, we are very pleased to state, most signally failed. The market has hardened considerably and sales have recently been effected at 25 cents, whereas a few months ago 15 cents was the ruling offer. And before very long 1886 wine will be sold at even higher figures. We stated a couple of months ago that prices would advance to from 25 cents to 30 cents per gallon. The former has been reached, and the latter will be, for good sound wines. This gives a living price to the maker as well as to the merchant and should be satisfactory to both.

Last year's vintage was about 18,000,000 gallons. Of this 3,000,000 gallons was made into brandy. We are exporting over 7,000,000 gallons annually, and in California we are consuming over 5,000,000 gallons. This will account for fully 15,500,000 gallons, leaving only 2,500,000 gallons surplus. This is not a drop too much because it can be easily held in makers hands throughout the State and will return them far larger profits in another year. The supplies at the end of last year were not large by any means, as the vintage of 1885 did not exceed 8,000,000 gallons. Makers will thus see that there is no reason for them to sell their wines for next to nothing. They are also receiving material assistance in their business from other sources. The storage company is in a fair way to succeed, and, as soon as it is ready for business, some 5,000,000 gallons of wine can be taken from makers' hands, and advances made to them at a reasonable rate of interest. This will be one of the most important events in the history of the wine trade of California. We should like to see a similar cellar started in New York, although San Francisco should always be the center of the wine trade in the United States. Then again, we have the condensed must operations which will be in effect this year. When a man like Mr. J. de Barth Shorb takes hold of it, it inspires confidence everywhere. He is not only thoroughly interested in the welfare of California from his property interests, but he is a large and experienced practical viticulturist, and one of the State Commissioners. With the machines for condensing must fully established throughout the State, the wine makers will be relieved of any possibility of a surplus.

The grape growers will receive higher prices for their grapes, and the wine makers for their wines. There will be a more buoyant and confident feeling from one end of California to the other. For next year, we look for a shortage in supplies. This vintage will not be as large as last year's. Placing it at the same quantity, after allowing for increased local consumption and increased export trade, there will not be enough to supply the demand without drawing upon stocks that are now put away for ageing. It seems almost a pity that the condensing process should be brought into effect so soon, as it will have a tendency to decrease the quantity of matured wines which are badly needed. We may also look for further inquiries from European centers, as every day the wines of California are being more and more talked about, and this State is becoming recognized for its importance as a wine producer. The encouraging outlook in the East, as reported by two more of our State Commissioners, Mr. I. De Turk and Mr. George West, must also not be lost sight of.

Taking all these things into consideration, we think that the outlook for California wine makers is most hopeful, and we trust soon to see the time when the regulation of market prices for new wines will be placed in their hands. It would be a decided change for the better.

A GOOD OUTLOOK.

Mr. George West, of Stockton, has just returned from a trip of several months in the Eastern States. He is as equally convinced as Mr. De Turk of the future success of the California wine business. This opinion from two of our Viticultural Commissioners, and most experienced wine makers, is exceedingly encouraging. They are not inclined to be unnecessarily hopeful as a rule, therefore the more importance may be attached to their expressions. Mr. West confirms our previous report of Mr. Pohndorff's great success, and holds that the East will consume every gallon of wine, that is three years old and upwards, that we can send there. He also speaks hopefully of the prospects for the brandy business and agrees with us in our opinion of the importance of the establishment of the bonded warehouse in New York. Mr. West returns with the old story of the large quantity of inferior and adulterated stuff, that is sold in the East as California wine. He also thinks that a large wine warehouse might be profitably established in New York for storing wines which could be shipped round the Horn. Perhaps the New York people will take hold of this matter which we have been so long in formulating.

Professor W. B. Rising, the State Analyst, who has recently been over-rushed with work in his department, has gone east combining business with recreation.

The St. Helena *Star* reports that wine and brandy shipments are unusually heavy from the valley, as much as sixteen carloads having been shipped up to the middle of the month. Trouble was experienced in getting sufficient cars.

HAWAIIAN AFFAIRS.

The end of the downward career of Hawaiian affairs has been brought to an abrupt termination. For the past eight or nine months the administration on the Islands has been deteriorating with alarming rapidity. Corruption in every form predominated. Extravagance and the reckless wasting of public funds has been the rule among those who manipulated the finance. A sudden influx of coin, to the extent of $1,000,000 or more, was too much for the mental equilibrium of Kalakaua and his satellites. The result was anticipated. It was merely a question of time. But the time arrived even quicker than was expected owing to the utter disregard for anything in the shape of honesty or economy that was shown by the maladministrators. But it is not a day too soon. Planters and business men could not brook any further delay. They simply took matters into their own hands and forced a crisis.

It is fortunate that no blood was shed during the terrible excitement that lasted on June 30th and July 1st. neO spark would have resulted in terrible loss of life and property. The citizens literally took possession of Honolulu. They had been goaded on for months, and finally twitted and taunted by Gibson beyond endurance. They have succeeded in teaching him even a better lesson than he learned in the jails of Java. When 2,500 armed men are parading the streets, wrought up to an intense pitch by the wrongs done them, and still further incited by stirring speeches and vigorous appeals for action, it can be readily understood how close they were to death and destruction. Great self-restraint must have been practiced, and it is to the credit of the citizens of Honolulu that they have done so much and so well. Our latest advices do not show by any means that all was peace and quiet, or that happiness reigned supreme. The storm had been long in gathering and its traces are yet felt. A mere change of administration cannot quell in an instant the feelings that have sunk so deeply for months and months.

The plans made for the insurrection must have been carefully and thoroughly matured. There was no hitch in the arrangements. Thoughts grew to whisperings; whisperings to words; words to grumblings, till, like its slumbering volcano, the fire burst suddenly forth. We do not think that the means adopted by the citizens were entirely in accordance with law and the constitution. It was thought rather that the end justified the means. We do not think that the trouble is even yet ended. Kalakaua may be compelled to sign the new Constitution and to accept a new Cabinet which is none of his own choosing. The men who are now his ministers are not his friends. His dislike for them is as great as is their contempt for him. He will never forget the methods of procedure or the indignities that have been heaped upon him. He may be temporarily subservient, but we feel that he will sooner or later make a strong attempt to be revenged. He will bear watching, and close watching. If Gibson be allowed to roam at large, he will continue in his attempts to stir up strife between the foreign and native races. He will worm his way back into the King's confidence, and between the two they will endeavor to incite a revolution among the natives. If this be brought about there will be far greater trouble than any that has yet occurred on the Islands. The men who are now in charge of affairs will need to keep a firm hand upon the King and a very close eye upon Gibson.

THE MELBOURNE EXHIBITION.

Several months ago Mr. W. F. Lawry, Manager of the New Zealand Loan and Mercantile Agency Co. in this city, drew the attention of our business men to the exhibition to be held in Melbourne next year, as an excellent opportunity for placing goods of American manufacture before the Colonial public. Besides giving full particulars as to the nature of the proposed exhibition, he also stated what was necessary to be done by intending exhibitors. Mr. Lawry even went further. He endeavored to interest the United States Government in the project and suggested that some official representation at least might be made in the Colonies. We have never heard that he received any reply from Washington, and the chances are that he did not as the present administration has no inclination toward encouraging American trade or intercourse with the Colonies. Its only action in this direction has been rather to prevent than further progress, as shown in the mail service matter. But what the Government would not do has been taken in hand by a single firm in this city, Messrs. A. P. Gregory & Co. These gentlemen have issued circulars to all our business men, and have publicly announced that their representatives in the Colonies are prepared to act as agents for intending exhibitors without any charge beyond actual expenses incurred, except when sales are effected. As the Colony of Victoria is strongly a protective one, it would have been more to our advantage if the exhibition were held in New South Wales, where there are scarcely any customs duties. But Melbourne will be crowded with visitors from all the other Colonies, and thus our trade may be extended. We believe firmly that there is yet a large market in the Colonies for American manufactures and productions, and that this market can be extended in many directions. An opportunity for doing so is now afforded, and no time should be lost in communicating with Messrs. H. P. Gregory & Co., Fremont and Mission Streets. The applications for space will close in Melbourne on August 31st, so they must go forward by the mail leaving here on 29th inst.

The Vintage.

Clarence Wetmore, Secretary to the State Viticultural Commission, recently issued circulars to the grape growers asking for a report upon the condition of the grape crop, with a view to obtaining an estimate of the vintage and thus determine values. Twenty replies have been received from as many different sections, and the indications are that this year's wine product will be in the neighborhood of 15,000,000 gallons. We are inclined to think, however, that this is slightly under the mark, although we do not look for more wine than was made last year, if there even be as much.

The Hawaiian treasury contains $6.47. The late Government acknowledge to having received over $1,000,000 of the new loan, which, by the way, was illegally floated, and the people naturally ask, "Where is the Loan?"

Dr. Springmuhl's Plans.

Dr. F. Springmuhl writes to the MERCHANT that he intends to visit California again next year. In consequence of the report he made upon the wines of California, his friends in London have decided to introduce the industry of the concentration of grape must in this State in 1888. In their opinion it would not be advisable to hurry the matter and begin this year, as they consider that there is not yet an overproduction of wines in California. Undeniable proof for this statement is found, writes Dr. Springmuhl, in the circumstance that large quantities of wines, from four to five years old, are not to be found in the cellars either of wine producers or merchants. He thinks, however, that in a few years there will be a surplus of wine in the United States as the consumption of wine is unusually small because Americans do not yet appreciate the importance of wines as a dietetic.

Professor Julius Stollar has made a practical trial in Alacska (Hungary), with the following manner of preparing the vintage for fermentation. Having pressed the grapes gently, he warms the pomace in a tank with double heads, up to 65°C. by steam, adds the pressed must, mixes it well through, keeping up the fermenting temperature to 20° or highest 25°C., racks the must, and allows the same to continue to ferment. The heating up to 65°C. of the pomace, the professor considers to have the effect of killing mould germs, and the double pressing of the must aerating the same well, he thinks proper, to perfect its fermentation, rendering the same independent of the weather.

Hon. H. A. Pellet, who was in town last week, was making careful enquiries into the proposed Wine and Security company. He is equally as anxious as the MERCHANT to see the affair started on a sound and solid basis, as it cannot but prove of the greatest possible benefit to all wine makers. It was learned from Mr. C. A. Spreckels, that the lease of the old refinery building to the company was being prepared. If Mr. Pellet finds that everything is as satisfactory as it should be to the wine makers he will take the management of the warehouse and set promptly to work with a will as no time is to be lost in getting the building ready for storage before the vintage.

A resume of reports from the different grape-growing districts of Italy regarding the aspect of the grape crops after the 15th of June, published in the *Italian Wine Journal* shows 12 districts of great abundance and excellent condition, 30 very good in both regards, and 17 middling. Southern Italy and the center of the Kingdom make a better show than Upper Italy.

A large crop seems to be hoped. Best qualities fetch good prices, but if another crop of a 1,000 million gallons will be gathered, then ordinary wines, of which there is a large stock of 1886, will be very cheap after the vintage of 1887 in Italy.

The price of 1886 wine is steadily advancing. Mrs. Kate Warfield and H. E. Boyes of Glen Ellen have each sold their red wines for more than 25 cents per gallon.

The pure wine law test case is to be heard before the Supreme Court early in August.

FRENCH IMPORTED WINE.

The Austrian Minister of Commerce published the French regulations of duty on wines imported into the Republic. Wines (including cask) 4.50 francs per hectoliter, and according to special treaty 2 francs. Wines above 15 per cent alcoholic strength the duty for the excess of spirit.

Extreme vigor is exercised by the French Custom House in determining the absolute purity of imported wines. The principle is upheld that a natural wine is the product of fresh grapes exclusively. Wines having an addition of anything not derived from fermentation of grapes, come within the objects of the law on imported spirit.

As artificial wines are considered:—

1. Such which have been made from other sources than grape or only a small admixture of grape juice.
2. Wines made from dried raisins.
3. Wines having water added (etendus d'eau, dedonbles) and then fortified (remontes) with alcohol.
4. Piquettes fortified with alcohol.
5. Pomace wine.

It appears that the tests on the part of the French authorities are now extremely vexations and can not be appealed against. Wines declared not pure, pay for every hectolitre of alcohol contained in them 186.45 francs. A wine tested even against the will of the man who sent the wine, and found not absolutely pure, is confiscated by the French authorities and the sender fined besides to the extent of 125 francs.

Parcels of Hungarian wines of 16.6 grams extract and 9.8 per cent. alcohol have been declared not pure by the French Custom House. Analysis made of samples from those parcels simultaneously in Klosternenberg and Wiesbaden declare these wines absolutely pure, but there is no redress. The Austro-Hungarian Government has made representations on the subject in Paris, the same as similar cases relative to wines from other countries have given rise to complaint in France.

HAWAIIAN TRADE.

The exports from San Francisco to Hawaiian ports have decreased during the past two months, compared with the same months of last year, to the extent of more than $31,000. This is not to be wondered at when we consider the unsettled condition of affairs there recently. Yet, taking the first half of each year we find that the value of the exports has been in favor of the present year to the extent of $51,383. The principal gain was made in the month of March when the exports were nearly $100,000 more than in March 1886. In April of this year there was also an increase, but the other four months show a decline. It is to be hoped that with a more settled condition of affairs on the Islands, under the new administration, that there may be a revival of trade and general increased confidence. The exports for the first six months of this year and last were: 1886, $1,159,810; 1887, $1,511,183.

Last month 60,500 pounds of raisins were shipped overland, Los Angeles sending 23,200 pounds and Colton 37,300 pounds. These were probably about the last lots of the 1886 pack that remained in makers' hands.

In Edenboken, (Palatinate,) Emanuel Kerr and his son have been sentenced to one year's imprisonment and a fine for adulteration of tartar with alum. Their operations have been rather extensive, a profit of 75,000 marks having been realized by them.

POHNDORFF AND POWDERLY.

Master Powderly reiterates that he is right when he enjoins temperance principles to his followers. He is right if the meaning of his advice is that the working classes like all rational beings should be temperate. Powderly is right when he advices abstaining from ardent liquors.

But if he means to say that liquor includes the fermented juice of the grape, if under the term rum sellers whom he excludes from membership of the great association he directs, he includes those who furnish wine or beer, fermented drinks exclusively—if he banishes from the working men's union, the laborer in the vineyard, the winery, the hop garden and brewery; in short if Powderly falls into the error of judgment that attributes to the light table drink wine, the demoniacal power of distilled drinks over habitués of the ardent dram shops and the slaves of rum, then the grandmaster is not only ludicrously mistaken, but shows his incapacity to rule a community of men that should be guided by high intelligence, firm persnasians and firm will.

If in his adherence to the rnling of the church of Rome, Powderly interprets the Pope's late expressions on the subject of abstinence from ardent drinks, as including wine, then he commits as great a blunder as a man who does not know the manners of nutrition in grape growing countries, inhabited by probably half the Catholics on the globe. The holy father himself uses his modicum of wine as part of his diet, the princes of the church, and the clergy with single exceptions consider the glass of wine as essential to wholesome alimentation.

It can not have been the intention of Pope Leo to proscribe wine from the use of the faithful. Tippling ardent drinks, the excess of which seems but a natural consequence of many who learned to indulge in them, is so serious an evil, that the head of the Catholic church and every one connected with it, must of needs condemn the practice.

Could Grandmaster Powderly be so blind as to believe hurtful to health and morals of the American working man, what constitutes the natural table beverage, the refreshing and strength and health preserving beverage of the French, Italians, Portuguese, Spanish, Hungarian, Austrian, Greek and Southern German workingman, light table wine?

Could it be made a crime to the American workingman to benefit of the chances, each year increasing, of finding in the temperate use of light, pure home grown wine, diluted at that, the best means of maintaining the vigor of his constitution, the preserver of his health?

Surely, the head of the grand body of workingmen, will have to modify his sweeping condemnations, and by all means get some information on the subject, if his ideas are in conformity with those well meaning but narrow-minded partisans of prohibition who have not yet learned to distinguish between what is hurtful and what is beneficial among beverages, and what is connected with a curse and what was blessed by our Redeemer.

F. PDFF.

EAST BOUND THROUGH FREIGHT.

Forwarded by the Southern Pacific Co., June, 1887.

FORWARDED FROM — IN POUNDS.

ARTICLES.	SAN FRANCISCO.	OAKLAND.	LOS ANGELES.	COLTON.	SACRAMENTO.	SAN JOSE.	STOCKTON.	MARYSVILLE.
Beans	717,720							
Blankets and Woolen Goods	25,870				4,150	9,590		
Books and Stationary	14,910	1,960			3,810	500		420
Borax		67,650						
Brandy	46,970		22,940		99,070	5,740	43,270	
Canned Goods	389,920	48,280			164,080			
China Merchandise	94,870							
Chocolate	9,400							
Cigars	17,810							
Clothing, California Manufactured	80,800							
Coffee, Green	269,740							
Drugs and Herbs	12,680	860					110	
Empty Packages	21,130		85,950					
Fish, Pickled	48,730							
Fruit, Dried	9,500				3,730			
" Green Deciduous	21,240				1,770,540	128,500		
" " Citrus			711,670	42,000				
Glue	23,250							
Hair	6,670				16,970			
Hides	68,540		82,300		88,380			
Honey			7,470					
Hops	47,470				206,690	11,660		
Horses					20,000			
Leather	47,310				8,480	17,170	1,420	
Lumber	101,010				181,530			
Machinery	29,130							
Merchandise, Asiatic (in bond)	31,210							
Miscellaneous	135,230	91,900	21,300		15,420		2,040	5,290
Mohair	8,140				1,340			
Mustard Cake	25,070							
Oils								
Oil Cocoanut	44,150							
Oils, Whale								
Ores	29,950							
Potatoes	2,138,000		319,110		734,770			
Pickles								
Powder and Explosives	2,080	24,800			210			
Quicksilver								
Raisins			23,200	37,300				
Rice								
Salmon, Canned	119,070							
Shells	30,420							
Shingles	190,280	32,100						
Silk	132,360							
Silk Goods	20,260							
Skins and Furs	41,120							460
Sugar	5,905,550							
Syrup	464,010							
Tea	5,142,330							
" Dust	6,990							
Tobacco Leaf								
" Dust								
Vegetables	646,570		209,450		1,395,460			
Whalebone								
Wheat								
Wine	1,856,500	1,220	195,630		514,230	23,600	11,780	100
Woods, Valuable								
Wool, Grease	1,977,660		765,640		252,570	9,800		
" Pulled					136,410			
Scoured	204,050							
Totals	21,255,670	268,770	2,444,660	79,300	5,607,800	206,500	58,620	6,270

Recapitulation.

San Francisco.	Oakland.	Los Angeles.	Sacramento.	San Jose.	Stockton.	Marysville.	Colton.	Grand Total.
21,255,670	268,770	2,444,660	5,607,800	206,560	58,620	6,270	79,300	29,927,650

WM. T. COLEMAN & CO.

SHIPPING AND COMMISSION MERCHANTS.

SAN FRANCISCO OFFICE:
MARKET AND MAIN STREETS.

NEW YORK OFFICE:
NO. 71 HUDSON STREET.

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91 MICHIGAN AVENUE, CHICAGO, ILL. **FLAVEL WAREHOUSE,** ASTORIA, OR. **NO. 75 NORTH SPRING ST.,** LOS ANGELES, CAL. **54 DRURY BUILDINGS,** LIVERPOOL.
NO. 4 BISHOPSGATE STREET, Within E. C., LONDON.

Sole and Exclusive Agents for following Brands of Salmon:

COLUMBIA RIVER.

Booth & Co, Black Diamond, Coleman Flag, McGowan Bros' "Trap" Brand, Fisherman's Pkg Co, Aberdeen Pkg Co, White Star Pkg Co, Jas. Williams & Co, Thistle Pkg Co, Columbia Canning Co, McGowan & Sons' "Keystone" brand, Seaside Pkg Co, J. W. Hume "Autograph" brand.

OUTSIDE RIVERS.

WACHUSETTS PKG CO,
"SILVERSIDE" BRAND,
BATH CANNING CO,
CARDINER PKG CO,
HERA PKG CO,
"TOMAHAWK" BRAND,
SUNNYSIDE PKG CO.

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SKEENA RIVER.

BRITISH AMERICAN PACKING COMPANY

SACRAMENTO RIVER.

COURTLAND PACKING CO., JONES & ANDERSON.

We also offer For Sale of Other Columbia, Sacramento and Fraser River Salmon:

Geo. W. Hume's "Flag" brand,
Hapgood & Co.,
I X L,
Pillar Rock Pkg Co.,
Geo. T. Meyers,
Ocean Canning Co.
Badolett & Co., (Flats),
Washington Pkg Co's "Favorite" Brand,
"Epicure" brand,
Pacific Union Pkg Co.,
Cutting Pkg Co's "Cocktail" (Flats),
A. Lusk & Co's pack,
"Mermaid" brand,
Scandinavian Pkg Co.,
West Coast Pkg Co.,
Warren & Co.,
"Carquinez" brand;
Point Adams,
Wadham's Fraser River.

ALASKA FISH.

Karluk Pkg Co., "Challenge" brand, Arctic Pkg Co., Arctic Pkg Co's "King" Salmon.

We also have the "O & O" brand, an outside river fish, and many other brands, that can be had on application.

WE ARE SOLE AGENTS FOR THE CELEBRATED

Golden Gate Packing Co, "Black Diamond" brand of fruits, Barbour & McMurtry's fruits in glass, Coleman's "Flag" brand of fruit, San Lorenzo Pkg Co, Riverside Fruit Co, Colton Cannery, J. Lusk Canning Co, San Mateo Pkg Co, Sierra Madre Packing Co, Santa Clara Packing Co.

Our lines of Canned Fruits and Canned Salmon are incomparable, and we will make prices F.O.B. or C.I.F. for Great Britain, Australia and the Colonies.

OUR NATIVE WINE SHIPMENTS BY SEA.

PER P. M. S. S. CO'S STEAMER GRANADA, JULY 15th, 1887.

TO NEW YORK.

MARKS.	SHIPPERS.	PACKAGES AND CONTENTS.	GALLONS	VALUE
C in diamond	C Carpy & Co	75 barrels Wine	3,739	$1,495
W N O	"	2 half puncheons Wine	122	122
Mrs Langtay	Kohler & Van Bergen	8 barrels Wine	400	400
"	"	2 octaves Brandy	50	150
B A	Leonormand Bros	10 barrels Wine	504	151
E M F	"	5 barrels Wine	250	75
A V Co	C Schilling & Co	150 barrels Wine	7,065	2,826
F in diamond	S Lachman & Co	45 barrels Wine	2,320	928
L G in diamond	"	30 barrels Wine	1,510	604
L M F	"	10 barrels Wine	540	270
"	"	1 barrel Brandy	47	140
E V	Lachman & Jacobi	40 barrels Wine	1,996	701
F A	"	25 barrels Wine	1,266	358
"	"	1 case Wine	3	3
F R	"	25 barrels Wine	1,271	385
A in diamond	"	15 barrels Wine	762	254
C F	"	1 barrel and 1 half barrel Wine	79	50
C H G M	Napa Valley Wine Co	4 barrels Wine	200	138
J K	A Erz	25 barrels Wine	1,247	449
S & Co	Williams, Dimond & Co	10 barrels Wine	440	200
E S	"	10 barrels Wine	438	210
"	"	1 barrel Brandy	50	100
Total amount of Wine, 1 case and			24,154	9,611
Total amount of Brandy			147	390

TO CENTRAL AMERICA.

J J B, Corinto	M Ebrman & Co	5 cases Wine		$23
"	"	2 cases Brandy		20
M M, La Libertad	Kohler & Frohling	6 kegs Wine	99	59
D M A, La Union	Montealegre & Co	10 packages Wine		80
M M, San Jose de Guat	Urruela & Urioste	6 cases Wine		24
G S, San Jose de Guat	"	10 cases Wine		45
F P & Co, La Union	"	10 kegs Wine	100	95
J S, La Union	"	7 kegs Wine	140	125
A Q, Champerico	"	3 kegs Wine	30	25
F P & Co, La Libertad	Cabrera, Roma & Co	1 keg Wine	20	22
J T, Champerico	McCarthy Bros. & Co	4 cases Whiskey		36
"	"	20 cases Claret		80
A P, Ocos	"	20 cases Claret		80
"	"	10 cases Wine		40
F H, Ocos	Schwartz Bros	2 cases Wine		9
S & S, Champerico	"	10 cases Wine		50
E F & Co, Corinto	B Dreyfus & Co	6 barrels Wine	300	250
J L, Guatamala	"	2 half barrels Wine	55	40
"	"	10 cases Wine		40
E C, La Libertad	Thannhauser & Co	12 cases Wine	60	76
H K, Ocos	J H Dieckman	5 barrels Wine	50	50
E C, San Juan del Sur	John T Wright	3 cases Wine	45	27
L S & H, Amapala	"	2 kegs Wine	20	18
J E, Amapala	"	4 kegs Wine	40	40
Total amount of Wine, 93 cases and			959	1,298
Total amount of Brandy, 2 cases and				20
Total amount of Whiskey, 4 cases and				36

TO MEXICO

G P Y C, San Blas	Paul O Burns W Co	6 half barrels Wine	120	$89
R G H in diamond, San Blas	"	2 half barrels Wine	40	30
T H, San Blas	"	8 half barrels Wine	160	176
I G D, Manzanillo	"	4 half barrels Wine	80	71
Y B, Manzanillo	"	8 half barrels Wine	160	128
R J D V, Manzanillo	"	13 half barrels Wine	260	191
R J D L V, San Blas	"	2 cases Wine		11
M C Y C, San Blas	"	2 packages Wine	57	55
L H, San Blas	"	1 barrel Wine	46	35
S R Y C, San Blas	"	9 half-barrels Wine	180	117
"	"	2 half barrels Brandy	40	80
"	"	1 half barrel Wine	20	13
O V H, San Blas	"	3 half brrrels Wine	60	63
F P Y C, San Blas	"	2 half barrels Wine	40	40
A S, San Blas	Redington & Co	2 half barrels Wine	52	44
J D G, Manzanillo	I R Burns & Co	3 kegs Wine	50	48
T B, Manzanillo	J H Dieckman	4 kegs Wine	73	65
R T, San Blas	Cabrera, Roma & Co	10 casks Wine	600	365
A J & Co, San Blas	J O Meyerink & Co	1 cask Wine	57	23
J M, San Blas	"	2 barrels Wine	55	60
"	"	3 boxs Wine		10
B T C, Acapulco	W Loaiza	10 cases Wine		35
"	"	1 barrel Wine	52	34
Total amount of Wine, 15 cases and			2,162	1,703
Total amount of Brandy			40	80

TO PANAMA.

C A F	Lachman & Jacobi	2 half barrels Wine	55	$30
P	B Dreyfus & Co	25 casks Wine	1,441	650
J K	Cabrera, Roma & Co	20 half barrels Wine	1,163	407
"	"	20 cases Whiskey		180
Total amount of Wine, 20 cases and			2,659	1,087
Total amount of Whiskey				180

TO SOUTH AMERICA.

J T & Co, Iquequi	Dickson, De Wolfe & Co.	4 kegs Wine	59	$63

TO GERMANY.

J E, Nurnberg	C Schilling & C	1 barrel Wine	47	$45

PER STEAMER MEXICO, JULY 15th, 1887.

A G & Co, Nsw York	F Mitchell	44 barrels Wine	2,500	$1,350
"	"	3 barrels Brandy	150	350

TO JAPAN—PER O & O S. S. Co's STEAMER SAN PABLO, JULY, 12, 1887.

R S S, Yoko	C Schilling & Co	1 barrel Wine	47	$36
T K, Tokio	"	11 barrels Wine	529	265
C & J T Co, Kobe	Williams, Dimond & Co	2 barrels Wine	95	64
J C & Co, Yoko	Getz Bros & Co	2 cases Whiskey		21
R in Diamond, Yoko	J Gundlach & Co	10 barrels Wine	490	294
G W L, Nag	R Andre	2 barrels Wine	100	40
W R, Hiogo	J E Merithen	20 barrels Wine	1,000	400
"	"	1 case Wine		4
L in diamond, Yoko	S Mayers	5 cases Wine		80
"	"	10 cases Whiskey		105
H E A, Yoko	Hirschler Bros & Co	12 barrels Wine	600	275
H E A, Kobe	"	8 barrels Wine	400	213
H B, Yoko	C Carpy & Co	4 casks Wine	240	121
J B & Co, Yoko	Kruse & Euler	1 half barrel Whiskey	27	120
A diamond C, Yoko	E Martin	50 cases Whiskey		300
Total amount of Wine, 68 cases and			3,101	1,876
Total amount of Whiskey			27	526

TO CHINA.

M & Co, Shanghai	S Foster & Co	3 packages Wine	132	$79

TO HONOLULU—PER O. S. S. Co's STEAMER AUSTRALIA, JULY 19th, 1886.

H J	Arpad Harastzhy & Co	6 barrels Wine	300	250
"	"	34 10-gal. kegs Wine	340	322
"	"	52 5-gallon kegs Wine	260	260
"	"	8 cases Wine	20	50
G W M & Co	A F Eans & Co	20 cases Whiskey		200
T Q H	Sronfe & McCrum	1 half-barrel Whiskey	31	124
W C P	B Dreyfus & Co	55 10-gallon kegs Wine	1,393	1,150
"	"	60 5-gallon kegs Wine		
"	"	20 half barrels Wine		
G B	C Carpy & Co	1 half-cask Wine	35	20
W, S in diamond, L	Schillinger & Co	1 keg Whiskey	10	50
G W M & Co	Spruance, Stanley & Co	30 cases Whiskey		236
L & Co	"	11 cases Whiskey		91
H J	Wilmerding & Co	1 barrel Whiskey	44	178
E H & Co	Kohler & Frohling	7 casks Wine	617	530
"	"	10 10-gallon kegs Wine		
"	"	10 5-gallon kegs Wine		
L & Co	Lachman & Jacobi	5 half-barrels Wine	218	204
"	"	11 kegs Wine		31
"	"	10 cases Wine		18
H & Don	Williams, Dimond & Co	5 cases Wine	150	85
G W M & Co	C C Shattuck & Co	10 kegs Wine	215	78
G in diamond	Donald Gedge	29 kegs Wine		
Total amount of Wine, 30 cases and			3,548	2,913
Total amount of Whiskey, 61 cases and			85	309

MISCELLANEOUS SHIPMENTS.

DESTINATION.	VESSEL	RIG.	GALLONS.	VALUE.
Santa Rosalia	Nautilus	Bark	1,083	$463
Victoria	Geo W Elder	Steamer	100	111
Mexico	Newhern	Steamer	2,605	1,638
Victoria	Mexico	Steamer	291	292
Honolulu	W G Irwin	Brig	1,735	1,487
Total			5,814	$3,991

Total shipments by Panama steamers	32,863 gallons	$15,157
Total Miscellaneous shipments	12,670 "	9,039
Grand totals	45,533	$24,196

BOGUS WINES.

The People of New York Humbugged by Unscrupulous Dealers.

[New York Sun.]

"We make from 30,000,000 to 35,000,000 gallons of American wine yearly, and we do not import over 5,000,000. Those figures tell whether the wine drunk by our people is foreign or American." So spoke a New York wine dealer. "By far the larger part of the American wine, however," he added, "is not sold as American but as foreign wines. Only a few days ago I visited the cellar of one of the largest wine merchants in the city. It contained many thousands of gallons of American wine, the casks being marked 'St. Julien,' 'Medoc,' etc., through the list of prominent foreign brands. Hotel men go there and order these wines bottled and labeled as foreign wines, and I saw in that cellar many thousands of labels ready for use in this way. These parties take good care not to imitate a trademark, but they give the wine the foreign name and sell it as foreign to their guests. It is a strictly confidential business as between the wine merchant and the hotel-keeper. The American wine is bottled right there in the cellar, labeled with the foreign label, and then sent to the hotel, so that the hotel proprietor is not put in the power of his steward or caterer by the latter knowing the source from which his employer receives his wines. Of course this does not apply to all the hotels.

"It is not difficult to see the advantage of all this," went on the wine dealer. "It enables the hotel man to sell his wines at a profit of 100 to 200 per cent., and it enables the American wine produeer to dispose of his product, that might otherwise be left on his hands.

"But one of the most interesting deceptions," added the wine dealer, "is that perpetrated by some of the *creme de la creme* upon their confinding friends. Some rich individual, who has a coat of arms, and coats of arms can always be got in London at the right figure, will order a quantity of American wine bottled, and have a label with his coat of arms stamped on the bottle. Then he confides to his friends, as they loll over the dinner table, that the wine was expressly imported for his private use. It's an innocent sort of a fraud, and the wine probably tastes a good deal better for it. But selling American wine for foreign is nothing to the trick of making wine out of cider or fruit acid with enough American wine for a body. This is not only a deception, it is morally, and ought to be legally, a crime. Yet, many thousands of gallons of such stuff are disposed of yearly in New York.

Short Wine Crops Abroad.

Reliable reports from France, Germany, and Italy state that the prospects for this year's grape crop in those countries is very unfavorable. Frost, cold and wet weather during the blooming time, and mildew, and other blights have ruined nearly half the crop. The result of this will be an advance in California wines, and the man who holds his wine over and has a first class two year old article to offer will command a good figure for his wine. Many wine men in Napa Valley are taking this advice and preparing to hold their wine till next year. It is a pity that all do not do so. It would be the making of the valley if they did.—*St Helena Independent.*

PRACTICAL TEMPERANCE LEGISLATION.

[National Republican.]

The State of Maryland in 1821 passed an act raising revenue for the State, and the second section read, "That all importers of foreign articles or commodities, of dry goods, wares or merchandise, by bale or package, or of *wine, rum, brandy, whiskey, and other distilled spirituous liquors, &c.*, and other persons selling the same by wholesale, bale or package, hogshead, barrel, or tierce, shall before they are authorized to sell take out a license," etc. The penalty was forfeiture of the goods and fine collectible by indictment.

The firm of Brown Brothers & Co., of Baltimore, importers, refused to pay the license; were indicted and fined in the Baltimore court; carried the case up to the Marylard Court of Appeals, which affirmed the decision of the court below, and finally to the Supreme Court of the United States.

Elaborate arguments were made before the Supreme Court, the whole question at issue being the right of the State to interfere with commerce between the United States and a foreign country. The attorneys for Brown, one of whom was afterward Chief Justice of the United States himself, held that the law of Maryland was in contravention of two clauses of the Constitution of the United States, viz: paragraph 3, Section 8 of Article 1, which says: "The Congress shall have power * * * to regulate commerce with foreign nations, and among the several States, and with the Indian tribes;" and paragraph 2, Section 10 of Article 1, which says: "No State shall, without the consent of Congress, lay any impost duties on imports or exports, except what may be absolutely necessary for executing its inspection laws."

Chief Justice Marshall delivered the opinion of the Court (12 Wharton, 419), treating the subject exhaustively. He upheld both claims made by the plaintiffs and held that the State had no right to impose restrictions on commerce. He said: "No goods would be imported if none could be sold. * * The right to sell is connected with the payment of duties." On the power of Congress to control commerce Justice Marshall said: "The power is coextensive with the subject on which it acts. * * Congress has a right not only to authorize importation, but to authorize the importer to sell. * * What does the importer purchase (when he pays duties) if he does not purchase the privilege to sell."

Pursuing this line of argument, Chief Justice Marshall said the United States could not justify its action to any foreign power, if called to account, if it permitted the States to prevent the sale of goods which it made a person pay for the privilege of importation; and he held that if the power to tax sales of imported goods in the original packages was admitted, the power to prohibit was also admitted. The court therefore denied the power to tax.

A long line of cases follow this precedent, both in the United States and State courts. These decisions show the folly of the attempt in Maine to prevent the sale of imported liquor in the original packages. If States are not allowed to tax, of course they are not allowed to prohibit, and the case cited expressly declares they can do neither, though the question of prohibition was not before the court.

Gov. Bodwell and the Maine prohibitionists should not waste either time or money in the effort to prevent by judicia measures the sale of liquor in imported packages. That question is settled by the highest authority in this country—the Supreme Court of the United States—and the decision will not be changed, because it ought not to be.

What is wanted is a change of law as to importations, such as has been heretofore suggested by the *National Republican;* and if Gov. Bodwell will devote himself to that end he will succeed.

The duties on liquors should be made so high as to be practically prohibitory. A rigid inspection of all imported liquors should be required so that whatever was brought into the country should be what it is claimed to be and not vile, poisonous mixtures, such as are now imported, and such packages shoutd be prescribed by law, so as to practically prevent a retail trade as conducted under the present law.

A bill containing these provisions could be made a law at the first session of the fiftieth Congress. It is the first step the prohibitionists should take. Such a measure would become a law, almost without opposition. Will some of our temperance friends try it?

The Report of the Fourth Annual State Viticultural Convention is now published and ready for delivery. Single copies are one dollar each, but special rates can be obtained for five copies or more.

A NEW WINERY.

Last Thursday a company was organized at Saratoga, to be known as the Saratoga Wine Company, with a capital of $10,000, and have leased the old Lewis & Hines winery building. They will fit it up in first-class style, with the latest improved machinery and expect to be ready for this season's vintage. The following Board of Directors were appointed: A. D. McDonald, A. L. Sage, A. Berryman, Robert Parker and Peter Warner. We suppose Mr. Warner will be the wine maker.—*Los Gatos Mail.*

AGGREGATION OF WINE.

The construction of a cellar in the immediate vicinity of St. Helena that will hold a million gallons of wine, to be used as a storage warehouse is one of the pressing necessities of the times. There are a number of wine men who would be glad to hold their wine till next year if they only had cellar room for it, but they do not feel able to build the additional cellars. This would be provided for with a storage cellar of the kind spoken of above. And again, when the buyer came he would know just where to go and sales could be speedily and satisfactorily consumated. Let the wine men look into the feasibility of the project—*St. Helena Independent.*

THE SAME OLD HACKS.

[Magee's Real Estate Circular.]

When any distinguished visitor appears, when any public excitement produces a public meeting; when anything stirring occurs in municipal, state or national politics; when any proposition is up for making any new public improvement—in short, when anything new and exciting is on the carpet at any time or an any subject, the same old, worn-out jobbers and political hacks, with unsavory reputations, turn up, and ring into the movement as prominent leaders, and endeavor to *pose* as very distinguished and public spirited citizens, in whose charge, not only city funds would be safe, but on whose bosoms a defenceless widow might lean, and in whose care her little funds would be as safe as in the U. S. Treasury. Every good movement is cursed and frozen out by the presence of these fellows, because all who know them (and all old citizens do), are aware that these parties are jackals and brass-bound office seekers, pure and simple. Many a good thing would go ahead but for their presence. It is therefore in order to ask whether this city is *always* to be cursed with these people. At all political conventions, at all grape and fruit growers' conventions, at all meetings to make or to abstain from making public improvements, these fellows turn up. At one time they *pose* as soldiers, at another as farmers, at another as political leaders, and at all times as public spirited citizens and platform orators. Many a quiet, good citizen who refuses to go anywhere where these jack in-the-box frauds appear, is getting very restive under their eternal ringing-in, and if some of these good people in a moment of distraction and righteous indignation build a bonfire under some of these old hacks no one will wonder at it. The wonder is that these burrs have been tolerated so long.

PURE WINES.

[National Republican.]

A gentleman thus writes us on the above important subject from a religious standpoint:

Purity in all things is a natural requirement of the Christian. No good son of the church should disgrace himself by partaking in word or action of anything that is not pure.

While the church enjoins the principle, civil laws as regard purity of food are framed to the same purport, but it is the citizen who should, on a high moral basis partake in making both religious and civil laws effective.

The efforts of the farmers overcame all obstacles and obtained a law obliging imitation butter (oleomargarine) to be sold as such, thus protecting the purity of the product from the farm.

The American grape growers strove in vain to receive protection by legislation against bogus wines. The California Association of Vintagers seeing the high wine and fraudulent wine interest defeating the growers' bill in Congress, hastily framed a state law, supposing thereby to do good. It is the general opinion that the imperfect law is of no practical effect, as outside California the stamp on wines that were pure when the grower put it on his casks will shield an altered article which has passed through several outside hands.

What consumers, and above all the churches, should require of wines to be bought, if possible from first hands for sacramental objects, would be to ascertain from time to time by chemical analysis the purity of what is obtained, rather than trust a dealer's assertion of the purity of his wines, of which he presents certificates relating to some sample of what may long have been exhausted, let the agricultural department test wines obtained by consumers.

Washington has a privilege, of which many readers are not aware, namely, the absolute certainty of the purity of wines lodged here in quantities right from the vineyard vinery. We refer to the To Kalon product, which, in the hands of an experienced and scrupulous Californian, is above suspicion of anything foreign to the grape being contained in them.

CHRISTIAN.

DIVIDEND NOTICE.

The German Savings and Loan Society.

☞ DIVIDEND NOTICE—THE GERMAN SAVings and Loan Society.—For the half year ending June 30, 1887, the Board of Directors of The German Savings and Loan Society has declared a dividend at the rate of four and thirty-two one-hundredths (4 32–100) per cent per annum on term deposits and three and sixty one-hundredths (3 60–100) per cent per annum on ordinary deposits, payable on and after the 1st day of July, 1887. By order.

GEO. LETTE, Secretary.

THE SAN FRANCISCO MERCHANT.

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Note on the Use of Alkaline Polysulphides for the Mildew.

By M. le Vte. Amaury de Montlaur, Engineer.

[Presented to the Agricultural Society of Hérault, November 9, 1885.]

Among the agents for trial, sulphur is the one whose employment first occurred to all. But if flowers of sulphur be efficent against the *Oidium*, it has shown itself to be without sensible influence on the mildew, the rapid propagation of which far exceeds the transformation of the sulphur into sulphurous acid, the only condition in which it acts on fungi.

I thought next of precipitated sulphur, which is produced in several chemical reactions in so fine a state that it passes through filter-papers, and the rapid oxidation which I have easily verified.

But it was evident that if one wished to profit by the advantages of this physical state of sulphur, it must be produced on the leaf itself, where it is to be oxidized. Moreover, among the available reactions, the only practical one was the oxidation of the polysulphurets in solution. I was therefore led to "*throw upon the plant a dilute solution of liver of sulphur (penta-sulphuret of potassa) by means of an atomizer.*"

This body is found in commerce at a low price, and oxidizes more easily than the corresponding sodium compound.

When we expose to the action of the air a surface covered with a one per cent. solution of liver of sulphur, the latter is changed instantly. A deposit of sulphur-precipitate takes place, and at the same time the hyposulphite is formed and remains in solution. If we remove the sulphur we find that the hyposulphite itself oxidizes rapidly in the presence of porous bodies. As the sulphur produced is transformed into sulphurous acid, almost all of the sulphur in the penta-sulphuret is utilized quite rapidly. After some hours a cloth impregnated with this precipitated sulphur contains scarcely any sulphur, except in the form of sulphurous acid.

These, then, are the advantages of my method: (1) The rapid production and almost complete utilization of sulphurous acid; (2) the presence of water, which facilitates the action of the gas upon the fungus.

These are the facts which led me to make some experiments, the last and most conclusive of which are presented herewith.

Experiments.—In the month of May last a vineyard of 10 acres of the Jacquez variety, belonging to the steward of the estate, was attacked by mildew. I treated it by my method the 23d of May. I visited the vineyard the 31st; the disease had disappeared; being taken at its beginning, it had done slight injury and had stopped.

The cure could be attributed only to the remedy or to a change of weather. Now, the weather was as bad after the treatment as before. In fact, the mean humidity of eight days preceding the treatment (the period during which the mildew developed) was 54, with a maximum of 71. After the treatment, from the 24th to the 31st, the mean was the same, and there was a notable maximum the 27th of May.

In the month of July, in cloudy weather with frequent fogs, the mildew soon appears. On the 14th I was informed that it had broken out in the plain of the Clotte, where we had a vineyard of 10 hectares by itself, on low alluvial soil, between the hill and the railroad embankment.

The disease appeared in a heatare of Jacquez six years old, very handsome, with a luxuriant vegetation. My atomizer, of a bad pattern, was then broken, and I could not make the application until the 18th. The mildew was attacking already the first rows of Aramons, grafted on Jacquez and Riparia, and surrounding the old ungrafted (?) Jacquez (*Jacquez francs de pieds*). Eight days later the disease had made no progress. The leaves, which were severely attacked, had indeed dried up, but not another row had been touched. The result was so evident that I did not make a second treatment, as was my intention.

Here, again, the weather had remained favorable to the mildew, the mean humidity being 56 for the second half of July, as for the first; continuous damp weather, with persistent fogs in this inclosed valley. As hygrometric maxima we had 82 and 95 the 19th and 29th of July.

During this weather the disease made progress in the vineyards of all my neighbors, while the vines treated in May, and situated very favorably for the growth of the mildew, showed no sign of attack.

Finally, during the last half of August, there was a violent recrudescence all through the country, except in the vineyards treated. These remained uninjured.

Mode of operating.—The following is the result of my experiments as to method of procedure: It is best to use the Riley spraying machine mounted upon a reed 1 meter long, communicating by a hard-rubber tube about 2 meters long, with a small pump mounted on a covered cask, which contains the solution, and holds about ten liters.

The solution is easily made by dissolving one kilo of the substance in several liters of boiling water, and then diluting with cold water to a volume of one hundred liters. It should be filtered through a cloth as rapidly as possible.

Two men are required to work the apparatus; one introduces the atomizer into the midst of the main stems, throwing the spray vertically, so as to reach the lower surface of the leaves, and facilitating the operation by raising the branches with his left hand.

The other operator works the pump and carries the cask slung over his shoulder, steadying it with the other hand, because it is more convenient to carry it so than to place it on the ground and try to hold it by means of the foot-board with which these instruments are provided.

It took these two men four hours to treat the hectare of Jacquez mentioned above, using two hundred liters of liquid. We have, therefore, the maximum cost of the process, for in general, less time and material will be necessary. Accordingly, 2 francs' worth of material and eight hours of labor constitute the maximum expense.

Liver of sulphur costs 1 franc per kilo retail, and 70 francs per 100 kilos.

Observations.—The solution should never be prepared in advance, for it changes rapidly; and the substance should be kept in the tin boxes in which it comes, in all cases secure from any moisture.

The spraying should be done by preference in the early morning or at sunset, for the evaporation being less active, the liquid does not dry up until the chemical reaction has taken place. I have never worked at any other time.

Finally, it is quite evident that if we act as soon as the disease appears, when there are only a few leaves affected, the arrest of the scourge will be much more rapid; the cure more certain. If, on the contrary, the fungus has invaded the entire vineyard, it is probable that a single treatment will not suffice.

As for me, I think we ought always to be ready to act immediately, and that the workmen should know how to recognize the mildew and should at once give notice to the proper person.

Preventive treatments.—In the month of May last I also treated a vineyard containing about 3 hectares of Aramons grafted on Riparias, situated on the shore of the Vidourle. Although late in putting forth and having yet only a few leaves, this vineyard was already attacked by mildew.

The treatment was given immediately, and the disease did not reappear.

From this fact and those cited above, I infer the efficacy of preventive treatments which forestall the violence of an epidemic by destroying the fungus germs which are on the plant and render an invasion of mildew less severe when they do not put a stop to it.

It is the suddenness of the attack, the rapid extension of the fungus, which makes our struggle against it so difficult.

Moreover, I cite facts only, and on this score I ought to add the following, which has its economic importance.

The vineyards treated in the spring have had neither *Oidium* nor *Erineum*;* this latter, which was greatly injuring the vineyards treated in July, disappeared after the treatment. This fact is not to be wondered at, the remedy which acts upon the fungus which is most difficult to destroy ought evidently to succeed with those the development of which is stopped by ordinary sulphur.

In the present note I give only some facts, chemical or viticultural experiments which have been carried out on a large scale, and not theories and suppositions based upon trials in a garden.

I am personally so well convinced that I intend to employ this method exclusively on my entire vineyard of 82 hectares (202 acres), and I shall be happy if many agriculturists come to assist in my treatments next spring, and to aid me, by their advice and criticism, in perfecting the method by means of polysulphurets.

*The *Erineum* is not a fungus, but is an abnormal growth of the leaf, caused by the presence of gall-mites.—Tr.

THE PERONOSPORA OVERCOME BY HYDRATE OF LIME.

By M. G B. Cerletti, *Director of the Revue de Viticulture et d'Œnologie Italienne.*
[Messager Agricole, October, 10, 1885.]

Five years have passed since we announced the appearance of *Peronospora viticola* upon the hills of Conegliano. Since then we have followed with anxiety the announcements of contemporary or later invasions of this fungus in several localities of Upper or Middle Italy, where they have caused more or less considerable ravages.

We are happy to state once more from Conegliano that one can see here entire hectares of vines, in which the *Peronospora* has been met and vanquished. It now remains for all viticulturists interested to demonstrate that the results obtained in this locality will be the same in other regions and each year.

The group of substances to which seekers of remedies for *Peronospora* have directed most attention is that of the alkalies, in the form of hydrate or carbonate. At the end of 1883 the hydrates of soda and lime and the carbonate of soda were stated to be efficacious; the results, however, were neither complete that year nor in 1884, because (as is well established to-day) the application of these solutions was not made at suitable times nor in doses as abundant and as often repeated as was necessary.

Some weeks later M. Rho, director of the Agri-horticultural School of Udine, recommended milk of lime to viticulturists, because at the close of last year he had observed that two vines of *Refosco*, already having a good third of their leaves yellow and burned, had budded anew some days after being treated by the milk of lime. No great importance was attached to the result thus announced, because, whenever for any reason the vine has prematurely lost many of its leaves, a new growth takes place without the use of milk of lime; and, and, besides, this new growth is not to be desired, because it necessitates a premature consumption of materials which ought to serve for the production of fruit the following year.

Happily, while the several experiments recommended by two successive circulars of the minister of agriculture were made either at the School of Viticulture or on the estates of several proprietors in the vicinity of Conegliano, the method extolled by M. Rho was tried at the same time on a large area and in a very complete manner.

The preceding autumn the two brothers Bellussi, having observed that some varieties treated with the *hydrate* or milk of lime had resisted the *Peronospora* much better, resolved to treat their whole vineyard this year, one row with milk of lime and another with sulphur. Let us note that they operated upon several hectares and, that, although attached to trees, the rows of vines had a great number of transverse branches, which formed a veritable net-work upon the soil. In passing we may state that this system of pruning would not be approved by those who desire a long and constant production.

In the month of May, by means of a box placed on wheels and by fans (?) (*ventilateurs*), the brothers Bellussi began to sprinkle a part of the rows of vines abundantly with milk of lime (2–3 parts of lime to 100 of water). They repeated this operation five or six times, allowing sixteen days for going over the domain.

The *Peronospora* having appeared only in the month of May from the seashore to the hills, wrought its principal ravages upon the plain where the fields of MM. Bellussi are situated, and it is there that some very remarkable differences may be observed:

1. On the small number of vines which were treated with the milk of lime only once this year, the preservation of the leaves which developed in spring is greater than on the vines simply sulphured. The portions of the leaves which already contained the *Peronospora* are atrophied, but the disease has made no more progress, the rest of the leaf, as Professor Cuboni has shown, remaining green and perfectly capable of nourishing the vine.

2. In the greater number of rows of vines the treatment with milk of lime began in the month of May and was repeated several times, and there the preservations of all the leaves of spring time is perfect. No trace of *Peronospora* is to be seen, although all the intermediate rows of vines, treated only with sulphur, have already lost two-thirds of their leaves by this mildew, and are in many places in contact with the lime-sprinkled leaves. If there are traces of *Peronospora* upon the vines treated with the lime, it is only upon some very high branches which the sprinkling could not reach. The leaves treated are deep green, they are broader and larger than the others, better nourished, and their peduncles begin to redden, which indicates an excellent alimentation. The grapes are not very plentiful, but are healthy and well nourished; the branches are better than those of the sulphured rows, but on account of the too abundant and long growth, of which we have already spoken, they are not very fine.

3. Finally we come to the vines which were treated the year before, and which have also been treated several times this year. These vines not only retain their foliage in good condition, but also bear a greater quantity of grapes, and their branches are larger and better ripened than in the preceding case, which proves that the better alimentation of last year has sufficed to give finer branches and a greater quantity of fruit.

In none of the three cases just examined did those new shoots form, which we must consider as injurious, since they are developed at the expense of the future fructification.

It is clearly apparent from these observations that repeated sprinklings of milk of lime will constitute a preventive remedy for *Peronospora*. The part of the leaf which is already attacked by this fungus will not be healed, but even upon that leaf the disease will spread no more; so that, for the diligent viticulturist, we may say that the remedy is efficient, practical, and specific. It can be procured anywhere, and its low price places it within the reach of all.

The milk of lime has shown itself equally efficient against the *Oidium* and a series of other fungi which attack the living supports of the vine and the fruit trees in the midst of vineyards; so that from an economical point of view the mixture would be preferable, because it will suffice to begin with a sulphuring to prevent the *Oidium*, and then to continue with aspersions of milk of lime to preserve the vineyard from the *Peronospora* and the *Oidium*. It is possible that experience will show later that we can omit this first sulphuring.

Any one can verify these facts, either in the fields of MM. Bellussi or in several other localities where the hydrate or milk of lime has been used.

Two questions of less importance still remain to be studied. The mode of sprinkling used in the experiments which we have mentioned is too primitive and is not applicable in all vineyards or upon the hills. The irrigation pump and the "hydronette" pump, which have been used in numerous experiments, ought to be replaced by larger and more powerful instruments or pumps, which do not become clogged, and which are able to throw a much greater mass of liquid.

The second question has reference to the inconvenience already foreseen in 1883, which is that at the time of the vintage a part of the grapes will be soiled by lime. Now, the lime, by neutralizing the slight natural acidity of the wine, might change its flavor a little too much, and sometimes even prevent the ordinary or alcoholic fermentation.

But a way of guarding against this trouble has been discovered. It suffices to put aside the grapes which have retained the lime and to wash them in pure or slightly acidulated water, as we have already explained in detail in this review, year 1882, when it was necessary to specify how to make wine from grapes soiled with mud after the inundations which had taken plac that year.

It is unnecessary to observe that, in normal conditions, the application of the lim ought to be made in the last days of May, or perhaps from the first of June to th beginning of August. There is, therefor , before the arrival of the vintage a certain lapse of time, during which much of the lime is washed off by the rain or shaken off by the wind.

It now remains for interested persons to repeat the experiments. Let those who have so far only traces of *Peronospora* (though ordinarily the remedy should be applied before the disease appears) at once make copious sprinklings of milk of lime and even this year they can test its effects; and, by retarding the fall of the leaves, they will obtain branches which are better nourished and which, in consequence, will be more fruitful next year.

We will close this note by declaring that persons will be convinced of the efficacy of the remedy by going to verify its good effects on the spot much more than by the best arguments. We think, therefore, that many of those whom occasion or duty may call to give advice in the journals and in associations or agricultural societies, and all those who have a great personal interest in assuring themselves of the reality of the good effects obtained by the use of the milk of lime, should hasten to see the experiments of MM. Bellussi. This will be the best means of disseminating the knowledge of this preventive remedy, and then we shall not see a repetition of what happened after the discovery of sulphur for *Oidium*. It was only after four years in one country and ten years in another that sulphurings were adopted in ordinary practice, because where sulphur had been employed very few persons went to verify the results obtained, and because then people were litile concerned about calling the attention of those interested to the experiments, although they were made on quite a large scale and with results which could not be disputed.

Conegliano, August, 25, 1885.

SOME ADDITIONAL REMARKS ON LIME AS A REMEDY FOR PERONOSPORA.

By M. G. B. Cerletti.
[*Messager Agricole*, October 10, 1885.]

In the last number of this review we stated that the result of experiments undertaken by several persons to find a remedy for the *Peronospora* could be seen only along the seashore and on the plain at a distance from the hills. In the fortnight which has since elapsed the parasite, favored by frequent rains, has continued its march, reached the foot of the hills, and even invaded, more or less severely, the greater part of the vineyards on these hills, as the characteristic drying and the premature fall of the leaves bear witness.

In this recently-invaded zone are found the vineyards of two estates which serve for the instructions of the pupils of the Royal School of Viticultnre. In a vineyard of *Italian Riesling*, the vines of which are planted at a distance of 1.4 by 1 meter, nine plots had been marked off in May of the preceding year and placed in like conditions, some containing 100, others 75 vines. Each plot was isolated from its neighbor by three rows of vines left without treatment, to serve for control experiments, and, at the same time, to prevent the substance applied to one plot from influencing other rows treated in a different manner. The following substances were each used several times upon the vine plots:

1. Sulphate of iron mixed with plaster, in the proportion of 1 to 4.
2. Sulphate of copper in powder.
3. Flowers of sulphur.
4. Mixture of sulphur, plaster, and sulphate of iron.
5. Phenic acid in solution, diluted with soap-suds and glycerine.
6. Hydrate of lime.
7. Unleached ashes and hydrate of lime in equal proportions.
8. Solution of hydrate of soda, 7 parts to 1,000.
9. Crude sulphur from Altavilla Irpina.

The powders were applied by means of the Carelli bellows; the solutions, by means of the sprayer or small irrigation pump of the Wine Supply Company of Milan.

For some days the result has been quite evident. The 100 vines treated with hydrate of lime have kept their leaves intact, while the other plots show only slight differences, whether they are compared with each other or with the parts which have received no treatment. On August 25, to show the different conditions, the leaves of 25 vines which commenced to have the *Peronospora* were removed from each plot and weighed separately; but the comparison of these weighings gave no decisive result.

After the experiment which succeeded so well with the brothers Bellussi, new applications of hydrate of lime were made upon four rows of *Pinot-franc*, containing 268 vines; upon sixteen rows of Bordeaux *Cabernets*, containing 1,200 vines; and upon three rows of *Raboso Véronese*, containing 313 vines; a portion of the same plots were only sulphured. The first application was made the 22d of August and repeated again twice after the rains; the anticipated result did not keep us waiting, although the application was tardily made; the vines treated with lime preserved almost all their leaves, while those not treated lost them speedily.

These applications have given an opportunity to try various spraying instruments and several pumps. We can say that the technical question of application presents no difficulty, but from an economical standpoint there is still something to be learned; the pumps we have used cost too much, and we are looking for other more economical patterns.

In the vicinity of Conegliano, the experiments have been repeated by several persons with good results; at least in those

localities where, at the time of the application of the milk of lime, the disease was only just beginning. Professor Cuboni writes that he has obtained excellent results in an experiment made near Lac-Majeur.

The good results obtained by the brothers Bellussi become more apparent every day. The vines not treated with the lime have lost almost all their leaves. The branches (*Raboso di Piave*) have remained small, and there are more green ones than colored. It is not so on the vines treated with the milk of lime. These still keep all their leaves, and the grapes on the well-developed bunches are large and already entirely black. More than six hundred persons have signed the visitors' register, and in this number are not included the cultivators brought by proprietors or by managers of great estates in order to verify these excellent results themselves. Nothing was more instructive than the sight of this vineyard. The delegate of a foreign agricultural society having visited the domain of MM. Bellussi and returned to his own country, came again some days later with a photographic apparatus, because he found speech was not enough to enable his countrymen to judge of the effects obtained, or to produce the conviction begotten of sight.

We will close by stating that according to our calculations the effects of this treatment will still be visible for a month. At the School of Viticulture they can also show to visitors different methods of application of the milk of lime.

GRAPE AND WINE CHAT.

[Washington, D. C., Sunday Herald.]

The many-branched family of Muscat vines has for ages made regions famous for the luscious wines produced from their grapes.

Impressed with the Andalusian Muscatels of great age and nectarious, the Moscatos of Southern Italy, the grand Samos Sweet of Asia Minor, the fine dry wines wherein Muscat juice had been blended in Hungary and other countries, the Frontignan and Lunel of Southern France, the Moscato from some Ionian Isles, that for centuries has been and still is the dessert wine of the Venetians, knowing the Malaga and the Smyrna Muscat grapes that enter into the world's puddings when dried, the writer could not at once suppose the Muscatels in California soil to be the equals of those of the Old World. But having for years become intimate with the manifold Muscatel propagations, their grapes, their musts and their wines, and having reared many of the latter, I can testify that California Muscatels are second to none. We can do more with some of them than the vinificator in Europe can. We are the heirs of the phylloxera-eaten vineyards wherein Midi of France Muscats grew and we shall perpetuate their glory in California soil. Our gordo blanco Muscat raisins are not of less quality than the originals of Malaga.

From one and a half millions of gallons eight years ago, the amount of wines consumed on the Pacific Coast has swelled now to seven annual millions. It would be a boon could similar showings in other States testify to increased sobriety. Those seven millions of wine must have displaced millions of fiery distilled drinks.

Has any fair reader visited the Golden State of late and observed the frequency of clear complexioned visages there, compared with pallor or bloated and puffed appearance consequent upon abuse of water or liquor? Not the climate, the air, or constant sunshine alone originate a delicate and healthy floridity of countenance. To some degree the juice of the grape enters into the causes. Too copious imbibing of wine may tint a skin deeply rubicund, give a still deeper hue to the proboscis. But the systematic use in moderation of light (and diluted) claret at the meal will bring about what cosmetics ape but in vain. True hygiene embraces rational nutrition. Who can, with reason, contradict the assertion that a modicum of claret, which strongly diluted in summer tempers the blood successfully, enriches it with the proper amount of oxygen, and has, therefore, a grand mission for health and beauty? The intelligent physician will certify to it.

F. POHNDORFF.

THE WINE TRADE OF JEREZ.

[The Economist.]

The following is taken from a report by Mr. Pro-Consul Davies:—It may be computed that the export of sherry from Jerez during the past year was nearly equal to that of 1885—say from 3,400,000 to 3,500,000 gallons—the decrease of trade during the first six months, owing to the uncertainty as to the ratification of the treaty of commerce with Great Britain, being to a great extent compensated for by the increased shipments to which the new tariff gave rise. According to the returns of the English Customs, the falling-off in arrivals of Spanish white wine during 1886 amounted to 149,000 gallons, thus proving that the improvement in the autumn trade did not altogether make up for the stagnation that prevailed during the first six months of the year. The arrest of the downward course of this branch of trade is doubtless due to the raising of the 1 s duty to 30 degrees, though there has scarcely been time to form an opinion whether the wines shipped under this tariff will eventually meet with general acceptation in England, most of the orders received being in a measure experimental, and many for blending with wines of the higher duty. The demand is, for the most part, for the cheaper and medium class of sherries, finer descriptions being to a great extent neglected. Trade with Russia, Germany and Mexico has been fairly maintained. With the United States and Canada there has been some falling off, and, so far, few sales of young wines have been effected for the French market, to which some 2,000,000 gallons were shipped from this district early in 1886. The Jerez vintage was plentiful, but the damage done to the grapes by the wet weather during the latter part of September has caused a great portion of the mostos to turn out of indifferent quality, it being estimated that only about 2,000,000 gallons, or about one-half of the yield, will be available for export purposes. The greater portion of the remainder will be turned into brandy. Large stocks of good wines are held by the sherry shippers and almacenistas, so that there would be no question as to supply were an increased demand to take place.

THE WINE INDUSTRY.

[Herald of Trade.]

The wine industry of this State promises large developments owing to the adaptability of several sections of the State to the cultivation of wine grapes. The first wine grape vine was propogated by the Franciscan friars who founded the Mission of San Diego in 1769. It is claimed that the vine came originally from Mexico, and owing to its successful cultivation was propagated at all the Missions, and hence came the name Mission grapes. This variety was about the only one cultivated up to the time Col. Haraszthy and the late Charles Kohler went into the industry. They imported vines from European wine districts, the first being the Zinfandel. The successful introduction and cultivation of them attracted attention to the adaptability of the State for the production of clarets. The German vineyardist adhered to the Rhine varieties of vines, which have brought California white wine so favorably before the world. Other pioneer vineyardists propagated many varieties of German and French vines. The number of acres in this State set out in vines is placed at 230,000. This aggregate however is not entirely of mature vineyards. Of this number 140,000 acres are in five-year and upward vines—it takes three years for vines to reach their productive state. Of the vines about sixty per cent. are wine grapes and the balance table and raisin grapes. It is roughly stated that there are a little over four thousand vineyards in the State, which are being added to each year.

The vintages of the past ten years have been as follows in gallons:

1876	3,750,000
1877	4,000,000
1878	5,000,000
1879	5,000,000
1880	8,500,000
1881	7,000,000
1882	10,000,000
1883	8,500,000
1884	15,000,000
1885	9,000,000
1886	18,000,000

This year's production is variously estimated at from 15,000,000 to 20,000,000 gallons. Had the vines escaped the climatic changes in the forepart of the fruitage season, the yield would undoubtedly have gone as high as 30,000,000 gallons. It is not at all unlikely that the introduction of condensing must machines will aid very materially in increasing the output of wine, for by them many thousand tons of grapes can be secured that go to waste owing to wine manufacturers not being able to care for the fruit during the heaviest picking.

A well known authority on California wine wrote about two years ago that it would be scarcely possible to speak of all the different varieties of grapes by name that are used in the manufacture of the various products. There are over 250 varieties of vines now being grown in the different parts of the State, while there are no fewer than 300 varieties in Crabbe's experimental patch at Oakville in Napa county. Generally it may be said that for the clarets the best grades will be the same as those grown near Bordeaux, Burgundy, Hungary and the north of Spain and the south of France. For our white wines the selections will be those that have made such a name for the Rhine, Sauterne and Spanish districts. The port wines, with modifications of the black Burgundy and Trousseau, will be those of Portugal. For brandy the grapes principally cultivated will be those of the cognac varieties, especially the Folle Blanch and Colombar. In fact so admirably provided is California with every variety of climate, that it contains within its borders the same climatic characteristics which obtain in France, Italy, Spain, Germany and Hungary. So, too, does it contain the qualities of soil which are found in these localities, and the future of the wine industry in California seems absolutely unlimited.

SAN JOSE WINE COMPANY.

[San Jose Herald.]

The organization of the Santa Clara Valley Co-operative Wine Company evidences the growing importance of the wine interest in this county, and is an association the development of whose plans will be watched with favorable attention by all who desire to see local resources utilized. The objects of the corporation are to make, buy and sell wines and brandies, the capital stock being $50,000, divided into 500 shares of the par value of $100 each. The Directors are Chas. McKiernan, Wm. Farrington, Mr. Rogers of Glenwood, Louis D. Combe and T. H. Frolich.

This morning a representative of this paper conversed with Mr. Combe in relation to the plans of the new company, and learned from him that the company will enter business under the most promising auspices.

"The principal object of the company," said Mr. Combe, "is to engage in the business of manufacturing wines and brandies, and for this purpose suitable buildings, including the brick building put up on North street by Charles McKiernan for a bonded warehouse, have been secured. The articles of incorporation will be filed in a day or two, and the company will at once commence to make active preparations for the work of manufacturing.

"All the details of the business have not yet been definitely settled upon, but the complete plan will be adopted shortly. We are not yet certain how far we will enter into the purchase of grapes for manufacturing purposes, and how far we may take grapes on shares. This is settled, however—that every department of the company's work will be in experienced and competent hands, and that we shall deal exclusively in Santa Clara county products. Our endeavor will be to put in the market products of good quality only, and to this end we shall keep our wines and brandies until their sale must of necessity redound to the credit of the company and the county. Our purpose will be to obtain the best returns for our goods—a result that can only follow first-class manufacturing work, thorough maturity of goods, and superior packing and bottling. There is no stock for sale in the new company. The enterprise is one which has been entered into, not for profit alone, but also to build up the reputation of Santa Clara county wines and brandies, the men who are connected with it having a knowledge of the county's resources, which enables them to view the field intelligently. They believe there is an opening for such a company and they propose to make it a success. The wine business will be a very important business here in a few years.

"With these objects in view I believe," concluded Mr. Combe, "that our project will have the sympathy and support of grape-growers, and we shall certainly try to earn their good will and at the same time do what we can towards building up an important productive interest."

The Attention of Wine-Growers, and all others interested, is called to the most powerful

INDUSTRIAL EXHIBITION AWARDED TO PARE BROS. "LE MERVEILLEUX" WINE-PRESS 1886

WINE AND CIDER PRESS
"Le Merveilleux,"
(THE WONDER.)

—THE CHEAPEST IN THE MARKET.—

WE CHALLENGE THE WORLD TO SHOW ITS EQUAL.

The latest invention in Europe. First introduced in the United States last year where it has given entire satisfaction as the testimonials will show.

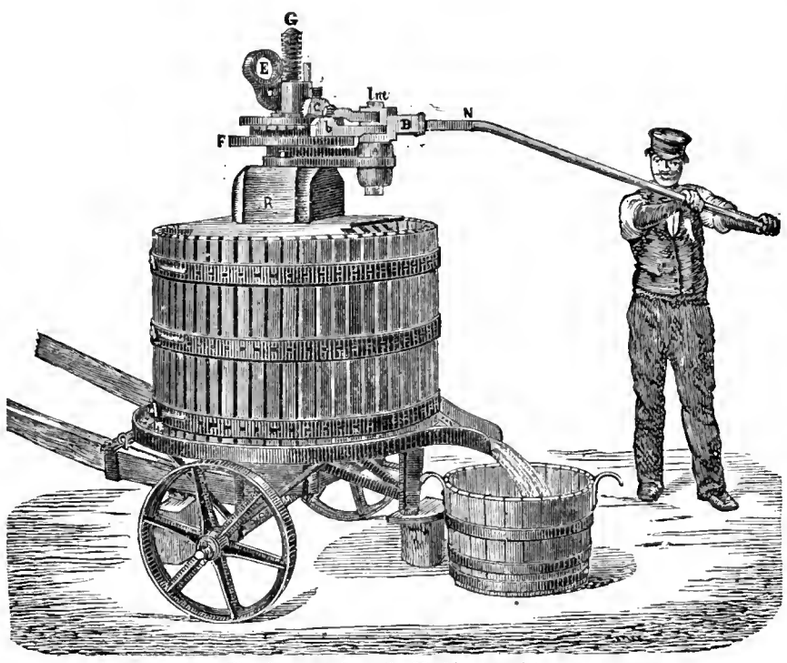
MECHANICS' INSTITUTE SAN FRANCISCO

Patented in the United States, France, Belgium, Spain, Germany, England, Italy, Portugal, Austria-Hungary, Luxemburg, Norway, Sweden and Denmark.

Price List at San Francisco.

Exclusively for 1887.

No.	Diameter of Screw. Inches.	Height of Basket. Inches.	Diameter of Basket. Inches.	Capacity of Basket of Fresh Grapes after Crushing. Tons.	PRESS, Complete. With 2 Wheels $	c.
1	2 7/16	24	32	1 3/4	120	00
2	2 3/4	26	40	2 1/4	160	00
3	3 3/16	28	48	3 1/2	220	00
4	3 9/16	32	55	5	290	00
5	3 15/16	35 1/2	63	8	350	00
6	4 3/8	35 1/2	71	10 1/2	400	00
7	4 3/4	36	78	14 1/4	450	00



The above cut shows the Machine complete.

Having secured the entire right for the United States, we take pleasure in introducing this Wine Press to the American public, believing it superior to any other press now in use.

It will be to the advantage of Wine Manufacturers to study carefully the following merits, which we claim it possesses:

First. By an ingenious mechanical application, the "power of resistance" can be reduced to a minimum, and with a single effort, three or four times more power can be obtained than with any other press known at this day.

Second. It does the work more rapidly, and with less labor.

Third. It is cheaper than any other first-class wine press in the market.

Fourth. It has no complicated devices, is so extremely simple in construction and easily operated, that a child of ten years can work it.

Fifth. It is made of the best materials, and by its simplicity not liable to get out of order.

Sixth. All parts are interchangeable, consequently, any part lost or injured can be replaced at little expense.

Seventh. It will extract the largest percentage of liquid.

Eighth. It is built on the ratchet principle, double acting, the lever working both ways, and can be worked in 6 feet space. It has no lost motion.

Ninth. It does not take any more labor to work the largest size than the smallest one.

Tenth. It presses any kind of fruit as well as grapes.

This press is not an experiment, having been used several seasons in the wine districts of Europe, and also in the United States last season.

It has received the highest award wherever exhibited in competition with other presses.

The main features of the press are the ease and rapidity with which it may be worked, and the great power which it applies; as the press stands on wheels, it can be readily moved from place to place.

In order to introduce our press last year, we placed it at a low figure; with the improvements that we have made this year, we are compelled to raise our prices, but they are yet the lowest on the market, while the press is far superior.

Our press is adapted for large vineyards as well as small ones, as we make different sizes. No. 7, shown in the above cut—the basket will hold 14 tons of grapes after crushing, and 4 fillings per day, its capacity being 56 *tons of grapes in one day.*

"LE MERVEILLEUX."

A representative of the MERCHANT has visited the shop where the Paré Bros. are building their wine presses, the "Le Merveilleux," which is claimed to be the best and cheapest wine press made. The platform or bed rests on a two wheeled cart, which enables the operator to move it to any part of a vineyard, or between the rows of tanks in a wine cellar. The basket is made of the best straight-grained Mendocino Pine staves, riveted to three bands of the finest quality of iron. These bands are each in halves. On one side they are connected by a hinge, and on the other are locked with pins, and, by removing these pins, the basket can be opened to any width required, and the must be removed in a very few minutes. The edges of the staves are beveled, the distance between them on one side being 1/8 of an inch, and on the outside 3/4 of an inch. This renders it impossible for the grapes to get jammed in between the staves.

Rapidity is one of the strong points of this machine. It takes only from twenty to forty-five minutes to make a pressure. The "screw" which stands upright in the middle of the "basket," is fastened under the "bed" by a nut which is six inches thick, screwed on and riveted to the end of the screw. The operator moves the large lever which is from five to eight feet long, and moves in a space of six feet backwards and forwards. This pushes alternately two small levers, which in turn catch in the ratchets of the combinations on their *forward* motion, and keeps the wheels or combination steadily falling down the main screw. In commencing to lower the crushers upon the grapes, and when speed is required, the lever is placed in an upper combination, which acts directly on the screw, and in a few movements of the lever it has reached the grapes. The Presses have been calculated to withstand the pressure according to their capacity, so if the smallest is incapable of breaking itself, the largest is equally so.

The main feature of the press is the ease with which it may be worked. Mr. Pare forced the lever as far as it was necessary to go in one direction, using only his little finger, upon shavings which had previously been packed so tight, that it was impossible to run a knife into them.—SAN FRANCISCO MERCHANT, Aug. 27th, 1886.

WINE PRESS EXHIBIT.

The French Wine Press exhibited at the Fair by Paré Bros., attracted great attention from visitors interested in wine-making. This press has no merely local reputation, but comes to us from over the seas endorsed by French wine producers generally, and by the leading journals of France. In the Eastern States it is rapidly supplanting all others, and no doubt in California will do the same. The reasons for this are plain. It is a great improvement over any now offered; it is portable and easily carried on a hand-truck from place to place; it is not expensive, and it does its work thoroughly and well; it requires but little attention, and it is labor-saving. It is called in France "Le Merveilleux," and certainly deserves the name. Certainly, those interested in wine production should at once acquaint themselves with the capabilities of the press, its price, and see it working. By it they will save money, as its expense is comparatively small, compared with the amount and character of work it is capable of doing. We certainly commend an examination of its merits.—*The Weekly Commercial Record*, San Francisco, Sept. 16th, 1886.

EXHIBITS AT THE PAVILION.
"Le Merveilleux" Wine Press.

Among the exhibits at the Mechanics' Fair, which naturally attract the attention of the visitors, whether from the city or country, is "Le Merveilleux" wine press. The wine interests of California are fast assuming enormous proportions, and every year sees an immense increase in the area devoted to the culture of the vine. It is only to be expected, therefore, that any invention coming from an old wine-producing country like France, should have great interest for the residents of California. "Le Merveilleux" is a French invention just being introduced here. It has been patented in all European countries and the United States. The entire right for this country is held by Messrs. Paré Brothers, of this city. The press is manufactured in seven different sizes, varying in price from $120 to $450. It is claimed for it that it is more powerful than any other press now in use; that it does its work more rapidly and with less labor; that it is cheaper, without complication, and not likely to get out of order. Being built upon the interchangeable plan, any part lost or injured can be replaced at small cost.

It is constructed on the ratchet system, and the lever can be worked in a six-foot space, and is so easily operated, that a child of 10 years can work it. The lever works both ways, and thus doubles the speed.—*Daily Journal of Commerce*, San Francisco, Sept. 24th, 1886.

THE SUNSET VINEYARD,
Minturn, Cal., Sept. 15, 1886.

Messrs. Pare Brothers.—GENTLEMEN:—We take pleasure in informing you that we have used your No. 4 press this season, at our vineyard, and find it all that you recommend it. It does the work perfectly and with ease, and in our opinion is perfect in every particular. Yours truly,
WEBSTER & SARGENT.

San Francisco, Sept. 17, 1886.

Messrs. Pare Bros.—GENTS.:—The wine press No. 4 purchased of you several weeks ago, has been tried at our winery and has thus far given full satisfaction.
Yours truly, MT. DIABLO VINEYARD CO.,
By Jac. Levy, Sr.

Anaheim, Cal., Sept. 15, 1886.

Messrs. Pare Bros., San Francisco, Cal.—GENTLEMEN:—The Press came at last, and after giving it a fair trial I find it to my satisfaction. Enclosed please find exchange draft for the same.
Respectfully yours, LOUIS SCHORN.

San Francisco, Sept 22, 1886.

Messrs. Pare Bros, City.—GENTLEMEN:—We take pleasure in informing you that we have used your Wine Press No. 5 this season at one of our Vineyards, and find it all that you recommend it. It works well, and is perfect in every part cular.
Yours very truly, B. DREYFUS & CO.

Anaheim, Sept. 27, 1886.

Pare Bros., San Francisco.—GENTLEMEN:—Yours, with shipping receipt and bill, at hand; but the press did not come until a week after, although I needed it badly. As soon as I got it I tried it, and must say that I like the press very well. Enclosed please find check for $140.50. Yours respectfully,
PETER HANSEN.

Pacheco, Contra Costa, Cal., March 15, 1887

Messrs. Pare Bros.—DEAR SIRS:—The "Le Merveilleux" No. 3 press I bought of you is the most powerful instrument to extract juice from grapes—it leaves the pulp entirely dry in a short time. I recommend it to all wine makers. Yours truly,
J. S. HOOK.

Mission San Jose, Cal., Oct. 27, 1886.

Messrs. Pare Bros., San Francisco.—GENTS.:—I have used your "No. 3" "Le Merveilleux" wine press all through my vintage, and it has in every particular given entire satisfaction, both in regard to the ease with which the work was accomplished.
Very truly yours, CHAS. C. McIVER.

I, the undersigned, certify that I bought from Messrs. Paré Bros. a No. 2 wine press, and used it last season, 1886, and it has given entire satisfaction.
Yours truly, A. CHEIGNON.
814 Howard St., San Francisco.

GENTLEMEN:—I take pleasure in telling you that I am entirely satisfied with the press, No. 2 "Le Merveilleux," you sent to me, it does the pressing without interruption. Yours,
B. DISTEL, Mountain View.

Messrs. Pare Bros., San Francisco.—GENTLEMEN:—I used last year one of your presses at the Hon. Jos. F. Black's vineyards of Livermore. I studied it carefully, and I must say it has given perfect satisfaction. It is the most powerful press I ever saw, and the work is very easily done. Yours very truly,
J. MORTIER, Livermore.

FARMERS' AND MERCHANTS' BANK,
Los Angeles, Cal., Oct. 15, 1886.

Messrs. Pare Bros., San Francisco.—DEAR SIRS:—Enclosed please find our check for $335.15, in payment your bill for two wine presses, as ordered by our letter of 30th ult., for

Messrs. Hafen & Niemeyer	$330 00
Drayage	6 00
	$336 00

The parties tell us the presses were received in good condition, and work to their satisfaction.
Respectfully, JOHN MILNER, Secretary.

After trial the Press may be returned to us if for any reasonable cause it is not satisfactory, "and money refunded," as we are satisfied from our experience that parties that have once used them will not afterwards do without them.

N. B.—We are also prepared to fill any orders for Crushers and Separators. For any further information apply to

PARÉ BROTHERS,

BRANCH OFFICES:
Honore Building, Chicago, Ill.
15 St. James St., Montreal, Canada.

OFFICE AND FACTORY:
101 to 107 Mission Street,
Res. 420 Geary Street, S. F.

THE OLIVE TREE.

SOILS SUITABLE TO ITS CULTURE.

[By Adolphe Flamant.]

In the Book of the Hebrews we read that when Noah, desiring to ascertain whether or not the waters of the deluge were beginning to withdraw from the surface of the earth, dispatched a dove from the ark, that feathered courier brought back to him "an olive leaf plucked off." Ever since that time the verdant branch of this evergreen tree has been regarded as the appropriate emblem of peace and of abundance.

We read in The Book of *Judges*, chap. IX: 8—"The trees went forth on a time to anoint a King over them: and they said unto the olive tree, Reign thou over us."

We also find in The Book of *Nehemiah*, chap. VIII: "And Ezra the priest said unto all the people: This day is holy unto the Lord, your God; go forth unto the mount and fetch olive branches."

Amid the steep and arid slopes overlooking the valley of Jehosaphat rises the Holy Mount, clad in the constant verdure of the olive trees among which our Blessed Savior used to roam, and whence he wept over Jerusalem.

A venerable legend tells us that when Minerva became the tutelary goddess of the City of Cecrops, she caused the olive tree to grow spontaneously on the Rock of the Acropolis, which Neptune had just struck with his trident; and thence, kept with religious care, the olive tree became one of emblems of the goddess.

Another legend represents Hercules introducing into Greece the olive tree which he brought from the Mounts Girapetra, in Creta.

Pindar says that all the slopes of Mount Olympus were soon covered with it, and that the Athenians used to crown with its branches the victors in the Olympic games.

From Greece it was introduced into Italy. There, says Virgil (Book II. Georgics), "the sterile lands and stony hills delight to be covered with the hardy and perennial olive tree."

Martial also says: "Hereafter the proud oak may be jealous of the olive tree of the Mount Alban!"

When the Phoceans founded Marseilles, about 600 years before the Christian Era, they introduced the olive tree in Provence, where they planted it only on steep and stony places.

In passing over a long period, during which the praises of the olive tree have been sung in many tongues, we come to that great agriculturist, Parmentier, who during the last century was instrumental in the introduction of the potato into France, He says: "Of all the trees that the industry of men has made profitable, the olive tree deserves, without contradiction, the very first place."

It is thus on the Mount Ararat, on the mountains mentioned by Nehemiah, on the summits of the Acropolis, on Mount Olympus, on the Girapetra Mountains, on the steep declivities of the Holy Mount, on Mount Alban, on the rough and stony spots selected by the Phoceans, on the sterile and rocky places recommended by Virgil that the olive tree has found the kind of soil most propitious to its robust constitution.

Has the tree or the nature of the soil changed since so that we may wisely disregard the testimony of the ancients? Is there anything to encourage us now to plant the olive tree on a richer or a different soil from that of its historic and traditional growth?

In the works of the most reputed modern writers we find full and satisfactory assurance that the kind of soil cited by the ancients is the most favorable to the growth and profitable culture of the olive tree. I will here give a few citations:

Riondet, p. 2. The olive tree requires a warm but temperate climate. It dreads equally extreme cold and excessive heat. In the north of Europe its progress is checked by cold weather; in the south and in Africa it is stopped by too much heat.

It does not grow well on low and wet lands, but it succeeds perfectly on mountains as well as on hills, and even amidst rocks, provided there is but little soil; indeed, on places where there seems to be scarcely anything but stones.

What gives it still a greater value is that where it grows best other annual products are impracticable.

p. 13. The olive tree is capable of enhancing the value of a soil naturally poor to a figure ranging from 12,000 to 15,000 francs per hectare. (Equal here to about $1,000 to $1,200 per acre.)

p. 42. In France the finest and most productive olive trees are to be found in the neighborhood of the city of Grasse, and they are mostly always planted on steep and rugged hills.

p. 123. The olive tree grows to perfection on dry lands, and in climates where often not a drop of rain falls for six and eight months.

Reynaud. p. 34. How much waste land could be utilized in the cultivation of the olive tree, which is so little exacting that it seems to be contented with a few baskets full of earth! In fact, where is the tree that, like it, would grow on arid, rocky spots, and without water? And then, it requires so little care, such slight cultivation, so little fertilizing!

p. 67. The olive tree prefers hills and elevated places, does not grow well in valley lands, low and wet, or where water stands. Its fruit corresponds to the soil where it is planted; in rich and moist land it gives a heavy and fatty oil; in the warm and dry soils the oil will be finer; in the marly and clayey soils it produces less.

p. 106. It can be easily understood why it cannot be planted in regular lines or rocky situations, where one utilizes even the interstices of rock, and where there is hardly enough earth to cover the roots.

Coutance. p. 177. The best soils, where the fertility of cereals is so great, are not the proper ones for the olive tree, not that it will not grow in them, but because an exaggerated ligneous development will take place at the expense of the richness of its fruits. The quality of the oil will likewise be affected. M. Cappy establishes on this point the difference noticeable between the products of the olive trees of the fertile plains of Calabria and those of the stony hills of Lucca; between the products of the plains of Salon, in France, and those of the rocky hills of Marseilles and Montpellier.

The olive is the only tree for the arid, steep and rocky hills of the Mediterranean shores. The ancients knew this well. Mangon insists on the necessity of planting it on a dry soil. Lucilius Junior, Virgil, Columelle, and many others make the same point.

p. 139. It will grow up to an altitude of 1200, 1800, and even 2300 feet, in some instances.

Fabien speaks of the necessity of temperate climates for the olive tree. It prefers the neighborhood of the sea, and it is more fertile in proportion as it approaches salt water, to enjoy the sea breezes.

There are still at Jerusalem olive trees, that M. Bove estimates to be possibly over 2,000 years old, that have witnessed the great scenes of the Savior's Passion.

M. Enault affirms that he has seen the finest trees in existence at Mount Carmel, in Galilea and in Samaria, and that he has seen none anywhere presenting an appearance of extreme age so striking as those of Gethsemane found in arid and rocky situations.

Finally Delille affirms that he picked a branch of the famous olive tree of Athens, the age of which is admitted to be about forty centuries.

HOW SOON WILL OLIVES BEGIN TO BEAR?

Mr. Kimball of National City claims that the olive will begin to bear on the third year of its existence. I presume this means *after* it is three years old, and has entered into its fourth summer. I know that Judge Logan of Santa Cruz has Mission olives which he bought from Mr. Kimball; this is the third summer for these olives in the judge's orchard, and they were affirmed to be two years old when he bought them. They must, therefore, have now entered into their fifth summer. One of the olives—one out of the three—blossomed last May, and I understand has fruit on it. In the spring of 1885 I imported a number of olives from the south of France, and among these were about forty Cayons and one Oblonga. From the 15th of May last to the 15th of June the Cayons, with scarcely an exception, were one mass of blossom, the branches bending even owing to it. The Oblonga had some blossom, but not much. *Now* the Cayons have fruit as large as ordinary peas—the Oblonga has none though.

My Cayons are exactly twenty-nine months in my ground. How long they were in nursery row before that I cannot tell; it is the custom of the French olive nursery-man, however, to dispose of his young olives when they are five to seven years old in order to abridge for his customers the long weary waiting period when everything is going out and nothing coming in.

Permit me to append a few remarks to the question which I have raised and tried to answer without going beyond the scope of my knowledge.

People are asking me what olives I would recommend them to plant. I give one decided reply. Plant Missions where you are not afraid of black frosts before the middle of January. Plant Picholines for they are cheap now and grow quickly and well in our State, and should you happen to become disappointed with them they will make first rate stocks. Plant above all, Cayons, but get them from France. You can see for yourself how early they commence bearing, and I can assure you they grow fast and without trouble in good drained friable soil. Hear, also, what Coutance says of the Cayon, "L'Huile est Excellente."

The Oblonga may give a sweeter oil than the Cayon, and the Manzanillo a more delicate; the Pleureur or Cornicabra may surpass the Cayon in fertility, but neither Oblonga, Manzanillo nor Pleureur have fruited yet with me, and I have had every one of these just as long as I have had the Cayon—nay, I have had the Pleureur a year longer. All came from the south of France too, and ought to be as old from the first start.

It is not all gold which glitters, and the $800 per acre profits on olives may be true or may be blarney, but I know this, that he who goes in for olives goes in for sorrow unless he keeps an ever wakeful eye and a masterful hand on the "Lecanium". I thought I was safe if man could be. I planted my olives where there were none others within miles of me. First season I watched—no scale. Second season I watched—no scale; not a shadow of a sign! Third season I watched, namely, this season; at first I saw one or two; where these had come from I puzzled my brain till I addled it and gave the game up.

I made sure I had killed the first one or two lacania and there were none left till bye and bye came three or four. Then I made dead certain I had left no more lacania till a further lot cropped up. Thus, I am going on and I have resigned myself to the ugly fact that I have a never ending fight before me.

I see that Mr. Klee, whose place is not very far from mine, has anticipated my experience. He convinced himself that he was a sure and safe man, and got woke up exactly as I have.

One may not see lacania for the first, second or even third season, search as he may, but the witches riding on broomsticks will spot him and bring him them. Moral, sure as you put out an olive prepare for the lacanium. I have come to believe that the lacanium must grow spontaneously on the olive. It is safest to believe that than pooh-pooh it at any rate.

John A. Stewart.
Etna Hill Vineyard, Santa Cruz.

At the Napa Valley Wine Company's cellar in East Napa, the upper floor has been extended half way through the building. This will be used as a fermenting floor. The crushers have also been placed in the center of the building, immediately beneath the roof. The ground floor will be used as a racking and storage room. One hundred feet north of the main building, a new boiler, engine and distilling house will be built. The size of this new part will be 20x40 feet. The crushing machinery and drapers in the main building will be operated by means of a steel cable connecting with the engine house. The cost of these improvements will approximate $4,000.

Carpy & Co. have also made room for an additional 100,000 gallons of wine, as heretofore noted in these columns. Since July 1st, this company has shipped about 243,600 gallons of wine to various points, including New York and New Orleans, Panama and San Francisco. Two thousand five hundred gallons go on a car.—*Register*.

A carload of '86 wine was shipped from Sonoma county to Chicago and netted 25 cents per gallon. Hold on and do not sell your fine '86 wine; you will get 25 or 30 cents next year. Sell this year's crop of grapes to the distillers even for low prices and you make money. Let the papers in Napa and Sonoma counties urge this point. —*St. Helena Star*.

WINE.

What It Is and How It Is Produced.

By Prof. F. E. Engleharot.
[American Analyst.]

Wine, in the proper acceptation of the word, is only fermented grape juice. Hence, beverages produced in any other way, or by the addition of something that is not derived from grapes, are not pure wine. For clarifying, only mechanically acting substances like isinglass or whites of eggs can be used.

Of all fermented beverages, wine is the oldest one; and its mode of production has been nearly the same since time immemorial. To produce wine of the finest quality the grapes must obtain their highest degree of ripeness, that is to say, contain the greatest amount of sugar and the least amount of acid. In the production of red wines, this quality is usually sacrificed for the sake of color; hence, these wines being, so to say, in an unripe state, must remain for years in barrels and bottles before they acquire those qualities which make them fit for consumption. The grapes, after being gathered from the vines, are usually separated from the stalks and then crushed. If the stalks remain with the grapes, and both are submitted to pressure, the resulting wine clarifies quicker, but loses in fineness of taste. To obtain the bouquet of the white wines to its fullest extent, which originates from the skins of the grapes, the crushed mass is left for some time undisturbed, and then the juice is separated as much as possible from the murk, before the latter is pressed. The "must" is now allowed to ferment. In the production of red wines the expressed juice, together with grape skins and the stalks, if the latter have not been previously removed, are fermented together. This is found to be necessary to extract the coloring matter out of the grape skins.* When fermentation has ceased the mass is vigorously stirred to extract as much as possible of the coloring matter, the wine run off and the residue pressed. The fermentation of grape juice is spontaneous, being due to the yeast spores which enter it. There are two kinds of fermentation, the upper one practiced in France, Spain and Italy, lasting from three to eight days, at a temperature of from 59° to 68° Fahrenheit, producing wines rich in alcohol, but wanting in bouquet; and the lower fermentation prevailing in Germany, occupying from fourteen to thirty days, at a temperature of from 41° to 59° Fahrenheit, yielding less alcoholic but more aromatic wines.

Many of the wine producers of Spain, Portugal and the south of France are in the habit of adding plaster of Paris either to the grapes before they are crushed or to the mass after fermentation has set in. This is the so-called plastering of the wine. This practice is pernicious, and of no benefit to the wine, as Messrs. Thudiet and Duprét have shown, since it removes more or less completely the tartaric acid, leaving only free or combined malic acid (an acid common in all other sour fruits) in the wine, while the place of the cream of tartar is taken by sulphate of potassium, a bitter tasting salt, the purging qualities of which, even in small doses, are well known to physicians.

The composition of the grapes and grape juices varies according to the weather, situation of the vineyard, kind of soil and variety of grapes. Koenig gives as an average composition for grapes and grape juice, the following figures:

	Grapes.	Grape Juice.
Water	78.17	74.49
Nitrogenous matter	0.50	0 28
Grape sugar	14.36	19.71
Free acid	0.79	0.64
Other non-nitrogenous matter	1.69	4.48
Kernels—Skins	3.60	3.60
Ash	0.5	0.4

How much the quality of the grape juice depends on the weather, the following two analyses of Hattenheimer grape juice analyzed by Neubauer will show;

	Year 1868.	Year 1869.
Water	69.92	76.80
Nitrogenous matter	0.19	0.33
Grape sugar	23.56	16.67
Free acid	0.46	0.79
Other non-nitrogenous matter	5.43	5.17
Kernels—Skins	3.60	3.60
Ash	0.44	0.24

The quality of the wine depends on the quality of the grapes. In this connection the following is undoubtedly of general interest. Sartorius has arranged a table comprising the last 100 years in regard to the quality of the wine produced during this period, with the following results:

Poor years	37.
Average years	21.
Good years	31.
Extra years	11.

While the records of the Agricultural Society of Wirtemberg from the year 1420 to 1852 show that in these 432 years there were:

AS TO QUALITY OF WINE.

Eminently distinguished	11	years.
Very good years for a good wine	28	"
Fair years	118	"
Producing middling quality	76	"
Producing inferior quality	199	"
	432	

AS TO QUANTITY OF WINE.

Years of ample yield	114
" middle yield	18
" poorer yield	99
" failures	201
The yield not paying expenses	
	432

The average production in Europe is stated to be equal to 3,107,039,000 gallons per year from 12,285,760 acres, hence 252.81 gallons per acre. If we value a gallon of wine at 25 cents, the total European wine crop is worth $776,759,750, or $63.22 per acre. Italy produces the most wine per acre, namely 441¼ gallons, equal to $110.37, while Switzerland and Belgium only produce 33⅜ gallons per acre, at a value of $8.34.

The main fermentation of the wine having been finished, it is transferred from the vessels in which it took place into others in which the so-called after fermentation takes place. During this time less yeast and nitrogenous matter separate from the wine, but more cream of tartar, than during the main fermentation. It usually lasts several months, and in the following spring the wine is transferred to other casks again. This process of transferring the wine from one cask to the other—to separate it "from its yeasty parts," is repeated several times, as necessity requires, before the wine becomes ripe enough to be put into bottles. The time at which various wines become ripe for bottling varies greatly. Some are ripe in three years, while other require ten years for this purpose, which is especially the case with wines containing much acid.

* Only acidified alcohol formed during fermentation dissolves the coloring matter of the skins.

The report of the Fourth Annual State Viticultural Convention is now published and ready for delivery. Single copies are one dollar each, but special rates can be obtained for five copies or more.

THE GRAPE ROT—ITS CAUSE.

[J. A. Peck, in the Advance; Lynchburg, Va.]

I see, from the *Advance* of June 23d, that you "have *private* information that the grape crop in this section is likely to prove a failure again this year on account of the Black Rot." Yes, it is a sad fact, and our growers are very much discouraged—the rot already is raging at a most alarming extent—and there is no *cure* for it. Some growers have been experimenting with various *preventatives*, but the remedies used have proved of but little avail—or none!

Many theories have been entertained and advanced by leading pomologits of the country as to the *cause of the rot*, and various remedies suggested and tried, but all of little avail.

OUR THEORY.

Virginia ought to become a great grape-growing State. Nature has given her the soil and climate and sunshine and hill sides that so conduce to the growth of this luscious fruit. But, alas! a number of our growers, especially in this section, have commenced the business wrong—as we have been trying to convince them for four years through the editorial columns of our journal, the *Farmer and Grape Grower*. We have begged them to be cautious how they experimented with foreign varieties—to stick to purely original varieties, if they wished to succeed; but no, they turned a deaf ear to our warnings, and the grape growing interest of this section has turned out as we said it would.

Over one hundred years ago Thomas Jefferson imported one or two French and German families, and brought on various European varieties of the grape and planted a vineyard on top of Monticello mountain, but after experimenting for sixteen years had to abandon the business—they did not suit this soil and climate—they mildewed and rotted! Fifteen or twenty years ago the owner of Monticello, planted a vineyard on the same spot of *home varieties*, and they succeeded splendidly until last year when they were attacked by the Black Rot, which disease is now an epidemic, and, we contend, was brought into this section by the extensive importation of European varities—varieties that are not at all suited to this climate and soil. They were healthy in their own country, but would not do here—hence the grape rot in Virginia! What is the Black Rot? This rot is caused by the spores of a fungus, which, though invisible to the naked eye, are carried by the wind and deposited on the fruit, where they germinate and grow, causing the rot. The rotten grapes lie on the ground all winter, and when the warm weather comes on, the spores are again sent out like smoke from a puff ball, and deposited on green grapes, when the same process is repeated—and thus, we contend it will be until our growers are contented to confine themselves strictly to the cultivation of home varieties. In our opinion, our growers will have to plow up, burn out, and commence fresh with original varieties. Our true grapes and our most profitable ones, are the Morton, Cynthiana, Ives, Catawba, and a few other hearty varities.

Our growers should select and cultivate only such home varieties as they know will succeed here, and let experimenting with foreign varieties alone; the poor man, especially, can't afford to experiment. Some few of the wiseacres may differ with us in opinion—they have a right to. What carried the rot into Europe? The importation of American varieties. What brought it into America? The importation of European varieties. If our Virginia growers continue to import and cultivate foreign varieties, they will continue to be troubled with mildew and rot. Let us orginate and cultivate our own varieties, and we will succeed.

Some of our wise men hold that mildew and rot are "caused by too much moisture in the soil." No doubt too much wet weather is injurious to the grape, but that did not cause the rot; but, as the rot is now an epidemic, it helps it. Who ever heard of grape rot in Virginia, until foreign varities were introduced? Who ever heard of the wild grape rotting, before the spores were wafted by the wind from the diseased cultivated vine, and settled upon the fruit?

The only sure remedy against this grape rot is the bagging system. That will protect grapes against the rot, if done in time—and the time to do it is as soon as the bloom drops.

CALIFORNIA BRANDY AGAIN.

[Wine and Spirit Review.]

We congratulate Mr. J. D. W. Sherman upon the promptness with which the California distilleries have availed themselves of the advantages offered by him of storing their brandies in bond in New York, and it is a suggestive fact that already the receipt of goods at his special warehouse has far exceeded his most sanguine expectations. This only confirms the correctness of the arguments advanced by Mr. Sherman before the authorities at Washington in favor of such a warehouse on the Atlantic seaboard, and no better evidence could be given of the fact that such a warehouse has been a need of the trade for some time past.

But simply a warehouse in the leading Eastern market, where the California distiller can deposit his goods for a period without paying the tax, and possibly secure liberal advances of money upon his consignments, is by no means all that will be required to build up and foster a trade in California brandies in the East, much less create a foreign demand for these goods. It is imperatively necessary to the accomplishment of this result that the average California brandy be vastly improved in quality, and that the distillers of that favored locality shall, as a class, do what a few only have so far done, viz: make their brandy from sound wine, and even from selected grapes grown expressly for the purpose. There is no trouble now in disposing of such brandy as this, as the experience of all who have handled it will demonstrate, and the demand for such a brandy will no doubt be for some time in excess of the supply.

THE GRAPE CROP.

Particulars of the Prospects for the Vintage.

The following replies have been received to circulars sent out by Clarence J. Wetmore, Secretary State Viticultural Commission, referring to the grape crop of 1887:

Alameda County.

REPORT OE H. B. WAGONER, UPON THE VINEYARDS SOUTH OF LIVERMORE.

Damage by Frost.—In this immediate neighborhood the damage hardly reaches one per cent., many vineyards having escaped entirely.

Damage by Coulure.—Loss very great on some varieties. Total loss estimated at 30 to 35 per cent.

Damage by Disease or Other Cause.—No damage observed so far. Apprehend less damage from sunburn than last year owing to the foliage being better.

This year's crop as compared with that of 1886: Some vineyards will produce but little more, others will produce double or more. In this vicinity there will be 60 to 75 per cent. more. In the valley 50 per cent. more.

The following varieties will produce a full crop: All white wine varieties except Golden Chasselas, Zinfandel and Mataro on some soils, Petit Pinot, Meunier, Grenache, Folle Noir and Lenoir.

The following varieties will produce a light crop: Malbeck, Cabernets in some vineyards, and Chauche Noir.

REPORT OF WEGENER AND WENTE, ON VINEYARDS SOUTHEAST OF LIVERMORE.

No frost except in two places where the damage was but slight. The loss by coulure estimated at about 40 per cent. No loss from any other cause. There will be an increase of about 15 per cent. over the crop of 1886. Golden Chasselas, Folle Blanche, Burger and Cariguan will produce a full crop. Sauvignon Blanc, Rieslings, Malbeck, Mataro, Zinfandel and Charbono will produce a light crop.

General Remark.—An abnormal growth of wood but a poor setting of the berries. A great many fruit buds remained dormant. A great need of more wineries in the locality.

REPORT OF F. L. FOWLER—VICINITY OF DES MESAS, LIVERMORE.

No damage from frost. Rieslings, Malbeck, Folle Noir, Chanche Noir, Cabernets and Petite Syrah damaged about 33 per cent. by coulure; Zinfandel about 20 per cent. No damage to other varieties. There will be about 40 per cent. increase in this vicinity over that of 1886 and abont 20 per cent, increase in the whole valley. Tannat. Pfeffers Black Burgundy and Merlot will produce a full crop.

REPORT OF J. GALLEOOS UPON THE VINEYARDS ABOUT MISSION SAN JOSE.

No damage by frost. Estimated damage of 33 per cent. by coulure. No damage from any other source. This year's crop will be 33 per cent. larger than 1886.

REPORT OF J. L. BEARD, WARM SPRINGS.

No damage by frost. Considerable damage from coulure. This year's crop will be larger than that of 1886. Zinfandel, Golden Chasselas and Folle Blanche will produce a full crop. Riesling, Malbeck, Trousseau and Petit Pinot will produce a light crop.

REPORT OF H. CURTNER, HARRISBURG.

No damage from frost. No damage from coulure worth mentioning. This year's crop will be 25 per cent. more than last year.

REPORT OF H. H. ELLIS, SUNOL.

No damage from frost. No damage from coulure. Crop of 1887 will be much heavier than that of 1886. All varieties will produce a full crop. Most of the vineyards in this section planted to table grapes.

REPORT OF H. G. ELLSWORTH, NILES.

No damage by frost; 25 per cent. damage by coulure. Crop appears to be nearly as good as last year. Folle Blanche and Rose of Peru will produce a full crop. Zinfandel, Muscat and Riesling a light crop.

Contra Costa County.

REPORT OF J. STRENTZEL, MARTINEZ.

Not over 1 per cent. damage from frost; 2½ per cent. damage from coulure.

The Sultanas were infested with the "thrip." A liberal dusting with a mixture of lime and sulphur slacked with concentrated salt water and crude coal oil disgusted them, very few are now seen.

There will be an increase of 15 per cent. over the crop of 1886. Muscat, Flame Tokay and Black Ferrara will produce a full crop. White Malaga, Royal Nice, Isabella, Black Lombardy and Black Moroco, will have a light crop.

The increase from young vineyards will be absorbed by local demand not influencing the general market. This report is only on the table grape varieties.

REPORT OF S. PARJEON, CONCORD.

No damage from frost; 1 per cent. damage from coulure.

This year's crop is 25 per cent. larger than that of 1886. Zinfandel, Mataro, Black Morocco, Black Hamburg, Tokay, Rose of Peru, Muscat and Chasselas, a full crop. Riesling, Cabernets, and Malbeck a light crop.

Napa County.

REPORT OF A. BRUN, OAKVILLE.

Twenty per cent. damage by frost between Rutherford and Youutville; 15 per cent. damage by coulnre in same district; 2 per cent. damage from cut worms and small black fly. This year's crop will be abont 70 per cent. of that of 1886. Zinfandel will produce the best crop. Rieslings and Chasselas will be light.

REPORT OF H. W. CRABB, OAKVILLE.

Twenty-five per cent damage from frost; 15 per cent. damage from coulure. Phylloxera is spreading slowly but surely, but the loss is as yet trifling. This year's crop will be 60 per cent. of that of 1886.

Golden Chasselas, Burger, Black Burgundy and Beclan will produce a full crop. Charbono, Chasselas de Foy, Malvasia, Moselle Riesling, Sauvignon Vert, Petite Syrah, Rieslings and Zinfandel will prodnce a light crop.

REPORT OF R. M. WHEELER, BELLO AND CHILES VALLEY.

Very little damage by frost in the vicinity of Bello and St. Helena. In Chiles Valley abont 33 per cent. loss. Thirty-three per cent. damage by coulure. This year's crop will be two-thirds of what it was in 1886. Golden Chasselas, Sauvignon Vert, Pinot, Zinfandel, Burgundies and Burger will produce a full crop. Riesling, Cabernet Sauvignon, Lenoir, Malvasia, Sauvignon Blanc and Semillon will produce a light crop.

REPORT OF CHAS. KRUG, ST. HELENA TO CALISTOGA.

Damage by frost, 25 per cent.; damage by conlure, 10 per cent.; damage by phylloxera, black knot and peronospera, about 5 per eent. The crop of this year will be less than 60 per cent. of that of 1886.

Chauche Gris, Sauvignon Vert, Petite Syrah, Mondeuse, Cabernet Franc, Mission, Malvoisie and Palomino will produce a full crop. Zinfandel s fair crop; Rieslings a light crop.

REPORT OF L. MINI, NAPA.

Damage by frost, 50 per cent. Only small damage by coulure. Considerable damage from phylloxera. This year's crop not over 50 per cent. of that of 1886.

Sonoma County.

REPORT OF A. SBARBORO, ASTI STATION.

No damage by frost; 1½ per cent. damage by coulure.

This year's crop will be 40 per cent. more than that of 1886. Zinfandel, Burger, Malvoisie, Grenache, Burgundy, Black Pinot Golden Classelas, Riesling and Carignan will produce good crops. Charbono and Trousseau will have light crops.

REPORT OF M. LITCHFILD, SEBASTOPOL.

No damage by frost; 40 per cent. damage by coulure.

This year's crop will be 30 per cent. less than that of 1886. Mission and Golden Chasselas will produce a full crop. Zinfandel a light crop.

REPORT OF S. TALMADGE, SEBASTOPOL.

Ten per cent. damage by frost; 40 per cent. damage by coulure.

Crop of this year will be 30 per cent. less than that of last year. Mission will produce a full crop. Zinfandel a light crop.

REPORT OF CHAS. KNUST, CLOVERDALE.

No damage by frost; no damage by coulure. The crop of this year will be far better than that of 1886. Chasselas (Golden) Burgundy and Mission will produce a full crop. If the Zinfandels are not troubled by sun burn they will produce a good crop. Riesling a light crop.

J. G. HEALD, CLOVERDALE.

No damage from frost; 5 per cent. damage by coulure; small loss from Oidium.

This year's crop 25 per cent. more than that of 1886. Nearly all varieties will produce a full crop. Riesling in most places a light crop. Great need of more wineries here.

REPORT OF ELI J. SHEPPARD, SONOMA.

Ten per cent. damage by frost; 33 per cent. damage by coulure. No disease among the vines except phylloxera. The general productiveness of the vineyards in this district is materially diminished annually by this pest.

This year's crop will not be more than 60 per cent of that of 1886. None of the varities will produce a full crop; the Zinfandel will perhaps produce the best average crop. All of the white wine varieties will produce a light crop.

REPORT OF O. H. RUFUS, SONOMA.

Small damage from frost; 5 per cent. damage by coulure. This year's crop will be 30 to 40 per cent. less than that of last year. The Mission will produce a full crop. All other varieties a light crop. One great drawback in our district is the lack of confidence in resistant stocks; when once the vines are killed by phylloxera, the land is not replanted; this reduces our acreage year by year. Better prices for grapes and more confidence in the resistence of American stocks will in a few years restore our vineyards to their former acreage.

REPORT OF J. W. TREADWELL, RINCON VALLEY.

Grape crops on the low lands entirely destroyed; 33 per cent loss from coulure. Crop of this year will be about the same as last year; young vines bearing well but none of the old vines will produce a full crop. Vines trained on the Chaintre system are doing better than those short pruned; the berries have set better.

REPORT OF J. T. HYDE, SANTA ROSA.

Thirty-three and one-third per cent. damage by frost; 10 per cent. damage by coulure. Hot wind did more damage than the frost. This year's crop will be 5-6 of that of 1886. Franken Riesling, Traminer, Burger, Gutedel, Orleans Riesling and Barbaroux a full crop. Chauche Gris, Zinfandel, Matan, Chauehe Noir, Black Burgundy, Ronssanne and Colombar, a light crop.

Solano County.

REPORT OF DR. W. H. WELLS, DIXON.

Twenty per cent loss by frost; no damage by coulure. This year's crop 60 per cent. of that of 1886. Burger, Chasselas and Malvoisie a full crop. Muscat, Tokay and Zinfandel a light crop.

REPORT OF BARBIERE BROS., RIO VISTA.

No damage by frost; 20 per cent. damage by coulure. Zinfandel, Burger, Malvoisie and Riesling a good crop.

Sacramento County.

REPORT OF JAS. BUTLER, FLORIN.

Twenty-five per cent. damage by frost; slight damage by snnburn. The crop of 1887 will be a little more than that of 1886.

REPORT FROM —— PERKINS.

Fifty per cent. damage by frost; no damage by coulure. This year's crop 50 per cent. less than that of 1886. The Mission is the only variety that will prodnce a fair crop.

REPORT OF —— SACRAMENTO.

In this county 20 per cent. loss from frost; 5 per cent damage from coulure. This year's crop will not be more than that of 1886, and may be a little less. Zinfandel, Mataro, Carignan, Burger, Folle Blanche, Grenache, Black Burgundy, Tokay and Black Ferrara, a full crop. Colombar, Mnscat and Cabernet, a light crop.

REPORT OF C. H. SCHUSSLER, NATOMA.

No damage by frost; 5 per cent. damage by coulure. The crop in our vineyards will be 50 per cent. larger than in 1886. Burger, Zinfandel, Grenache, Black Burgundy, Mataro, Trousseau, Folle Blanche, Mennier, Malvoisie, Chanche Noir, Lenoir, Carignan, Moselle Riesling, Teinturier, Black Ferrara, Tokay and Emperor will prodnce a full crop. Colombar, Chalosse, West's White Prolific, Charbono, Verdal, Muscat, Cabernet Sauvignon and Malbec, a light crop.

REPORT OF JOHN M'COMB, FOLSOM.

About 75 per cent. loss by frost and coulure. In the Red Bank Vineyard there were 175 tons in 1886; this year there will be but ten tons. Mission, Rose of Peru and Feher Szagos a total loss; Muscat and Tokay hardly worth picking; Zinfandel, first crop about a total loss, exeept on high ground; second crop good, and will therefore produce about one-third of a crop. Other vineyards in this vicinity damaged not quite as much, owing to their being on higher ground.

Placer County.

REPORT OF G. W. APPLEGATE, APPLEGATE.

Fifty per cent. damage from frost. This year's crop will be two-thirds of that of 1886. The Mission will produce a full crop.

REPORT OF N. MERTES, ROSEVILLE.

Seventy-five per cent. damage from frost; slight damage from coulure. Crop of 1887 one-half of that of 1886. None of the varieties will produce a full crop. Muscat, Rose of Peru, Zinfandel and Mataro will produce the best.

REPORT OF C. P. WESTCOTT, ROCKLIN.

Damage from frost about one-third; damage from coulure very great. Will not have over one-third of a crop on Muscats. Most of the first crop of wine grapes destroyed by frost. Only one or two vineyards will have a fair crop.

REPORT OF C. GLADDING, LINCOLN.

Twenty-five per cent. damage from frost; 5 per cent. damage from coulure. This year's crop 20 per cent. less than that of 1886. Owing to a less than average rainfall this year and lack of water for irrigation a decrease instead of an increase in the grape crop is the result. This happily will be obviated next year by the opening up of the Gold Hill ditch next winter.

REPORT OF E. B. SILVA, NEWCASTLE.

Damage by frost one-third; no damage by coulure. This year's crop about two-thirds of that of 1886.

REPORT OF J. A. FILCHER, AUBURN

Two per cent. damage from frost; no damage from coulure; small damage from phylloxera. This year's crop 10 per cent. increase over last year's. All varieties will produce a full crop.

REPORT OF J. B. WHITCOMB, COLFAX.

Ten per cent damage by frost. Mostly table grapes planted in this district. The crop will be 25 per cent. larger than that of 1886.

Nevada County.

REPORT OF FELIX GILLET, NEVADA CITY.

Damage by frost very great, very few vineyards escaping. No damage from coulure. This year's crop will not be over one-third of that of 1886, Zinfandel, where not frosted, producing a fair crop. I find, though, that it ripens too late to mature well.

Tehama County.

REPORT OF BRUCE B. LEE, RED BLUFF.

No damage by frost; no damage by coulure. This year's crop about the same as last year. All of the varieties are producing well, especially so the Muscats.

(N. B.—This report does not include the vineyards near Vina.)

Shasta County.

REPORT OF WM. M JOHNSTON, ANDERSON.

Five per cent. damage by frost; no damage by coulure. This year's crop as good as that of 1886. Flame Tokay, Muscat and Black Hamburg, a light crop. Most of the vineyards around here have been planted to raisin grapes.

REPORT OF C. C. BUSH, REDDING.

No damage by frost; no damage by coulure. Our crop this year will be heavier than that of 1886. All the varieties will produce a full crop.

REPORT OF J. S. BRINCARD, CENTERVILLE.

No damage by frost; no damage by coulure. This year's crop about the same as in 1886. The Mission will produce a full crop.

REPORT OF ADA H. CAMDEN, TOWER HOUSE.

Slight loss by frost; no damage by coulure. Only small number of vines planted in this district. Those that are here look remarkably well and promise a heavier crop than what we had in 1886.

Santa Cruz County.

REPORT OF J. A. STEWART, SANTA CRUZ.

No damage by frost; 10 to 25 per cent. damage by coulure. This year's crop but little in excess of that of 1886; most varities will produce a fair crop. Cabernets, Charbono, Muscat and Malbeck, will produce a light crop. Cabernets grow with the greatest ease, but they have coulred considerably owing to the cold weather. Petite Syrah promises to be a good bearer, trained in Chaintre also the Poulsard; Noiriones (Pinots) on the chaintre do not do as well as on the Guyot system. The indications are that the Franken Riesling and Chauche Noir will overbear on Chaintres, and so hurt the vines. Merlots are yielding large returns and promise well and will become our future favorite. Mondeuse and Sauvignon Blanc not doing as well as was expected. Semillon is doing well.

San Benito County.

REPORT OF WM. PALMTAG, HOLLISTER.

No damage by frost; no damage by coulure. This year's crop will be two-thirds of that of 1886, about 20,000 gallons of wine. Black Pinot, Gros Riesling, Black Hamburg, Malvoisie, Rose of Peru, Muscatel, Chassalas and Burger, a full crop. Zinfandel, Charbono, Chauche Gris, Muscat and Trousseau, a light crop.

Santa Clara County.

REPORT OF J. HAGUE, GILROY.

No damage from frost; 33⅓ per cent. damage by coulure. This year's crop about 20 per cent. less than that of last year. The Mission is the only grape that will produce a full crop.

REPORT OF F. H. M'CULLAUGH, LOS GATOS.

No damage by frost; 15 per cent. damage by coulure. Damage by heat, coulure, etc., will amount to at least 33⅓ per cent. The crop of this year will probably be about the same as that of 1886. Mataro and Zinfandel, a good crop. All other varieties about two-thirds of a crop.

REPORT OF R. T. PIERCE, SANTA CLARA.

No damage by frost; no damage by coulure. Crop of 1887 about the same as 1886, perhaps 10 per cent. more.

REPORT OF H. C. MORRELL, WRIGHTS.

Thirty per cent. damage by frost; 50 per cent. damage by coulure to the table grape varieties; 25 per cent. loss to the wine grapes. This year's crop will be only 60 per cent. of that of 1886. None of the varieties will produce a full crop. The grape crop will be very late this year. Some varieties barely out of blossom now (July 20). If we have early rains the grape crop on the Santa Cruz mountains will not amount to much.

REPORT OF J. C. MERITHEW, CUPERTINO.

No damage by frost; 20 per cent. damage by coulure. Old vines will only have one-half of the crop of 1886. Young vines about the same as last year. Mataro, Trousseau, Cabernet and Zinfandel will produce an average crop. Charbono, Grenache, Malbeck and Carignan will produce an average crop. In this district I should say that the crop of grapes would amount to nearly the same as in 1886, but the berries being smaller the yield of wine will be from one-fourth to one-third less.

REPORT OF H. LEFRANC, SAN JOSE.

I do not know the amount of damage by frost. The usual story here, "none in my place but some in my neighbor's." I am told by those who have their places for sale that their vines did not suffer from coulure, and those few whose places are not on the market say that there was a little coulage. I am unable to see the effect of the different diseases, and the fact is concealed by every grower.

I think that the vintage of 1887 will be about the same as 1886. The Mission will produce a full crop. Zinfandel, Cabernets, Semillon and Muscat, a light crop. Low price for wine, and plenty of wine and more wine a coming.

REPORT OF J. B. J. PORTAL, BURGUNDY VINEYARD, ETC.

No damage from frost; scarcely any damage from coulure. This year's crop will be 50 per cent. more than that of 1886. Zinfandel, Grenache, Carignan, Mataro, Cabernet Franc, Sauvignon Vert, Folle Blanche, Pinot, Malbeck, Ploussard and Burger will produce a full crop. Charbono, Cabernet Sauvignon and Muscat will produce a light crop. From present appearances the vintage will commence about September 15th.

Fresno County.

REPORT OF J. R. MINTURN, MINTURN.

No damage from frost; 5 per cent. damage from coulure. Vines are all young in this vicinity; had 200 tons in 1886, this year will have 1000 tons.

West's White Prolific, Trousseau, Folle Blanche, Colombar, Verdal and Mataro will produce a full crop. Frontignan (on short pruning) and Feher Szagos, a light crop.

REPORT OF M. DENICKE, FRESNO.

No damage from frost or coulure; the raisin crop will be about double that of 1886; estimated between 400,000 and 500,000 boxes. Increase in wine grapes over 1886 of 30 to 40 per cent; all varieties will produce a full crop.

The red winged lady bug has made its first appearance in many vineyards in this district and is destroying the ova of the grape fly. We will have about 4,000 tons of wine grapes to ship, and outside of local wine cellars capacity.

REPORT OF MRS. A. L. AYRES, CHURCH COLONY, FRESNO.

No damage by frost; the crop will be heavier than in 1886; all varieties will produce a full crop.

San Joaquin County.

REPORT OF W. H. ROBINSON, STOCKTON.

Five per cent. damage by frost; 10 per cent. damage by coulure. This year's crop about the same as that of 1886. West's White Prolific, Chasselas, Burger, Johannisberg Riesling and Zinfandel, a full crop. Black Hamburg, Frontignan, Trousseau, Black Prince and Muscat, a light crop. Berries this year small, caused by drought and heat.

REPORT OF GERTIE DE FORCE CLUFF, LODI.

Slight damage by frost. This year's crop will equal if not exceed the crop of 1886.

REPORT OF F. N. SMART, LODI.

Fifteen per cent. damage by frost; slight damage by sunburn. Crop of 1887 about the same as 1886. No varieties in bearing to amount to anything except Mission and Zinfandel. Young Mataro vines affected by sunburn. Sauterne varieties extremely healthy and vigorous.

Los Angeles County.

REPORT OF SAN GABRIEL WINE CO. SAN GABRIEL.

No damage from frost; no damage from coulure. New vineyards will produce three times as much this year as last; old vineyards about equal to 1886. Grenache, Carignan, Mataro, Burger, Zinfandel, Folle Blanche and Mission, will produce a full crop. Sultana, Trousseau, Grosser Blauer, Golden Chasselas, Lenoir, Malbeck and Black Burgundy, a light crop.

The raising up of new town sites has been the means of cutting up a number of vineyards into town lots and the vines have not been attended to. If the land boom continues another year the acreage of vineyards will be greatly decreased.

Santa Barbara County.

REPORT OF J. E. GOUX, SANTA BARBARA.

No damage by frost; no damage by coulure. Crop of 1886 was a failure. This year's crop will be a good one. All varieties will produce a full crop. About 50,000 gallons of wine will be made this year.

San Bernardino County.

REPORT OF E. B. JUDSON, REDLAND.

No damage by frost; 20 per cent. damage by coulure. There will be an increase of 20 per cent. this year over that of 1886. Muscats will have a full crop. They have not suffered so much from coulure this year as heretofore. They seem to bear better if left in hard, lumpy, unwatered ground in spring until the fruit is set and then watered and cultivated.

REPORT OF DR. J. D. B. STILLMAN, LUGONIA.

No damage by frost; only slight loss from coulure. All varieties are bearing well, and if the vines are not injured by the peronospera during August a heavy crop will be harvested.

San Diego County.

REPORT OF C. J. COUTS, SAN LUIS REY.

No damage by frost. The crop of 1887 will be very much the same as that of 1886. The old vineyards will not produce as largely this year as last; but the loss will be made up by new vineyards coming into bearing. The Mission and Zinfandel will produce a full crop. Muscat, Malaga, Sultana and Tokay a light crop.

REPORT OF N. A. EATON, ENCINITOS.

No damage from frost or coulure. This year's crop more than double that of 1886.

REPORT OF G. F. MERRIAM, APEX.

No damage by frost; 30 per cent. damage by coulure; 10 per cent. damage by sunburn. The crop of 1887 will be larger than that of 1886. Raisin grapes three times as large and wine grapes double. Sauvignon Blanc, Cariguan, Grenache and Muscat a full crop. Trousseau, Chauche Noir and Sultana a light crop. Cabernet Sauvignon, Petite Syrah, Grosser Blauer, Semillon, Folle Blanche, Mataro and Meunier a fair crop.

REPORT OF J. F. MILLER, EL CAJON.

No damage by frost; very little damage by coulure. This year's crop will be double that of 1886. All varieties will produce a full crop.

Eldorado County.

REPORT OF WM. A. KRAMP, DIAMOND SPRINGS.

Ten per cent. loss from frost; no damage from coulure. Crop of 1887 larger than that of 1886. Mission, Zinfandel, Muscat, Catawba, Isabella, Elvira and Black Prince, a full crop.

Yolo County.

REPORT OF WEBSTER TREAT, DAVISVILLE.

No damage by frost; no damage by coulure. Crop of 1887 just about the same as in 1886. Muscat and Tokay a full crop. Emperor a light crop.

Mendocino County.

REPORT OF A. J. WODDELL, GUALALA.

Five per cent. loss from frost; 15 per cent. loss from coulure. Crop this year a trifle heavier than that of 1886; nearly all varieties will produce a full crop. Flame Tokay, Grey Riesling, Muscat and Mission a light crop.

From the above reports the following estimate of the crop of 1887 for the whole State is made:

	1886.	1887.
Napa County	4,500,000	3,150,000
Sonoma County	3,000,000	2,100,000
Alameda & Contra Costa	800,000	1,064,000
Santa Clara & Santa Cruz	1,700,000	2,000,000
Fresno & San Joaquin	1,800,000	2,300,000
Los Angeles & South	3,000,000	3,000,000
Sacramento & North	1,500,000	2,000,000
Other Counties	500,000	1,000,000
	16,800,000	16,614,000

Making the production of 1887 a trifle less than that of 1886. Allowing 3,000,000 gallons to be distilled would leave a little over 13,000,000 gallons of marketable wine. If two condensing machines are put up by Mr. Shorb and his company and run to their full capacity they will be able to condense 10,000 tons of grapes, and so reduce the wine yield by 1,500,000 gallons, making it about 15,000,000 gallons.

THE SAN FRANCISCO MERCHANT.

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FRIDAY.....AUGUST 5, 1887

OLIVE CULTURE.

Mr. Adolphe Flamant of Napa, has just published his work on Olive Culture, which is a practical treatise, not only on olive culture, but also on the making of olive oil and the pickling of olives. It consists of nine separate chapters on the following subjects: Soils suitable to the culture of the olive, reproduction, general care, cost of a plantation, disease, varieties, the olive oil, the pickled olive, and general conclusions. The work is a very valuable addition to the limited number of publications bearing upon olive culture, and Mr. Flamant's experience in France, as well as in California, render him particularly qualified as an authority. The price of the book is one dollar, and it has already met with a very large measure of success. Copies can be obtained at the office of the MERCHANT.

The exports of wines to the United States from the Consular district of Lyons are decreasing, as will be seen by the following figures which give the value of the wines thus exported during the first six months of each year: 1886, francs 294,390; 1887, francs 242,383.

CRESTA BLANCA.

Mr. Charles A. Wetmore has decided to place his Cresta Blanca vineyard in the market. The property consists of four hundred and seventy acres in the Livermore Valley. It was selected by the owner on account of the similarity of the soil to that of the most renowned French vineyards. It can be divided into three or four fine properties, and is situated on both sides of the main road with a good stream of water continuously flowing through it. He desires to retain the site of his wine cellar, which has been dug out from under the hill, also a portion of the land, but his interests in San Diego necessitate that a large portion of his time should be passed in the southern portion of the State, consequently he is unable to devote all the attention that is required to the vineyard. The vines planted on the property are all of the choicest imported varieties, grafted on to resistant stocks. He also has fifteen acres planted to olives, besides ten acres in figs and peaches. Part of the land is also adapted to oranges and lemons, and other uncultivated portions could be planted profitably with any kind of fruits that might be required. The situation is very convenient to San Francisco and the scenery is as beautiful as could be desired. It will be remembered that Mr. Wetmore was offered one dollar per gallon for his new 1886 wine by Wm. T. Coleman & Co., but he prefered to keep it for maturing. Parties desiring to see the property should communicate with Mr. Wetmore at 204 Montgomery St.

THE ETRAIRE GRAPE.

Mr. Felix Gillet, of Nevada City, writes as follows: "I would call the attention of the Viticultural Commission to the fact that most all the "Etraires," a family of wine grapes cultivated for a very long time in the south of France, are said to be phylloxera-proof, so that the planting of that grape in phylloxera-infested vineyards would do away with the difficult and precarious process of grafting, and grafting *above* ground, liable to so many accidents. I notice that the "Etraires" are being extensively planted in France, or at least planted where before they never were thought of. Some four or five years ago I introduced into this State the Etraire de l'Adui, the finest of the Etraires, simply to experiment upon it as a wine grape, not knowing at that time even that it was a "resistant" stock, or said to be. I find this Etraire to be a very vigorous grower and heavy bearer; the bunches are large, shouldered, well set; the berries medium large, oval, black, and ripening before Zinfandel. What kind of wine the Etraire would make in California I had no chance yet to ascertain, not having more than four large vines of this Etraire. Now it seems to me that it would be well on the part of the Commission to find out whether the Etraire will resist the attacks of the phylloxera here in California as well as they are claimed to do in France, and then encourage the planting of that kind in phylloxera-infested lands. I believe that the Etraires will make as good wine, if not better, than Zinfandel."

Any communication intended for the editor of the MERCHANT should be addressed to 327 Market Street, and all matter pertaining to the business affairs of the office should be sent to P. O. Box 2366.

THE VINTAGE PROSPECTS.

We devote considerable space in the present issue to reports from all parts of the State, on the prospects for the coming vintage. The collection of these reports is due to Clarence J. Wetmore, Secretary to the State Viticultural Commission, who sent out many hundred blanks in all directions, and has succeeded in obtaining a percentage of replies. The reports published are not given in full, but have been condensed by Mr. Wetmore, and contain the substance of more lengthy writings on the part of his correspondents. He has certainly been much more successful in obtaining replies than has heretofore been the case, and we hope that this is an indication of a growing feeling among viticulturists that it is advisable to supply accurate information of such a nature as will be both interesting to themselves, to the dealers and to the public generally.

At the conclusion of the reports as published, Mr. Wetmore summarizes them and gives his own opinion as to the prospects for the vintage of 1887. This he thinks will fall short of the vintage of 1886, which is reckoned at under 17,000,000 gallons. We think that his figures may be taken as approximately correct. It must be remembered that estimates were given for this year's vintage, of 30,000,000 gallons, which shows the fallacy of figuring on crop prospects a year before they mature. There are innumerable "ifs" to be taken into consideration always, besides certain "pros" and "cons" that cannot be disregarded. The past season has been very similar to that of 1885 when the vintage was reduced fully one-half below the estimates. This season we have met with the late frosts, later even than in 1885, and they were followed by excessive heat which alternated again with unusually cold weather. And so it has continued throughout the season, until, at the present time, the prospects for the vintage have been reduced by nearly one-half of original estimates.

But there is one point that has not yet been taken into consideration, and that may be looked for this year. It will be remembered that in 1885, the similar season to this one, after there had been a heavy loss in the grape crop from the effects of frost and coulure, that, during fermentation, there was again endless trouble which resulted in the loss of a large quantity of wine. The regular course of fermentation seemed to be suffering from freaks that nobody could understand, and which all occurred at once in different sections of the State, and from no apparent cause. The officers of the State Commission will recollect that time when complaints poured into them from all sides and they were besieged with requests for remedies. It is not at all improbable that a similar experience may be met with this year, and if it is then the vintage of 1887 will be even less than is reckoned upon in the estimate we give from Mr. Wetmore. After such a favorable season in 1886, it would be a pity to see a relapse to the vinegary wines of 1885. But this may happen, so that the unsold wines of 1886 are yet of infinite commercial value.

There are some wine makers who have not yet disposed of their 1886 vintage. We congratulate them upon this fact. It is well known that there is a very short supply indeed of old wines in the hands of the merchants. They are, in fact, beginning to fear that they will not have enough to carry them through. White wines are especially scarce and good paying figures would be given for them. But the holders of white wines also have red wines for sale, which the dealers are not so anxious to secure. The makers consequently seem to have matters in their own hands and to be in a position to fix prices for red and white wines combined. When the large storage cellar is in full operation, and the condensed must machines are at work in different sections, there will be no talk of surplus supplies of wines, or of sales at ten and fifteen cents per gallon. And these two important factors in the business will very shortly be brought into play. Besides this many of the wine makers are making large additions to their storage capacity at home, which will enable them to hold their vintage for a couple of years at least. The wines of 1886 were the best ever made in California, consequently they are worth more than the merchants are offering.

It is thought by some that it will pay them better to keep last year's wine than it will to make any wine this year, and it is reported that this will be done in a few instances, If so the vintage will be reduced by this unmade quantity. The price of grapes for the season has certainly not been determined, and it will depend to a great extent upon the operations of the condensed must machines and the speedy commencement of the wine storage company.

Remedy for Mildew.

A friend writes: In 1885 and 1886, certain portions of my vineyard were badly mildewed, so bad that I lost all the grapes grown. The early July's were the most affected. I did nothing to prevent the spread of mildew, and this year there is no sign of mildew in my vineyard, some 8 acres mostly set in 1856. Had I used any remedy last fall or winter, I might have thought that I knew all about mildew.

Cherry Juice.

In consequence of the failure of the crop of black Sour Cherries throughout Germany and the heavy increase in the Spirit-tax, the price of Cherry Juice has advanced 5 to 6 marks per Hectolitre, while in New York the price has gone up to 50c. per gallon, with a tendency to still higher rates. Prices here will have to follow the European and New York quotations.

The Tannat variety of grape is doing well at Livermore. Mr. Charles A. Wetmore has a nine acre plot of Tannats, on his Cresta Blanca Vineyard, from which he expects to gather nine or ten tons of grapes to the acre. They are grafted on Riparia and Californica resistant stock, those on the Californica bearing the largest fruit and apparently being better vines in every way.

J. B. J. Portal of San Jose, tells us that he sold all his last year's second crop Zinfandel at 15 cents per gallon, but that he obtained special prices for his extra good wines, brands for which he is famed. Mr. Portal's modesty prevented him from mentioning the exact figure, and he was also afraid that his brother wine makers might be jealous if they heard of his good fortune.

Arpad Haraszthy was the first wine maker to commence operations this season, as he did in 1885. It is to be hoped that the subsequent results this year, throughout the State, will not be the same as they were two years ago.

CALIFORNIA WINES.

Statistics of a Great and Growing Industry on the Slope.

[New York Herald.]

Statistics of the California wine export trade for the first half of this year show that the business continues to increase, although not in such large proportions as a year ago.

The total quantity of wine exported up to June 30 amounted to 3,624,390 gallons, being an increase of 397,036 gallons over the same period last year, when the quantity shipped out of the State was 3,227,354 gallons. In the same period in 1885 the exports of wine amounted to 2,181,997 gallons, which gave an increase of 1,045,358 gallons in 1886 over 1885, as against an increase of 397,036 this year over last.

The bulk of the wine shipped from California is sent overland by rail, the quantity sent in this direction this year being 2,575,035 gallons, which was less than the quantity shipped overland last year, when it amounted to 2,666,125 gallons, though in 1885 it was only 1,584,869 gallons. But the shipments made by sea have nearly doubled this year, and aggregate 1,049,355 gallons, as against 561,229 gallons in 1886 and 597,127 gallons in 1885. This larger movement by sea this year is due to the irregularity in the overland transportation charges, which have fluctuated considerably, owing to the interstate law, which for a time rendered overland exports of California products almost impossible.

WHERE IT GOES.

More than half of the wine exported by sea was sent by the Panama line of steamers, which took 533,609 gallons this year, as against 475,103 gallons in 1886 and 554,894 gallons in 1885. Thus the shipments via Panama this year were less than those of two years ago, although larger than in 1886. In shipments by other routes and in other directions there has been a large increase, the exports of wine this year amounting to 515,746 gallons, against only 86,126 gallons in the first half of 1886 and 42,233 gallons in 1885. This large increase in the miscellaneous shipments is due to the fact that several vessels going round the Horn to New York have taken large cargoes of wine, amounting to 100,000 gallons each.

The bulk of the wine shipped by the Panama steamers also goes to New York, only a small proportion being for Mexico and Central America, with an occasional small consignment for European ports. In the miscellaneous shipments the Hawaiian Islands come next in order to New York, and there the consumption of California wines is largely increasing, being now about fifty thousand gallons annually, while a few years ago the islands did not consume five thousand gallons a year. Small shipments are also made to Tahiti, Japan, China, New Zealand, Australia, Russia, European ports and British Columbia. The principal market is in the United States, and New York is the chief distributing centre in the east.

VALUE OF THE CROP.

The value of the wine exported from California is averaged at forty cents per gallon, though this is probably an underestimate. Taking this figure, however, it gives a total of $1,449,756 as representing the value of the wine exported this year. Doubling this gives almost $3,000,000 as the annual value of the California wine product for export. Five years ago the value of the wine exported from the State did not exceed $500,000

The consumption in the State is estimated at six million gallons annually, which, at the same average value of forty cents per gallon, would be $2,400,000 yearly, or a total of $5,400,000 as the value of the California wine consumed in the United States. These figures show to what importance the business is attaining.

It seems that the consumption of California wines is not keeping pace with the production. The vintage of 1886 amounted to 18,000,000 gallons, while it was only 7,500,000 gallons in 1885. There will evidently be a surplus stock at the end of this year, but this will be a decided benefit, as there is scarcely any old wine in the hands of the makers or producers, and last year's vintage being of excellent quality it will serve well for maturing. This year's crop will be about the same in quantity as last year, late frosts and *coulure* having affected the vines. Had it not been for an increased acreage just coming into bearing, the vintage of this year would have been less than that of last. The quality of the coming crop is expected to be excellent, and it is generally conceded that the production of fine wines in California has been fully established.

PRICES LOW.

Prices for new wines have been very low this year, some sales having been made at eleven cents, the average being fifteen cents. But since a shortage in the crop has been assured values have advanced and sales have been reported at twenty-five cents per gallon. Most of the wine makers are compelled to sell before the vintage, as they have not sufficient storage capacity to enable them to hold their wines as well as the new vintage. The wine makers are making strong efforts to establish a co-operative cellar in San Francisco, and they hope to have it ready by next month. Other efforts to relieve the market are being made by the erection of machinery for condensing the must, and several machines will be in operation this season. These measures, it is hoped, will enable the makers to hold over their wines and thus secure a paying price for them, while obtaining cellar room for the coming vintage. If the contemplated arrangements cannot be perfected in time then the makers will be largely forced to sacrifice their wines at very low figures to the merchants, which will entail serious loss upon the producers. It will also affect the price paid for grapes to the growers who do not make their own wine, as the makers, having lost money on the vintage of 1886 and the cellars of merchants being then well stocked with good wine, will only see before them prospects of a repetition of their present experience for another season.

MILDEW AND GRAPE ROT.

[Fruit and Grape Grower.]

One or both of these diseases appeared in some vineyards in different parts of the country some years ago. The damage from them was not material the first year of their appearance, and they attracted little or no attention. A second year they appeared again, doing more damage this time and creating some *talk* among grape growers, and so the matter proceeded for several years, getting worse each year until at last, by continual increase, and the coming of a season peculiarly adapted to the development of these diseases, whole crops were entirely destroyed and whole neighborhoods became infected. Yet during all this time nothing was done to correct these diseases, nor any investigations made in these communities into the nature of the disease or the remedies to eradicate them. This was gross negligence and heedlessness. Had these grape growers, upon their first appearance, informed themselves of the character of these diseases and the remedies to arrest and eradicate them, they could have saved thousands of dollars in the past, and their vineyards would now be free from these plagues. What must now be done? Surrender in despairor, fight skillfully and persistently from year to year until these diseases have been eradicated? By all means pursue the latter course. Be not satisfied with a few spasmodic efforts in the spring. But fight it throughout the year until you have destroyed them. Those who will pursue this course will be rewarded with success and reap a rich reward. And those who will not do so had better dig up their vines at once and put their lands to growing something else. This is not only true of grape growing, but the same principle applies to all fruit culture. Fruit culture is the most pleasant, profitable and ennobling secular employment that man can follow. But this is only so for the persons who give it close, intelligent, persistent and unremitting attention. There are so few who will bring those qualifications to the business, is the reason why it always will be very profitable to those who do.

The *Fruit and Grape Grower* has from time to time informed its readers of the most approved remedies for these diseases, and it will continue to do so. But it is not our purpose to speak of them in this article, but only to encourage grape growers to fight these great evils with pluck tell thiy win a complete victory.

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Booth & Co, Black Diamond, Coleman Flag, McGowan Bros' "Trap" Brand, Fisherman's Pkg Co, Aberdeen Pkg Co, White Star Pkg Co, Jas. Williams & Co, Thistle Pkg Co, Columbia Canning Co, McGowan & Sons' "Keystone" brand, Seaside Pkg Co, J. W. Hume "Autograph" brand.

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WACHUSETTS PKC CO,
"SILVERSIDE" BRAND,
BATH CANNINC CO,
CARDINER PKC CO,
HERA PKC CO,
"TOMAHAWK" BRAND,
SUNNYSIDE PKC CO.

FRASER RIVER.

BRITISH AMERICAN PACKINC CO.,
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SKEENA RIVER.

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SACRAMENTO RIVER.

COURTLAND PACKINC CO., JONES & ANDERSON.

We also offer For Sale of Other Columbia, Sacramento and Fraser River Salmon:

Geo. W. Hume's "Flag" brand,
Hapgood & Co.,
I X L,
Pillar Rock Pkg Co.,
Geo. T. Meyers,
Ocean Canning Co.
Badolett & Co., (Flats),
Washington Pkg Co's "Favorite" Brand,
"Epicure" brand.
Pacific Union Pkg Co.,
Cutting Pkg Co's "Cocktail" (Flats),
A. Lusk & Co's pack,
"Mermaid" brand,
Scandinavian Pkg Co.,
West Coast Pkg Co.,
Warren & Co.,
"Carquinez" brand;
Point Adams,
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Karluk Pkg Co., "Challenge" brand, Arctic Pkg Co., Arctic Pkg Co's "King" Salmon.

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Our lines of Canned Fruits and Canned Salmon are incomparable, and we will make prices F.O.B. or C.I.F. for Great Britain, Australia and the Colonies.

OUR NATIVE WINE SHIPMENTS BY SEA.

PER STEAMER GEO. W. ELDER, JULY 20th, 1887.

TO NEW YORK.

MARKS.	SHIPPERS.	PACKAGES AND CONTENTS.	GALLONS	VALUE
A G & Co	F Mitchell	524 cases Wine		$2,300
"	"	50 barrels Wine	2,643	1,475
"	"	3 barrels Wine		
Total amount of Wine, 524 cases and			2,643	3,775

TO NEW YORK—PER SHIP IROQUOIS, JULY 20th, 1887.

W T C & Co	Wm T Coleman & Co	170 barrels Wine	8,414	$3,155
H W & Co	Lawrence & Co	2 barrels Wine	99	37
G	J Gundlach & Co	150 barrels Wine	14,977	6,736
"	"	50 puncheons Wine		
J G Jr	B Dreyfus & Co	36 barrels Wine	19,565	7,237
B D & Co	"	380 barrels Wine		
"	"	75 half barrels Brandy	1,845	
K & F	Kohler & Frohling	1092 barrels Wine	55,057	20,646
A V Co	C Schilling & Co	329 barrels Wine	30,673	11,506
A in diamond	"	218 barrels Wine		
B in diamond	"	100 barrels Wine		
Total amount of Wine			128785	49,318
Total amount of Brandy			1,845	3,690

TO JAPAN—PER STEAMER CITY OF SYDNEY, JULY 20th, 1887.

T K, Tokio	C Schilling & Co	2 barrels Wine	96	$60
L in diamond, Co, Yoko	S Mayers	10 casks Wine	621	217
G W L, Nag	R Andre	2 barrels Wine	100	35
L B, Yoko	Lang & Co	1 half barrel Wine	28	20
Total amount of Wine			845	332

TO NEW YORK—PER P. M. S. S. CO'S STEAMER STARBUCK, JULY 26th, 1887.

F in diamond	S Lachman & Co	50 barrels Wine	2,500	
"	"	3 half brrrels Wine	70	
G in diamond	"	30 barrels Wine	1,510	1,544
E M F	"	10 barrels Wine	540	219
"	"	1 barrel Brandy	47	94
Total amount of Wine			4,620	1,763
Total amount of Brandy			47	94

TO NEW YORK—PER P. M. S. S. CO'S STEAMER ACAPULCO, AUG. 2, 1887.

C B	Kohler & Van Bergen	10 barrels Wine	497	$497
G B	"	15 barrels Wine	1,250	1,250
T B L	Napa Valley Wine Co	3 barrels Wine	150	150
H H	C Schilling & Co	1 barrel Wine	48	40
F C & Co	Leonormand Bros	25 barrels Wine	1,256	377
L W M	Kohler & Van Bergen	10 barrels Wine	498	498
B B	Lachman & Jacobi	25 barrels Wine	1,266	358
F A	"	25 barrels Wine	1,260	356
N in diamond	"	25 barrels Wine	1,257	464
L J	"	10 half barrels Brandy	261	585
F B & S	C Carpy & Co	15 barrels Wine	753	301
D T	"	15 barrels Wine	750	300
Total amount of Wine			8,985	4,591
Total amount of Brandy			261	585

TO CENTRAL AMERICA.

J R, Puntas Arenas	Wm A Schultz	1 keg Malaga Wine	20	$20
"	"	1 keg Port Wine	10	13
K G, Corinto	Kohler & Frohling	4 cases Wine	158	127
A C D, Acajutla	"	5 half barrels Wine	82	100
"	"	3 kegs Wine	75	100
M M, La Libertad	B Dreyfus & Co	3 half barrels Wine	136	100
R M, Acajutla	"	2 half barrels Wine	73	129
"	"	2 kegs Wine	30	24
J L, Acajutla	"	5 half barrels Wine	60	101
J A R, Acajutla	Kohler & Frehling	7 barrels Wine	101	70
"	"	6 demijohns Wine	337	477
"	"	24 cases Wine		16
"	"	3 quarter casks Wine	10	40
J C, La Libertad	"	135 cases Wine		170
R G, Corinto	Sperry & Co	4 cases Wine		167
M M, La Libertad	Bloem, Baruch & Co	1 keg Whiskey		81
L & Co, San Jose de Guat	Schwartz Bros	40 cases Wine	20	20
A H, San Jose de Guat	"	10 cases Whiskey		33
M H, Acajutla	Urruela & Urioste	9 cases Whiskey	136	136
J S, Puntas Arenas	"	4 kegs Wine	25	25
M J C, Champerico	"	12 cases Wine		40
M A V, Acajutla	"	4 kegs Wine	60	36
W C S, Puntas Arenas	Wo Kee & Co	1 half barrel Wine		
H & Co, San Jose de Guat	John T Wright	10 cases Wine		
J T W, L Libertad	"	2 half barrels Wine		
Total amount of Wine, 66 cases and			1,323	2,737
Total amount of Whiskey, 19 cases and			10	288

TO PANAMA.

F A	L F Lastreto	10 barrels Wine	484	$211
E & G M	E de Sabla & Co	2 kegs Wine	10	8
P	B Dreyfus & Co	25 casks Wine	1,446	650
Total amount of Wine, 15 cases and			1,940	869

TO MEXICO

J K, Mazatlan	Cabrera, Roma & Co	1 barrel Wine	34	$28
J J V, Mazatlan	"	2 octaves Wine	53	52
P W C, Acapulco	W Loaiza	2 casks Wine	191	118
M S, Mazatlan	"	2 barrels Wine	100	52
"	"	1 keg Wine	10	5
Total amount of Wine			388	255

TO GERMANY.

A W L, Bremen	Gambrinus & Co	1 barrel Wine	52	$10

TO TAHITI—PER BARKENTINE CITY OF PAPEETE, AUG. 2, 1887.

J L & F	P G Sabatie & Co	6 barrels Claret	300	$90
L T	E G Lyons & Co	1 barrels Whiskey	40	80
E T & Co	E Thomas & Co	24 octaves Brandy	465	1,170
A V	A Viguier & Co	1 half-cask Wine	28	29
J F	E Amios	2 barrels Wine	100	30
J H C	Wilkens & Co	11 packages Wine	570	275
D in diamond	J Piuet	20 barrels Wine	963	301
L T	"	2 barrels Wine	99	50
M J V	"	4 casks Wine	243	122
Total amount of Wine			2,303	897
Total amount of Whiskey			40	40
Total amount of Brandy			465	1170

MISCELLANEOUS SHIPMENTS.

DESTINATION.	VESSEL	RIG.	GALLONS.	VALUE.
Mazatlan	J N Ingals	Schooner	208	$172
Honolulu	Planter	Barkentine	242	192
China	Oceanic	Steamer	100	150
Vladivistock	Oceanic	Steamer	543	563
Nanaimo	Empire	Steamer	30	24
Victoria	Mexico	Steamer	100	78
Honclulu	Mariposa	Steamer	650	331
Total			1,873	$1,510

Total shipments by Panama steamers	17,511 gallons	$10,255
Total Miscellaneous shipments	137,759 "	55,832
Grand totals	155,270	$66,087

IN THE WINE CELLAR.

[Correspondence Napa Register.]

There is small use in a carpenter attempting to work with dull tools; there is no use in a cellar master attempting to make good wine and the best wine without thoroughly clean fermenting tanks in the first instance, and clean casks in which to put his made wine in the second.

To begin with the former, or fermenting tanks, and in the very beginning that is new fermenting tanks, it is the general custom to soak with cold water, rinse with boiling water and soda, and then to rinse with cold water again; in this case the idea is to do away with all of the wood taste, to take out the coloring matter, etc. There is a second very simple method of treating both redwood and oak, and that, by filling with hot water in which sea salt has been dissolved in proportion of one pound to ten gallons, allowing this to rest in the tank or cask for twenty-four hours, and then rinse thoroughly with cold water several times.

There is a much longer and complicated method, but it gives even a better result than the one above. Here again the tanks must be filled with cold or tepid water, with a solution of potash, letting it remain in the tanks for several days, then filling the tank several times with pure water until there is absolutely no taste to the water drawn off, then rinse with a little warmed wine and brandy mixed.

Sometimes, no matter how much care has been taken in washing the tanks, the wine will taste of the wood. This can, however, be entirely taken away by adding sweet oil—olive oil—a quart of oil to sixty-five gallons of wine, shaking it thoroughly for fifteen minutes; the oil, on returning to the surface, can readily be drawn off, taking with it all of the wood taste and leaving the wine in better condition than it was before.

With old cooperage, and more particularly oak, there are several diseases, subject of course to casks which have not been in use, the most common, and in sequence as regards their danger are, mouldiness or mouldy taste, a sour taste, and last, woody taste; after these, but much more rare, are the bitter taste, the rotten taste and the dead wood taste.

The mouldy taste, coming entirely from want of cleanliness, is one which cellar masters cannot fight too strongly against. For it is much better to prevent it than to have cause to cure it.

To assist in keeping this taste away, all casks and all utensils should be carefully washed immediately after using and before putting away. Tanks in particular should be well washed with brooms, especially at the joints of the staves, and all solid matter resting there should be swept away.

Mould grows in the shape of acd is classified among the family of mushrooms, and its germinating rapidity is awful to calculate. Moisture assists its growth, consequently it is well to keep the tanks dry and in a well ventilated place. Casks can be treated in the same way, using a piece of chain instead of a broom. But the exterior needs as much treatment as the interior; all mould is bad.

If, however, with all care, mouldiness gets possession of the tanks or casks, it can be entirely displaced by washing the outside with a sponge dipped in water and sulphuric acid, one to ten, and rinsing the inside in like proportion, washing carefully, however, afterwards with plain water. This latter remedy ought to clean the tanks and casks of all manner of diseases.

The last and most desperate remedy is this: Take two ounces of chloride of lime, dissolve in a quart of cold water and a small quantity of sulphuric acid, diluted in a little water in about the same proportions, bung the cask tight and await consequences.

The action of the sulphuric acid will decompose the lime, chloride will be produced and the disinfection will be absolute.

A cask treated in this way cannot be used for some time. In the first instance it will have a most disagreeable smell, and in the second chloride gas is a very powerful destroyer of color. Rinse thoroughly with cold water, and then sulphur well.

The sulphur will entirely destroy the chloride. Finally wash, and the cask will be as good as new.

Down With Wine Adulterations.

[Chicago Champion.]

We are glad to notice a general disposition in several of the State Legislatures to enact stringent laws against the long practiced, injurious adulteration of wines and spirits. A few months ago the California Legislature came forward with a most sensible practical act which, if carried out in all its provisions, will effectually stop the adulteration of California wines. Following close on her sister State's footsteps, New York come to the fore with an equally effective legislative enactment to protect the consumers of wine against an imposition which has already assumed gigantic proportions.

COLOR IN WINES.

[Santa Cruz Courier.]

Prof. Hilgard, of the State University, has published a bulletin regarding wine colors, which, so long as the public taste demands color in table wines, is of much importance in a pecuniary way to wine producers. Wine makers and those who desire to see all the scientific facts bearing on the subject are directed to the bulletin itself. The salient points in the document and its conclusions only, are of consequence to the general public and to the small wine-growers or amateurs in wine making. He gives a list of forty varieties of red wine made in different places, the coloring matter of which he measured, and what he shows conclusively proves that there is no excuse for analine dyes, cochineal, cherry juice or any other decoction to produce the peculiar color the popular taste seems to demand. The standard of measurement used by Prof. Hilgard, is that devised by Chevreul and adopted by the French Government as well as by manufacturers in France. The color intensities of deep tinted commercial wines range between twenty and thirty; ordinary wines such as the Zinfandels, between ten and twenty, while any wine below ten is classed as "light red." Prof. Hilgard shows by his table that taking twenty as a satisfactory standard for clarets there are quite a number of California wines far above that standard, affording coloring matter enough to blend with less color, and still raise the whole to the popular standard. The most prominent color-wines shown in the table are, in the order of their intensity, Petit Bonsehet, Mondeuse, Sirah, Verdot, Merlot and Cabernet Franc.

The fact is made apparent by his investigations, that locality has much to do with intensity in wines. The same grape does not produce the same intensity in all localities, nor in all vineyards in nearly the same locality. Santa Cruz mountain grapes almost invariably give a high color. A great deal is still left for observation and experiment. Some grapes produce a less intensity of color than others, but more permanence.

HUMBUG IN WINES.

[New York Sun.]

"We make from thirty to thirty-five millions of gallons of American wine yearly, and do not import over five millions. These figures tell whether the wine drank by our people is foreign or American." So spoke a New York wine dealer. "By far the largest part of the American wine, however," he added, "is not sold as American, but as foreign wines. Only a few weeks ago I visited the cellar of one of the largest wine merchants in the city. It contained many thousands of gallons of American wine, the casks being marked 'St. Julian,' 'Medoc' etc., through the list of prominent foreign brands. His men go there and order wines bottled and labeled as foreign wines, and I saw in that cellar many thousands of labels ready for use in this way. These parties take good care not to imitate a trade mark, but they give the wine a foreign name and sell it as foreign to their guests. It is a strictly confidential business between the wine merchant and the hotel keeper. The American wine is bottled right there in the cellar, maked with a foreign label and then sent to the hotel, so that the hotel proprietor is not put in the power of his steward or caterer by the latter knowing the source from which the latter receives his wine.

THE COLORING OF WINES.

Mr. J. E. Taylor, the well-known scientist, writes on that subject in the *Sydney Town and Country Journal*, as follows:

Many scientists are rising to distinction, not so much because they are making new and beneficial discoveries, as that they are detecting the rascal and the thief. I am led to make these remarks by the announcement of a discovery that a German chemist, Herz, has found out an easy means for the detection of artificially-colored red wines. Of course there have been, and still are, various means of detecting the artificial coloring matters put into wines. The honest wine merchant is well aware that his customers like to have their eyes pleased as well as their palates tickled; and he does his best to accommodate himself to their wishes without actually poisoning them. Herz shows us how to detect these coloring matters. By his various methods, if magenta is the coloring matter, the wine will froth, if the common poppy has been utilized, it turns a cherry-red; with cherry-juice, it becomes a violet color; the proverbial and useful elder produces a red-violet, bilberries a blue-violet; privet-berries a pure violet, and so on.

White wines artificially colored, and red wines mixed with artificial colors, have been successfully examined in the same manner. Treatment with sodium hydrogen carbonate produces with pure wine a brown-red color, with wine colored with pure elderberry a gray-violet, and with bilberry a brownish green. The colors of red wines, due to the various artificial matters used as mentioned above, were detected chiefly by a saturated solution of tartar emetic, shaken up with the wine. Saturated solutions of sulphate of magnesia, soda, etc., were also employed as tests. It seems, however, that when old solutions of privet and elder are used for coloring, it is more difficult to detect them than with new.

THE BARTON VINEYARD.

[Evening Bulletin.]

Robert Barton, the Fresno vineyardist, sold his property recently to an English syndicate. In speaking of the sale Mr. Barton said: "The sale includes 960 acres, of which 540 are in solid vineyard, 20 to orchards and the remainder to feed. During the present season 320 additional acres are to be planted in vines. In cooperage, vaults and vats I have spent $170,000, and we will spend $20,000 more in cooperage this season, the contracts being already let. The vintage this season will be 500,000 gallons. The climate of Fresno is superb. We never have any frosts, and this season there have been no dry winds. Nature has been very prodigal to our section. I founded my vineyard in January and February, 1880. Its growth was marvelous. I have not yet resorted to irrigation for vines or trees since the first year. My experience leads me to believe that the subject of irrigation is not well understood. Plenty of water is needed the first year—none thereafter. We have better wine without it. Many irrigate too much. Deep plowing and deep cultivating are all that is required after the first year. The section of country specially adapted to wine and raisins lies between the San Joaquin and the Kings River, up to the foothills of the Sierra Nevada Mountains, and running down the middle of the valley, making a region about forty miles square.

An analysis of the soil shows it to be especially adapted for fine wines, even the light wines. Fresno county will produce 350,000 boxes of raisins this year, as against 250,000 boxes last year, and will thus remain the banner district. What is more important, there will be an improvement in quality as well as in quantity. Our raisin and wine growers are constantly acquiring knowledge by experience, and are profiting by it. George W. Meade & Co. are enlarging their packing house, and W. T. Coleman & Co. are also erecting a packing house at Fresno. The Atlantic and Pacific Railroad Company is buying land all over Fresno county, and will build through the valley on its way to this city. The price of land is jumping, and land is rapidly changing hands.

Grape Must.

The wine-makers of St. Helena will endeavor to have one of the Springmuehl-must-condensing machines located at that point for the use of this season's vintage. Sonoma people want one also, and Santa Clara viticulturists make the same request. Two machines are being made in this city, but J. de Barth Shorb of San Gabriel, who is managing the matter, says it is not improbable that a third apparatus may be ready before the season is over. The viticulturists of a district have to organize and agree to bear half the expense of the plant before a machine in the district will be assured by the managers. Where such assurance is made, it is also promised to purchase all the product. Mr. Shorb, who recently passed a week in this city, has returned home. I. D. Cone, the agent for the coast of the Yaryan system of evaporation for must condensation, says that by the vintage of 1888 he will have several machines ready for work. The plant for the process is said to be much cheaper than that of the Springmuehl process. The Yaryan process has been used in the condensation of liquid beef, glucose, wood pulp, tannin and other things. The machines are made in Ohio. Mr. Cone has recently communicated his plans to Executive Officer Wheeler of the Viticultural Commission.—*S. F. Bulletin.*

CALIFORNIA VINTAGE.

[The Western Broker.]

Better and richer than her mines of gold, is the capacity of California to produce a harvest of wine, second to none of the celebrated wine growing countries of the old world, and the enterprise of her citizens, aided by a bountiful soil, a benificent climate, the accumulation of capital which is now being directed to this industry, and the acquisition of scientific data which is being obtained from countries experienced in viticulture, is having the effect of building up that, which was at one time, for lack of these resources, threatened with destruction A glance at our columns, as they show from month to month, the shipments of wine and brandies from California to the various domestic and foreign markets, cannot fail to gratify those who take an interest in the growth of this, the most important factor in the prosperity of the Golden State.

In the statement of the distribution of this product as shown by the various shipments by land and sea, for which we are mainly indebted to the pages of that excellent journal the SAN FRANCISCO MERCHANT, it is apparent that the wines are of higher grade than would be conceded by those who have been accustomed caustically to designate—*attempts to make wine.*

Is it likely that our own people would consume those wines to such an extent, to the exclusion of other vintages, if they were of lower grade? Would wine growing countries buy them if they were commercially inferior to their own growth? Would Bordeaux purchase Claret of a poorer quality and pay for its transportation? Would Spain, Italy or Germany buy Port, Sherry, or Riesling, if it were unequal to their home production? Should we note the various countries to which these wines are being shipped we would readily see the vast opening in the markets of the world for these products of our Pacific Slope. Europe, South America, India, China and Japan, the Islands of the Pacific, and far off Australia will, in coming years, administer to the greatness and prosperity of this great State.

A glance at the short history of this industry and the rapid strides which it has already made in some of the leading markets of the world, indicates healthy growth and future greatness. Countries which, although producing in their own vineyards, hundreds of millions of gallons annually, do not disdain to buy from California, to the full extent of her present producing capacity; this should prove the assertion, to those who have hitherto doubted and scouted it, that this State is destined to become a rival to old European countries and will ultimately compete with them in the supply of wine, to at least five hundred millions of the people of the earth. And the annual product of this State could, with safety, be increased an hundred fold and still be within the growing requirements of the world's market, which is now knocking at her doors.

And what can we say of those people who in their mistaken fanatical and insane zeal, would trample upon this great industry, would prohibit the cultivation of the vine for fermentation, would call down the powers of heaven and earth for the purpose of suppressing and crushing this source of wealth and greatness. Are they not traitors? Sould they not be restrained and manacled rather than this grand State should be threatened with such a fate as has befallen Maine, Iowa, and other States, whose citizens are held under a servile bondage, their liberty disrespected, the privacy of their homes invaded, and who in consequence seem to have lost the commanding manhood of their forefathers. Let the people of California look well to their interests and to these foolish and wicked babblers.

WINE MATTERS

Just now is a critical time with the wine producers. The scale is just evenly poised, and if it swings one way it means ruin almost to the producer, but if the other end of the beam is brought down it means money and good times.

One great element in determining how the scale shall turn is the disposition that is made of the '86 crop. If it is sold at the present ruinous prices it will prove the dearest way in the world to care for it. By keeping it till next year 50 per cent advance will be realized. It will certainly pay to keep the wine over.

Another great element in the matter is the erection of large warehouses in San Francisco, Napa and Sonoma valleys, in which may be stored the surplus wine for ageing purposes. If this work is carried on to a proper extent, and under good management, it alone will solve the vexatious problem, and in favor of the grower, too.

The sale of wine on hand at present will make very much against the wine growers. They will lose certainly $800 on every 10,000 gallons sold.

It is the old wine that pays the producer, and not the new. This is a very important factor in the industry. If there were a million gallons of old wine in Napa valley to-day a ready market could be found for it at the east, and the growers would not be dependent upon the San Francerseo buyers. Once free from them, and the fortune of the growers is made. Continue to sell your wine to them while it is new and ruination will follow.

The report of the State Viticultural officers is that white wine will be short, and already the price has jumped up on it. Parties near St. Helena have been offered 20 cents for their white wine. Now don't sell it unless the red wine goes with it. Make one sell the other. At any rate hold to both till you can get a good price.—*St. Helena Independent.*

One of our wine men who holds about 60,000 gallons of wine of '86 stated the other day that it would pay him a great deal better to keep these wines till they bring 25 cents, and let the hogs eat the grapes, although nearly ripe in the vineyards, than to sell his '86 wines for low prices and make the present crop into wine. Nobody knows what quality of wine the next vintage will bring; very likely the fermentation will be defective.—*St. Helena Star.*

We learn that white wines are very scarce and prices rising, but our wine growers cannot afford to sell their white wines for a few cents higher than they could get a month ago, without selling their red wine at the same time. Hold on with your white and red wines; it is a shame to sell such good wines for present prices.—*St. Helena Star.*

The Report of the Fourth Annual State Viticultural Convention is now published and ready for delivery. Single copies are one dollar each, but special rates can be obtained for five copies or more.

Mr. J. de Barth Shorb has been visiting various sections of the north grape-growing parts of the State, for the purpose of determining in which localities the condensed must machinery shall first be established. The choice seems to lie between Cloverdale and St. Helena, the former having very few wine cellars while the latter place has the most grapes.

New Distilleries.

Deputy United States Revenue Collector Hicks states that a number of large steam distilleries are being erected and will be in readiness for work by the time of the ripening of the coming vintage. Among the more important are those of J. B. J. Portal, the Santa Clara Valley Co-operative Winery and the Saratoga Co-operative Winery. The Los Gatos Co-operative Winery will also convert its furnace distillery into a greatly enlarged steam distillery. Less pretentious establishments are being put up by G. M. Javis, A. Amide and others.—*San Jose Herald.*

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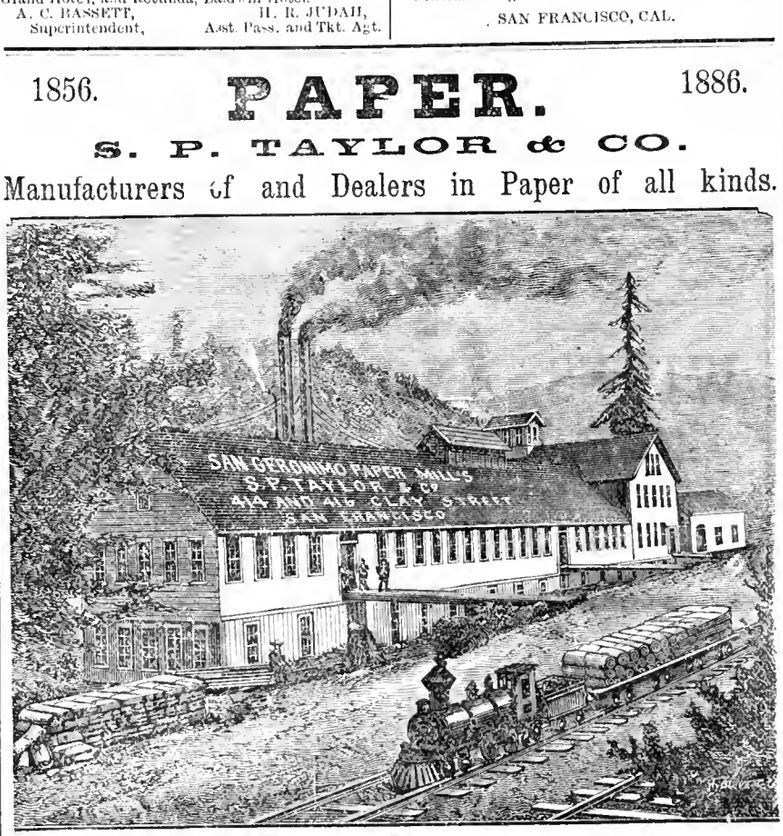

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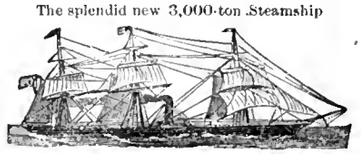

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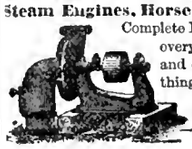

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Synopsis of Replies to a Circular Relative to Grape Mildews and Grape Rot in the United States.

By Erwin F. Smith.

To inquiries by this Section relative to the prevalence of grape rot and the mildews in the grape growing districts of the United States, there were received 384 replies from 366 localities, in 41 different States and Territories.

THE MILDEWS.

Of all who reported, 202 had neither observed nor heard of the mildews in their county, or did not know them, or did not state. One hundred and eighty-two persons, in nearly as many localities, stated the presence of *Uncinula spiralis* or *Peronospora viticola*, or both, with varying degrees of injury to the vineyards. The reported loss, depending upon the locality and the season, ranges from "slight" to "total." Nearly one-third of all who reported stated the loss in the vineyards of their section to be, in bad years, from 25 to 50 per cent. of the crop, and, in some instances, in particular vineyards or upon certain varieties, the entire crop. If the reports received can be taken as fairly indicative of the loss from mildews throughout the grape growing regions of the United States, then it may be positively stated that during the past ten years this has been as much as 10 or 15 per cent. annually.

POWDERY MILDEW.

Almost without exception, *Uncinula spiralis* is reported to do serious injury only in dry districts, or during severe drought, and chiefly to foreign grapes and a few natives, such as the Delaware. In a few cases a loss of from 10 to 50 per cent. or more is ascribed solely to *Uncinula*. This fungus is widely distributed in the United States, ranging from Massachusetts to Georgia, and westward across the continent to the Pacific, but the losses occasioned thereby, in the country as a whole, appear to be trifling.

DOWNY MILDEW.

Peronospora viticola occurs in nearly all parts of the United States, on wild as well as cultivated sorts. Even the Pacific coast, which long enjoyed perfect immunity, is not now free from it. During the last year at least eight different counties in California reported its presence, with losses on certain varieties ranging from 5 to 100 per cent. It is found also in Utah, and probably occurs in Oregon. It is most prevalent from the mid-Atlantic coast district west to the Mississippi, and south-west into Texas. This fungus everywhere injures the vineyards, often attacking fruit as well as leaves. It occurs on the vines throughout the growing season, but is usually worse from June to August. All report its growth to be favored by warm and wet weather, particularly by hot weather following protracted rains. In bad seasons all varieties, without exception, are subject to its attacks. Those esteemed particularly hardy and free from it in one locality succumb to it in another, or even in the same locality another year. On the whole, the varieties, reported most free from it are Scuppernong, Norton's Virginia, and Ives' Seedling. Almost the entire loss from mildew must be attributed to *Peronospora viticola*, since, as above stated, *Uncinula spiralis* does serious injury only in a few restricted districts.

REMEDIES AND PREVENTIVES.

The remedies most commonly tried for mildew have been sulphur and lime, though many others were mentioned. None of them seem to have given uniform or satisfactory results, except, possibly, sulphur in the case of *Uncinula*, which grows upon the surface of the leaves, stems, and fruit, and can be reached directly. In the grapery, moisture alone appears sufficient to check the growth of this parasite. The only conclusion reached by a consideration of the replies is that sulphur, lime, copperas, and other remedies, so far as tried in this country, are of doubtful utility in case of *P. viticola*, the mycelium of which grows deep within the tissues of the leaf and berry, where it cannot be reached by external applications. Many cases of apparent benefit from external applications are unquestionably attributable to accident, to changes in the weather, or to other causes not within control of the grower.

In the hands of some grape growers a remedy may seem to give excellent results, but before it can be accepted as really useful it must be tried in many localities and during a series of years in order to eliminate all sources of error. If applications are made to the vines in years when, from dryness or other natural cause, fungi of all sorts are unusually scarce, then, unless very carefully conducted control experiments are made at the same time, it is easy to see how results due solely to the season or location might be ascribed to the remedy. Hasty generalizations from a few observations and experiments are very common, but almost always lead one widely astray. In reference to all proposed remedies, it may be said, only when the disappearance of the fungus uniformly follows the application of the remedy are we warranted in attributing this to its use.

THE BLACK ROT.

DISTRIBUTION, VARIETIES ATTACKED, ETC.

Two hundred and twenty-nine persons reported the presence of black rot.

The territory over which *Phoma uvicola* is reported includes the chief vine growing regions of the United States, and coincides with the mildew district, save that no rot is reported west of the Rocky Mountains, except doubtfully in one instance, and but very little north of latitude 43°. In some districts this fungus has been under observation for more than twenty years, and in many, during the last decade, it has done serious and increasing injury. It usually attracts attention about the time the grapes are beginning to color, or a little earlier, and in very warm, wet seasons may, within a week or ten days, destroy the whole product of a vineyard. As in the case of *Peronospora viticola*, its growth is said to be greatly favored by warm and wet weather, and entirely stopped by a protracted drought. The Concord, Catawba, Isabella, Hartford Prolific, and Rogers-hybrid varieties seem most subject to this rot, and the Delaware and other light-colored or white varieties least; but no variety is entirely free from its attacks, unless it be the Scuppernong, which is said to be harmed by nothing. Many persons report all varieties equally subject. Often those reported "iron-clad" and "rot-proof" in one locality are said to be very badly affected in some other.

STATEMENTS OF CORRESPONDENTS AS TO PREVALENCE AND DESTRUCTIVENESS.

Judging from the reports received, the loss occasioned by this rot is far more serious than that attributable to the mildews. Many report the loss of nearly their entire grape crop for a series of years, and state that they have dug up their vineyards, or will soon do so, if a remedy cannot be found. The following are characteristic quotations from letters received from badly-stricken localities:

Renders the cultivation of *Labrusca* and *Æstivalis* varieties unprofitable. (G. W. Davis, Jacksonville, Fla.)

All hybrids are much subject to its attacks, and almost worthless in consequence. (David Milen, Macon, Ga.)

For the last five years I have not had an average of 200 pounds per acre, and on many vines not a grape has matured. (W. W. Patch, Galesburg, Ill.)

Grape culture was formerly very profitable in this county, but, owing to the ravages of the black rot, it is now almost wholly abandoned. (Theodore Goodrich, Cobden, Ill.)

The rot comes suddenly, and quits as suddenly. About one-half of mine rotted in one week. (P. A. Hickman, Mount Sterling, Ill.)

The rot is worse in wet seasons. Sometimes the entire crop fails on account of it. (G. W. Mosteller, Crawford County, Kansas.)

The black rot appeared gradually, and continued until the crop was utterly worthless. I dug up one vineyard. (J. Wallace, Cambridge, Md.)

Many acres were formerly planted, but now, on account of the rot, few vines are grown. In this county alone many thousands of dollars have been lost by the rot. (John J. Maxwell, East New Market, Md.)

For the last two years a large firm of wine makers at Hermann, Mo., has been buying grapes across the river, at Wathena, for $60 per ton. On account of rot, the vineyardist who furnished the company four car-loads year before last, could furnish only one car-load last year. (Joseph L. McAleer, Saint Joseph, Mo.)

Loss about 60 per cent. Nothing I have tried does any good. (John W. Mansfield, Plato, Mo.)

In the year 1869, I made a specialty of grape culture, and planted a vineyard of 5,000 vines, mostly Concord. For three years abundant and perfect crops were the result, without any show of disease, when the black rot made its appearance on a few vines, and each year thereafter gradually extended until the loss was so great that I was obliged to discontinue grape culture, taking out the vines, except a few hundred, two years ago. In a vineyard of 10,000 vines, at Kidder, Mo., near Hamilton, the black rot has been equally destructive, and the vines have all been taken out. Loss fully 90 per cent in this county. (N. B. Bell, Hamilton, Mo.)

I have about 3,000 vines in my yard, and have among them Concord, Norton's Virginia, and Delaware as the principal crop: also all, or nearly all, kinds of Labrusca, with many Vinifera, a number of Riparia, with nearly all of Rogers' Hybrids. The greatest rot is among the following in the order in which I give them: Concord, Champion, Brighton, Dutchess, Prentiss, Agawam, Goethe, Elvira, Catawba. The foregoing were almost a total loss—practically were a total loss—as the cost of sorting and cleaning out the rotten berries was more than the residue in the shape of dilapidated bunches of grapes brought when sold.

The Martha rotted to the extent of 50 per cent. of its crop; the Herbemont about the same; Norton's Virginia no perceptible damage; about 25 per cent. of the crop of Delawares suffered from a grayish rot that injured the grapes, leaving some of them apparently sound, but with a bitter taste that followed the grape into the wine-vat, and left a bitterness in the wine that was offensive. With us the only vines that are profitable are the Norton's Virginia, and, to some extent, the Delaware; the latter suffers greatly from mildew and other diseases, and the vines have the appearance of weakness in the wood.

Usually we have a good deal of rainfall in April and May, which is followed by hot close weather, which in May develops the rot If it turns dry the rot clears, but if it rains to any great extent it commences again. This season, [1886], has been unusually dry, no rainfall at all since last April; hence, up to the present day, all the grapes are free from all appearance of rot. I never saw the vines and grapes looking so healthy as they do at present, which indicates that our troubles come from excessive moisture. (Edward Perry, Denison City, Grayson County, Texas.)

As early as 1871 or 1872, the black rot appeared in some vineyards here, but was not general until 1876; then for about six years the loss was almost total. I think my loss on two thousand vines was $300 per annum. (V. H. Porter, Forest Grove, N. J.)

Loss was light at first, but in three years it took my entire crop of Concords, and is doing so in other vineyards in this neighborhood. (—— ——, Egg Harbor, N. J.)

On account of the prevalence of the black rot, I have abandoned the cultivation of the grape. For several years in succession the crop was a complete failure. (J. M. Demarest, Mountain View, N. J.)

Last year, taking an average for the whole county, the loss occasioned by the rot was about 30 per cent. The average for the last five years is about 70 per cent. (Joseph Nehr, Egg Harbor City, N. J.)

In general, our vintners do not fear, and have not taken any account of the ravages of mildew; perhaps if the black rot had not been prevalent to such a large extent, it would have attracted closer observation. As to my condemnation of hybridized grapes being more prone to the attack of the black rot, I may instance that for a number of years I have tested Othello, Cornucopia, Alvayse, (received from your Department), and, in conjunction with Concord, found them to be the first and worst attacked of any varieties, so that I was reluctantly compelled to displace them for other more ironclad varieties. (V. P. Hoffman, secretary E. H. C. Agricultural Society, Egg Harbor City, N. J.)

I am in receipt of your letter inquiring what I "believe to be the actual and probable loss occasioned by any one of the well-known fungus diseases of plants." For example, as regards grape rot, probably the loss occasioned by it to the grape crop of the United States (outside of California) amounts to one-fourth. Loss from rot and mildew, the two fungus diseases together, may be estimated at 50 per cent. of the crop. In Southern New Jersey, during some ten years, the loss on the grape crop, financially speaking, was total—that is, the cost of the vintage was more than it yielded. (Alexander W. Pearson, Vineland, N. J.)

In this part of the State, ten or fifteen years ago, black rot was more prevalent than now. It was so bad then that most of the vineyards of the county were abandoned. At this date the loss per annum is about 25 to 30 per cent. (G. F. Newton, Millersburg, Ohio.)

In years past, grape rot has destroyed hundreds of tons of grapes here, so that nearly every vineyard has been dug up. I have seen the produce of whole vineyards destroyed in three or four days, the last of June or the first of July. The kind of weather that used to rust wheat seems to breed this pestilence. (T. L. Whiteacre, East Rochester, Ohio.)

The rot appeared in our vineyards in 1878, and for seven years past it has destroyed the entire crop. All varieties have rotted, and almost all the vineyards in this vicinity have been dug out. I had 12 acres and dug all out. Our grapes rot without mildew or any apparent disease of the vine. (F. R. Palmer, Mansfield, Ohio.)

The rot appeared first in 1884, and it has increased every year since. It destroys three-fourths of the crop. My crop is too far gone this year, [July 2, 1886,] to try any remedies. (Charles Hek, Rustburg, Va.)

The black rot appeared about the year 1872. It attacks all varieties cultivated, and the loss per annum is 90 per cent. I have tried no remedies except to dig up and burn the vines, and abandon further investments of time, labor, and money in that direction.

I was the pioneer in planting vineyards in my county (Alexandria County, Virginia). I planted my first vineyard in the spring of 1866, finishing this month twenty years ago. * * * The summer of 1868 the vines yielded a fair crop of grapes, which were as fine and perfect as ever grew, and which sold for 15 cents per pound *on the vine*. The next three crops were as beautiful and as perfect. The fifth year now and then a grape on a bunch was discovered that had dried up and turned black. The next year there were more, and so on, until now for several years the crop has nearly all rotted, and I have abandoned their cultivation. The total damage to me so far by said rot will amount to about $12,000. (R. A. Phillips, 1428 New York Avenue, Washington, D. C.)

The black rot has prevailed three or four years. It is very destructive in some vineyards in the south part of Berrien County. The loss last year, [1885] was, perhaps, about one-fourth, but this season, by reason of extreme dry weather, the injury is less. The Catawba, Isabella, Niagara, and Concord are most subject to its attacks. The Hartford, Ives, Delaware, and varieties which color and ripen early are comparatively exempt.

No remedies are found to be efficient. I have applied sulphur in large quantities with no apparent effect. Some vineyards, where last year the crop was entirely destroyed, were cut to the ground last spring. The theory prevails that by destroying the crop one season the spores of the fungus which causes this rot will be destroyed or checked, so that the succeeding year a crop can be grown upon young vines. This theory remains to be proved. No doubt is entertained by our intelligent growers regarding the cause of the black rot. When a vineyard becomes affected and rotten grapes fall to the ground, the spores of this fungus are matured in the ground during the winter and spring. Then, under favorable circumstances of warm and wet weather, the spores become detached, and, floating in the air, attach themselves to the young, growing grapes, at first causing a very minute "speck," which soon spreads over the grape.

The disease is not communicated by contact of a rotten grape with a sound one. Usually several attacks occur during the season, each being induced by conditions of the atmosphere favorable to the development of the spores of this fungus. The black rot has spread over a very wide area of country. It is advancing northward in the Michigan peninsula slowly but surely; and, if no remedy is discovered, it will render grape growing extremely precarious in all parts of the country. (W. A. Brown, Benton Harbor, Mich.)

ESTIMATED LOSS.

In my opinion, which is based upon the above-mentioned special reports (384), and on other available and trustworthy information, the *annual loss* from grape rot during the last ten years in the principal vine growing regions of the United States *has not been less than one-fourth of the entire crop.*

REMEDIES.

Many remedies have been proposed for grape rot, but none appears to be effective. Perhaps no substance will ever be discovered which can be depended upon to destroy the growing *Phoma* and arrest the rot without at the same time injuring the vines themselves.

PREVENTIVES.

By way of prevention, which is really more important than cure, two methods seem worthy of extended trial. These are:

1. *Prompt removal and burning of all diseased grapes.*

2. *Protection of the grape clusters from rain and dew.*

The first method has been tried with uniform success* in Michigan, New Jersey, South Carolina, Tennessee, Mississippi, and other States. This method is based upon sound principles. The grape rot is an infectious disease, propagated by diseased berries. Every rotten berry is, or may become, a center of infection. Consequently, the chances that the rot will spread decrease in proportion to the thoroughness with which this infectious material is removed and destroyed. The berries should be picked off every day until the rot disappears, and should in all cases be burned or buried. Where this treatment has been systematically followed, for even a single year, great benefit has been experienced the year following. To be most effectual, the picking should be practiced every year from the time the rot begins until it ceases, and should be so thorough that no diseased grapes are left either upon the vines or on the ground. The labor of removal, at first onerous, will become less and less each year. To render the work most effective there should be concerted action among the grape growers of a district.

The second method, the protection of the fruit from moisture, is based on the well-known fact that the spores of *Phoma* will not germinate if kept dry, and on the often recorded observation that the rot almost entirely disappears in times of drought. In many parts of Southern Michigan, the summer and autumn of 1886 were characterized by a protracted drought, not a drop of rain falling for six or eight weeks. During this dry weather the rot disappeared almost entirely. I made several examinations in September, in three different counties, but failed to find a trace of rot even in vineyards where it was very prevalent in 1885. There are two ways of keeping the grapes dry:

(*a*) By covering the individual clusters with paper bags.

(*b*) By roofing the trellises with wood boards or with cotton cloth.

Bagging is almost uniformly successful if done carefully, and early in the growing season, *i. e.*, soon after the grapes have set and before the spores of the *Phoma* have lodged thereon.

Mr. J. C. Hodges, of Morristown, Tenn., writes:

For twelve years my experience has served to demonstrate that dampness on the surface of the fruit and rapid growth of foliage are the causes of the disease. Shelter of any kind over the vine prevents it every time. Small paper sacks over the bunches save them perfectly. The remedy I have used most, with almost uniform success, is leaf pruning. I allow the canes to grow full length, but in June I cut away the tender leaves and suckers from near the fruit so as to allow free circulation of air, and that the sun may shine on the fruit. Except on rich land or when there is a long continued, cloudy spell, this saves the fruit. Nothing but shelter or sacking the bunches will save it on rich land.

I have never seen disease of any kind attack fruit or vine when the vine is trained along the wall or under the eaves of a building. I have seen a shelter 2 feet wide made over the trellis, prove a complete protection against rot, while on the same vine, where it bore fruit not under the shelter, no grape matured.

Respecting the roofing of trellises, Mr. Alexander W. Pearson, of Vineland, N. J., who has had large experience, also says: "It gives almost complete protection."

If practicable, both methods may be combined.

With many viticulturists it may be an open question whether the profits of grape raising will warrant the cost attending the application of these preventive measures. It is hoped, however, that they will be given careful trial, and that grape growers will report results to this Section.

PER CENT. OF CROP ANNUALLY DESTROYED BY ROT AND MILDEW.

In some instances observers have clearly distinguished the loss due to mildews from that due to the rot. The fact that they generally occur together renders this the more difficult. In a good many

*The best remedy for the rot is undoubtedly picking off the rotten berries every day. This stops the spreading of the disease. (G. Wanner, Walhalla, S. C.)

Last year [1885] was the first season the black rot made its appearance in my vineyard of one acre. I promptly picked off the affected fruit and buried it. Out of a crop of 5 tons I had only about 10 pounds of the affected grapes. The disease made its appearance when the berry was nearly full grown. I use ashes and lime as a top dressing, spreading it broadcast, and, as they become affected, promptly pick off the grapes and destroy them. I expect to keep the grape rot in check by picking off and destroying the diseased fruit as soon as it makes its appearance. One of our reliable fruit growers told me he had succeeded in keeping the rot in check by following that method. (W. T. Withey, Benton Harbor, Mich.)

* "A dry May brings a good crop," is a common saying among grape growers.

localities, in the years when the mildew prevails, the loss is chiefly from the rot; but the rot also appears to prevail where *Peronospora viticola* is unknown or infrequent

For the United States east of the Rocky Mountains, the entire loss from mildews and black rot cannot, on an average, be much less than 40 per cent. annually. This is lower than Mr. Pearson's estimate, and lower than I would be warranted in placing it, if I based my judgment exclusively upon the reports received.

VALUE OF THE PRODUCT.

Owing to our ignorance of the total grape product of the United States the pecuniary loss cannot be accurately determined.

Some of the principal grape-growing states are Missouri, Illinois, Ohio, Michigan, Pennsylvania, Maryland, New Jersey, and California. Probably more grapes are grown in these States than in all the rest of the United States, but in most of them the records are imperfect. If we knew the total grape-product of the United States for a series of years, or, in other words, if our State and National crop-reporting systems were as complete and accurate as the agricultural interests of the country demand, it would not be difficult to make a close estimate of the value of the grapes destroyed by rot and mildew. As it is, we must be content with such scanty and imperfect returns as are accessible.

The "Farm Statistics" of Michigan, which are carefully compiled from the monthly returns of 1,400 special correspondents, and considered trustworthy, state the number of pounds of grapes sold in Michigan, and from these I have compiled the following table:

TABLE I.—*The approximate grape-product of Michigan during the four years*, 1882-1885.

Year.	Pounds sold.	Value at .03 per pound.
1882	3,089,474	$92,684
1883	1,004,757	30,143
1884	2,603,884	78,116
1885	3,710,000	111,300

* From unpublished statistics, furnished by Mr. Robert L. Hewitt, Chief of Statistics, Departments of State, Lansing, Mich., and subject to final revision.

Table II. covers a longer period, and is presumed to be reasonably correct, but I have no means of knowing how accurately the returns were made:

RAISINS.

One of the largest operations ever reported in the New York market was completed last week. The transactions includes some twenty-thousand boxes. Three crown, loose and London layers, which were purchased by a local jobber. The price did not transpire. The jobbing demand for this fruit is active, and this fact has encouraged the buyer to bring the stock under better control for the maintenance of remunerative prices.

The Fresno *Republican*, in an article on the production in that county states that Fresno raisins are now known in all of the great trading centers of the United States, and there are very few towns of ten thousand inhabitants or over in which a few boxes of real Fresno raisins have not been introduced. We are aware that dishonest dealers in the East have placed an inferior article of fruit upon the market as Fresno raisins. While this action will no doubt prejudice some few customers against our fruit, we are satisfied that prejudice thus engendered cannot stand long when our growers and packers can more nearly supply the demand with the genuine Fresno raisin. The section which produces our famous raisins is between Kings and San Joaquin Rivers, in Fresno County, and is bounded on the east by the Sierra foothills, and on the west by Fresno slough, containing 400,000 acres of irrigable land, about two-thirds of which is suited to the production of grapes. Less than 18,000 acres have been planted to grapes yet, and not over two-thirds of these vines are in bearing. The greater number of bearing vines now are wine grapes, but by next season the acreage of bearing raisin grapes will exceed that of the wine grapes. About 2,500 acres of new raisin vineyard was planted in this vicinity last season, and the amount of new vineyard planted each succeeding season will probably show a liberal increase over the preceeding season for a number of years to come. Last year there were orders for 150,000 boxes of Fresno raisins which our packers could not supply, and, notwithstanding the fact that our crop will this year be nearly, if not quite 100 per cent greater than last, we anticipate a still greater disparity between demand and supply. Our packers should use the same care this season that they have heretofore exercised to secure only first-class fruit for their eastern patrons, and no matter how rapidly the yield may increase there will always be a demand equal to it.

TABLE II.—*Showing the grape-product of Ohio for the twenty-one years*, 1865-1885.

[Compiled from returns by the county auditors* and from other official sources, as published in the State Agricultural Reports of Ohio.]

Year.	Acres.	Yield per acre in pounds.	Total number of pounds gathered.	Gallons of wine pressed.	Value of entire product.
1865	5,666	439	2,487,607	237,008	
1866	7,162	205	1,469,467	153,159	
1867	7,304	757	5,526,227	290,929	
1868	7,574	388	2,937,737	143,767	
1869	10,477	362	3,794,899	155,535	
1870	10,890	1,459	15,883,719	2,577,907	
1871	11,219	1,720	19,292,980	1,031,923	
1872	15,111	636	9,616,427	425,923	
1873	11,560	571	6,607,653	208,298	
1874	9,975	1,801	17,965,604	1,078,056	
1875	8,130	825	6,703,408	199,848	
1876	8,321	1,337	11,127,969	537,192	
1877	8,695	1,279	11,119,401	488,419	
1878	8,866	1,167	10,341,715	708,733	
1879*	18,114	906	16,308,151	961,702	2,009,479
1880	10,315	1,796	18,526,219	1,296,295	2,685,491
1881	10,642	1,097	11,678,545	884,895	2,336,931
1882	12,091	2,275	27,503,000	1,465,336	4,305,150
1883†	9,377	†660	6,191,072	261,787	†702,235
1884	11,924	1,752	20,895,563	938,671	2,452,785
1885	17,292	523	9,043,216	439,610	1,021,144

* After 1878 a different and more complete system of returns was adopted. The grapes are estimated at .04 per pound for 1879, 1880, 1881, and 1885; and at .05 for 1882, 1883, and 1884. The wine is valued at $1.50 per gallon for 1879, 1880, 1883, 1884, and 1885; and at $2 for 1881 and 1882. The estimated value for the years prior to 1879 is not given.

† In 1882, in the vine-growing districts of Michigan and Ohio the late summer and autumn were dry, and there was comparatively little mildew or rot. In 1883, in both States the spring was cold and wet, and during June and July there was a long-continued spell of wet weather. The grapes mildewed and rotted very badly in both States. In Ottawa county, which grows more grapes than any other county in Ohio, the Catawbas promised well in the spring, but almost the entire crop rotted in August.

THE HESSIAN FLY AND RESISTANT GRAINS.

In Bulletin No. 58 of the University Experiment Station (issued Oct. 9, 1886) is given a sketch of the results of an experiment made in 1886 to test the resistance of a large collection of grain varieties to the attacks of the Hessian fly (*Cecidomyia destructor*). The annual report for 1886, which is now nearly ready for distribution, will contain a fuller account of the same experiment. For the purpose of verifying the results of last year, and at the same time to determine other points in view, the full collection of cereals was resown in 1887, on the same fly-infested ground. In addition to the varieties sown last year, there were a number of new sorts, some selected with special reference to their supposed resisting quality.

The present announcement is for the purpose of giving early notice of the varieties which gave best results, and in some cases to compare the outcome of two years' trial. A full consideration of other points involved in the experiment will be reserved for the next annual report. The following table gives the behavior of certain varieties of wheat under attack by the Hessian fly:

VARIETIES OF WHEAT AND THE HESSIAN FLY.

Name of Variety.	1886. Sown February 25th.	1887. Sown January 24th.
Missoyen	Small crop, but no fly found	Good crop; no fly.
Palestine	Fair crop; no fly	Good crop; no fly.
Petali	Fair crop; no fly	Good crop; no fly.
Volo	Good crop; no fly	Good crop; no fly.
Atlanti*	Small yield; no fly	Good crop; very few flaxseeds.
Forelle	Fair crop; no fly	Fair crop; no fly.
Common March	Fair crop; very few flies	Good crop; no fly.
Diamond		Good crop; no fly.
Ex. Early Oakley	Failure; abundantly infested	Good crop; very few flies.
McGeehee's White	Failure; largely infested	Good crop; no flies.
Polish	Fair crop; somewhat infested	Good crop; no flies.
Red Sea	Failure; badly infested	Good crop; no flies.
Victoria	Not sown	Good crop; no flies.
Brenner White Club†	Not sown	Poor yield; no flies
Winter Crimea	Not sown	Good crop; no flies.
Nicaragua	Not sown	Good crop; very few flies.
White Genoese	Fair crop; slightly infested	Fair crop; very few flies.
Raub's Black Prolific	Not sown	Good crop; no flies.
Winter Fulcaster	Not sown	Good crop; no flies.
Russian Red Bearded	Not sown	Good crop; some flies.
Centennial Black	Nearly destroyed	Good crop; some flies.
Big White Club, Oregon	Poor; abundantly infested	Good crop; few flies.
Diehl's Mediterranean	Failure; abundantly infested	Fair crop; few flies.
Egyptian	Failure; abundantly infested	Good crop; few flies.
Faltz	Failure; somewhat infested	Good crop; some flies.
Improved Circassian	Fair crop; somewhat infested	Good crop; very few flies.
Little Club	Very poor; badly infested	Good crop; very few flies.
Mammoth	Very poor; badly infested	Good crop; very few flies.
Nonette Lousanne	Fair crop; few flies	Good crop; very few flies.
Touzelle	Poor crop; badly infested	Poor crop; badly infested.
Tunisian	Poor crop; badly infested	Good crop; few flies.
White Banate	Poor crop; badly infested	Good crop; few flies.

*Seed sown in 1886 was very old, from museum specimen; growth of 1886 resown in 1887.
†Old seed from museum collection.

The foregoing are a few varieties chosen from over 150, which have been tested this year, and they are selected with a view of pointing out some of the most obvious conclusions concerning resisting quality.

First: The value of early sowing is apparent, for it is shown that quite a number of varieties which yielded entirely to the fly last year were able this year, by having a growing season a month longer, to pull through and make a fair to good yield on the same ground that they failed on last year. At the same time it appears that the time of sowing does not fully hold the key to the situation, for some varieties were destroyed both years. The full report will show more instances of this kind than it is thought worth while to cite at this time.

Second: That the resisting quality inheres in the variety largely, is shown by the continued resistance of the varieties which succeeded last year, and which were therefore sent out for experiment in fly-infested districts last winter. These varieties are the first six enumerated in the table above. In most of these cases an improved yield was secured by earlier sowing this year, but whether yielding little or much, they had the same distastefulness to the fly.

This brief statement is made chiefly with the design of drawing out reports from those whom we sent resisting varieties for trial. Such local experience will be of great value in the full discussion which is contemplated. We desire not only the facts of yield and behavior of these varieties themselves but a comparison of them with other varieties commonly sown in the localities; also what is the conclusion of the grower of the value of these strong growing dark varieties, either for home use or in the market.

During the year we have been in correspondence with Miss Eleanor A. Ormerod, Consulting Entomologist of the Royal Agricultural Society of England, in reference to the Hessian fly and its work. Miss Ormerod announced the discovery of the fly in English grain fields in July, 1886. Up to that time its presence had not been observed. Miss Ormerod's tenth report contains a very interesting description of her investigations and study of the insect. One point on which Miss Ormerod desires the observation of others who may be handling fly-infested grain is the point at which the flaxseeds or *puparia* are deposited in the process of thrashing. She did not find them in the cleaned grain nor in the chaff blown out by the fan, but found them in great abundance with the screenings which in English practice seem to be deposited just beneath the machine. The point of deposit in California would depend upon the kind of cleaner which is used with the thrasher. We would esteem it a favor if any reader who may have opportunity to make examination on this point would send us the results. The *puparia* are called "flax-seeds" from their resemblance thereto. They are generally about one-sixth of an inch long, smooth, spindle-shaped, or pointed at both ends, and of different shades of chestnut color. When very thickly crowded in the stem, they are irregularly compressed but would still be recognizable. We shall be glad to receive notes on the occurrence of such bodies in screenings, and to receive small samples of screenings which may be thought to contain them. Of course, if it is found that these bodies are largely aggregated by the process of thrashing, measures can be taken to somewhat reduce the pest by treatment of the screenings, which is calculated to destroy the insect when in this form. Such measures, coupled with burning the straw and stubble right after removing the grain from the field, would seem to be a serious blow to the increase of the fly. Our experiment this year included a large collection of varieties of barley. The results, which will be more fully discussed at another time, show that barleys were much less seriously affected this year than last, and that a number of kinds which failed last year gave very satisfactory returns this year.

E. J. WICKSON.

Berkeley, August 12th.

The Attention of Wine-Growers, and all others interested, is called to the most powerful

INDUSTRIAL EXHIBITION AWARDED TO PARE BROS. "LE MERVEILLEUX" WINE-PRESS 1886

WINE AND CIDER PRESS

"Le Merveilleux,"

(THE WONDER.)

—THE CHEAPEST IN THE MARKET.—

WE CHALLENGE THE ORLD TO SHOW ITS EQUAL.

The latest invention in Europe. First introduced in the United States last year where it has given entire satisfaction as the testimonials will show.

MECHANICS' INSTITUTE SAN FRANCISCO

Patented in the United States, France, Belgium, Spain, Germany, England, Italy, Portugal, Austria-Hungary, Luxemburg, Norway, Sweden and Denmark.

Price List at San Francisco.

Exclusively for 1887.

No.	Diameter of Screw.	Height of Basket.	Diameter of Basket.	Capacity of Basket of Fresh Grapes after Crushing.	PRESS, Complete. With 2 Wheels	
	Inches.	Inches.	Inches.	Tons.	$	c.
1	2 7/16	24	32	1¾	120	00
2	2¾	26	40	2¼	160	00
3	3 3/16	28	48	3½	220	00
4	3 9/16	32	55	5	290	00
5	3 15/16	35½	63	8	350	00
6	4⅜	35½	71	10½	400	00
7	4¾	36	78	14¼	450	00

The above cut shows the Machine complete.

Having secured the entire right for the United S we take pleasure in introducing this Wine Press American public, believing it superior to any other now in use.

It will be to the advantage of Wine Manufactur study carefully the following merits, which we cl possesses:

First. By an ingenious mechanical application "power of resistance" can be reduced to a minimun with a single effort, three or four times more powe be obtained than with any other press known at thi

Second. It does the work more rapidly, and wit labor.

Third. It is cheaper than any other first-class press in the market.

Fourth. It has no complicated devices, is so extr simple in construction and easily operated, that a ch ten years can work it.

Fifth. It is made of the best materials, and by it plicity not liable to get out of order.

Sixth. All parts are interchangeable, consequently part lost or injured can be replaced at little expense.

Seventh. It will extract the largest percentage of j

Eighth. It is built on the ratchet principle, double a the lever working both ways, and can be worked in space. It has no lost motion.

Ninth. It does not take any more labor to wor largest size than the smallest one.

Tenth. It presses any kind of fruit as well as grap

This press is not an experiment, having been several seasons in the wine districts of Europe, an in the United States last season.

It has received the highest award wherever exhibi competition with other presses.

The main features of the press are the ease and ra with which it may be worked, and the great power it applies; as the press stands on wheels, it can be r moved from place to place.

In order to introduce our press last year, we place a low figure; with the improvements that we have this year, we are compelled to raise our prices, but th yet the lowest on the market, while the press is far su

Our press is adapted for large vineyards as well as ones, as we make different sizes. No. 7, shown above cut—the basket will hold 14 tons of grape crushing, and 4 fillings per day, its capacity being 56 *grapes in one day.*

"LE MERVEILLEUX."

A representative of the MERCHANT has visited the shop where the Paré Bros. are building their wine presses, the "Le Merveilleux," which is claimed to be the best and cheapest wine press made. The platform or bed rests on a two wheeled cart, which enables the operator to move it to any part of a vineyard, or between the rows of tanks in a wine cellar. The basket is made of the best straight-grained Mendocino Pine staves, riveted to three bands of the finest quality of iron. These bands are each in halves. On one side they are connected by a hinge, and on the other are locked with pins, and, by removing these pins, the basket can be opened to any width required, and the must be removed in a very few minutes. The edges of the staves are beveled, the distance between them on one side being 3/8 of an inch, and on the outside 3/4 of an inch. This renders it impossible for the grapes to get jammed in between the staves.

Rapidity is one of the strong points of this machine. It takes only from twenty to forty-five minutes to make a pressure. The "screw" which stands upright in the middle of the "basket," is fastened under the "bed" by a nut which is six inches thick, screwed on and riveted to the end of the screw. The operator moves the large lever which is from five to eight feet long, and moves in a space of six feet backwards and forwards. This pushes alternately two small levers, which in turn catch in the ratchets of the combinations on their *forward* motion, and keeps the wheels or combination steadily falling down the main screw. In commencing to lower the crushers upon the grapes, and when speed is required, the lever is placed in an upper combination, which acts directly on the screw, and in a few movements of the lever it has reached the grapes. The Presses have been calculated to withstand the pressure according to their capacity, so if the smallest is incapable of breaking itself, the largest is equally so.

The main feature of the press is the ease with which it may be worked. Mr. Pare forced the lever as far as it was necessary to go in one direction, using only his little finger, upon shavings which had previously been packed so tight, that it was impossible to run a knife into them.—SAN FRANCISCO MERCHANT, Aug. 27th, 1886.

WINE PRESS EXHIBIT.

The French Wine Press exhibited at the Fair by Paré Bros., attracted great attention from visitors interested in wine-making. This press has no merely local reputation, but comes to us from over the seas endorsed by French wine producers generally, and by the leading journals of France. In the Eastern States it is rapidly supplanting all others, and no doubt in California will do the same. The reasons for this are plain. It is a great improvement over any now offered; it is portable and easily carried on a hand-truck from place to place; it is not expensive, and it does its work thoroughly and well; it requires but little attention, and it is labor-saving. It is called in France "Le Merveilleux," and certainly deserves the name. Certainly, those interested in wine production should at once acquaint themselves with the capabilities of the press, its price, and see it working. By it they will save money, as its expense is comparatively small, compared with the amount and character of work it is capable of doing. We certainly commend an examination of its merits.—*The Weekly Commercial Record*, San Francisco, Sept. 16th, 1886.

EXHIBITS AT THE PAVILION.

"Le Merveilleux" Wine Press.

Among the exhibits at the Mechanics' Fair, which naturally attract the attention of the visitors, whether from the city or country, is "Le Merveilleux" wine press. The wine interests of California are fast assuming enormous proportions, and every year sees an immense increase in the area devoted to the culture of the vine. It is only to be expected, therefore, that any invention coming from an old wine-producing country like France, should have great interest for the residents of California. "Le Merveilleux" is a French invention just being introduced here. It has been patented in all European countries and the United States. The entire right for this country is held by Messrs. Paré Brothers, of this city. The press is manufactured in seven different sizes, varying in price from $120 to $450. It is claimed for it that it is more powerful than any other press now in use; that it does its work more rapidly and with less labor; that it is cheaper, without complication, and not likely to get out of order. Being built upon the interchangeable plan, any part lost or injured can be replaced at small cost.

It is constructed on the ratchet system, and the lever can be worked in a six-foot space, and is so easily operated, that a child of 10 years can work it. The lever works both ways, and thus doubles the speed.—*Daily Journal of Commerce*, San Francisco, Sept. 24th, 1886.

THE SUNSET VINEYARD,
Minturn, Cal., Sept. 15, 1886.

Messrs. Pare Brothers.—GENTLEMEN:—We take pleasure in informing you that we have used your No. 4 press this season, at our vineyard, and find it all that you recommend it. It does the work perfectly and with ease, and in our opinion is perfect in every particular. Yours truly,
WEBSTER & SARGENT.

San Francisco, Sept. 17, 1886.

Messrs. Pare Bros.—GENTS.:—The wine press No. 4 purchased of you several weeks ago, has been tried at our winery and has thus far given full satisfaction.
Yours truly, MT. DIABLO VINEYARD CO.,
By Jac. Levy, Sr.

Anaheim, Cal., Sept. 15, 1886.

Messrs. Pare Bros., San Francisco, Cal.—GENTLEMEN:—The Press came at last, and after giving it a fair trial I find it to my satisfaction. Enclosed please find exchange draft for the same.
Respectfully yours, LOUIS SCHORN.

San Francisco, Sept 22, 1886.

Messrs. Pare Bros., City.—GENTLEMEN:—We take pleasure in informing you that we have used your Wine Press No. 5 this season at one of our Vineyards, and find it all that you recommend it. It works well, and is perfect in every part cular.
Yours very truly, B. DREYFUS & CO.

Anaheim, Sept. 27, 1886.

Pare Bros., San Francisco.—GENTLEMEN:—Yours, with shipping receipt and bill, at hand; but the press did not come until a week after, although I needed it badly. As soon as I got it I tried it, and must say that I like the press very well. Enclosed please find check for $140.50. Yours respectfully,
PETER HANSEN.

Pacheco, Contra Costa, Cal., March 15, 18
Messrs. Pare Bros.—DEAR SIRS:—The "Le M leux" No. 3 press I bought of you is the most po instrument to extract juice from grapes—it leav pulp entirely dry in a short time. I recommen all wine makers. Yours truly,
J. S. HC

Mission San Jose, Cal., Oct. 27, 18
Messrs. Pare Bros., San Francisco.—GEN have used your "No. 3" "Le Merveilleux" wine all through my vintage, and it has in every par given entire satisfaction, both in regard to th with which the work was accomplished.
Very truly yours, CHAS. C. McIV

I, the undersigned, certify that I bought Messrs. Paré Bros. a No. 2 wine press, and last season, 1886, and it has given entire satisfa
Yours truly, A. CHEIGNON,
814 Howard St., San Fra

GENTLEMEN:—I take pleasure in telling you am entirely satisfied with the press, No. 2 "L veilleux," you sent to me, it does the pressing w interruption. Yours,
B. DISTEL, Mountain V

Messrs. Pare Bros., San Francisco.—GENTLE I used last year one of your presses at the Ho F. Black's vineyards of Livermore. I studied it fully, and I must say it has given perfect satisfa It is the most powerful press I ever saw, a work is very easily done, Yours very truly,
J. MORTIER, Livern

FARMERS' AND MERCHANTS' BAN
Los Angeles, Cal., Oct. 15, 188
Messrs. Pare Bros., San Francisco.—DEAR Enclosed please find our check for $335.15, i ment your bill for two wine presses, as ordered letter of 30th ult., for
Messrs. Hafen & Niemeyer.....$3
Drayage.....
.....$3
The parties tell us the presses were received i condition, and work to their satisfaction.
Respectfully, JOHN MILNER, Secre

After trial the Press may be returned to us if for any reasonable cause it is not satisfactory, "and money refunded," as we are satisfied our experience that parties that have once used them will not afterwards do without them.

N. B.—We are also prepared to fill any orders for Crushers and Separators. For any further information apply to

PARÉ BROTHERS,

BRANCH OFFICES:
Honore Building, Chicago, Ill.
15 St. James St., Montreal, Canada.

OFFICE AND FACTORY:
101 to 107 Mission Str
Res. 420 Geary Street, S. F.

THE OLIVE TREE.

REPRODUCTION.

[By Adolphe Flamant.]

e olive tree is reproduced in different : by the seed, by the simple cutting, by amified cutting, by suckers that shoot the trunk, and by the woody ex- ences which form on the bark of the r roots of old trees.

t us begin with the reproduction by eed.

must be first understood that an olive o grown has to be grafted, as it would wise remain a wild tree, giving thus poor and small product. On the hand it is well known that through edium of a seed a tree is more vigor- has a more lasting power, resists better weather, and is less delicate on the e of soil than those grown from cut-

For all such reasons this is the mode generally in use in the olive regions of pe.

when the olive tree is so robust by e, so little scrupulous with regard to oice of soil, enjoys such remarkable vity, and has no excessive cold weath- fear in California, should it be raised from the seed instead of the cutting, by the first mode we have to wait ten lve years for the product, as against r five years by the second.

reover, grafting which becomes indis- ble when the tree is raised from the giving it thus additional viger, can s well, if so desired, be applied to the rown from the cutting without losing by the advantages derived from this ode of reproduction.

tance, who pronounces himself in of the seed, tells us that the plant has ain at least seven years in nursery, at after being grafted it requires three years before it begins to bear fruit.

naud tells us also that he has seen in e, in the county of Ardeche, aa also at s and in the Hyera Islands olive trees from seed; that they were ready to fted, but that this result had required years. He however adds that the luction of the tree by seed has been so slow that it seems puerile to have se to it.

oureux affirms that this method is of cessive slowness and of very little cal use.

rles Etienne and Liebault concur in that it is time and money lost to y this method.

Mr. Elwobd Cooper's treatise on olive e we also find that when the tree is from seed it has to remain seven in the nursery, but that when grown the cutting it bears as early in Europe loes in California.

adet explains to us how the young ree, raised from seed, develops always tap-root, which constitutes its princi- d often its only support; and that transplanting it to permanent a site, a long stay in a nursery, the cutting l tap-root, which then becomes indis- ble, inflicta upon its system a serious from which it is likely to suffer for

eems thus established that the olive rown from the seed—which is the d most generally followed in the s of Europe where the severe winters enced occasionally make it desirable der the tree as hardy as possible—has kept about seven years in nursery, at at its transplantation it will experi- ence a severe check which will be the natural result of meddling with its tap-root, as also of cutting back its top.

Is it then at all surprising that a half generation should pass before the olive tree so produced reaches bearing? Many people who have not carefully studied olive culture seem to believe that this is an inevitable result. We shall see by further explanations that it is not.

Let us pass now to the consideration of the propagation of the olive by cuttings. We would state in common with Coutance, Amoureux, Riondet, DuBreuil, Reynaud and many others, that a cutting coming from an olive tree that has been grafted, and of a good variety, needs no grafting. This operation is however necessary when the cutting from a grafted tree is derived from a point below the place where grafting was effected.

These cuttings can be made like those of a vine or any other cutting, only with this difference that the olive tree being an evergreen, one or more sets of leaves should be left on.

It is difficult safely to cut the large truncheons because, when taken from the tree or even when cut a little to freshen the butt-end at plantation, there is danger of crushing the bark, which has the effect of imperiling their starting and which, should they grow, may induce rot. To plant them directly in permanent sites is to run the risk of losing a great many, as has happened to several parties I could name. If, on the other hand, they are placed in nursery in preference to much smaller cuttings, their tap-root will be so developed, even only after a year of stay therein, that it will be necessary to cut it back when they are to be transplanted, which will reduce their ultimate chances of growth, and will at least make them languid and sickly for a year or two. But, the smaller the cuttings are when placed in the nursery, the less will be the chances at transplantation within a year, of disturbing their root system which will nscessarily be lesss developed.

These smaller cuttings, from six to eight inches long, are generally raised in boxes under glass, where they take very readily; or in open ground in nursery when from eight to twelve inches long; but there their growth is very precarious. When ready for transplantation within a year the whole root system can be taken with the soil adhering to it and placed in the ground without disturbing it, and especially without exposing it to the air.

I consider thia last point of great importance, for it ia well known that all evergreen trees, whose vegetation is nearly always active, are of a very difficult transplantation. The slightest exposure of their roots to the air renders the starting in their new places very doubtful. Any one who has had occasion to transplant eucalyptus, laurels, orange trees, etc., must be acquainted with this fact.

In support of this theory I extract the following, from a recent article of the Phœnix *Herald*, giving a few sensible hints on the setting out of an orange orchard:

"The greatest care must be exercised in transplanting the orange not to allow the small thread-like roots of the tree to become dry, for the moment they do so the tree is gone. The roots must be carefully dampened till the tree is safe in the ground. This is one of the most important items to be observed in transplanting."

The olive is just as delicate to handle as the orange tree, so that the older it is and the more developed its root system, the more danger it presents in transplantation, when even the most careful precautions will not always secure success.

The small trees, when one year old, will develop with astonishing vigor when planted in their permanent sites; their tap-roots will sink rapidly; they will stand, without suffering, drought and hot weather, and not more than one in every two or three hundred will fail to grow. Not only had I occasion to verify this, but I have also observed that when so planted, without experiencing any amputation of their roots and branches, they will overtake in life and vigor before two or three years, those which, planted older and larger, have had to undergo the mutilations which are rendered necessary by their greater age, and a consequently more developed root system.

Mr. W. G. Glee, in a bulletin of the University of California, says that the mode of reproduction by large cuttings is liable to several objections. He claims justly, that there will never be so fine a root system developed as by starting the trees from small herbaceous cuttings. He recommends to take from young, growing trees, the young tops, when neither very soft nor perfectly hard, having three to four sets of leaves, and to put them in a little frame with sand, where they are to be given a few waterings during the course of a month. He states that in three or four months the little cuttings will have rooted, and in a few months more will be found ready to set out. He adds that olive trees planted in the Santa Cruz Mountains were propagated in this manner, that they received no irrigation after setting out, and that they have formed a beautiful root system.

Mr. Frank A. Kimbal, of National City, San Diego County, tella us also, that he has in no case succeeded with large cuttings, and that he has obtained but meagre results in planting twenty inches deep. He tried with all kinds of cuttings, from three feet down to eight and ten inches only, and he finds the latter preferable.

The mode thus recommended by Mr. Klee, by Mr. Kimbal and others, is in perfect harmony with what I have done, and which has enabled me to obtain an excellent root system in less than a year. Having had frequent occassions to compare it with others, I do not hesitate to pronounce it as the one method capable of producing most vigorous trees, which, within four or five years, will be from ten to twelve feet high, and will begin to produce a few gallons of olives.

I have knowledge of the fact that several persons have planted olive cuttings in nursery, and have met but with very meagre results. I think I can give them possibly the reason for it.

The olive, as already said, is an evergreen tree. It has two very distinct yearly vegetations, one called the spring vegtation, the other the fall vegetation. It is thus, that under our fine and quite exceptional climate, where the winters are frequently very mild, its vegetation knows scarcely any cessation. If the cuttings are not taken from the tree during one of those short periods of comparative repose—which vary according to seasons—and are not placed in the nursery within a reasonable time, say from one to two weeks, there is danger of the vitality in most of them dying out, and the loss will easily reach thirty, forty of even fifty per cent., and possibly still more. In this respect, the cuttings of the olive tree differ from those of the vine, which can be cut immediately after the fall of the leaves, when vegetation comes to a stand-still, and which can be kept buried in the ground until March or April, without interfering with their starting when spring comes.

For the reasons here suggested, it can be understood why those who have attempted to reprodnce the olive tree from cuttings which were not recently cut from the tree, and who have performed that operation at a season of the year when the sap was too active, have realized such poor results. I know of some parties whose loss has reached 80 and 90 per cent., and two of them who did not succeed with a single cutting. I can see no other cause for it than the one I have just mentioned. Let us now pass in review other modes of propagation.

Cuttings can be made from the suckers that grow from the base of the tree, but if they are taken below the grafting point of trees raised from the seed they will have to be grsfted.

The olive tree is also reproduced from the woody excrescences that form generally on the trunk of old trees. This mode of propagation which carries with it the mutilation of the trunk of a tree is possible only in the countries where old trees are to be found, while from young trees, of which there will soon be plenty in California, cuttings can be easily procured through the ordinary process of pruning, which thus proves beneficial to them instead of being a source of mutilation. This alone should be a sufficient reason for the general adoption in this country of so rational a mode of propagation.

HOW TO PRESERVE OLIVES.

[By F. Pohndorff.]

There are several systems of pickling olives. For this purpose the fruit is gathered green; this is particularly the case with the big-sized, fine olives imported from Seville, Malaga and from French and Italian ports. Other varieties of small size and nice tasting, are gathered nearly ripe for pickling. To pickle or sweeten them the olives are put in fresh water for five or six days, changing the water each day four or five times. When thus they have lost the bitter taste, they are put in a basin full of brine, keeping them immersed fully in the same. Frequently some fennel is put on top. After sixty days the olive will be fit for use, and keep until next year. If the olives are to be used quickly, they may be opened, and the stone taken out previons to being put in water, and, after having been kept in frequently changed water for four or five days, to be left in lye for six or eight days, when they may be eaten either alone or with oil and vinegar, like a salad.

Another way to pickle is putting the olives in lye, not long enough to penetrate the whole of the pulp, and when appearing to be free of the bitter taste, leaving them four or five days in water, to be changed two or three times daily. They may be kept, put into salt water. Fennel, Mace, Corriander seed, Rosewood, Cloves and Cinnamon, may be added for flavoring.

Olives for drying should be fully rip , left in the sun for fifteen or twenty days, and a little salt be put on them; or they may be placed in a basket with a stratum of salt, where, after a day the vegetable water sweats out, and five or six days later they may be eaten, being a fine nourishing condiment of, rather a substitute for meat. The dried olives are kept in families for use all the year round; and by soaking in water, after they are swollen to their original size, become very palatable.

WINE MAKING.

Fermentation Produced by Vegetable or Animal Microbes.

The following interesting hints on the subject of wine making, we quote from the August issue of the Greenville, S. C., *Colton Plant*.

Fermentation is an act of nature without artificial cause, and is produced, the scientific writers tell us, by a living thing that grows and reproduces its kind in the grape-juice, as animals or vegetable plants grow and reproduce their kind in the air or the soil. Wine, strictly speaking, is fermented grape juice. The immediate cause of fermentation is this organism that belongs either to vegetable or the animal kingdom—a microbe, discernible only under a glass of great magnifying power. Under the microscope, it is a cell which is seen to bud and bear the germs of offspring which separate from each other and bud and multiply until they become myriads of organisms in a very short space of time. Until within recent years, scientific people were divided in opinion as to whether this microbe that causes alcoholic or vinous fermentation was on animal or a vegetable. It grows in the wine and resembles in some particulars a vegetable plant like that which is to be seen in what is known as California beer, moss beer or California moss, which is easily seen with the unaided eye as it grows in the bottle, and which is unquestionably a vegetable growth. Yet in the microbe of wine and lager beer called the ferment, there is known to occur a respiration or breathing equal to that of fishes. Upon this as one fact those who believe the microbe or ferment to be an animalcule found their argument. Another argument is that the alcoholic ferment has nothing about it that corresponds to the root of a plant, while the microbe which causes mildew on the vine and fruit *has* a root, or *mycelium* as it is called, by which it fastens itself upon the vine and through which it derives sustenance by absorbing the juices of the plant. To these arguments the supporters of the vegetable theory reply that certain vegetable plants of the higher order not only breathe, but are capable of motion like that of animals. The sensitive plant, for instance, shrinks from the touch. And thus it is that the most learned men of the world find room for differences of opinion. The researches of M. Pasteur, the great French scientist who has made more discoveries in this line than any man that ever lived, go a long way toward proving that the organism in question is a microscopic vegetable plant, and this idea is rapidly gaining ground, in fact, acknowledged to be correct by many of the most advanced students of science of the present time. Be the microbe a vegetable or an animal, it is scarcely any longer doubted that it is the direct cause of the fermentation that takes place in the liquid, since the fermentation never takes place except in the presence of these germs; and that it lives upon the sugar in the liquid is proved by these two facts, viz: that this particular organism will not live and multiply except in a liquid which contains sugar, and that by its presence the sugar disappears. The active direct fermentation stops as soon as all the sugar is gone or as soon as the liquid becomes so strong in alcohol as to act antiseptically and kill or destroy the activity of the germs. This ferment we are considering belongs to the species called *saccharomyces*, and being elliptical in shape is called *saccharomyces ellipsoideus*. Its action is described by scientific writers as "splitting up the molecules of sugar," and converting that substance into alcohol and carbonic acid gas. The vital act itself has never been seen. It is the escaping of this gas that causes the effervescence or boiling seen while the wine is fermenting. The proportions of alcohol and gas resulting from the consumption of 100 parts of cane sugar, as ascertained by Pasteur, are

Alcohol	51.11
Gas	48.89
	100.00

Small quantities of succinic acid and glycerine are also found in wine, resulting from fermentation, depends, of course, upon the purity of the sugar—pure white crushed sugar yielding more alcohol than cheap brown sugar; and the latter is apt to impart an undesirable flavor to the wine. Whatever alcohol is found in the wine is directly the product of sugar, as alcohol is not derived from any other source. It is plain, therefore, that the alcoholic strength of wine is in exact proportion to the amount of sugar that undergoes fermentation. Unfermented sugar will remain in the wine as sugar, in its original form, being sweet to the taste. If all the sugar is fermented or converted until there is no more free or suspended sugar left in the wine, it will have no sweet taste, and is called dry wine, no matter how much sugar it contained before fermentation, and no matter what may be its alcoholic strength. The pure juice of the grape contains considerable sugar, varying from 15 to 30 per cent. In France and many parts of the United States, the sugar found in the natural juice amounts to from 20 to 25 per cent., while very sweet varieties of grapes, grown under favorable conditions, not unfrequently yield from 30 to 35 per cent. of sugar. The sugar naturally in the grape is called grape-sugar or glucose. It is slightly different, chemically speaking, from cane sugar. But cane sugar, when used in making wine, undergoes a change as soon as it is dissolved in the liquid, and becomes grape-sugar. As grape-sugar it is fermentable, while as cane sugar it is supposed to be not in a condition to feed the ferment germs. But we will not follow chemical niceties. There is one point that wine makers must recognize and keep constantly in miud in considering the kind of wine they intend to make—its alcoholic strength—and that is about 50 per cent. of the sugar contained in the juice, whether cane sugar that is added, or grape sugar that is originally there, will be converted into pure wine-alcohol.

That is to say, that a "must" containing 30 per cent. of sugar will result in a wine containing about 15 per cent. of alcohol, if all the sugar is converted. Hence, every wine maker will find use for a saccharometer to determine the amount of sugar in the must he is about to ferment, and how much cane sugar is to be added to produce the wine he intends to make. It is only by this instrument that we can ascertain whether sugar should be added to our grapes, and how much. This point, and the temperature at which the wine is fermented, are the most important considerations in wine making. The use of the acidimeter, an instrument used for determining the acidity of the must, is desirable, but is not so important, as under proper conditions it is not likely that our common varieties of grapes will be wanting in acids, or that they will contain an excess of them. The natural acidity of the must may vary considerably without danger of serious results to the wine produced.

The next important consideration is that of temperature, and in determining this we consult the health and comfort of the *saccharomyces*, our microscopic employees, whom we are about to set to work in the fermenting vessel. The liquid we supply contains sugar, acids, albumen, mineral matter and other substances to supply the support of the germs, and all materials necessary for the production of the desired wine.

That it is entirely practical to regulate the temperature, in which the process goes on, will be shown in a continuation of this article.

THE COMING VINTAGE.

As the month of August draws to a close, we see our wine growers all over the State preparing for the coming vintage in September by cleaning up their fermenting vessels and rooms, their cellars and wine casks, and by getting everything ready for the reception of the precious liquid to be pressed from the abundant and juicy grape.

We also see the careful wine grower take the necessary precautions to secure for his wine an even, uninterrupted and thorough fermentation, by protecting his fermentation-room against great changes of temperature, between day and night, without which a perfect and clean fermentation cannot be obtained, nor a good and wholesome wine be made.

The greatest defect of our light California white and red wines, and which has kept them low in the estimation of connaisseurs and lovers of wine, has always been their imperfect fermentation, a defect which it is almost impossible to cure afterwards. It shows itself by a sharpness and unpleasant acidity in aroma and taste, which interferes with the development of the natural flavor and aroma of the wine and which we never find in the well-fermented European wines.

It is therefore one of the most important tasks of our wine growers to secure that fundamental condition for the production of a well made and wholesome wine, viz, *a thorough and perfect fermentation*, to obtain which all legitimate means and precautions should be carefully applied.

According to all advices from the vine-growing districts in France, Germany, Hungary, Italy, etc., there has never been a more effective and excellent assistant to fermentation applied than the renowned "*Oenotannin*" of Chevallier-Appert, the effect of which on white and red wines, whether applied during the crushing of the grapes into must, or the wine before its second fermentation, is simply marvelous. It concentrates all the impurities in the must, together with all the ferments, albummoids, etc., and precipitates them, insoluble, into the lees, thus enabling the wine to go through a perfect clarification and to develope its richness of color and its natural aroma and flavor, free from all disturbing elements. After a thorough clarification with *Boake's Liquid Albumens* the wines are ready for ageing by careful treatment in the cellar, when after two or three years they will show their true character and virtue.

The "*Oenotannin* being made, as its name implies, of parts of the grape, such as the skins and seeds, etc., combines perfectly with the wine, becomes part and parcel of it and replaces the natural tannin which may have been lost by any disturbance in the wine, by fermentation or from any other cause.

For those who may not have the means, or perhaps the qualities of wine to justify the labor and expense necessary for agin the "*Oenotannin*" is of the greatest impo tance, as its use enables them to bring the wines into the market at an earlier perio and in better, more brilliant and keepi condition, than by the use of any oth treatment. This testimony is surported l a host of the most eminent analysts of t different wine districts of France, and l many of our most distinguished wine gro ers and wine merchants, who have alrea made practical tests of the "*Oenotannin* on a large scale.

The excellence of *Boake & Co's Liqu Albumens*, as thorough going and reliab finings, is already well established with mo of our intelligent wine men, and to tho who have not used them, we can only sa "*Try them.*"

We refer our friends among the wi growers and wine merchants of this sta to the advertisements in this number, these important articles by the importe and agents on this coast, hoping, theref to serve the cause of the production of goo pure and perfect California wines, and th steady advance in the estimation of lovers of good wine.

We trust that the readers of the Me CHANT will not forget that its columns a always open to them for an expression their views on any topic connected wi the viticultural or other industrial and co mercial interests of the Pacific Coast. T varied expressions of thought and opinio developed in a public discussion, thro the strongest light on any question or su ject. In the multitude of counsellors wisdom.

BLEACHING SEEDLESS SULTANA RAISINS.

By J. H. Wheeler,
Chief Executive Viticultural Officer.

The area planted to the Seedless Sultana ape in California, was greatly augmented 1881, 1882 and 1883, during which time was in great favor with many. After 84, the planting of this variety nearly ased, and it is not at present a popular ape for either wine or raisins. The market easily glutted with its raisins, and the ne has with few exceptions proved other an satisfactory. Prominent among other jections has been its tardiness in coming o bearing—generally this variety must ve attained the age of at least five years fore it sets a good crop. When once well bearing, however, it is regular and very olific,—it has been known to produce as ich as fifteen tons per acre.

The extensive plantations of Sultanas ade at first, are now coming well into aring, and the matter of preparing the isins for market is a one of considerable erest and inquiry.

Letters have come to me asking for full structions as to the best methods of bleach-g, drying and marketing the grapes.

The imported Sultana raisins come to r markets bleached; they are translucent d nearly colorless—more so than any I ve yet seen prepared in California. These mmand better prices than the domestic ltanas.

Bleaching and drying these raisins have en carried on here by a very few, and eir experiments have been limited. Some od results have been obtained, and it is e experience which has grown out of these ccesses which I am here able to produce.

Mr. W. B. West of Stockton, has been the rly pioneer in the matter of Sultana rais-s, having cultivated this grape for upwards twenty years. In drying them, he was st to employ bleaching, the details of which he had learned in Europe, and ter a trial, he communicated his experi-ce to Messrs. W. T. Coleman & Co., o have since furnished this together with her information to some of their custom-s.

Prominent among others who have pre-red bleached Seedless Sultana raisins, are ckson Bros., N. Wyckhoff and Wm. For-th.

I give, in the following directions for the rk, the latest instructions produced by e Commission house of Wm. T. Coleman Co., together with such changes and ad-tions as have been suggested by Mr. W. West and Byron Jackson. These gen-men have kindly assisted me in the mat-r:

DIRECTIONS.

For the best results the grapes must not picked until they are fully ripe. This is dicated in bunches not too much shaded, the bright amber color of the skin, which, owever, fails to appear in grapes hidden om the light and sun. A certain deter-ination of full ripeness may be had by essing the clear juice from the grapes ought to be ripe, on each of several suc-ssive days, at each pressing determining e sugar by means of a must scale, and hen the amount of sugar shows no in-ease from day to day, the grapes are ripe. making these tests care must be taken at no bad bunches enter the samples as hole bunches of sultanas are sometimes und which never sweeten—these should carefully excluded throughout the treat-ent.

More care is necessary in determining the perfect ripeness of the Sultana than is the case with the Muscats, as when at all green the large amount of acid so common to this variety renders them almost valueless. Even when drying, the bunches being large and dense should be carefully examined to see that they are ripe throughout.

Before picking everything should be in readiness for bleaching. The necessary preparations are as follows:

A kettle or kettles holding twenty gallons or more, proportioned to the amount of work to be performed—should be ready to heat up. The work of dipping the grapes into the lye solution may be done in the kettles if necessary, but for convenience it is best to have a wooden trough built at which a number of persons can work.

This trough should be provided with a sheet iron bottom, and built over a brick fireplace, such that the heat of the solution may not be lowered by the dipping.

The lye solution used thus far in California, has been made of concentrated lye dissolved in water just below the boiling point.

In Smyrna however, the practice has been to use instead of concentrated lye, consisting in our market of impure and variable caustic soda, the potash lye obtained by leaching the ashes produced by the burning grape-vine brush. The superiority of the imported Sultanas would hence lead us to infer that potashes, which is the alkalic obtained from ashes, or better still the pearl ashes, which consists of purified potashes, could be substituted for concentrated lye to advantage. The last named potash salt is dearer than any of the others, but the quantity consumed is so small that no hesitation should be had in substituting this clean and wholesome salt for the soda salt, so uncertain in composition and impure. Another advantage growing out of the use of pearl ashes would be that of preserving the raisin in a soft jelly-like condition, with a clear glossy skin more inviting far than the dry chip-like raisin sometimes produced by the over drying of raisins dipped in caustic soda.

The proportion recommended and employed heretofore have been, one pound of concentrated lye to five gallons of water. To make an equally caustic potash solution would require about one and one-half pound of pearl ashes to five gallons of water. The price of pearl-ashes, which consists of pure carbonate of potash, varies from eight to ten cents per pound according to quantity.

Another indispensible provision is to secure facilities for rinsing the fruit in cold water immediately on its removal from the hot lye solution. The best rinsing may be done in running water, but when this is not practicable a barrel or tank may be used, care being taken to renew the water frequently, in order that it may not become so changed with the lye as to improperly perform the rinsing.

A dripping rack may be had above the trough or tank, by placing cleats or strips across on which the trays may stand a few moments after removing from the bath. They should be well drained when removed from the rinsing water, otherwise a drop will form and dry up on the underside of the raisin, leaving a dark spot when cured.

To add to the soft glossy appearance of the skin, a quantity of pure olive oil should be provided, which may be added to the dip on which it floats. The oil for this purpose should be pure. To insure purity, it is safest to use oil produced in California. Glycerine is highly recommended for the same purpose—some claim that it is superior to oil, and, being cheaper, may be used more freely.

The apparatus being in readiness, and the grapes ripe, the lye should be put in solution and heated. The potashes being all dissolved, the oil or glycerine may be added at the rate of half a large spoonful now and then as it disappears on the grapes. If oil be used, the proper amount will give to the solution a distinct amber shade.

As little time as possible should elapse between the period of picking the grapes and that of dipping the same. A great deal depends on this, as any delay in getting the grapes into the lye will make the work more difficult and the result more uncertain.

Some recommend picking the grapes in baskets or buckets of perforated tin, in which, without transfer, they may be immersed in the dip. Mr. Jackson places the grapes on a tray made with a frame of iron which is covered with wire gauze with one quarter inch mesh. The frame projects upwards on the sides to prevent the fruit floating off when in the dip, and is made to receive, as a cover, the wooden tray on which the fruit goes to the drier. When dipped and rinsed the wooden tray is placed over the dipping tray and two men transfer the fruit by turning over the two. This system I believe is superior to all others, and economizes time and labor in the curing.

The time which the grapes should continue in the dip will vary with the locality. In some districts they possess thick skins, thus requiring a longer submersion than when the skins are thin and delicate. From one to two minutes is the prescribed time—experience and observation are the best guides.

The dipping causes the skin of the grape to crack, at which time they are dipped enough and should be removed.

After dipping and a moment's draining over the trough, they should be rinsed thoroughly by immersing them in the pure water of the rinsing trough, after which drain well, long enough to allow all of the water to run off which will run off. After transferring as above the drying may be conducted as for other raisins.

If the drying be conducted in the open air, and the heat of the climate will permit, the trays should be stacked immediately one above the other, up to a convenient height for handling. Sultanas dried thus in the shade, will profit much more by the bleaching than if exposed to the direct rays of the sun. A building through which the draught draws strongly and warm, is the best for open air drying.

When the drying is complete, the bunches should be gently rubbed over a seive with fine meshes to remove the stems which will then come off readily.

When thus finished the raisins should be packed in regular raisin boxes, which according to W. T. Coleman & Co's instructions should contain just twenty-five pounds net weight. Use only one plain single paper wrapper around them all. Over the top face of the raisins, between them and the leaves of the paper wrapper, insert a piece of confectioners wax paper, this done, your product is ready to enter the market in competition with those similarly prepared in Smyrna.

Besides adding to the appearance of the Sultana raisin, this operation increases perceptibly the weight of the finished product, greatly bettering it by the moisture retaining power of the potash.

The process of bleaching, I am informed, adds twenty-five per cent. to the selling price of the raisins. Messrs. W. T. Coleman & Co. put the profit a little lower than this. Such being the case, those drying Sultanas cannot afford to long avoid the simple addition of the bleaching process.

Bleaching as applied to Muscat raisins has never become popular in this country, nor is it certain that any common preference could be formed to make the process common. There are those who prefer bleached Muscats, and we already find quite a market. Their preparation is therefore worthy of the attention of some of our growers and curers of the Muscat.

The most beautiful large seeded and high priced raisins prepared in Smyrna are bleached as above and make a most inviting fruit. Well prepared I believe they would form a novelty, which would prove profitable at least in limited quantities.

CONDENSING MACHINERY.

Dr. O. A. Rhousopoulos describes in the *Weinlaube*, an invention of Dr. Kaliburies, a Greek scientist, for which the French Academy of Sciences has awarded him a diplome d'honneur. This invention is an apparatus for concentrating liquids, notably grape must; and by adding some more apparatus also for distillation in a way that exhausts the liquid containing alcohol to the last atom.

The condensing machinery contains a piece that is provided with cotton filter for cleaning the air, and according to Dr. Rhousopoulos the action of the invention is of such perfection that it leaves any other must condensor far behind.

It may be expected that the principle of concentrating must, which is not many years old and still has already given rise to quite a quantity of patented machinery, will be fruitful of practical investigations and inventions for practical application. This machinery, which was considered the acme of perfection a year ago, may become antiquated in a short space of time. It will be advisable for American inventive talent to enter into the field, which even genius, in a nation that is not distingnished for practical innovations, pays attention to.

The subject of Concentrated Must is of far greater interest for Southern European grape countries than for America, since for instance. Italy in view of a large crop perhaps forty times that of the whole United States crop of grapes holds a very large stock of 86 wines unsold, and necessarily can offer only scant prices for grapes, which are sure to seek an outlet in the concentrated must shape in markets where California musts are to be shipped.

For Eastern grape growers California concentrated must at a reasonable price will be one of the most desirable accessions for raising the standard of their production of wine from indigenous varieties. Attention to the outlet in eastern states therefore would be advisable. F. Pupp.

From the *Rural Californian*, we learn that the cold storage of fruits, now being experimented with at Riverside, promises to be a success. If it is as successful as its projectors hope for, it will advance the value of every fruit tree and grape vine in California. By this process our best table grapes can be placed on the eastern markets during all the winter months, and they will be greedily purchased at from $200 to $300 a ton at retail. The grower at $10 a ton on the vine is making $100 an acre every season.

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FRIDAY.....AUGUST 19, 1887

REVOLUTIONS as a general rule prove costly undertakings not alone to the individual against whom it is directed, but to the country or kingdom itself. The one which lately took place in the Hawaiian Islands proves no exception, trade during the past two months having decreased over $31,000, as compared with the corresponding period of last year. This is not the only injury worked to the kingdom; the peculiar position of the loan effected prior to the change in the Government, has placed the credit of the Islands is in joepardy among the nations of the world. One good feature of the overthrow of the old government is the check placed upon the prodigal ruler, and his temporary guardian the chamberlain evidently does not propose to leave any opportunity open for evading his jurisdiction. A notice like the following must seem rather peculiar to the ears of a foreign royalty. "No debts on account of his majesty, King Kalakaua, and the royal household will be recognizen unless authorized in writing by the Chamberlain." And thus divinity doth hedge a king in these matter of fact days of the 19th century.

THE suspension of business by the Directors of the Produce Exchange in this city, while it may have been prudent, viewed from the standpoint of a peculiar regard for the safety of certain speculators' pockets, has worked a great injustice to the wheat raisers of the State. Just at the time when their crops were beginning to come in, the chance of realizing the high prices which then ruled, is suddenly shut off, by the arbitrary action of a few men.

Had they been content to close the regular session of the board, under conditions which would have permitted dealing on the Street, there would not have been so much cause for complaint. An institution that can close down at any moment, when things do not happen the right way for some of the more powerful members, and by so doing, stop all trading in a staple commodity, is a standing menace to our farming interests. For weeks past, wheat raisers have been practically detained from disposing of their crop, unless content to accept the rates offered by speculators, at all times much lower than the market could possibly have been forced for some time under ordinary conditions. Quotations have been floating around the street, of bids ranging from $1.50 to $1.70 for No. 1 wheat.

The farmer who sells at that rate, is simply gambling on the future, quite as much as if he ventured "long" or "short" under the contract system. The price of wheat when the Board closed was $2.14, and at that price it must open when the Board resumes, unless all the old contracts are settled upon some definite basis, which does not seem likely at present. Whether the "longs" or "shorts" will eventually maintain their grip is a question of the future which it is difficult to discount.

What object the Directors had in view when they thus summarily suspended business is not exactly clear. Their first announcement, amounted to nothing more than that in their judgment wheat had gone high enough for safety, and that this step alone could avert a panic. A general settlement was spoken of, but so far only some of the "longs" have come to time, others taking the stand that, while the action of the business in the Board might itself be suspended, it did not follow that all business should be stopped, and prices be raised or lowered at the Directors' pleasure. An annoying source of delay is next experienced in the attempt to remodel the rules, providing for the deposit of margins in bank. As this will affect the business of the smaller brokers, and as they are in the majority in the Board it does not seem likely the proposition will eventually be carried. A newly framed constitution is also before the members, and upon its adoption the Board will reopen for business, leaving the Revision of Rules for the future.

The outlook is certainly not satisfactory for a steady resumption of business. The proposed constitution places too much power in the hands of the Directors, and even if it is passed, trouble may be anticipated when the revised rules come up for final action. In this event, business will again be blocked and the farmers will naturally suffer.

The business methods of the Call Board are bad, and are conceived in the interests of the gambling fraternity. A system which permits a "cinched" interest to shut down business at the moment of their opponents' triumph, and by so doing, to demoralize the market and depreciate values cannot too soon be changed. Besides, the interests of the producing farmer should cut some figure in the matter. It is monstrous that farmers should be barred of a market for a single moment, because that gamblers have been committing the common law offense of forc-stalling that market.

Railroad enterprise is keeping well abreast with the rapid march of improvement throughout the State. Down in the Southern Counties, the Southern Pacific Company is extending a net work of branch lines, to all the more important towns, which are springing up like magic under the influence of the boom.

The first completed line of the California Central System, was that of the Los Angeles and San Bernardino Railroad, which was past known as the Los Angeles and San Gabriel Valley line. This road extends from Los Angeles to Duarte, a distance of 18 miles. This road now belongs to the Atchison System. This road at present under construction by the California Southern, from San Diego to El Cayon, will not be extended beyond that point for some time. Its length will probably be finished by October 1st. It is not at all unlikely that the Southern Pacific Company will build a line to parallel the California Central into San San Diego.

This company has also completed the final surveys of the Colton, Mound City, and Lugonia road, and the grade stakes are being set. On January 1st, 1888, trains will be drawing the products of Lugonia, Redlands, and the orange groves of the foothills to Colton. The surveys made in the same interest on the road from Colton to Riverside, Chino and Pomona, are being rapidly driven ahead.

Nor is the activity in the Northern portion of the State less marked. There the railroads have taken up the work, only to lay it down when this most attractive and valuable portion of our territory is fully opened up and brought within easy distance of the metropolis. The San Francisco and North Pacific Company has buckled down to work in earnest, and are driving their rails right and left through the most fertile portion of Sonoma, Marin and Napa Counties. One branch starting at the Cloverdale terminus, runs north 30 miles to Ukiah, another branching from Ingnacia and Petaluma Creek, thence by Sonoma Valley Railroad and Extension to a point on the California and Pacific, between Adelente and Suscol. Again, another branch transverses the fertile district from Glen Ellen, a distance of 16 miles, to the town of Santa Rosa.

The Southern Pacific system is also extenning its interests further into the vinelands and a spur of the main line is making rapid progress from its intersection at the Carquinez straits, through the new town of Los Guillicos, where a central depot will be established to the proposed terminus on 4th Street in Santa Rosa.

The Winters and Ukiah Railroad will run from Winters, Yolo County, connecting with the Vacaville and Clear Lake Railroad, and thence up Berryessa Valley to Clear Lake, and thence to Ukiah City a distance of 185 miles, under the Southern system. A road from Napa City to Lake county is proposed in the near future, with the prospect that it will continue on through Lake and Mendocino, into Humboldt County.

In the San Joaquin Valley, the Stockton and Copperopolis will tap the timber belt, at or near the Big Trees in Calaveras County. The second crossing of the main track line that divides the valley, will be at Fresno city and thence into the Sierras in Mariposa county. The third crossing will be in the southern portion of Tulare, at or near Alia. These important enterprises mean considerably more than may be seen at the first glance. The stream of population which will follow the course of the new roads into the hitherto undeveloped interior means an increase of wealth for California far beyond the studied calculations of her most sanguine well-wishers.

The manufacture of sugar from the Mangold or sugar beet, will probably be one of the leading industries of California in the near future. The enterprise is making such rapid strides in the older countries of Europe, that the sugar markets of the world have been materially affected, and the very existence of the cane sugar is threatened. California is naturally adapted for this business, and it is only a matter of time until it is opened up upon a large scale. The Bay counties are all suitable for the cultivation of the root, and vast tracts of land, now lying idle along the Sacramento river, could thus be turned into profitable account.

The requirements of the Pacific Coast amount to about 50,000 tons of sugar annually, for which we are dependent upon the supply from the Hawaiian Islands. Some years ago an experiment was tried with beets, at works established near Sacramento, but for some reason or other it proved a failure. That the system is now thoroughly understood, is evident from the successful operations in Germany and Austria, as described in the following article from a London contemporary:

The European fabricants are engaged at the present time in teaching the art of sugar making to the world, and some remarkable results are following. Their white sugar is now so well and cheaply manufactured that, not only is it threatening the very existence of the ancient industry of sugar refining by a second process, throughout the world, but after paying the great cost of carriage to the European seaboard, and thousands of miles of sea-freight, beet crystals and granulated can be sold in the most distant parts of the world, and even in cane-growing countries themselves. No one accustomed to the extreme cheapness of sugar in England, can fail to be struck with the higher prices obtained for it in the producing countries, or in the neighboring colonies. Our planters console themselves with the idea that the cheapness of European sugar, in the markets of the world, is due to bounties, and to a trifling extent this may be the case in countries near the producing districts. But the main reason for its cheapness, is perfection in cultivation and manufacture. Indeed, no more striking illustration of the old fable of the hare and the tortoise could be chosen than the change in the relative positions of the towering cane and the humble beet. The former from time immemoriat has contained 18 per cent. of saccharine matter, by weight, from which most of our planters extract, in a debased form, 6 per cent., or one third of the sugar the plant contains. The mangold, the original form of sugar beet, contains 4 per cent. of sugar. The Germans, last season, from improved varieties of beet, extracted close on 12 per cent. of their weight, to a great degree in the form of pure white sugar fit for direct consumption, or about three times what would be produced from the root not so many years ago. It is to progress like this, and not to bounties, that the cheapness of European white sugar is due, and if

our cane planters have a rude awakening by finding their own home markets invaded by Germany or Austria, it may at length cause them to realize their position, and ask how they can continue to make a profit if they sacrifice two thirds of their possible income.

California with its boundless resources and never ending summer, is rapidly becoming a household word among the inhabitants of the more densely populated Eastern States. One can readily imagine the pleasurable feelings of surprise with which the traveller from these lands of wintry sterilty, where poverty stalks naked under a clouded sun, when they first gaze upon the never ending beauty of this vine and olive clad land. It is not astonishing that on their return to the gloomy and crowded surroundings of their eastern homes, that their tales should excite the curiosity of their listners, and urge them to come and see for themselves To these periodical visits, fostered by a wise and generous railroad policy, may be attributed to a large extent; the rapid settlement of the southern portion of the State. But not to these alone. The principal credit is due to the energy displayed by the residents themselves, in advertising throughout the length and breadth of the Eastern States their varied advantages of soil and climate. The press took hold of the matter with a vigorous enterprise, and lost no opportunity to scatter broadcast information of the attraction peculiar to their particular locality. Citizens came to the front and ably seconded the movement, spending their money freely to speed the good news in the proper quarters. Thousands of pamphlets were printed and scattered far and wide by agents located in the populous centers of the east. This well directed energy has reaped its reward. The value of land has advanced at an incredible rate, and the demand instead of decreasing seems to be steadily growing as the time rolls bye. What at first had the appearance of a speculative craze, has gradually developed into a strong and healthy movement controlled by people of intelligence and means, who have apparently come to stay. The boom is gradually drifting northward, and of its own accord, unaided to any extent by the exertions of our people.

The wonderful advantages and resources of these northern counties have not been sufficiently noised abroad, or a boom would soon be inaugurated that would almost depopulate the newly fledged towns of Southern California. It is high time that the people of the Bay counties awakened from their lethargy, and entered the lists, with the energy displayed by their southern neighbors. The vine clad hills and olive groves of Sonoma, Napa and the adjacent counties, situated as they are within a few hours ride of the metropolis of the Pacific Coast, offer superior inducements to the settler, on the outlay of his time and money than any of the more vaunted sections of the state. As much fruit can be raised to the acre and of as good or better quality in the counties named as in Southern California. Thee xpense is trifling in comparison especially in view of grapes and larger fruit requiring irrigation. The price asked for land is not one-tnird asked in the vicinity of Los Angeles; and in the matter of climate it is incomparable superior. As good orange land aa there is in the state lies in the warm belt of our foothills, which can be bought now, for $15 to $30 per acre, and decidedly superior to much of the land in the three southern counties now finding eager purchasers at from $150 to $500 per acre.

Land in the interior counties surounding the Bay of San Francisco is held to-day at a ridiculously low figure, when the value of its product is taken into consideration.

The rate of $500 an acre is surely not an extravagant price for land planted with fruit trees, returning an annual profit of $100 an acre. It is only a matter of time until these lands will appreciate to something more approximate to their true value. In the mean time every available method should be employed to foster immigration, for on it alone depends the possibility of any substantial and lasting boom. A liberal and judicious system of advertising the many resources and advantages possessed in these northern districts, is just as necessary as it was in the southern counties, with the additional prospect of a greater return on the investment than they can ever hope to realize.

A National Pure Wine Law is at present the subject of serious discussion, among the leading vineyardists and wine makers of this State, and it is an understood fact that representatives of this industry from the East rn States are fully in accord with the proposed measure. Some important conferences have already been held in this city, resulting in the draft of a bill, which will undoubtedly meet with the hearty approval and support of all the wine makers throughout the United States.

California is most directly interested in this fight for protection· Her commercial interests are not only threatened, but the reputation of her product is at stake. With an increasing annual yield of steadily improving wines, a market is not the only consideration. The spurious imitations, offered and sold on the eastern markets as California wine, work a more serious and lasting injury than a scanty demand. The poorest quality of blended adulterations is made to serve for our choicest brands, which are themselves refused a recognition of their real merits, being cloaked under a foreign label. It is therefore high time that our wine makers bestir themselves, and adopt vigorous measures at command, to stamp out effectually this fraudulent and demoralizing competition. The blending of American wines is growing more common every day in eastern cities, spurious concoctions, manufactured out of all sorts of abominations being constantly sold unde the name, and in the place of pure wines.

State legislation is totally ineffective to cope with the difficulty and the only relief lies in congressional action. The fears of Congressman Romeis of Ohio, that Congress will hesitate to legislate upon the subject seem groundless. The Internal Revenue Law which regulates the manufacture and sale of spirituous liquors, can surely have its powers extended for the protection of the quality of wine. The question of taxar tion cuts no figure in the case. Our wine men will certsinly not object to pay the nccessary expenses involved, if the protection of their interests is assured.

Unity of action on the part of the wine producing statea is the main point in the fight. No jealousy should be permitted to exist, as to who shall take the lead. It is a matter in which all are directly concerned.

One thing is certain, that our California delegation to Congress will be a unit on the subject, and that all that lies in their power will be done to carry the day in the interests of one of our most important industries, the manufacture of a pure wine.

The Panoramas which are now on exhibition in this city, are the exemplification of a good idea well carried out. While they are entertaining and interesting as historical reminisences, they are withal instructive, being the exact reproduction of the battle scene taken upon the spot. The position of the troops engaged is accurately portrayed. In addition, the vivid portrayals of these prominent battle-fields, exert a powerful influence in stirring up and keeping alive a spirit of patriotism among the rising generation, and this in itself should prove a strong recommendation to public favor.

The crowds of people who patronized the Battle of Waterloo, during its lengthy representation, showed that the novel idea was fully appreciated. How much greater interest may be expected in the stirring scenes of Vicksburg and Missionary Ridge. The men who took part in these gigantic struggles, which decided forever the question of Union supremacy, are among us to-day. The dust of nearly a century has not to be brushed away in order to revive the memories of those dark and trying days. The details of these battles are generally so widely known, that it is useless to enter upon them, and for those who are not acquainted with them, an hour in the Panorama will be more instructive than volumes written on the subject. For the younger people growing up around us, this opportunity to get a thorough and affective insight into the past, is one which should not be neglected under any consideration.

CRYSTALLIZATION OF FRUIT.

Consul Mason of Marseilles in a very full and exhaustive report on the subject, states that the business of preserving fruits by the crystallizing process is peculiar to Southeastern France, and is practiced on a large scale at Apt, in the Department of Vaucluse, at Clermont, in Auvergne, as well as at Marseilles, Grasse, Avignon and other place of less importance.

The product is exported largely to England, the United States and various other countries, including Algiers, the East and West Indies, and even South America, where the profusion of fresh fruits would seem, at first thought, to render such an expensive import almost superfluous.

The kinds of fruits preserved by this process are mainly pears, cherries, apricots, pineapples, plums, figs, citrons, oranges, melons, and a kind of dwarf orange called "chinois," which grows to some extent in the district of Nice, but is imported mainly from Italy and Corsica. Peaches are used for this purpose to a limited extent in the region of Marseilles, the "free stone" varieties being too costly and the supply too small for profitable use on a large scale. The fruit is first carefully assorted in respect to size and uniform degrees of ripeness. Pears, pineapples and quinces are pared, citrons are cut into quarters and soaked in morelli in sea-water, and the "pits" of apricots, cherries and peaches are carefully removed. The stone must be removed with as little injury as possible to the form and solidity of the fruit.

Thus prepared, the fruit is immersed in boiling water, which quickly penetrates the pulp, dissolving and diluting the juice, which is thereby nearly eliminated, when the fruit is subsequently taken from the water and drained, leaving only the solid portion of the pulp intact.

This process of "blanching" must also be done with exact nicety, the period of immersion in the hot water being determined by the size and ripeness of the fruit. If immersed too long the pulp is either over-cooked or is left too dry and woody. If taken out too soon the juices left in the pulp prevent perfect absorption of the sugar afterward, and by eventually causing fermentation destroy the value of the product. In this, as in other stages of the process, the only guide is experience. A skillful workman can tell by the color and appearance of the pulp when it is properly "blanched," and this knowledge invariably commands employment and liberal compensation.

After being thus scalded, some fruits, apricots, for example, are again assorted into two or three classes, according to the degree of softness that has been produced, for the reason that if kept together they would take up the sugar differently, some losing their form entirely, while others would remain sufficienty impregnated. For these different grades sugar syrups of different degrees of density are required, the softer the fruit the stronger the syrup required for its preservation.

For the same reason each of the different varieties of fruit requires a syrup of corresponding strength. Pears, citrons and pineapples, which remain hard and firm, take best a syrup having a density of from 18 to 25 degrees, while apricots, plums and figs are treated with syrups which gauge from 30 to 40 degrees by the aerometer

The requisite syrup having been prepared by dissolving the sugar in pure water, the fruit is immersed in it and left at rest for a certain period in large earthenware pans, glazed inside, and having a capacity of about eight gallons.

The syrup penetrates the pulp, and gradually withdraws and replaces the remaining fruity juice, which, as it exudes and mingles with the transparent liquid, produces a certain filmy or clouded appearance, which marks the commencement of fermention. When this has reached a certain stage, the vessel containing the syrup and fruit is placed over the fire and heated to 212 degrees F. This corrects the fermentation and raises all impurities to the surface, whence, if necessary, they can be removed by skimming. If the syrup is of proper density, this process of impregnating the fruit with sugar will be complete in about six weeks, during which time it is usually necessary to perform this heating process, as above described, three times. The impregnation of the fruit with sugar being thus complete, it is taken out, washed in pure water to remove the flaky particles that adhere, and submitted to one or two finishing processes, as follows:

If the fruit is to be "glazed," that is, covered with an ice or transparent coating, it is dipped in a thick, viscid syrup of sugar and left to dry and harden rapidly in the open air. If it is to be "crystallized" it is dipped into the same syrup, but is then cooled and dried slowly in a kiln or chamber warmed to a temperature of ninety degrees, Fahrenheit.

This slow cooling causes the thick syrup with which the fruit is covered to crystalize and assume the usual granulated appearance. The work is now finished. If properly done, the fruit thus preserved will bear transportation to any climate, and will keep, firm and unchanged, for years. It is packed in light wooden or card-board boxes, and may be shipped in cases containing several hundred pounds each. During the process of impregnating fruit with sugar, the syrup in which it is immersed is gradually deteriorated by losing its sugar and absorbing the juices of the fruit. It is finally utilized in the preparation of "conture d'Apt," wnich is made of soft overcooked and irregular pieces of fruits of all kinds mixed in irregular proportion preserved in the spent syrup, which is boiled down to the required consistency.

AUSTRALIA AND NEW ZEALAND.

In regard to general conditions there is practically nothing to add to advices of the last two months. In Australia, the rainfall on the East Coast, at any rate, has almost been phenomenal, and the reports from the interior are in all directions satisfactory. The lambing is stated to give an excellent percentage, and our friends look forward to a heavy clip, in good condition. South Australian agriculturists also report generally favorably of the appearance of the growing wheat. In matters commercial, Victoria is reported to be very prosperous. The indications from South Australia and New South Wales are generally of a more hopeful character—that the former Colony is gradually emerging from the depression of the last three or four years, and would probably do so more rapidly, but for the heavy deficit and uncertainty as to the Government Finance. In this connection the Adelaide *Prices Current* at 27th June, containing Mr. Wright's Report on the prospects of South Australia, will be interesting and useful. It is stated that in New South Wales, mercantile obligations are being much more readily met, and they are confidently looking forward to good trade in coming spring. In New Zealand there is not so much to add to former reports in either respect. We have had some very severe weather, with considerable falls of snow in the South, but no damages to Stock in the back country are reported so far. Reports as to commercial matters from Wellington and Canterbury are favorable, and in a more limited degree from Otago. In Auckland the depression still continues very severe. Still what business is done, although of limited extent, and still more narrow "profits," appears to be sound enough.

A NEW WINE COMPANY.

The California Winery and Security Company has elected the following officers: A. Vignier, President; R. J. Harrison, Robert J. Tobin, and D. V. B. Henarie, Directors; D. M. Cashin, Secretary; H. A. Pellet, Superintendent; Whitney Palache, Accountant; London, Paris and American Bank, Treasurer.

This company is incorporated under the laws of the State, and backed by men of ample means and unquestioned reliability. The company will commence receiving wine on storage after Monday next, and will then prepare to forward shipping casks to those who have not their own to use. Advances will be made on wine, as heretofore stated, and only sound and pure wines will be received.

A side track is now being built into its warehouses at Eighth and Brannan Streets, and men are at work getting the building ready for the reception of wine on storage.

The Report of the Fourth Annual State Viticultural Convention is now published and ready for delivery. Singles copies are one dollar each, but special rates can be obtained for five copies or more.

A Hint for Napa.

The orchardists of Santa Clara Valley are experimenting with the labor of school children in gathering their fruit. It is a success, and so large is the crop that they have petitioned for an extension of the vacation. A large number of Chinese have been displaced in this way. We hope to see all the vine-tying, fruit-picking, and all such light work in this valley, done by children in the near future. In the gathering of grapes in particular, employment might be given to a large number of children in the vineyards around St. Helena, and the scattering of money among young and old for this purpose would do much to dispel hard times.

The Grape-Growers.

A meeting of grape-growers took place last week at Cloverdale, to discuss the disposition of the coming grape crop. The grape must condenser was the main topic of discussion, and it was determined to communicate with the company who are operating the machinery in regard to placing a machine in this district. It was thought that some two or three thousand tons of grapes could be had in this and Geyserville district which by offering at good terms would be an inducement for the company to locate here. The Secretary was instructed to correspond with the Secretary of Viticultural Commission of San Francisco. By next week some definite conclusions will be decided on.

EAST BOUND THROUGH FREIGHT.

Forwarded by the Southern Pacific Co., July, 1887.

FORWARDED FROM — IN POUNDS.

ARTICLES.	SAN FRANCISCO.	OAKLAND.	LOS ANGELES.	COLTON.	SACRAMENTO.	SAN JOSE.	STOCKTON.	MARYSVILLE.
Beans	314,740	.....	.....	.....	.....	.....	.....	.....
Blankets and Woolen Goods	80,770	.....	.....	.....	5,170	6,360	.....	.....
Books and Stationary	11,510	7,120	.....	.....	.....	.....	.....	.....
Borax	.....	332,430	.....	.....	40,640	.....	.....	.....
Brandy	112,450	.....	17,020	.....	210	6,790	2,520	.....
Canned Goods	1,423,510	310,950	.....	.....	622,820	466,880	.....	.....
China Merchandise	111,700	.....	.....	.....	.....	.....	.....	.....
Chocolate	3,140	.....	.....	.....	.....	.....	.....	.....
Cigars	22,080	.....	.....	.....	.....	.....	.....	.....
Clothing, California Manufactured	75,540	.....	.....	.....	.....	.....	.....	.....
Coffee, Green	397,770	.....	.....	.....	.....	.....	.....	.....
Copper Cement	20,000	.....	.....	.....	.....	.....	.....	.....
Drugs and Herbs	6,460	.....	.....	.....	.....	.....	.....	.....
Dry Goods	10,690	.....	.....	.....	.....	.....	.....	.....
Empty Packages	43,050	.....	436,650	.....	.....	.....	.....	.....
Fish, Pickled	23,400	.....	.....	.....	.....	.....	.....	.....
Fruit, Dried	147,390	.....	126,200	.....	255,520	64,430	20,730	30,010
" Green Citrus	.....	.....	62,880	.....	.....	.....	.....	.....
" " Deciduous	.....	.....	.....	.....	6,635,200	.....	.....	66,300
Fuse	12,110	.....	.....	.....	.....	.....	.....	.....
Glue	66,260	9,330	.....	.....	.....	.....	.....	.....
Hair	10,860	.....	.....	.....	.....	.....	.....	.....
Hardware and Iron	10,610	.....	.....	.....	.....	.....	.....	.....
Hides	44,330	.....	40,650	.....	43,110	.....	.....	.....
Hops	43,360	.....	.....	.....	102,330	.....	.....	.....
Leather	78,620	.....	.....	.....	27,500	5,410	.....	.....
Machinery	.....	.....	.....	.....	.....	.....	.....	.....
Matting	38,470	.....	.....	.....	.....	.....	.....	.....
Merchandise, Asiatic (in bond)	22,090	.....	.....	.....	.....	.....	.....	.....
Miscellaneous	117,470	10,520	.....	360	20,640	32,850	4,170	7,480
Mohair	3,280	.....	.....	.....	.....	.....	.....	630
Mustard Cake	.....	.....	.....	.....	.....	.....	.....	.....
Oils	.....	.....	.....	.....	.....	.....	.....	.....
Oil, Cocoanut	.....	.....	.....	.....	.....	.....	.....	.....
Oil, Whale	44,500	.....	.....	.....	.....	.....	.....	.....
Onions	128,590	.....	.....	.....	177,200	.....	.....	.....
Ores	.....	.....	.....	.....	20,000	.....	.....	.....
Potatoes	329,380	.....	178,740	.....	178,770	.....	.....	.....
Powder and Explosives	.....	.....	.....	.....	.....	.....	.....	.....
Pickles	.....	.....	.....	.....	.....	.....	.....	.....
Quicksilver	.....	.....	.....	.....	.....	.....	.....	.....
Raisins	.....	.....	.....	.....	.....	.....	.....	.....
Rice	68,500	.....	.....	.....	.....	.....	.....	.....
Salmon, Canned	91,710	.....	.....	.....	.....	.....	.....	.....
Shells	.....	.....	.....	.....	.....	.....	.....	.....
Shingles	332,670	29,080	.....	.....	.....	.....	.....	.....
Silk	151,030	.....	.....	.....	.....	.....	.....	.....
Silk Goods	39,610	.....	.....	.....	.....	.....	.....	.....
Skins and Furs	12,430	.....	.....	.....	.....	.....	.....	.....
Sugar	6,182,370	.....	.....	.....	.....	.....	.....	.....
Syrup	276,590	.....	.....	.....	.....	.....	.....	.....
Tea	5,551,150	.....	.....	.....	.....	.....	.....	.....
Vegetables	143,170	.....	50,880	.....	131,250	.....	.....	.....
Whalebone	.....	.....	.....	.....	.....	.....	.....	.....
Wheat	.....	.....	.....	.....	.....	.....	.....	.....
Wine	2,082,820	560	201,450	.....	305,810	43,120	53,180	.....
Woods, Valuable	.....	.....	.....	.....	.....	.....	.....	.....
Wool, Grease	1,459,240	.....	669,920	.....	417,400	8,200	.....	.....
" Pulled	.....	.....	.....	.....	105,950	.....	.....	.....
" Scoured	209,630	.....	.....	.....	.....	.....	.....	.....
Totals	20,355,050	699,930	1,784,390	360	9,089,520	634,040	80,600	104,420

Recapitulation.

San Francisco.	Oakland.	Los Angeles.	Sacramento.	San Jose.	Stockton.	Marysville.	Colton.	Grand Total.
20,355,050	699,930	1,784,390	9,089,520	634,040	80,600	104,420	360	32,748,310

OUR NATIVE WINE SHIPMENTS BY SEA.

PER STEAMER SAN BLAS, AUGUST 15th, 1887.

TO NEW YORK.

MARKS.	SHIPPERS.	PACKAGES AND CONTENTS.	GALLONS	VALUE
B....	Lenormand Bros.....	25 barrels Wine.....	1,17	$328
D & Co.....	B Dreyfus & Co.....	50 barrels Wine.....	2,375	1,200
Bns.....	C Carpy & Co.....	52 barrels Wine.....	2,599	1,040
G.....	"	9 barrels Wine.....	449	300
B C.....	"	10 barrels Wine.....	497	304
A.....	Lachman & Jacobi....	25 barrels Wine.....	1,275	361
V.....	"	20 barrels Wine.....	1,011	337
V B in diamond.....	"	40 barrels Wine.....	1,999	698
In diamond.....	"	20 barrels Wine.....	1,010	380
H.....	"	6 barrels Wine.....	305	117
In diamond.....	"	25 barrels Wine.....	1,267	358
alf diamond.....	"	10 barrels Wine.....	509	206
L.....	"	10 barrels Wine.....	503	168
R.....	"	25 barrels Wine.....	1,273	385
B J.....	"	100 barrels Wine.....	4,961	1,218
K.....	Kohler & Van Bergen.	10 barrels Wine.....	502	502
F M.....	"	1 barrel Brandy.....	47	94
W M.....	"	5 half barrels Brandy.....	128	256
V Co.....	C Schilling & Co.....	100 barrels Wine.....	4,755	1,900
H.....	Napa Valley Wine Co.	7 barrels Wine.....	300	262
"	"	2 half barrels Wine.....	52	117
Total amount of Wine.....			26,815	10,182
Total amount of Brandy.....			175	350

TO CENTRAL AMERICA.

B & Co, La Libertad.....	L S Haas.....	1 barrel Whiskey.....	42	$116
A R, Acajutla.....	Kohler & Frohling...	7 kegs Wine.....	70	61
G in sqnare, Corinto.....	"	2 barrels Wine.....	200	204
"	"	40 cases Wine.....		
B & Co, La Libertad.....	Bloom Bros.....	15 cases Wine.....		75
A, San Jose de Guat.....	"	20 cases Whiskey:.....		150
R, La Union.....	Ramonna, Ghiradelli &C	20 cases Wine.....		107
S, Champérico.....	Schwartz Bros.....	4 packages Whiskey.....		135
3, Amapala.....	Montealegre & Co....	10 kegs Wine.....	120	96
le U, Corinto.....	John T Wright.....	5 packages Wine.....		43
"	"	10 cases Wine.....		40
"	"	4 half barrels Whiskey.....	104	523
, La Libertad.....	"	6 cases Wine.....		24
W, San Jose de Guat.....	Urruela & Urioste.....	4 kegs Wine.....	80	60
Total amount of Wine, 96 cases and.....			470	710
Total amount of Whiskey, 24 cases and.....			146	934

TO MEXICO

Co, Acapulco.....	L & Lastreto.....	2 barrels Wine.....	98	$49
, Manzanillo.....	Dellipiane & Co.....	2 barrels Wine.....	52	26
"	"	1 keg Wine.....	13	10
& Co, Acapulco.....	Urruela & Urioste....	2 casks Red Wine.....	118	59
Co, Acapulco.....	"	10 cases Wine.....		40
& Co, San Blas.....	Wightman Bros.....	1 cask Wine.....	57	23
& Co, Acapulco.....	I Outte.....	5 casks Wine.....	287	116
in shield, Acapulco.....	"	5 cases Sherry.....		39
V E, Tonala.....	Kohler & Frohling....	2 octaves Wine.....	32	26
"	"	1 octave Brandy.....	17	34
, Manzanillo.....	J H Dieckman.....	2 barrels Wine.....	50	35
Total amount of Wine, 15 cases and.....			707	423
Total amount of Brandy.....			17	34

TO PANAMA.

.....	Cabrera, Roma & Co..	2 casks Wine.....	124	$45

YOKOHAMA—PER P. M. S. S. Co's STEAMER RIO DE JANEIRO, AUG. 13, 1887.

A, Yoko.....	Huschler Bros.....	10 barrels Wine.....	500	$250
A, Kobe.....	"	5 barrels Wine.....	250	125
diamond Co, Yoko....	S Mayers.....	10 casks Wine.....	580	203
"	"	5 cases Wine.....		20
"	"	15 cases Whiskey.....		195
diamond.....	J Gundlach & Co.....	18 barrels Wine.....	888	454
Co, Yoko.....	Williams, Dimond & Co	9 barrels Wine.....	450	365
C. 28 in sqnare, Yoko.....	"	1 case Wine.....		3
S in half diamond, T, Yoko	"	1 case Wine.....		3
diamond, R, Yoko.....	"	1 case Wine.....		13
In diamond, W, Shanghai.	"	1 cask Wine.....		22
Total amount of Wine, 9 cases and.....			2,668	1,448
Total amount of Whiskey, 15 cases and.....				195

TO HONOLULU—PER O. S. S. Co's STEAMER AUSTRALIA, AUG. 16, 1887.

.....	Arpad Haraszthy & Co	1 10-gallon keg Brandy.....	10	$50
"	"	40 10 gallon kegs Wine.....	400	400
"	"	58 5-gallons kegs Wine.....	290	290
"	"	8 barrels Wine.....	395	395
"	"	29 cases Wine.....	60	60
P.....	B Dreyfus & Co.....	2 barrels Wine.....		
"	"	17 half barrels Wine.....		
"	"	55 10-gallon kegs Wine.....		
"	"	80 5-gallon kegs Wine.....	1,511	1,225
"	"	5 half barrels Brandy.....	130	125
L.....	Pascal, Dubedat & Co.	2 barrels White Wine.....	58	70
G & Co.....	M S Grinbaum & Co...	5 cases Wine.....		20
.....	C Carpy & Co.....	1 half-cask Wine.....	36	30
.....	Lachman & Jacobi....	2 half barrels Wine.....	56	43
Co.....	Kohler & Frohling....	80 kegs Wine.....	600	523
Co.....	Sprunance, Stanley & Co	40 cases Whiskey.....		370
"	"	5 cases Brandy.....		33
M & Co.....	"	25 cases Whiskey.....		181
"	"	5 cases Brandy.....		33
Total amount of Wine, 5 cases and.....			3,406	3,056
Total amount of Whiskey, 10 cases and.....			140	241
Total amount of Brandy, 65 cases and.....				218

MISCELLANEOUS SHIPMENTS.

DESTINATION.	VESSEL	RIG.	GALLONS.	VALUE.
oria.....	Geo. W. Elder.....	Steamer.....	60	$39
ico.....	Newbern.....	Steamer.....	524	379
oria.....	Mexico.....	Steamer.....	77	67
olulu.....	Consuelo.....	Brig.....	1,752	1,506
Total.....			2,413	1,991
Total shipments by Panama steamers.....			28,110 gallons	$11,360
Total Miscellaneous shipments.....			5,819 "	6,495
Grand totals.....			33,935	$17,855

DRINK WINE.

EDITOR MERCHANT:—The first grapes at the fruiterer's stand remind me of many a vine field where the luscious bunches are hidden under the dense foliage and soon will suffer the effect of the crusher. Enticing to look at these eastern grapes are, but the writer's palate has had too long the enjoyment of the rich fruit of the vines of Southern Europe and of California to relish imperfect saccharine mixed with the perfume and flavor of the vulpine grapes indigenous in this region. Too much skin and seeds and too little juice deter my spoiled taste from finding them toothsome I let them alone and content myself to wine my water with the perfectly fermented juice of higher grade grapes. The potent capability of the product from Crabb's Black Burgundy grape to keep the blood in this abnormally ardent season at the normal degree of temperature is being demonstrated on ever so many whom fate keeps in this city, the writer among them, while who can, seeks the cooler regions near the Atlantic, on the hills or in summer resorts. It may be a trifling contribution to the general success of our wines, but it is not an insignificant sign of the approach of greater popularity of them, that the medical faculty of the capital pays deserved heed to nature's proper and efficacious medicine wine. When in the Public Schools the idea is inculcated into the minds of the present generation, that wine ought to be eschewed as dangerous, unnatural, nay poisonous—when authors of text books who never were authorized by study of the subject to emit an opinion on it, we may rejoice at the fact, that the highest intelligence among the physicans plead and adopt our cause and have practically the means and the opportunity of verifying and confirming the views demonstrated as correct, held by a hundred millions in the grapes growing countries, namely that the judicious use of a pure and good wine from good varieties is a blessing.

Let me note also the splendid and spontaneous aid now granted our industry by the Washington press. Mr. Fox, the proprietor of the *National Republican*, Dr. Hines, one of its editors, and the staff generally, are defending our views which coincide with theirs. We shall have valuable assistance from that paper when the fight against bogus wines will be renewed, for like every good patriot, those gentlemen, Capt. J. N. Burritt of the *Sunday Herald*, Mr. Morrow of the *Sunday Gazette*, Mr. Kilbourn of the *Critic*, and presumably the press generally here, are as desirous to antogonize sham and adulteration as the grape growers themselves. The two first named papers make it a point to place before their readers whatever instructs on the subject of our industry, and there is, different from the generality of daily papers of large cities, reading matter in many a column that interests the agriculturists, and the townsman likewise.

The idea put forward by more than one grape grower and advocated in a very clever leader of the *S. F. Call* of acting by cooperation in many populous centers, in the cause of popularizing our wines by supplying them in an unadulterated and identical shape true to grapes named, should be taken in hand. The field is an enormously large one. The moral effect of the accessibility at moderate prices of pure wines would be a great one. It would counteract both the abuse of ardent drinks and of total abstinence vagaries. It would help the adherents to temperance, and our industry would find allies in the rational temperance people. It would dispel the fog of ignorance on the subject of wine, considered generally as a means for the furtherance of intemperate habits and not as a wholesome article of diet. Let the consumer everywhere have his bottle of wine at the moderate price it can be had in California, and let the proper use of it be explained. Let the workingman find health and vigor in his bottle of claret diluted, and the absurd idea that he cannot be trusted set forth by Powderly, will soon be proven an absurd fallacy. Popularizing our good pure wines among the masses, will bring about an easy outlet for every gallon we can produce.

F. PDFF.

Washington, D. C. August 7, 1887.

PERSONAL.

E. W. E. Koeh, the Ohio vinegrower, is in the city.

A. G. Chauche, owner of the Mont Rouge Cellar and Vineyard, has been elected Vice President of the California Wine and Security Co.

Charles Heidsieck, of Reims, France, son of the founder of the celebrated champagne house which bears his name, visited this city during the week. Since his arrival here, Mr. Heidsieck has taken a flying visit to several of our more important vine-bearing districts, and expresses the opinion that this State is destined in the near future to be the chief source of supplying red wines to all parts of the world. Talking about the vintage of this year in France, round about Reims, Epernay, Avenay, Ay, Cramant, Rilly la Montagne, etc., Mr. Heidsieck says, that on the Montagne de Rilly, the vines are not bearing fruit in such abundant quantities as heretofore, but that the quality will be very good. He states that on the mountains of Reims (Montagnes de Reims) the vines are not bearing in very abundant quantitities, but that the wine will be very good; the other vineyards are, on the whole, about the same as in former years, and will no doubt yield a total of 4,000,000 to 5,000,000 gallons.

His firm exports to Great Britain, America, etc., from 250,000 to 300,000 barrels every year, and is year by year gradually increasing its sales.

Meeting of the Commission for the S. F. District.

SAN FRANCISCO, August 17th, 1887.

The Secretary of the State Viticultural Commission has issued the following circular:

By direction of the officers of the State Viticultural Commission, I am instructed to inform you that a meeting has been called by the Commissioner for the San Francisco Viticultural District, to be held at the offices of the Commission, No. 204 Montgomery St., San Francisco, on Wednesday, August 24th, 1887, at 11 o'clock, A. M.

This meeting has been called at the request of a large number of persons from Santa Clara and Alameda Counties, for the purpose of consulting with their members of Congress on the subject of the practicability of securing favorable legislation in Washington to protect genuine wines against unrestricted competition with spurious compounds. It is desired that this should be a general meeting of all persons interested in viticulture in the State, and a special invitation is hereby extended to you to be present and to participate in the proceedings of the meeting. Invitations have been extended to the entire California Congressional delegation, both Senators and Representatives. The Grape Growers' and Wine Makers' Association has accepted an invitation to be present.

Yours Respectfully,

CLARENCE J. WETMORE, Secty.

SUGAR BEETS AT FRESNO.

The culture of the sugar beet in the San Joaquin valley has until lately remained a bare suggestion. It is well known that they have been successfully grown at Isleton and Sacramento, on the moist lands of the Sacramento river, on which irrigation is unnecessary. It is doubtful that the sugar beet has ever been cultivated where irrigation is indispensable, and this fact, as well as the high summer temperature of the southern valley, has discouraged the attempt. In fact, the very idea of a root filled full of irrigation water, and then wilted by the torrid heat, is enough to excite the antipathy of the manufacturer.

The success of the sugar beet in Los Angeles, however, encouraged the hope that with a proper selection of soil and of the time of planting and irrigation, a root suitable for the sugar maker might be produced in the San Joaquin valley; and, if so, that the crop might be made to supplement that of the coast valleys so as to prolong materially the annual campaign, the shortness of which is a heavy charge on the capital invested in the somewhat costly plant of beet-sugar factories. As stated in a paper on the subject, published in the December number of the *Overland Monthly*, the campaign period in Europe usually does not much exceed three months—October, November, December—while in California, owing to the favoring climatic conditions, there is no difficulty in lengthening it to the five months from September to January, both inclusive.

Preliminary experiments to test the feasibility of growing good sugar beets under the condition of the Fresno climate have, during the present season, been made by Mr. M. Denicke of Fresno. Mr. D. obtained last autumn from Mr. Dyer of Alvarado, some reliable sugar beet seed, and sowed it at intervals from December to April. The results of the examination of three lots, planted and harvested as stated below, were as follows:

Lot No. 1.—Seed sown in December, harvested May 27th. The lot consisted of four roots, two of which (A) showed just an indication of new growth starting in the center, while in the two others (B) a short seed-stalk was already formed, so that they had evidently passed the proper stage for sugar making.

Lot No. 2.—Two beets from seed planted early in April by Mr. L. J. McCleary, on sandy, ashy soil on King's river, six miles east from Selma. Harvested June 26th. Little or no indication of new growth starting.

Lot No. 3.—Two roots. Seed sown about March 15th, on "white-ash" soil. Harvested June 29th. Somewhat fresh looking in the center but no serious show of new growth.

Lot No. 4.—Date of sowing not stated. Roots in good apparent condition. Harvested August 4th. The assays resulted as follows:

ASSAYS OF FRESNO SUGAR BEETS.

	Purity. Coefficient.	Cane Sugar. Per Cent.	Average Weight Ounces.	Harvested.	Sown.
Lot No. 1 A	82.6	10.1	21	May 27	Dec.
Lot No. 1 B	70.0	7.0	24	May 27	Dec.
Lot No. 2	80.7	10.5	18	June 26	Apr. 10
Lot No. 3	82.0	12.6	22	June 29	Mar. 17
Lot No. 4	76.3	13.2	25	Aug. 4	?

With regard to the data in this table, it should be stated for the benefit of the general reader, that roots having an average of 10 per cent. of cane sugar and a purity coefficient of 80 (that is, 80 per cent. of cane sugar in the total solid contents of the juice) would be considered a fair workable material by the sugar maker. But a higher sugar per cent. in the juice may offset a lower degree of purity, and *vice versa*.

It will be noted that the average of the three first lots (leaving out of consideration lot 1, B) is 11.1 per cent. of sugar with a purity coefficient of 81.4; they are therefore amply within the limits stipulated by the sugar maker. As for lot 1, B, the fact that the roots had begun to throw out seedstalks shows at once that they had passed beyond the limits within which the crop should have been harvested. I conjecture that this growth had been started by untimely irrigation. As for lot 4, although it shows a somewhat higher sugar percentage than No. 3, its lower purity coefficient would nevertheless render it less desirable as it stands; but the appearance of the roots suggests in this case, also, that the proper time for harvesting had passed by.

Considering that the persons growing these beets were without experience in the premises; that, in fact, irrigation has probably never been before applied to the production of sugar beets; and that the right time and the proper amount must in this case be considered as at least equally as important as in the case of wine grapes, the results thus obtained are exceedingly encouraging. They imply that in Middle California the working campaign for sugar beets can very probably be extended through the months of June, July and August, making it reach from June 1st to February 1st; and considering that the beets of the first lot had already passed their best condition by a week or two, and that with somewhat improved arrangements for the preservation of the late-grown beets they can probably be carried to the middle of February, we can foreshadow the possibility of such an extraordinary feat as an *eight months'* campaign of a beet-sugar factory, running on fresh beets. With the additional possibility of utilizing beets sliced and dried under the same conditions as the raisin crop, the full twelve-month may ultimately be called into requisition.

It must, however, be remembered that in order to realize such results, it must be feasible to bring the beets of the San Joaquin valley and those of the coast valleys within reach of one and the same factory plant. The roots will not bear railroad transportation to any distance; but with cheap water transportation it might be feasible to let the crops of Fresno and Merced start up the factories located in the upper bay region, in June, and to keep them running until the middle of February by supplies from the coast region.

It is to be hoped that more extended and carefully guarded experiments will be made the coming season, even if the omission of Congress to render the Experiment Station bill effective by means of an appropriation should not be made good in time.

E. W. HILGARD,

Berkeley, August 12, 1887.

The Napa County Committee, organized for exhibiting the products of Napa county, at the Mechanics' Fair at San Francisco is holding weekly meetings, during this month. The Chairman, Mr. Crabb, has appointed the necessary sub-committees to perfect the important work for this county.

Proposed Pure Wine Bill.

The following is the proposed draft of the Pure Wine Bill to be introduced at the next Session of Congress:

Pure wine is to be exempt from license. Imitations shall pay license.

Violators of both shall be subject to punishment.

Pure wine shall be defined as either pure fermented grape juice or the same with such addition of sugar, water or spirits, or all of them; which addition shall not exceed the quantity of must by 100 per cent. Thus, in Kelly's island, 13 to 14 pounds of grapes shall never produce more than two gallons of wine.

Condensed must or dried grapes, commonly called raisins, used alone or both, or either, added to fresh grape must, may be used, but their use shall be subject to the same proportion regarding the increase of wine produced by the addition of sugar, water or alcohol. Either one or two of all these constituents may be used.

Condensed must shall be computed according to the original quantity of grapes from which it was obtained, and raisins in like manner.

Imitations of wines shall be defined as such other vinous fluids, which in proportion to the quantity of grapes used, indicate a lesser proportion of pure grape juice than previously designated; also any and all pure grape wines fermented with other fruit juices.

Any addition to pure grape wine as defined before, or of chemical, or vegetable, or any other substances whatever for coloring, strengthening, flavoring or increasing the quantity shall stamp such a product as an imitation.

Wines may be made of other fruits, such as cherries, currants, apples, pears, peaches and berries, and no license shall be necessary to growing or manufacturing; but such substances must be designated by their true names, and shall be subject to the same regulations as to additions of sugar, water and spirits.

Any manufacturer who sells or imitates grape wine, or any of the fermentable fruit juices or vegetable juices, shall be punished under this act; and any wholesale dealer who changes pure grape wine so as to make them imitations shall be amenable to punishment.

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THE SAN FRANCISCO MERCHANT.

THE ONLY VITICULTURAL PAPER IN THE STATE.

Devoted to Viticulture, Olive Culture, and other Productions, Manufactures and Commerce of the Pacific Coast.

VOL. XVIII, NO. 10. SAN FRANCISCO, SEPTEMBER 2, 1887. PRICE 15 CENTS

The Fungus Diseases of the Grape Vine.

Two special works of a scientific character on the fungi of the vine were published several years ago. In the first, 104 species, or so-called species, are described, while the second enumerates 224. Although many of the fungi described in these works are such as are common to all kinds of decaying vegetable matter, and many others are doubtless only secondary forms of which the perfect state is unknown, there yet remains a goodly number that are directly or indirectly injurious to the vines which they infest. Of these, very few are known excepting to the mycologist. It is only those that have made themselves felt through their widespread and devastating effects that have received popular recognition. There are but four that can claim such prominence in this country. They are the Downy Mildew (*Peronospora viticola*, De By.); the Powdery Mildew (*Uncinula spiralis*, B. & C.); the Black-rot (*Physalospora Bidwellii*, Sac.) and Anthracnose (*Sphaceloma ampelinum*, De By.). These, together with one or two others of less importance, will be here treated.

THE DOWNY MILDEW.

(*Peronospora viticola*, De By.)

The Downy Mildew is common to both the wild and cultivated grapes of this country, and from the former it doubtless was conveyed to the east of the Mississippi, particularly in the Central and Middle Atlantic States, it has long been known as a serious pest. It is now reported to be in California, where the loss it occasions in some localities is variously estimated at from 10 to 50 per cent. In New England and along the northern tier of states, although of frequent occurrence, its action is comparatively insignificant.

In one respect Downy Mildew may be deemed a more serious enemy to viticulture than either of those to be described, as by its action on the leaves it affects the nutrition of the vine, weakening its vitality and eventually destroying it. This action upon the leaves interferes with the development of woody tissue in the growing shoots and prevents the ripening of the fruit, and the wine produced will be inferior both in quantity and quality.

There is no fungus disease of cultivated plants that has received more general attention by the horticulturist, nor one that has been more carefully studied by scientific observers, that the mildew under consideration, so that there are few points in its natural history not now thoroughly understood.

It was first collected in 1834 by Schweinitz, who erroneously referred it to *Botrytis canna* of Link. In 1848 it was named *Botrytis viticola* by Berkeley and Curtis, and was distributed, without description, by Ravenel in the fifth volume of his *Fungi Caroliniani*. It was not until 1863 that the fungus was referred to its proper genus and a full description given of it by De Barry in the *Annales des Sciences Naturelles* (serie 4, tome XX, p. 125). In 1876, in the *Bulletin of the Bussey Institution*, appeared Professor Farlow's very excellent paper on *The American Grape Vine Mildew*. In the same journal (p. 427) and in the *Botanical Gazette* (vol. VIII, p. 309) Professor Farlow has published full botanical descriptions of the fungus. The most famous memoir, however, on this subject is that of M. Maxime Cornu, *Le Peronospora des Vignes*, published in Paris in 1882.

A great deal has been published in our agricultural and horticultural journals about the Downy Mildew, or *Peronospora*, of the vine, and much information, often of sound, practical value, has been disseminated in this way among the people respecting this pest; but for all that has been written it does not appear that any certainly efficacious remedy for the disease has been discovered in this country.

EXTERNAL CHARACTERS.

The Downy Mildew is a true parasite, closely allied to the fungus of the potato rot, and, through its action on the vine, produces changes that are quite characteristic. It attacks all the green portions—the leaves, young shoots, and berries—and in seasons favorable to its development causes not only a loss of the present crop, but often so diminishes the vigor of the vine as to seriously affect its future productiveness.

The vegetative portion of the fungus, the mycelium, traverses the tissues of the affected plant, going between the living cells and from them deriving its nourishment by the aid of little suckers. Threads from this mycelium, passing into the air without, through the stomata, branch and fructify and form the more or less conspicuous white patches that are familiarly referred to as the "Mildew," or the "Downy Mildew."

In the latitude of Washington this mildew appears about the middle of June, if sufficient heat and moisture prevail, and continues, with varying intensity, until the season of frosts. Pale green or yellowish spots of irregular size and outline appear upon the upper side of the leaves as the first manifestation of the disease. Corresponding points on the lower surface soon exhibit the outside development—the spore bearing filaments of the fungus—in the form of white patches that are very conspicuous on the smooth-leaved varieties of grapes. As the disease progresses, the yellowish spots of the upper surface assume a brownish hue, which gradually becomes more intense, finally having all the characters of completely dried and dead tissue. These spots may be quite small; late in the season the older leaves attacked are often covered all over with minute brown spots, which are usually sharply defined, being limited by the nerves in the leaf; again they may be so large as to nearly cover the whole surface, in which case the destruction of the leaf is quickly accomplished. Under the final action of the fungus the leaf becomes thoroughly dried amd shriveled as if burned, and the tissues are particularly brittle. It very rarely occurs that the mildew itself appears upon the upper surface of the leaf. In severe cases the growth of the fungus extends to the young shoots, and, although the conidia-bearing filaments do not appear excepting upon the youngest and most tender of these, the action of the mycelium checks their further development, and finally the tissues are killed. The effect upon the shoots is often to produce dark-colored, slightly depressed markings as a consequence of the sinking away of the tissues beneath. These markings are quite distinct from the deep and lacerated lesions of Anthracnose.

It has been stated that the mildew only attacks the berries when they are quite young, and, so far as observed by the writer, this is true. The affected berries rarely attain more than one-fourth their full size, often remaining no larger than small peas; they soon turn brown or, when the fungus fruits upon them, gray in color. There is thus produced a kind of "rot" which is popularly named "brown-rot" or "gray-rot." From statements made by Professor William Trelease* it appears that the mildew affects berries in advanced stages of their growth. In the fall of 1884, Professor Trelease spent several days at Ithaca, Wis., in the examination of rotting grapes. He states that the greater number of the diseased berries in that vicinity were simply drying up and falling, with no external sign of insect attacks. These berries when cut open showed quite uniformily a discolored appearance before any trace of injury could be seen at the surface. As a rule, while most of the pulp remained unaffected, a zone of browned tissue could be seen running almost or quite around the fruit between the seeds and the skin. In sections of this diseased tissue he discovered mycelium, which was evidently that of some *Peronospora*, possessing the small, round haustoria, or suckers, of the mycelium which is found in grape leaves attacked by *Peronospora viticola*, De By. Sections of grapes containing this mycelium were placed in damp air, and in the course of a few days several of them produced a small quantity of the fruit characteristic of this *Peronospora*. It appears, therefore, that the most destructive form of the grape-rot in Wisconsin is a direct result of the growth, in the berries, of the fungus which causes the common leaf disease of the vine.

The berries of some of the varieties of grapes cultivated on the grounds of this department have been during the present season (1886) badly infested by the *Peronospora*. The peduncle is swollen and distorted because of the mycelial growth within, and the fructiferous filaments whiten, here and there, the berries as well as the stalks supporting them. To the left are shown three healthy berries taken from the same vine at the same time, and by the comparison of these with those diseased by the *Peronospora* the severe effects of this fungus are very forcibly illustrated. The diseased berries in this case were brown and had a rotten appearance, although they were of nearly their original firmness and not at all shriveled.

BOTANICAL CHARACTERS OF THE DOWNY MILDEW.

The fungus named by De Bary, *Peronospora viticola*, has been shown by repeated inoculations to be the direct cause of the "Mildew," the external characters of which have been described above. This fungus consists of a mycelium or vegetative portion which grows within the more tender and living tissues of the vine, producing the changes constituting the so called disease.

Upon this mycelium at different periods and in very unlike ways two sorts of reproductive bodies or spores are formed, one kind produced externally on short filaments and named conidia, the other developed by a special sexual process on the mycelium within the tissue of the host plant and termed oöspores. The first are produced in great numbers throughout the summer and serve for the immediate propagation of the fungus, effecting its rapid distribution; the second are formed later and do not germinate until the following season. The former are often called "summer spores" in distinction from the latter, which have been named the "winter spores."

The mycelium—The vegetative portion, or mycelium of the fungus, grows between the cells composing the tissues of the leaves, young grapes and shoots, never through them, and the threads, or hyphæ, of which the mycelium is made up, branch most irregularly and vary greatly in diameter. In the more condensed tissues these threads are very fine, while in that which is less compact, and particularly in tissues having intercellular spaces of considerable size, the threads are coarser and are often curiously branched. These threads have no cross partitions, or septa, but are continuous throughout their whole length and are filled with a colorless, granular and somewhat oily substance. At frequent intervals on these threads, as they push their way between the cells, minute lateral projections are formed that penetrate the adjacent cell-walls of the host from which they absorb the nourishment for the support of the fungus, whence they have received the name of suckers, or haustoria. These haustoria are nearly spherical, strongly contracted at the point of attachment with the hyphæ, their greatest diameter being rsrely more than half that of the latter. The contents of the perforated cells quickly turns brown, ultimately affecting the outward changes already described.*

Just beneath the stomata, or breathing pores of the leaf, the hyphæ are particularly abundant and intricately entangled. A number of branches from these masses of threads pass outward through the openings of the stomata, developing into the conidiophores or bearers of the conidia already referred to.

Conidiophores and conidia—The slender filaments of the fungus that issue through the natural openings, the breathing pores in the leaves, support upon their branched extremities numerous spores called conidia, and are hence named conidiophores or conidia bearers. Four to five or even as many as eight or nine of these conidiophores issue from each breathing pore, and it is because of their great abundance that the fungus becomes visible to the naked eye; the downy white patches of mold, so conspicuous on the under surface of the affected leaves, being wholly this growth. The length of these filaments averages about 1-50 of an inch; their diameter is nearly uniform throughout, and their manner of branching, which is quite characteristic. The ultimate points of the branches to which the conidia are attached are termed sterigmata. A few hours of a single night is all the time required for the development of the conidiophores and conidia, but the mycelium may exist within the tissues of the leaves or other affected parts a long time before this outward development takes place. The conidiophores only appear under certain favorable atmospheric conditions, and, as these conditions may only occur at intervals of considerable length, we are in the habit of assuming that a new infection takes place each time. That vines previously free from the mildew may become affected at any time during the summer, there is no doubt, but the appearance of the mildew on the leaves may come from mycelium that arose from a much earlier infection.

The conidia are the reproductive bodies that are borne in great profusion on the ultimate branches of the conidiophores. It has been estimated that from two to ten millions of these bodies may be produced on a single invaded vine, and as each conidium is capable of producing, should it fall upon good ground, five or more new individuals, the reproductive power of the fungus passes our comprehension.

In shape the conidia are generally ovoid, the smaller end being at the point of attachment, their longest diameter being from 6-10,000 to 9-10,000 of an inch. They are very thin-walled, and are filled with a colorless, nearly transparent, granular fluid. Their formation takes place with great rapidity, and when mature they are most easily detached from their supports. In respect to the germination of these bodies I quote the following from Dr. Farlow's paper on *The American Grape Vine Mildew.*

The germination of the conidia was studied by us in the beginning of October, when the fungus was in its prime. Leaves affected with the fungus were gathered in the afternoon; and allowed to remain under a moistened bell glass during the night. In the morning, parts of the leaves where fresh conidia had grown during the night were cut out, and the conidia shaken into watch-glasses, or into glass slides containing a few drops of water. In order to test the conditions of germination, some of the bell glasses were placed in a light room, and others kept in the dark, and sowings were made at different hours of the day. The result was uniformly the same, whether the conidia were in the dark or light. Experiments in direct sunlight were, however, unsuccessful, as the sun's rays heated the water to such an extent as to cause rapid evaporation of the necessarily small amount of water used. With relation to the time of day at which the sowing was made, germination took place in all cases; but the conidia sown in the morning generally germinated somewhat more quickly and more abundantly than those sown in the afternoon. This might have been partly owing to the fact that the conidia sown in the morning were in better condition, the result of a growth of fourteen or fifteen hours, while those sown in the afternoon were the conidia produced during only four or five hours of the afternoon. It was not possible to keep the conidia which was produced in the night, until the afternoon, as they generally fell from their attachments in the morning, and began to germinate. In all cases, the germination took place with a surprising regularity.

At the end of an hour the conidia were slightly swollen, and their contents had begun to segment, * * * each segment having a light-colored nucleus. At the expiration of an hour and a quarter the segments had resolved themselves into a number of oval bodies, which collected at the distal end of the conidia, and which before long succeeded in rupturing the cell-wall and making their escape from the mother-cell. They passed out rather slowly, usually one at a time, and paused for a moment in front of the opening, where they remained as if not yet quite free from one another. In a short time each segment began to extricate itself from the common mass, moved more and more actively, and finally darted off with great rapidity a full-fledged zoöspore, furnished with two cilia. The number of zoöspores produced in a conidium is very variable. The most frequent number is five or six. Sometimes there are not more than three, and we counted in one case seventeen. * * *

The zoöspores move about for from fifteen to twenty minutes, the motion growing gradually slower. At the end of that time they come to rest, the cilia drop off, they assume a spherical shape, and in about a quarter of an hour an outgrowth appears on one side, which develops rapidly into the mycelium of a new plant.

The manner of germination thus described by Dr. Farlow, *i. e.*, by zoöspores, is that which usually takes place. Under exceptional circumstances other forms of germination have been noted.

The germination of zoöspores is the most common, and perhaps we might say the normal habit of the *Peronospora* of the vine; and experience in cultures leads us to believe that no form of germination will take place except in the presence of water. A damp atmosphere is insufficient; there must be the actual presence of water, in the form of drops of rain or dew, to effect the formation of the zoöspores. The rapidity with which one of the conidia will germinate has been noted. If a mature conidium falls upon a drop of water on a grape leaf, within an hour or two the zoöspores will have already escaped and commenced the formation of their germinal threads. These threads doubtless pierce the epidermis, and the mycelium which is now developed insinuates itself between the tissues within. Temperature exercises a considerable influence over the germination of the conidia, that which is most favorable being between 25° and 35° C. At lower temperatures germination takes place more slowly; but the temperature may be reduced to zero without destroying the vitality of the conidia. Exactly how long these bodies will retain their vitality in a moist atmosphere has never been determined, but it is known that dry air, particularly a dry wind, is destructive to them. Experiments have shown that in a dry atmosphere the conidia contract in a very short time, and shrivel up or burst and lose their contents.

In order to study the propagation of the mildew, Dr. Farlow placed leaves from different varieties of grapes under moistened bell glasses and sowed conidia upon them in different positions. He found that the quickest method of infection was secured by laying a healthy leaf upon one affected with the fungus. In some instances the mildew appeared on the healthy leaves at the end of the second day. It made no difference whether the upper or lower surface of the healthy leaf was brought in contact with the infected one, so far as the contagion was concerned. Infection has also been accomplished by sowing the germinating zoöspores on healthy leaves, in from five to seven days, according to the variety experimented on.

The oospores—During the summer or season of growth the *Peronospora* expends its energies in the production of the conidia, and these, in consequence, have been familiarly named summer spores. There is no probability that they retain their vitality through the winter, their office being the immediate dissemination and propagation of the fungus. To tide over the season of winter another spore-form is produced, which is furnished with thickened walls and is still further protected by being embedded within the tissues of the host plant. These are the result of a special sexual process, and are termed oöspores or egg-spores. Spores of this class have also been called winter spores. As stated, these winter spores are formed within the tissues of the infested plant. They have been observed within the leaves, and this season I have seen them in berries strongly invaded by mildew. The formation begins as a slight swelling at the ends of the branches of the mycelium. This swelling finally attains a diameter of about 1-8,470 of an inch, assumes a spherical shape, and the cell-wall covering it becomes thickened and pale yellow in color. At one side, arising from the branch that bears the oögonium or sack in which the oöspore is developed, another and smaller body is formed, which is termed the antheridium, and the former is only perfected when the contents of the latter is emptied into it. The antheridium, without detaching itself from its support, comes into close contact with the oögonium at an early period, and, later on, by a special mechanism, the granular protoplasmic contents of the former is conveyed to the latter, by which means the oöspore is fertilized.

The germination of the winter spore has never been satisfactorily determined; but, however it may take place, it probably does not occur until the spring or early summer following its formation. There can be no doubt that it is through the germination of these bodies that the annual recurrence of the mildew is effected, for there is no other known way by which the fungus can be carried over from one season to another; hence the manifest importance of employing every means for destruction of these winter spores. They are naturally protected from all exigencies of climate, and they have been known to pass through the stomachs of domestic animals without apparent injury.

CONDITIONS WHICH FAVOR THE DEVELOPMENT OF THE DOWNY MILDEW.

The two conditions necessary for the development of the mildew are heat and moisture. Frequent showers of heavy dew or fogs, followed by hot sultry days, is the kind of weather which favors the development of this as well as most other injurious fungi. A vine so sheltered as to prevent the deposition of rain or dew upon its foliage in the form of drops will escape the mildew, although surrounded by vines invaded with the disease. Practical advantage has been taken of this fact, and the mildew avoided, by placing a board or other covering over the trellises, in the manner described by Mr. William Saunders, horticulturist of the department, in the United States Agricultural Report for 1861.

REMEDIES.

Our object in studying the nature and habits—the life history—of the injurious fungi is to discover some means by which we may destroy them, or at least check their development so as to reduce the amount of damage they would otherwise inflict upon our cultivated crops. If we find ourselves unable to combat a fungus in its actively injurious stage, we may, by care-

*The mycelium is difficult to see, especially with the suckers adhering. It is most readily made out, perhaps, in fresh sections of the affected berries. To observe it in the leaves, fragments are detached from the mildewed parts and placed for an instant in strong acetic acid; they are then transferred to a concentrated solution of potassa, which is gradually warmed until it just reaches the boiling point. The fragments are now washed in alcohol, carefully dissected, and examined in glycerine.

ful investigations, discover some period in its development when its destruction may be effected with comparative ease. We know that the vegetative portion—the mycelium—of the Downy Mildew lies buried within the tissues of the host, and, although we may prevent the formation of the conidia or even destroy the conidiophores, any application that will destroy the mycelial growth within the affected parts would destroy these parts as well. In the case of this fungus preventive measures, rather than curative, must be sought. The great desideratum is a substance which, applied to the vines and foliage in season, will prevent the germination of the conidia or summer spores that may fall upon them. Hopes are entertained that such a substance has been found in a compound of sulphate of copper (bluestone) and lime. The following account of the preparation and application of this mixture is extracted from a paper by M. Foëx on "Practical Treatments for the prevention of Mildew," published in *La Vigne Americaine et la Viticulture en Europe*, June, 1886:

THE COPPER MIXTURE OF GIRONDE.

(*a*) *Description of the process.*—A process which was discovered recently in Gironde gave in 1885 the most satisfactory results. It consists in spraying the vines, during their growth, with a mixture of sulphate of copper and lime. This is prepared in the following manner: On the one hand, 6 to 8 kilograms (1 kilogram=2.2 pounds.) of sulphate of copper are dissolved in 100 liters (1 liter=1.76 pints) of cold water; on the other hand, 15 kilograms of quicklime are slacked in 30 liters of water. When the sulphate of copper is completely dissolved, and the lime has formed a homogeneous mixture, the latter is poured into the copper solution, the mixture being stirred meanwhile. We thus obtain, if the sulphate of copper is pure, a clear blue precipitate, which settles to the bottom of the vessel in which the operation is carried on. This substance should be stirred up at the time of using, in order to put it in suspension in the water.

(*b*) *Action of the remedy.*—The action of the remedy, which we have just described, is due to the copper which it contains. The presence of this metal, even in a very minute quantity, in drops of dew or rain on the upper surface of the leaves, prevents the germination of the spores of the conidia which may have been brought there by the wind. Thus forestalled, the disease cannot establish itself upon the leaves.

(*c*) *Mode of application of the remedy.*—The copper mixture should be distributed by sprinkling in little drops on the upper surface of the leaves. Two or three spots thus produced suffice to completely preserve a leaf, and they become sufficiently adherent and coherent, as soon as they have dried, to remain until the leaves fall.

The sprinklings were made in Gironde, in 1885, with a simple broom of heath, which was plunged into a bucket or watering pot containing the mixture. This plan of operating gives satisfaction, so far as the distribution of the substance is concerned, but it has the inconvenience of being somewhat slow, and it requires much hand labor; therefore apparatuses have been devised which permit more rapid operation at a less expense of muscle. The one which gave the best results at the trial held in Montpellier, in February, 1886, was that of Mr. Delord, 9 rue St. Gilles, Nimes.

(*d*) *Time when the treatment should be made.*—The salts of copper having the effect, as we have seen, of preventing the disease from becoming established, their use should be preventive. The vines should, therefore, be treated before May 15, at which date the *Peronospora* has sometimes made its appearance in certain places in the department of Hérault. In operating at so early a date only a small portion of the leaves can be reached, the greater number developing between this period and the 1st of June; in practice, therefore, it is better probably to sacrifice, if need be, some of the first leaves, and make the treatment only when the vegetation has reached a sufficient development, say, in Hérault, from the 1st to the 15th of June.

In Italy the use of lime alone in combating the Downy Mildew appears, from the following notice, published in the *Bollettino di Notizie Agrarie*, September, 1885, to be valuable:

In a communication received from the school of viticulture and œnology of Conegliano, are stated the results obtained during the past year, by the various methods proposed to combat the *Peronospora*, many agriculturists in that locality having applied these remedies from the end of May to the beginning of June. Such applications were repeated by the most diligent among them at intervals of about twenty days, and principally after rain.

The months of June and most of July passed without there being noticed any trace of the malady, the drought and heat which then prevailed being conditions unfavorable to the development of the malady.

With the rains at the beginning of August, appeared the first signs of the *Peronospora*, at first in the provinces nearest to the sea, and thence to the hilly regions of the interior. One of the regions the most affected is that situated to the south of Conegliano, which is formed principally of the gravels and sands of the ancient alluviums of the river Paive, and it was just here that were noticed the great differences between the various methods of treatment adopted.

The vines treated with the "milk of lime" remain green and enjoy perfect immunity from the *Peronospora*, even when they are in close proximity with those badly damaged, or when the branches are in close contact, which happens commonly enough, owing to the local custom, which consists in training or pulling the branches in the same direction.

We append below the conclusion of the report transmitted by the director of the school of Conegliano, resulting from a visit made by himself and his assistants to the farm of the brothers Belluasi:

1st. On the branches which were treated once only during the present year, the preservation of the leaves is already decidedly noticeable in comparison with the vines not treated. Upon the vines on which the fungus had already spread, the part affected is found in a state of atrophy, the spores dead, while the rest of the vine is perfectly well preserved by the action of the lime.

2d. In the vines upon which the treatment was applied early in May, the preservation of the leaves may be said to be perfect. They have attained a greater development than those suffering from the *Peronospora*, and their excellent state of nutrition is otherwise attested by the reddening stems of the fruit. While the latter is not very abundant it is sufficiently well nourished, and the wood is well developed.

3d. On the vines which, besides being treated at different times during the year, received an application of the 'milk of lime' before the end of the previous autumn, the leaves are found to be in perfect condition, the fruit more abundant, and the wood better developed than in the preceding case, which is due to the fact that the application of the remedy during the preceding autumn permitted the better nutrition of the various parts which prepared the fruit and the wood for the coming season."

Finally, it results that, whenever the leaves are completely covered with the lime, either from above or below, they are perfectly well preserved, and the nutritive process in the plant is permitted to go on regularly.

The use of sulphate of iron as a remedy against the mildew has proved of value in the hands of some, and, if it should prove generally effective, it has the advantage of being much less expensive than the sulphate of copper. Dr. John Strentzel, of Martinez, Cal., in a letter addressed to the Commissioner of Agriculture, under the date of June 28, 1886, says:

I have been using for years solutions of sulphates of copper and iron to destroy parasitic fungi on vines and pear trees, also to kill red spiders on almonds. I have found the sulphate of iron more acrid, minute crystals corroding the vegetable fiber or blackening and scorching the parasitic growth; no such visible effect was produced by the application of the copper salt.

The poisonous effects of copper salts are known, and any particles adhering to the fruits are dangerous to health, and in distributing it over the foliage, particles would lodge on the green berries. I hold that the remedies against the *Peronospora* and allied mildews on the vine should be used to destroy the germs of the fungi, and ought to be applied when the vine is in a dormant state, the whole plant being liberally washed.

The mixture I use consists of two pounds of sulphate of iron to one gallon of water, dissolved, and add three pounds of lime and one pound of sulphur, the lime being slacked in hot salt brine to a consistency of thick whitewash. The chemical affinity of the ingredients favors the formation of chloride of iron which is an effective fungicide. All the old cuttings and leaves should be carefully collected and buried.

If, in addition to the employment of these remedies, a thorough system of what may be termed disinfection be followed, the probabilities are that the mildew would do little damage, even in seasons most favorable to its development. The disinfection should be such as would destroy all the fungus germs that may be lying dormant within or upon the tissues of the vines that have been affected. To accomplish this, all the fallen leaves and berries, and the trimmings from the vines, should be raked together, removed from the vineyard, and burned; then, just before the buds begin to swell in early spring, the naked vines should be thoroughly washed in a strong (50 per cent.) solution of sulphate of iron. This washing may be done by dipping into the solution, which may be carried through the vineyard in any convenient vessel, a large wagon sponge attached to the end of a mop-handle, and applying this directly to the vines. This application should be made in damp weather, so as to avoid a too rapid evaporation of the solution, which might result in injury to the plants treated. Such a bath as this is deemed an effective remedy against Anthracnose, and its action is considered as being in every way beneficial by those who have applied it. Mr. Jacob Schram, of St. Helena, Cal., to whom I am indebted for a part of the statements here made, relative to the use of sulphate of iron, claims that the quantity of solution which necessarily falls upon the ground in making the application, as described above, has value as a fertilizer.

One method of avoiding the mildew, not yet alluded to, is that of selecting those varieties for cultivation which possess, from some unexplained reason, a power of resisting the attacks of the fungus. It is well known to grape growers that some varieties are more susceptible to the attacks of fungus diseases than others; yet the evidence on this subject afforded by the replies to the circular of inquiries is conflicting, and it is very doubtful if, in seasons favorable to the development of the mildew, there are any varieties wholly exempt from the ravages of the disease.

I have compared the tables of Mr. Munson and of Bush, Meisner & Son, naming the varieties free from or liable to the attacks of mildew and other fungi, and I find such a disagreement between these and between the reports from vineyardists received at this department, that I am led to consider the publication of any list of this character more likely to do harm than good, as being misleading.

CALIFORNIA BRANDIES AHEAD.

The impossibility of the distillers of wines in France to supply Cognac, Armagnac and other brandies for the demand only of consumption in France, has been reported in more than one Consular message. Statistics of the French Regie are exact and demonstrate the same fact. We cannot but feel for the producers of the precious liquid and it is to be regretted that after another decade an old genuine Cognac may be a merchandise hardly obtainable.

The comparative table following here will give a true insight in the state of affairs of distillation in France.

Gallons distilled in....	1872	1885
from wine.....	18,100,000	864,000
" grain.....	2,200,000	14,498,000
" pomace and fruits	1,250,000	1,400,000
" beetroot.....	7,950,000	12,800,000
" molasses.	15,900,000	20,220,000
" diff'r'nt materials	1,443 000	430,000
" imported.....	1,347,267	6,547,570
st ok and consumption of producer.....	14,600,000	8,668,000
consumption	33,285,000	46,770,000
exp rted.....	14,098, 79	7,177,500
stock.....	13,931,600	8,579,000
average price per hectolitre	$10.714	$0.923

One great lesson should be taught from the sad experience of the producers in Charente. It is the great value that brandy from high class grapes, truly fit for the production of hygienically and commercially valuable brandy will have after maturing it. A broad line should be drawn between the poor product from Mission grape wine and that from the folle blanche, West's Prolific, the Burger and other grapes that yield wholesome brandy of quality. In a few years it will be acknowledged what a debt of gratitude is due Chas. A. Wetmore for his insistance that the best varieties should be adopted also for brandy. The writer has had ample opportunity of observing of what importance it is for the dangerously sick to obtain an old and truly medicinal pure brandy. California growers who take pride in producing something better than what is good enough for those "who do not know the difference," will reap compensation for their efforts and have the satisfaction of acting for the best of mankind.

F. Pdff.

THE importation of wines into Brazil in 1886 amounted to the equivalent of 4¼ millions of gallons, of which about 70% hailed from Portugal.

The Attention of Wine-Growers, and all others interested, is called to the most powerful

INDUSTRIAL EXHIBITION AWARDED TO PARE BROS. "LE MERVEILLEUX" WINE-PRESS 1886

WINE AND CIDER PRESS

"Le Merveilleux,"

(THE WONDER.)

—THE CHEAPEST IN THE MARKET.—

WE CHALLENGE THE WORLD TO SHOW ITS EQUAL.

The latest invention in Europe. First introduced in the United States last year where it has given entire satisfaction as the testimonials will show.

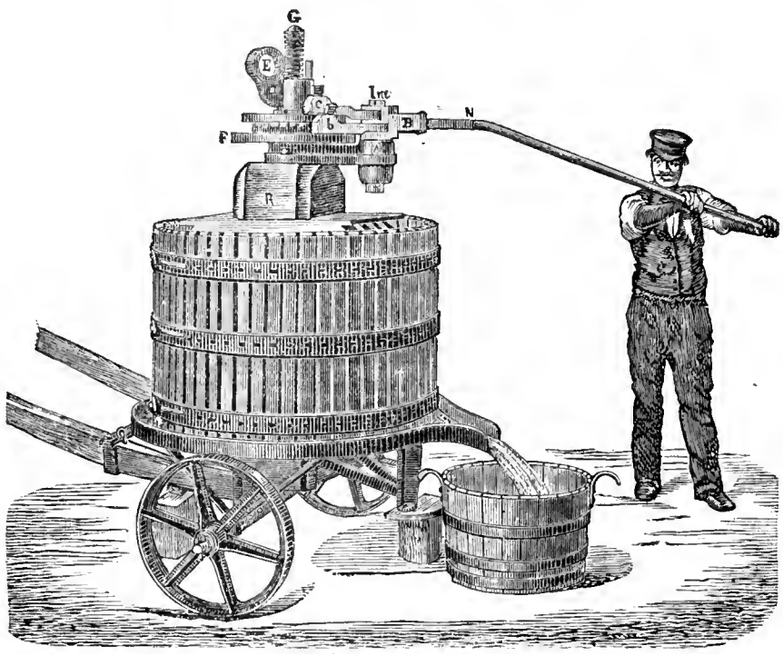
MECHANICS' INSTITUTE SAN FRANCISCO

Patented in the United States, France, Belgium, Spain, Germany, England, Italy, Portugal, Austria-Hungary, Luxemburg, Norway, Sweden and Denmark.

Price List at San Francisco.

Exclusively for 1887.

No.	Diameter of Screw. Inches.	Height of Basket. Inches.	Diameter of Basket. Inches.	Capacity of Basket of Fresh Grapes after Crushing. Tons.	PRESS, Complete. With 2 Wheels $	c.
1	$2\frac{7}{16}$	24	32	$1\frac{3}{4}$	120	00
2	$2\frac{3}{4}$	26	40	$2\frac{1}{4}$	160	00
3	$3\frac{3}{16}$	28	48	$3\frac{1}{2}$	220	00
4	$3\frac{9}{16}$	32	55	5	290	00
5	$3\frac{15}{16}$	$35\frac{1}{2}$	63	8	350	00
6	$4\frac{3}{8}$	$35\frac{1}{2}$	71	$10\frac{1}{2}$	400	00
7	$4\frac{3}{4}$	36	78	$14\frac{1}{4}$	450	00



The above cut shows the Machine complete.

Having secured the entire right for the United States, we take pleasure in introducing this Wine Press to the American public, believing it superior to any other press now in use.

It will be to the advantage of Wine Manufacturers to study carefully the following merits, which we claim it possesses:

First. By an ingenious mechanical application, the "power of resistance" can be reduced to a minimum, and with a single effort, three or four times more power can be obtained than with any other press known at this day.

Second. It does the work more rapidly, and with less labor.

Third. It is cheaper than any other first-class wine press in the market.

Fourth. It has no complicated devices, is so extremely simple in construction and easily operated, that a child of ten years can work it.

Fifth. It is made of the best materials, and by its simplicity not liable to get out of order.

Sixth. All parts are interchangeable, consequently, any part lost or injured can be replaced at little expense.

Seventh. It will extract the largest percentage of liquid.

Eighth. It is built on the ratchet principle, double acting, the lever working both ways, and can be worked in 6 feet space. It has no lost motion.

Ninth. It does not take any more labor to work the largest size than the smallest one.

Tenth. It presses any kind of fruit as well as grapes.

This press is not an experiment, having been used several seasons in the wine districts of Europe, and also in the United States last season.

It has received the highest award wherever exhibited in competition with other presses.

The main features of the press are the ease and rapidity with which it may be worked, and the great power which it applies; as the press stands on wheels, it can be readily moved from place to place.

In order to introduce our press last year, we placed it at a low figure; with the improvements that we have made this year, we are compelled to raise our prices, but they are yet the lowest on the market, while the press is far superior.

Our press is adapted for large vineyards as well as small ones, as we make different sizes. No. 7, shown in the above cut—the basket will hold 14 tons of grapes after crushing, and 4 fillings per day, its capacity being 56 *tons of grapes in one day.*

"LE MERVEILLEUX."

A representative of the MERCHANT has visited the shop where the Paré Bros. are building their wine presses, the "Le Merveilleux," which is claimed to be the best and cheapest wine press made. The platform or bed rests on a two wheeled cart, which enables the operator to move it to any part of a vineyard, or between the rows of tanks in a wine cellar. The basket is made of the best straight-grained Mendocino Pine staves, riveted to three bands of the finest quality of iron. These bands are each in halves. On one side they are connected by a hinge, and on the other are locked with pins, and, by removing these pins, the basket can be opened to any width required, and the must be removed in a very few minutes. The edges of the staves are beveled, the distance between them on one side being $\frac{1}{8}$ of an inch, and on the outside $\frac{3}{4}$ of an inch. This renders it impossible for the grapes to get jammed in between the staves.

Rapidity is one of the strong points of this machine. It takes only from twenty to forty-five minutes to make a pressure. The "screw" which stands upright in the middle of the "basket," is fastened under the "bed" by a nut which is six inches thick, screwed on and riveted to the end of the screw. The operator moves the large lever which is from five to eight feet long, and moves in a space of six feet backwards and forwards. This pushes alternately two small levers, which in turn catch in the ratchets of the combinations on their *forward* motion, and keeps the wheels or combination steadily falling down the main screw. In commencing to lower the crushers upon the grapes, and when speed is required, the lever is placed in an upper combination, which acts directly on the screw, and in a few movements of the lever it has reached the grapes. The Presses have been calculated to withstand the pressure according to their capacity, so if the smallest is incapable of breaking itself, the largest is equally so.

The main feature of the press is the ease with which it may be worked. Mr. Pare forced the lever as far as it was necessary to go in one direction, using only his little finger, upon shavings which had previously been packed so tight, that it was impossible to run a knife into them.—SAN FRANCISCO MERCHANT, Aug. 27th, 1886.

WINE PRESS EXHIBIT.

The French Wine Press exhibited at the Fair by Paré Bros., attracted great attention from visitors interested in wine-making. This press has no merely local reputation, but comes to us from over the seas endorsed by French wine producers generally, and by the leading journals of France. In the Eastern States it is rapidly supplanting all others, and no doubt in California will do the same. The reasons for this are plain. It is a great improvement over any now offered; it is portable and easily carried on a hand-truck from place to place; it is not expensive, and it does its work thoroughly and well; it requires but little attention, and it is labor-saving. It is called in France "Le Merveilleux," and certainly deserves the name. Certainly, those interested in wine production should at once acquaint themselves with the capabilities of the press, its price, and see it working. By it they will save money, as its expense is comparatively small, compared with the amount and character of work it is capable of doing. We certainly commend an examination of its merits.—*The Weekly Commercial Record*, San Francisco, Sept. 16th, 1886.

EXHIBITS AT THE PAVILION.
"Le Merveilleux" Wine Press.

Among the exhibits at the Mechanics' Fair, which naturally attract the attention of the visitors, whether from the city or country, is "Le Merveilleux" wine press. The wine interests of California are fast assuming enormous proportions, and every year sees an immense increase in the area devoted to the culture of the vine. It is only to be expected, therefore, that any invention coming from an old wine-producing country like France, should have great interest for the residents of California. "Le Merveilleux" is a French invention just being introduced here. It has been patented in all European countries and the United States. The entire right for this country is held by Messrs. Paré Brothers, of this city. The press is manufactured in seven different sizes, varying in price from $120 to $450. It is claimed for it that it is more powerful than any other press now in use; that it does its work more rapidly and with less labor; that it is cheaper, without complication, and not likely to get out of order. Being built upon the interchangeable plan, any part lost or injured can be replaced at small cost.

It is constructed on the ratchet system, and the lever can be worked in a six-foot space, and is so easily operated, that a child of 10 years can work it. The lever works both ways, and thus doubles the speed.—*Daily Journal of Commerce*, San Francisco, Sept. 24th, 1886.

THE SUNSET VINEYARD,
Minturn, Cal., Sept. 15, 1886.

Messrs. Pare Brothers.—GENTLEMEN:—We take pleasure in informing you that we have used your No. 4 press this season, at our vineyard, and find it all that you recommend it. It does the work perfectly and with ease, and in our opinion is perfect in every particular. Yours truly,
WEBSTER & SARGENT.

San Francisco, Sept. 17, 1886.

Messrs. Pare Bros.—GENTS.:—The wine press No. 4 purchased of you several weeks ago, has been tried at our winery and has thus far given full satisfaction.
Yours truly, MT. DIABLO VINEYARD CO.,
By Jac. Levy, Sr.

Anaheim, Cal., Sept. 15, 1886.

Messrs. Pare Bros., San Francisco, Cal.—GENTLEMEN:—The Press came at last, and after giving it a fair trial I find it to my satisfaction. Enclosed please find exchange draft for the same.
Respectfully yours, LOUIS SCHORN.

San Francisco, Sept. 22, 1886.

Messrs. Pare Bros., City.—GENTLEMEN:—We take pleasure in informing you that we have used your Wine Press No. 5 this season at one of our Vineyards, and find it all that you recommend it. It works well, and is perfect in every particular.
Yours very truly, B. DREYFUS & CO.

Anaheim, Sept. 27, 1886.

Pare Bros., San Francisco.—GENTLEMEN:—Yours, with shipping receipt and bill, at hand; but the press did not come until a week after, although I needed it badly. As soon as I got it I tried it, and must say that I like the press very well. Enclosed please find check for $140.50. Yours respectfully,
PETER HANSEN.

Pacheco, Contra Costa, Cal., March 15, 1887

Messrs. Pare Bros.—DEAR SIRS:—The "Le Merveilleux" No. 3 press I bought of you is the most powerful instrument to extract juice from grapes—it leaves the pulp entirely dry in a short time. I recommend it to all wine makers. Yours truly,
J. S. HOOK.

Mission San Jose, Cal., Oct. 27, 1886.

Messrs. Pare Bros., San Francisco.—GENTS.:—I have used your "No. 3" "Le Merveilleux" wine press all through my vintage, and it has in every particular given entire satisfaction, both in regard to the ease with which the work was accomplished.
Very truly yours, CHAS. C. McIVER.

I, the undersigned, certify that I bought from Messrs. Paré Bros., a No. 2 wine press, and used it last season, 1886, and it has given entire satisfaction.
Yours truly, A. CHEIGNON,
814 Howard St., San Francisco.

GENTLEMEN:—I take pleasure in telling you that I am entirely satisfied with the press, No. 2 "Le Merveilleux," you sent to me, it does the pressing without interruption. Yours,
B. DISTEL, Mountain View.

Messrs. Pare Bros., San Francisco.—GENTLEMEN:—I used last year one of your presses at the Hon. Jos. F. Black's vineyards of Livermore. I studied it carefully, and I must say it has given perfect satisfaction. It is the most powerful press I ever saw, and the work is very easily done. Yours very truly,
J. MORTIER, Livermore.

FARMERS' AND MERCHANTS' BANK,
Los Angeles, Cal., Oct. 15, 1886.

Messrs. Pare Bros., San Francisco.—DEAR SIRS:—Enclosed please find our check for $335.15, in payment your bill for two wine presses, as ordered by our letter of 30th ult., for

Messrs. Hafen & Niemeyer	$330 00
Drayage	6 00
	$336 00

The parties tell us the presses were received in good condition, and work to their satisfaction.
Respectfully, JOHN MILNER, Secretary.

After trial the Press may be returned to us if for any reasonable cause it is not satisfactory, "and money refunded," as we are satisfied from our experience that parties that have once used them will not afterwards do without them.

N. B.—We are also prepared to fill any orders for Crushers and Separators. For any further information apply to

PARÉ BROTHERS,

BRANCH OFFICES:
Honore Building, Chicago, Ill.
15 St. James St., Montreal, Canada.

OFFICE AND FACTORY:
101 to 107 Mission Street,
Res. 420 Geary Street, S. F.

THE OLIVE TREE.

GENERAL CARE.

[By Adolphe Flamant.]

If, in the cultivation of the olive tree, one were to be guided by the ancient beliefs that have come down to us through the ages, it would appear that when once planted it can be left to take care of itself.

Virgil says in his Georgics that the olive tree needs no cultivation, and Pliny repeats with him that it should not be given too much care.

Columelle affirms also that of all trees the olive is the one which requires the least work and the least manuring. He does not, however, recommend an absolute abandonment of "the first of all trees," as he calls it, but judges that it is the tree *par excellence* that can stand neglect and bad treatment better than any other.

It has nevertheless been since recognized that the olive tree, though by no means exacting, needs a certain amount of care, especially as regards pruning. It might be said, however, in connection with this, that in certain olive regions of Europe, Africa and A ia, there are still many olive trees that are never pruned and receive no care whatever.

It is thus that we read in Dr. Thomson's "The Land and The Book:"

"This tree requires but little labor or care of any kind, and, if long neglected, will revive again when the ground is dug or ploughed, and begin afresh to yield as before. Vineyards forsaken die out almost immediately; and mulberry orchards neglected run rapidly to ruin; but not so the olive. I saw the desolate hills of Jebel-El-Alah, above Antioch, covered with these groves, although no one had paid attention to them for half a century. Large trees, in a good season, will yield from ten to fifteen gallons of oil. No wonder it is so highly prized."

Reynaud tells us that in the south of France the olive tree gives abundant product without the effort of a careful and costly cultivation. "Which is the tree," says he, "which, like it, demands so little care, so little cultivating, so little manuring!"

Other modern writers on the contrary, insist that the olive tree should be carefully worked, pruned and manured.

Between these two extreme views, it is well to allow ourselves to be guided, to a certain extent, by the experience of past generations, which is often transmitted to us under the form of proverbs. It is thus that we have been cradled in our younger days by such old sayings as: "An olive tree requires a wise man at its foot and a fool at its head;" and yet: "Make me poor and I will make thee rich;" from which we should infer that the tree is not so much in need of a costly stirring of the soil as it is of a careful pruning.

The caution that is thus recommended to us, as regards to the cultivation of the soil around the olive tree, is in a certain measure the natural consequence of the rocky and steep situations where it is most generally found in Europe, and where the plows cannot find easy access. In such places, where plowing is out of the question, two or three hoeings a year, a few feet around the tree, will be sufficient to ensure its rapid development. Eugenio Ricci says to this effect: "The soil should be dry and stony, and on a slope. There should be no other cultivation except occasionally to remove the grass and loosen the soil. At least twice a year the land should be worked with the hoe for three feet around the tree, which process should, every second year, be preceded by a manuring."

If olive trees are planted in arable lands, then the heavier the soil the oftener it has to be stirred, while on light soils it can be done less frequently. It is thus evident that the cultivation of the olive tree should not be identical in all soils, and it belongs to each olive grower to apply the most suitable method as per the character and constitution of his land.

Manuring the olive tree meets with no opponent, for no one could ignore the advantages it presents.

As for pruning, there are many divergent opinions. An olive tree never pruned bears heavily one year, and gives but little fruit in the year following, as if it needs rest for its laborious efforts; but by judicious pruning it is brought to give regular yearly crops.

Du Breuil tells us on that subject that the berries of the olive that is not pruned are very numerous, and that they remain on the tree until the end of winter, so that during fertile years all the sap has gone to supply their growth, preventing new bearing branches from forming for the following year. It is thus that the fructification of the olive trees not pruned is most always biennial.

The pruning of the olive tree should have mostly for its object to decrease the height of its head so as to render the picking of the crop more easy; to give to that head such a form as to allow light and ventilation in all its parts; to suppress every year a certain number of the bearing branches so that the sap can feed better those that remain, and that by the development of new branches it may assure a good average crop every year.

Young olive trees are generally left to themselves for the first two years following their planting, pruning being applied only in their third.

Riondet recommends to direct the tree in such a manner as to avoid the ultimate necessity of having to suppress a large branch or to inflict a big wound upon it. It will be sufficient to that effect to clear the tree of the small branches that can no more bear fruit.

Coutance guards us against the unreasonable pruning that seems to be recommended by the proverb "a wise man at its foot, a fool at its head," thought he would rather prefer it to a complete adandonment. He simply recommends the suppression of all dead wood, the cutting of the branches that prevent light and air from circulating into the center of the tree, the giving it a regular shape, and the keeping it from growing too high, which would result in the sterility of the lower parts, and would render the gathering of the fruit more difficult.

The suckers that grow continually from the base of the tree should be removed at intervals; and, while pruning, it should be borne in mind that the horizontal branches and those turning down are the most productive.

Considering the heavy summer winds experienced on the Pacific Coast, it is highly advisable to form the trees low; they are thus less likely to be damaged and can be cleaned with washes against insect pests with more facility. Moreover, by keeping them so, the trunk develops with more force, the crops come quicker, are more abundant, and the pruning as well as the gathering of the crops is easier and more economical; all reasons that speak in the most eloquent language in favor of this protective and beneficial method.

COST OF A PLANTATION.

It should not be understood by the numerous quotations given in preceding chapters that the cultivation of the olive tree is impossible or will give but meagre results in a rich soil, well cultivated and abundantly manured. Such a soil, well selected, and provided it is properly drained, will give a good yield, which will be, as in all other cultures, the direct result of the good care that will be given to the tree. We should, however, bear in mind that it has been said time and time over by the best authorities on the subject, and especially by Michaux, that the quality of the fruit of the olive is essentially affected by that of the soil, and that while it succeeds in good loam capable of bearing wheat and vines, in fat lands it yields oil of an inferior flavor, and becomes laden with a barren exuberance of leaves and branches.

Moreover, those rich valley lands are not always within the means of all parties who desire to avail themselves of the numerous advantages that the culture of the olive tree presents. Those with but modest means at their disposal will rather invest in fifty to one hundred acres of hill lands, more or less rocky, if their outlay for the same will not be above that required for the purchase of from ten to twenty acres only of a richer soil, especially if it is fully demonstrated to them that the olive tree will grow well on those steep and stony lands, and that while they are not likely to lose anything in quantity, relatively to a richer soil, they will gain the advantage of a finer quality in the product.

Let us thus study the cost of a plantation and its proper care on rocky lands, the price of which may vary from $10 to $30 per acre, according to their nearness to or remoteness from a city, or facilities of transportation. I will take in this as a basis, my own plantation of about 6,000 olive trees, which I made in 1884 on hill lands, most of them inaccessible to the plow, and where I have had all the work done by hand.

Planting as much as possible at a distance of twenty feet—for on such places regular lines could not be made—we have about one hundred trees per acre, leaving out the very few patches where it is utterly impossible to plant even an olive tree. We will select for this plantation, one-year-old rooted cuttings, coming directly, or originally, from trees that have been grafted, of which the stem will be hardly from ten to twelve inches high, and the roots from three to six inches long.

For such small trees it will be sufficient to dig the ground one foot deep, or one foot and a half when the soil permits, but where the hole cannot be dug as deep as that, some of the surrounding earth can be brought around the tree in a concave shape.

The digging of these 100 holes, and the planting of the tree, should not cost above $5 per acre. Two hoeings of a space about three feet wide, around each tree, one in early spring, one in early summer, at $1.50 each, will make it $8 altogether per acre. The small rooted cuttings can be had at prices ranging from $10 to $15 per hundred, according to sizes; and taking their maximum cost of $15, we come to a total of $23 per acre for all the first year's expenses, independently of the cost of the land, which can be bought as cheap as $10 per acre, and even cheaper, if the purchaser is not particular about being near a city or a railroad.

During the following years, three hoeings, distanced according to a more or less rainy season, will be more than is required to keep the plantation in very good condition; it will not cost altogether over $5 per acre to which can be added the cost of pruning every two years, and, if desired, the cost of manuring every two or three years.

When comparing this simple and cheap work with the care required by a vineyard, which, besides the regular cultivation, pruning, plowing, cross plowing, hoeing, tying, needs expensive stakes, suckering, summer pruning, sulphuring, etc., one can readily perceive the advantages to be found in olive culture.

The olive oil industry is looming up in San Diego County. The National City *Record* states that Frank A. Kimball shipped from his works this week quite a large quantity of bottled olive oil. Mr. Kimball and Elwood Cooper find the demand for pure olive oil so great that both manufactories cannot begin to keep up the supply.

The cultivation of the olive is attracting attention in Florida and a colony of Italians have made negotiations to settle in one of the southern counties. An exchange says the settlement is to be called Naples and a great nursery for olive culture is to be formed. The wonder has long been why a crop so easy of cultivation, with so few enemies and capable of such satisfactory results has been so long neglected in a country so well adapted as California to its cultivation. The olive is generally propagated from the cutting, a small section of the tree with a good thick bark growing readily. There is an old Italian proverb which says: "An olive plantation is a gold mine on the face of the earth."

The Reports from abroad of the condition of the leading wine producing counties are taken as a whole favorable. From France we learn that the crop in Burgundy is developing well under the influence of the great heat, and there are no reports of mildew. Even the vines that have not been treated for this disease, seem to be in a flourishing condition. In Bordeaux the grapes were growing well under the influence of the rains, and with the exception of some uneasiness about mildew, everything seems to be going on well. The vineyards in Champagne present a very satisfactory appearance, particularly in the neighborhood of Aveze and Ay. Epernay and the mountains are not so well off.

The conditions of the vineyards in Germany is generally eminently satisfactory. The weather during the month was all that could be desired. If all goes well, an abundant vintage, and perhaps a great one, as far as quality is concerned, is confidently expected.

Reports from Spain mention the appearance of phylloxera in considerable numbers, in some districts, that have hitherto been exempt from the scourge. Otherwise, the news from the vineyards is good; the grapes are nor very numerous, but they are developing well.

In the south of Italy, the vines are looking well, and growers are calculating upon an excellent vintage both in quantity and quality.

A Collection of Wines.

The Viticultural Commissioners have addressed letters to persons living in the principal wine producing districts in the world, asking for samples of the wine of 1887. The communications have been directed to Australia, Cape Colony and the East, as well as to the European countries. The object is to form a collection of fair wines from every region to serve as a basis of comparison with the products of California vineyards. It is not to be expected that much of the collection will be found before next spring.

WINE MAKING.

The Proper Temperature and Alcoholic Strength Discussed.

[CONTINUED FROM PAGE 134.]

It is entirely practical to regulate the temperature in which the process shall go on. The investigations and experiments of Pasteur and others, as well as the experience of wine producers, prove that the saccharomyces thrive best and convert sugar more quickly in a temperature ranging between 65° and 75° Fahrenheit; that at about 32° (freezing) the germs become inactive, and that 140° is too hot for them and they die. It is probable that a higher temperature than 75°, say 90° to 95°, would not in itself injure the saccharomyces, but the danger at this temperature is that another germ, and the one most to be dreaded by wine makers, is brought into conditions favorable to activity—the *mycoderma aceti*, or the microbe that changes sugar into vinegar. It is well known that the mycoderma requires a high temperature to do its work, and the experience of wine makers is, that wine is likely to go wrong by acetic fermentation when the temperature is high. The lactic or milk-sour germ is also given favorable conditions for development at a high temperature, but the conversion of sugar into lactic acid by this microbe hardly ever becomes so excessive as to permanently injure the wine. When acetic or vinegar fermentation sets in, however, something has to be done quickly or the liquid will pass into vinegar in a very short time. When vinegar fermentation is discovered, the liquid may be heated to about 160° F. to kill the germs of the mycoderma, after which the regular alcoholic fermentation may be started again by the addition of fresh grape juice. The same may be done in case of lactic fermentation, but, as said above, the lactic is not so dangerous as the acetic fermentation. The heating plan is the one being generally adopted by wine makers. It may be done ordinarily in a common boiler, if the fermentation is to be continued. Where some injurious fermentations set in after the wine is made, the killing of the false germs and the entrance of others thereafter prevented is accomplished by running the wine into vessels through an apparatus invented by M. Pasteur and sealed while hot. This process is the only perfect one known, and is called Pasteurizing, in honor of the celebrated man who discovered it.

But it is far better to avoid all such troubles of false fermentation by adopting and securing the temperature known to be favorable to the development of the saccharomyces or alcoholic ferment, namely, 65° to 75°, a temperature that hardly admits of lactic or acetic fermentations. To procure this range of temperature, cool cellars are necessary. It is needless to suggest that tunnelling into the side of a hill-slope is the most feasible plan of getting a cool, dry cellar. If there is any seepage of water into it cementing is necessary. It is important that the cellar should be kept dry, as a damp cellar is a good place for mischievous germs to lurk in the atmosphere, especially if the temperature is not as cool as it should be, and as it is almost impossible to keep the wine without some access of the surrounding atmosphere, these germs are liable to get into the wine and develop some form of disease.

Let us next consider what kind of wine our vine growers *ought* to make. To decide this question only two considerations are admissible if we studiously avoid and curtail all possible evil results.

The two considerations we refer to are, first, the production of a wine that will contain the minimun of alcohol. The two questions are intimately related, as the alcohol is the preserver of the wine, else none would be found in it and none required. A word may be said here in favor of the alcohol produced in wine by fermentation—that it is the purest form of alcohol known to science, and less injurious to the health of the consumer. It does not contain fusil oil, which is one of the injurious products of distillation, and which is generally found in much of the poisonous stuff sold by liquor dealers. Pure wine contains no antiseptic other than the alcohol that nature places in it. There are many wines sold on the market recommended as "temperance" wines, and "non-alcoholic" wines that are more injurious to health than alcohol itself, for they are preserved from spoiling by the use of some antiseptic that is itself as poisonous or more poisonous than alcohol. We can understand this point better when we reflect that no fruit or fruit juice can be kept for any great length of time exposed to the air without the use of an antiseptic, the reason being that the germs afloat in the atmosphere get into it and start some sort of fermentation—lactic, butyric, acetic or putrefactive—and the wine is no longer fit for any use. Some such wines are termed unfermented wine, and fermentation is prevented in them by the use of salicylic acid, which is a violent poison, producing death if taken in any considerable quantity. It would be better to use common whiskey to preserve wine than salicylic acid. The only unfermented wine known that is not injurious is that made by pasteurizing or boiling the fresh juice of the grape and sealing it perfectly air tight while it is hot. The heating destroys all ferment germs already in the juice, and the sealing prevents the entrance of fresh germs from the air. In this manner grape-juice or any other fruit juice or fruit can be kept from fermenting. If there is an antiseptic that is not injurious that can be used to replace salicylic acid it is yet undiscovered, and reason would seem to suggest that nature has placed in the grape itself all that it should have, including alcohol to preserve it. The addition of any foreign substance, therefore, is a violation of nature's law, and inexcusable.

Under circumstances such as happen in some parts of the world where the grapes do not ripen fully owing to early frost, the must will not contain sufficient sugar but an excess of acids. Under these circumstances the addition of sugar and water is permissible—the sugar to bring up the necessary saccharine strength and the water to dilute the acid. This practice is legitimately carried on in some countries, but unfortunately it has led to a great deal of deception and fraud, such as "stretching" wine with water, using dyes to restore its color and cheap alcohol, such as grain and potato alcohol, to bring it again to its keeping strength. Or if the alcohol is not needed in the "doctoring," salicylic acid is used to prevent spoiling. Such practices have been carried on to an alarming extent in New York and other large cities. Only a few months ago the contents of a cellar in New York city, numbering many thousand gallons of so-called wine, were seized by the health officers of that city and condemned and destroyed. In France the most rigid and exacting laws are enacted and enforced, as far as practicable, yet it is claimed that much of the French wines consumed in this country are adulterations that measure the earthly existence of the regular wine drinker who uses them.

It is not our purpose to defend the use of alcohol, but to present the health side of the question. Many millions of gallons of wine are made and consumed in this country. Now if the alcohol produced in wine by fermentation possesses such antiseptic properties as will preserve the wine from disease, and if that alcohol so formed in the wine is less injurious to health than any known substance that can be used for that purpose, no argument is needed to convince any one that the best and most rational way to preserve wine is to produce in it, by the fermentation of sugar, just the amount of alcohol necessary for the purpose. More than that is not justified under any circumstances that we are aware of, and just that quantity is entirely sufficient for all legitimate use, including the care of invalids and persons of feeble health. Commercial wines require greater alcoholic strenght to preserve them, especially sweet wines which are exposed and trundled about in transportation, than wine well kept and cared for in a cellar. Exporters consider it necessary for sweet wines that are to cross the ocean or travel great inland distances, to have from 20 to 22 per cent. of alcohol. Sweet wine, owing to the presence of fermentable sugar is more liable to spoil than dry wine, the sugar being ready at all times for fermentation when exposed to the air and a warm temperature. A dry wine with 15 per cent. of alcoholic will keep well under ordinary conditions, while the same wine kept sealed in a cool cellar is safe with from 8 to 12 per cent. of alcohol.

VINES IN TUNIS.

The new French protectorate, Tunis, situated on the eastern border of the Province of Constantine, Algeria, is gradually becoming a wine producing country. A traveller, writing to the *Bulletin official* of Paris, gives the following interesting description of a pioneer vineyard in this new district. "From the height where we are, we perceive at the bottom of a depression, half hidden in a bright green—Bir Kassa. In a few minutes, we arrive on the territory of this beautiful property. As a vineyard, Bir Kassa was planted by Mr. Lançon, and over 240 acres of virgin land, are now covered with vines. M. Le Royer, ex-Minister of agriculture of France, and his companions who lately visited this beautiful property, expressed much surprise at the order with which it is kept.

The vines of Bir Kassa have been planted with the greatest discernment, in lines about 40 inches apart, with a space of at least 9½ feet between the lines, which gives about 1230 vines to the acre. As the rows are heading in the direction of the Sirocco, the vines are protected one by the other against this mischievous wind. The soil is so prolific that it requires the constant use of plows to prevent the weeds smothering the vines. At Bir Kassa, they cultivate 2¼ acres in one day, with four plows each with 8 or 10 oxen, driven by two men.

Mr. Lançon has formed about 20 properties on the following conditions:

Purchase of ground, 240 acres	$ 3000
Building of house	3000
Planting and cultivating until 3rd year	4000
Total Cost	$10,000

Generally at the third year there is already a beginning of production. The fourth year it is in full bearing, and preparations must be made for fermenting and storing wine. The cost of accessory buildings is usually figured at the rate of about $1.80 for every 24 gallons of wine produced.

In the valley of Kangat Hadji, where he possesses over 9,000 acres, Mr. Lançon proposes to try the delicate and difficult problem of vinification, lodging and selling by auction (*voir adjudication*). As is the case in cheese and watch making in the department of the Doubs and Juro, he calculates to reduce running expenses by a system of co-operative work on a large scale.

In this case, the 15 or 20 owners of the Kangat, will not have to trouble themselves individually about wine making. This will be done by a syndicate which will take its share out of the product. Each one will have a quantity of wine or money proportionate to the quantity of grapes brought to the common vats. Such a system has existed already for a good many years in certain communes of the Bavaria Palatinate.

Mr. Lançon can not be encouraged too much in as good an undertaking. The advantages to be gained are as follows:

1st. The operations of vinification will cost each member one-third less than if he worked individually.

2nd. The operations on a large scale are always better managed, and give a better average than those conducted separately.

3rd. Having no capital to pay for building cellars, an buying cooperage, the proprietor can, with an equal capital, undertake a larger number of acres, and develope more benefits.

4th. The troubles and personal cares are stopped after the gathering of crops, which decreases his work and makes his life easier. The syndicate assumes all responsibility as soon as the crops are in.

These considerations have already surrounded Mr. Lançon with numerous proprietors, and he very soon will be counted as a colonist of the first "order".

REPORT OF L. J. ROSE.

Commissioner for the Los Angeles District.

LOS ANGELES, August 20, 1887.

To the Board of State Viticultural Commissioners:

GENTLEMEN—I have been unable to give to my district report the personal attention I might wish; but, for want of time and opportunity I have adopted the means recommended and provided for at a recent meeting of the Board, namely: that of employing some competent person in the district to assist in procuring whatever statistics might be available. These I take pleasure in offering. They form a brief but carefully prepared resumé of the present condition of the viticultural industry in the counties over which I have the honor to preside. I trust the same may prove acceptable as submitted herewith.

Very respectfully,
L. J. ROSE,
Commissioner for the Los Angeles District.

L. J. Rose, San Gabriel:

DEAR SIR:—At your request I have taken such available statistics you have furnished, as to the acreage of vines in Southern California, and secured other information from the various counties, and also from the several vine growing sections, from which I arrive at the enclosed report.

I have found it exceedingly difficult to get any information, the many letters written asking for information remained unanswered. I have interviewed many persons living in different sections of the country and otherwise, arrived at the enclosed report, which I respectfully submit, although with misgivings as to its accuracy.

Yours most obt.,
GEO. RICE.

Notwithstanding the tendency throughout Southern California to subdivide large tracts into smaller ones, and smaller and some larger ones into lots. I find that the vine interest has not been neglected.

The planting of cuttings last season has been about seventeen per cent of all planted before. The planting has been of the choicest varieties, that experience has shown to be the best. Better arrangements for making grapes into wine and brandy have been made and more attention given to details. The grape and wine growers are awake to the importance of the subject, and many expect to continue to make wine and make it most profitable.

The prospect for this year is exceedingly good with every assurance of a full crop. No damage has occurred on account of frost, coulure or other causes, excepting from some unknown disease that is doing some harm in the neighborhood of Anaheim and Orange of which I speak further on.

This year's crop will be say ten per cent larger this than last season's, with the exceptions noted. All varieties seem to have done well. The Mission as usual, loaded, the Zinfandel also continues to bear heavily; the same might be said of all varieties. The Muscat of Alexandria of course excelling in Orange, Santa Ana and Riverside, and not succeeding along the foothills, where but very few have been planted.

SAN LUIS OBISPO COUNTY.

The planting of cuttings in this county has received quite an impetus the past season, and with better transporting facilities will continue to increase.

The acreage planted in 1885 and prior was	472
Consisting of Zinfandel 84 A., Berger 34, Muscat A of 31, balance planted to Mission and Malvoisie.	
The planting of 1886-7 was about as follows: Zinfandel 20, Berger 10, Muscat 10, Mission and Mixed 40.	
Making	80
Total	552

Making an increase of nearly 20 per cent.

SANTA BARBARA COUNTY.

The total acres planted in 1885 and prior amounted to	900
About 35 per cent of this is in Muscat of Alexander, one-half of the remainder in Missions, the balance in Zinfandel, Berger and scattering European varieties.	
The plant of 1886-7 was	225
Total	1,125

The present out look is very good and a full crop assured.

The report from this county was furnished by County Assessor, which he says is as near correct as is possible to give with data before him.

VENTURA COUNTY.

Information from this county was hard to get, more so than from others. From the best information I could get

The number of acres planted in 1886 and prior was about	380
Planted in 1886-7, 20 per cent increase	76
Total	456

Missions predominating with Zinfandel and Muscats next. A much larger acreage is promised the coming season. "Ventura can make as good wine as can be made in the State" is the language of one of her intelligent citizens.

SAN DIEGO COUNTY.

This county has rallied around the bay, and the people are whooping up the real estate boom. Many beautiful valleys in the interior are awaiting.

Total acres planted 1885 and prior	774
Of this Muscat of Alexander (Raisins)	545
Missions	214
Roussillon Type	14
Planting of 1886-7 20 per cent. increase; of these 80 per cent. were of raisin variety.	
Total acres	1000

The raisins of El Cajon Valley are pronounced the best in the State, at least, the people of that section so claim, and there is no doubt about their superiority.

SAN BERNARDINO COUNTY.

1885 and prior, planted	3470
Of these Muscat of Alexander	1844
Wine varieties make up the balance.	
The increase planted in 1886-7 has been 20 per cent.	610
Total	4080

Of the increase, 80 per cent. has been of Muscats—this variety succeeding most admirable, especially at Riverside, where the bulk of all the raisins are grown.

LOS ANGELES COUNTY.

Acres 1885 and prior	15,560
Consisting of Mission and Malvoisie, 30 per cent., Muscat of A, 15 per cent., Zinfandel, 15 per cent., choice European varieties, 40 per cent.	
Planted 1886-7, less loss from disease and subdivision, 10 per cent	1560
Total acres	17,120

The disease mentioned appeared noticable two or three years ago, in Orange and Anaheim, where the vines seem to die without cause. Prof. Hilgard thought it must be some climatic trouble that would pass over in a short time.

Entire vines, roots and all have been sent to scientific men in Washington, D. C., and to others, but no one so far has given a name or remedy.

No phylloxera exists is certain, but this new disease, whatever it is, should have the attention of your Viticultural Authorities.

In submitting this report, I do so with misgivings, and you will sympathize with me when you understand the little help I have had and the number of unanswered letters.

Your most obedient.
GEORGE RICE.

To L. J. ROSE,
Commissioner, Los Angeles Dist.

EDITOR MERCHANT:—A pessimist's voice may sound discordant when encouragement of hopefulness suggests efforts for progress. But it would be impracticable to regard matters of interest only from the sunny side and not listen to the voice of warning, or rather consider disadvantages based on facts and actualities.

We speak of surpluses of production of our vineyards. Wisely the movement of laying up our wines to develop them and market them when matured, has begun and with the aid of capital, will extend, thereby rendering us capable to evermore gain honor by presenting wines in the shape in which they will be acceptable by consumers who used to sneer at a native wine, and who unfortunately will for some time patronize the foreign label.

Surplus of production—necessity of reversing matters and market across the Atlantic, what should benefit the health of Americans. Well, things look yet as if the miserable figure of thirty millions of gallons which may be the total of American real grape wine, sufficient for the consumption of 10 weeks for the City of Paris, could not yet be overwhelmed by 60 millions of Americans, half a gallon for every American stomach! and that we have to devise means of sending to Europe what remains unsaleable in the United States.

The London market is considered of importance in this case, and red wines the principal kind for the British market. Bordeaux sent to England in 1885 4,887,135 gallons, in 1886 317,000 gallons less. These figures speak. Only wines ready for consumption, as the dealer supplies them, can be shipped to Great Britain; the best we have, just those which we need to build up our trade in this nation, which will be ready to accept what is a real substitute for the wonted good grades of wines from Europe.

The chances may be good to unload an excess in England, but practical account sales will on more than one occasion, disenchant the over-hopeful. There are excesses of good red wines elsewhere, and nearer to the markets where everything of quality finds custom. Spanish viticulture is staggering under the load of overproduction of wine, Lack of purchasers for a hundred millions of gallons of good Spanish wine is producing misery in thousands of rural communities.

Competition is fearful when there is an excess of stock. The French needs are being filled from Portugal, to the neglect of Spanish wines, as the usefulness of the former and cheaper prices deviated the current of buyers from France to Portugal. Italy will count an enormous surplus after next crop, as 1886's remained unsold to the amount of some hundred millions of gallons. The break in prices for deep-tinted blending wines for France since last winter is $10 or more per ton of 900 litres, or something like 10% on the average price of 40 cents per gallon, ship freights, railroad, insurance, cask, commission, brokerage, discount to come off that price, which is low Bordeaux. This state of things will influence both the influx of wines, consigned or bought from quarters where people must diminish stocks, and prices in England. The increase of production in Southern European vineyards and in Algiers will cause a competition in all markets that probably will depress prices lastingly. There is the defense of quality. How we stand in this regard, will have to be demonstrated, practically. One expert's opinion of the fitness and pecuniary advantages for British markets, counts for little. (As little probably as these lines of one croaker) but prudence and foresight and judgment from experience should count for something.

As to French markets for deep-tinted, full-bodied red wines of clear taste and bouquet, such as the hot valleys can and do produce, I just spoke of glut in Spain and Italy of such wines. We shall have to experiment what the practical entering into line, if we are admitted, will yield us in the run. Seven competing countries are in that line. May the result be favorable.

One idea occurs to me. The condensed must pays no duty in some countries as is asserted. Will that be long? Russian wine makers had the privilege of importing via the Black Sea, any amount of cargoes of currants from Greece. Of course the government saw a chance for revenue, and soon the importation ceased. France fortunately became the great customer for the dried grapes soon afterwards, and Greece did not suffer.

Let abler brains than mine consider matters practically. Perhaps I am wrong, but I am sincere.

F. PDFF.
Washington, D. C,, August 21, 1887.

Fresno Enterprise.

The "California Fruit and Vine Land Company" has been incorporated by Fresno capitalists to operate on a large scale. A tract of ten sections of land has been purchased in Fresno, and the Company intends to put out 3,000 acres of fruit this season. There will be 1,000 acres of grapes, 1,000 of figs, and 1,000 of oranges. As to the grapes and figs, no better selection of soil and climate could have been made; but when it comes to raising oranges on so large a scale as is proposed in the locality chosen, it seems like raising a good deal of capital on an uncertainty. Time may, however, prove that the latter fruit is as well adapted to the Fresno plains as are the former. Fine oranges are raised in the sheltered canyons of Fresno, Merced, Tulare and Kern counties, and if they can be successfully cultivated on the open plains, every friend of California will rejoice at the new evidence of fruitfulness.—*Fresno Democrat.*

The exports of wine and liquors from the port of Lyons, France, to the United states, for the month of July, 1887, according to the Consular statement, amounted to $6,250 as against $1,400 for the same month in 1886. The total exports, however, for the first seven months of 1887, were only valued at $53,206, against $58,513 in the same period of 1886, showing a decrease of $5,207 for the present year.

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FRIDAY.....SEPTEMBER 2, 1887

ENGLISH SUGAR Manufacturers are in a bad way, according to the statements of members of the leading firms at a late meeting of the Liverpool Chamber of Commerce. This unfortunate state of affairs is caused by the existence of the foreign bounty system. The home trade is not only affected, but reports coming in from the colonies, likewise reveal an absolute state of demoralization in the trade. Over 100 estates in Barbados, are in chancery, and the leading firm, or one of the leading firms, has gone into liquidation. In Trinidad several of the largest estates in the Island have been closed, and the leading firm is in liquidation. In Demerara, which in condition of machinery and the fertility of the soil has been far in advance of the whole of the West Indies, things have not come to such an extreme crisis; but during the last three or four years, manufacturers have had no return on their investments. Sugar from this place has run down, within a very short time from 29s. to 15s., and yet under a system, which is working such damage to England and her possessions, the foreign countries seem to be working themselves at a tremendous loss. The loss to their wineries per annum is stated as follows:

France, $16,400,000; Austria, $5,183,335; Holland, $1,547,275; Germany, $9,433,450; and Belgium, $4,065,000, making a total of $36,630,060. This loss to the revenue is not in the sense that they make nothing at all from these sugar finances, but in that they did not get as much as they expected from their sugar taxes. In France and Germany, owing to their mode of levying taxes, about one-third of the sugar escapes taxation altogether. Yet this sugar receives the bounty if exported, and the loss falls on the taxpayers of the county.

It is said that France could afford to sell the sugar for which she is now receiving 13s 6d and 14s 6d, at about half its present price, and still leave room for very large profits. The injurious effect of this foreign competition on the home trade can be imagined from the fact, that during the lapse of few years, four sugar houses have stopped altogether, and others have closed their premises never to open again. One large firm in London, which has spent over $1,500,000 upon its business could not dispose of it lately, at the reserved price of $450,000. Although statistics seemed to show that the consumption had been about the same during the last six months, as it was during the corresponding period of last year, it is generally admitted that they are disceptive, and do not show in the least what has passed through the sugar refineries, which in quantity is decidedly less than in former years. The production of best sugar in Europe, which has grown from 6 per cent. to 58 per cent., is declared to be solely owing to the artificial stimulation of the industry, by means of bounties. The sugar men in strengthening their claim for production, agree that other great industries are affected by the decline of their business, and instance the coal and bag making trades. For every ton of sugar refined half a ton of coal is required, and the decrease in bag-making affects the manufacture of jute. The makers of machinery and sugar plant both for the West Indies and home use, are largely affected. There are two remedies suggested, one is by foreign countries, abolishing duties upon sugar altogether, and the other is by a system of refinery in bond, when the duty would be paid upon the perfected article, and therefore it would not be necessary if it was going to be exported, that any duty should be paid upon it at all, and any drawback received. The strongest kind of opposition may be expected to anything like a counter-vailing duty, as it strikes directly at the principles of Free Trade, which is the pet hobby of the liberal Englishman, as this sect is daily growing stronger in Great Britain, it looks very much as if the British sugar trade, will continue to decline. Cheap sugar for England is making rapid fortunes for a few foreign manufacturers, but it means death to the home industry.

HIS SABLE Majesty of the Hawaiian Islands is daily making himself more conspicuous in the eyes of a wondering world, either through his own sensational capers or through the peculiar business transactions of his reputed agents. It is high time that a guardian should have been placed over him, and this sensible action of the new government will command for it a feeling of confidence which has never been extended to the ruling powers of the Islands. The question now before them of passing upon and accepting the loan negotiated by their reckless predecessors, is of serious import. Of course the credit of the Islands demands protection, still there are many circumstances connected with that loan which will bear the closest kind of scrutiny. The deduction of the enormous expenses incurred by the negotiators should not be tolerated, and the payment of every dollar borrowed from English capitalists should be insisted upon, before any question of commission is permitted to come up. The offer of £160,000 in place of £200,000 which was actually borrowed, suggests the idea that the credit of the Islands was strained for personal ends; nothing but the regular discount should be allowed, and a fair commission for services rendered, and if it is the case that the agent was really at the time a salaried official of the government, it does not seem right or proper that he should be paid twice for performing his duty.

One feature of the account rendered is affording the independent press of America an opportunity to retaliate on their immaculate contemporaries in Europe, who never let an opportunity escape to throw mud at this side of the Atlantic.

That is the item of $75,000, rendered in the expense account of the negotiations, used for the purpose of silencing the English financial journals. Just exactly where this money has been paid has not yet come out but it probably will in time, in the meantime the information must be interesting to the parties who have advanced the coin. All of these expenses should be refunded, and if they are not the Hawaiian Government will be very foolish to accept the loan on its present terms. Satisfied that an honest and economical administration has at last got the royal scapegrace sufficiently under control, and beyond the power of extravagant licentiousness, American capitalists will advance the necessary funds without any necessity of paying through the nose for accommodation from a set of foreign Shylocks.

THE WORN "boom" is a misnomer as applied to the rise in valuation of the fruit and farming lands in the counties surrounding the Bay of San Francisco. The state of affairs in the southern portion of the state is totally different from what will take place up here, when the tide of immigration gradually sweeps up to the choicest portion of the Golden State. The movement down south was virtually a boom. The natural outburst of enthusiasm, which one can understand, from strangers, who caught for a first time a glimpse of this earthly paradise. They were attracted temporarily, with the tamed down beauties of the outskirts of the land, tarrying over the grapes of Eschol without a thought of the glories further into the interior, of which their surroundings were only a foretaste.

They have at last begun to move this way and the busy hum of the southern boom is hushed. Nothing is heard now of the fabulous transfers of property in the orange groves, and lung-healing sea-side resorts of Los Angeles. Now the fruit lands of Santa Clara, the vineyards and olive plantations of Sonoma, Napa, Marin, and the bordering and adjacent counties of the Queen City of the Pacific, are opening up in all their beauty and advantages of soil and climate, to the still but ardent gaze of their new inhabitants. We say inhabitants, for here they come to stay, not to purchase for a speculative purpose, but to enter right into improved and remunerative homesteads under the finest climate on the face of this broad earth. The Santa Clara Valley offers inducements unparalleled in farming and fruit lands, at a price which is at least seventy-five per cent. below its ultimate value, and the same can be said of the counties mentioned above. Fresno, in the central portion of the state, is second to none, and with a warmer climate affords opportunities for the cultivation of as choice and delicate varieties of fruit, as can be grown in more tropical climes.

Land all over these sections is comparatively cheap, the most highly improved rarely bringing more than $500 per acre. Land that will produce $100 per acre, net, is certainly worth $1,000 per acre, returning interest of ten per cent. on the capital invested. Once the Eastern people get travelling through the northern portion of the state, prices must go up much higher than they are at present. It is sheer folly to attempt to argue that land in California is too high in either city or county. With advantages superior to any other State in the Union, or any other Country in the world for that matter, she must command the attention of settlers. The influx of population means a demand for land, and the price will then be largely governed by the supply.

Property in San Francisco is to-day selling lower than any other city of like importance in America, and the day is not far distant when it will take as big a pile of twenty-dollar pieces to the square inch to purchase Market street property, as it does now in some of the more favored sections of New York City.

The day of mossbacks and silurians is rapidly passing away in California. They are gradually giving way to a new and enterprising class growing up among us. They have sat upon California and her prospects as long as they possibly could, and if a wet blanket would to-day smother the rising fires of progress, they would supply it. Their day of inactivity and uselessness is gone forever it is to be hoped, and the era upon which we are now about to enter, seems bright with promises of a prosperous future for California.

THE CONFERENCE of Congressmen and Viticulturists which was held during the past week in this city, to discuss the possibility of securing legislation for the relief of the wine makers of California, relative to fortification of wines, resulted in an adjournment without taking any definite action. A most unsatisfactory condition of affairs was revealed by the statements of the Congressmen present. In their opinion, it would be impossible to get a bill through Congress, and our wine makers are told, that they can expect no relief at the next session. The great difficulty is that California gets no place in the principal committees, and all her interests are before those committees. In other words, California has to take a back seat upon all propositions, and her representatives are merely lookers on in Venice. More stress is laid on this point, than on the opposition from Eastern wine makers, and the manufacturers of neutral spirits.

If this is really the case, that California is so utterly debarred from any say in the legislative halls of the Union, the only course open for our wine men, seems to be a coalition with the wine makers in the East. Their interests are not so diametrically opposed as might appear at first glance. Both agree on the point that the wines must be fortified, only one uses brandy and the other neutral spirits. The reason claimed for the use of the latter is that brandy can not be obtained, unless at a cost which would ruin the business. If this be the case, why not permit the Eastern wine growers to use grain spirits, while the Californian adheres to his grape brandy. This is merely a question of taste, and not the main point at issue. The Pure Wine Bill should be framed to strike at adultera-

tions, leaving the manufacture of genuine wine open to the ideas and methods peculiar to the maker or locality. State legislation can regulate the material to be used for fortification, if the provisions of the Federal law is drawn with that in view. From all accounts there is as much common spirit used in fortifying California wines to-day, as there is brandy, and it seems foolish to allow a mere difference of opinion to interfere with the interests of the manufacturers as a body. The wine makers of California should arrive at some definite conclusion, and either do one thing or the other; buckle down for a good hard fight in which concessions will be granted, and every advantage taken if necessary to carry the point, or else cave down, and leave the field open to the New York adulterator, with his stock in trade—a case of chemicals.

Pool all the issues in the hands of some competent and skillful representative wine man, and let him take the field in person, when Congress meets. There will then be a likelihood of some work being done in the right direction. California is the leading wine producing State in America, and she not only demands but has every right to protection from fraud, by the passage of a Pure Wine Law.

The Jury system is rapidly falling into disrepute in San Francisco. Nor is this surprising when the calibre of the men selected for this important duty is taken into consideration. One of the first questions put by a criminal's counsel is, "Have you read the newspaper reports of this case, and have you formed any opinion thereon?"

Should the answer be yes, the person is immediately rejected as incompetent to try the case. Only those who do not read newspapers and never form opinions are believed capable of acting without bias towards a violator of our laws. There are few men in San Francisco who can truthfully swear they are competent to act as jurors on this basis. There is not a city in the world to-day where papers are so generally read, and topics of interest discussed on the street, in work shops and in the home circle. Consequently, we are open to the disagreeable deduction that nine-tenths of the men who sit on our jury cases are perjurers. If they are not, then it must be admitted, they are a highly intellectual class of men to be entrusted with the affairs of justice. A man who does not read his morning paper, nor form an opinion on the live topics of the day, empowered to decide the life or death of some unfortunate. A reform is badly needed in our method of selecting jurymen, and never more so than at the present time. The case of Morrow which is now awaiting trial, is one in which the community at large is directly interested. It is stated openly on the street that it is impossible to convict this man on account of his wealth. That will altogether depend upon the calibre of the jury which will try the case. It does not follow that because Mr. Morrow may be a rich man that he should be convicted on that ground. But at the same time the offense with which he is charged is so heinous in its nature, that the people of this city will take particular care that the trial will be fair on both sides.

The list of the men who will deliberate on the evidence will be carefully scrutinized, as to whether they are trustworthy or not. Had Morrow been fighting a rich corporation or a man as wealthy as himself, there might have been some excuse for his alleged crime. But in a wanton attack upon the widow of a man killed by the carelessness of a great corporation, any sympathy which might be extended to an ordinary offender is turned to execration and scorn.

A wealthy man in the position of attempting to use our courts of justice for the purpose of robbing the widow and orphan of the man for whose death he is held legally responsible, is a monster in human form. His trial should be expedited, and if found guilty, penal servitute for life is a mild punishment. Our jury system will receive a severe test in the forthcoming trials of Morrow and McCord, and the result will be awaited with interest throughout the state. It is to be sincerely hoped, that for once justice will be fairly meted out, regardless of wealth or any consideration of social surroundings.

The Agricultural experiment station of the university of California, has just published Bulletins 73 and 74. No. 73 is by Professor W. W. Morse, and treats of the use of hydro cyanic acid against scale insects. The process is in itself as follows: A bill shaped tent of heavy oiled ticking is made, with cloth flanges around the lower edge. This is thrown over the tree to be treated, and supported by a frame, the sides reaching down to the ground, and the flanges covered with earth to keep the gas confined. The tent should be about twenty-six feet high, twenty-by-twenty-five feet at the base, and secured by guy ropes when pitched. A sheet-iron generator is required, with pipes through which the vapor is blown into the tent. There are two receivers, one to hold the sulphuric acid and the other for cyanide of potassium and bi-carbonate of soda. A quantity of these last two ingredients is put into any convenient vessel and made into a thin paste with water. Pour it into the cyanide receiver and let it run slowly and regularly upon the acid which has previously been turned into the generator. The gas which is generated must be blown violently into the tent by means of a blower attached to the generator—blowing for a minute or so and then allowing the tree to rest about fifteen minutes, and continuing the treatment for thirty minutes. The process should be carried on in the cool of the early morning to prevent burning of the foliage, which is greatly aided by the heat of the sun. The gas is not only deadly to the insects, but kills the eggs, and is equally effective against the black and red scales. As the preparation is highly poisonous, the greatest care is urged upon the part of the person handling it. The professor recommends that those who are interested in the construction of a machine shall, if possible, make a personal examination of the working outfit at San Gabriel.

No. 74 is by Professor E. W. Hilgard, on the vintage work and instruction in the viticultural laboratory of 1887. After quoting the provisions of the act of 1880, and referring to the work that has been carried on under its provisions at the University, an invitation is extended to grape growers to send sample lots of grapes for analysis and experimental wine making. The course of instruction in vinification and wine analysis is given, together with suggestions, to sending of grapes, wines, etc. A large portion of the bulletin is devoted to "The Choice of Resistant Stocks." Under this head he makes the important statement that the wild riparia fully resists the phylloxera, and when it succumbs to the attack when used as a grafting stock, it is because its vitality is too heavily drawn upon by other causes.

The Produce Exchange of this city should be closed. Its existence is a continual menace to the farming interests of the State, and the gambling among its members as at present carried on, strikes at the vital core of one of the most prominent agricultural interests in the world. The present unsatisfactory condition of affairs is apt to be repeated at any moment, and the producers be tied up hand and foot. The damage done by the present disaster is something incalculable, not alone from a financial standpoint, but also in the demoralizing effect it exerts on business generally. The fact that two men can plan and accomplish a deal, which can upset the wheat market, and fix prices at will, is not pleasant to contemplate. Nevertheless, that such is the case, is evident by the late corner which has resulted in the failure of Dresbach & Rosenfeld. These men backed by unlimited credit, have twisted and turned the market inside out, as suited best their purpose, and not until in their daring they carried prices beyond the bounds of reason, and their own nerve, did they cry a halt, and then it was only to demoralize business altogether, and scatter ruin broadcast.

The blow does not fall on the wheat interest alone; it will be far more sweeping, and its effect may not be immediate.

The import coal which shippers would have only been too glad to have carried to this port as ballast for the wheat fleet, has been so materially checked by the unsettled state of the grain market in this State, that higher prices must enevitably result during the coming winter. Iron and other interests are more or less unduly influenced by the tie up in wheat, and all to satisfy the inordinate greed of a few men. Any system of business which will permit such trifling with any commodity, and especially with breadstuffs, is entirely wrong, and immediate steps should be taken to obliterate it. The farmers of this State have received a lesson which should last them forever, and prevent them from ever again, allowing themselves to be made catspaws for a set of selfish speculators. There is some satisfaction however, in the knowledge, that a grain corner in the United States has always resulted disastrously for the manipulators. The present care is no exception to the general rule, and if it results in the final dissolution of the association which fosters and aids the execution of such vile schemes against the public welfare, it will be a most fortunate circumstance for the wheat producers of this State.

The Repression of fraudulent wine making is being agitated abroad, if anything more vigorously than among the wine men of America. The Chamber of Commerce at Perpignan has addressed a letter to the Minister of Commerce and Industry demanding relief by legislation against the wrongs under which their department is at present suffering. Their position as depicted in the letter published in full in *La Vigne Francaise* is certainly unfortunate. After fighting the phylloxera for years, at an expense which absorbs all the profits of their vineyards, the small production of wine of 1886 still lies in the cellars. The markets in the surrounding districts has been closed against them, and the outside places are all supplied to the extent of the demand. If they offer as in years gone bye their wines on the markets of Bordeaux and Lebourne, where they have always been heretofore highly esteemed, they are opposed by foreign wines of every sort, principally Portuguese, all fortified up to fifteen or sixteen degrees, while theirs which range from eleven to thirteen degrees are firmly but courteously refused. If beaten in the west, they try the east of France, they find it inundated with wines from Saint Gothard furnished by the Italians. If they resort in despair to the Capital, they are confronted with a perfect avalanche of small wines, principally from Spain, ranging from fifteen to sixteen degrees, and which are sold, delivered on the quay at Bercy for 25 francs the hectolitre. They demand a protection that the treaties be modified so that they shall clearly indicate, that wines shall be produced exclusively from the fermentation of grapes, without the addition of any foreign element whatsoever. A system of taxation is proposed and a limit is put on the quality of brandy to be used, and the existing treaties are cut up in a manner which means business. The communication is straight talk from end to end, and the burden of foreign competition is fully discussed, and a demand made for instant protection.

The Mechanics' Fair now open, promises to be one of the most interesting and successful exhibits in the history of the institute. A new feature this year, and one which is especially commendable, is the premium offered for country products. Over $2,000 has been already guaranteed for that purpose, and in all likelihood the large amount of $4,000 will be subscribed for distribution among the different counties. Considerable interest is being manifested in the interior, and there is every promise of a large exhibit of viticultural, agricultural and horticultural products. Napa County especially is making vigorous efforts to advertise her lands and wines.

One of the most prominent and desirable spaces in the pavillion has been assigned for a mammoth display of the fine wines and brandies for which this county is so justly celebrated. Now is the time for our wine men to get in good work. There is no cheaper or better method of advertising the viticultural resources of California than the one which now offers at the Mechanics' Fair. Thousands of eastern visitors who are daily pouring our city, seeking information of our resources, and the capabilities of our lands, will attend this grand exhibition, and thereby gain in a few hours, a thorough insight into all that they desire to know. The enquiry for land is so general just now by people from the Eastern States, that the attendance at the present exhibit of our industries, may be counted upon to surpass that of all other years. The interest taken lately in California, is rapidly growing, and there is no doubt that the coming year will see an influx of settlers from all parts of the Union, that will go far towards filling up the greater portion of the vacant land within our territory. For this reason, if for none other, the present opportunity to make a good showing, should not be neglected on any account.

The Southern Pacific Railroad Company has reduced its local passenger fares something like 25 per.cent. The reductions have been effected by simply cutting down six cents a mile rates to five cents, five cents a mile to four, and four cents a mile to three. A reduction has also been made in way freights, but the full schedules have not yet been published. The largely increase travel has doubtless much to do with these reductions. The business trans-continental and local, has swelled to enormous proportions of late, and from all appearances, the Southern Pacific will be taxed to furnish accomodations for the travelling public.

Under this condition of affairs it can afford the reduction, with the prospect of largely increased profits resulting from this judicious move.

REMEDY FOR CHLOROSE.

Mons. Narbonve in the *Progréss Vilicole Et Agricole*, states that two parts of sulphate of iron in one hundred parts of water is curative of chlorose, but hear Mons. Sicard, in the *Messager Du Midi*.

This terrible malady, chlorose, has rav aged in such a manner in our department this year, that it appears as if we would have to reconstitute our vineyards—Jacques or Riparia grafts, nothing escapes its deadly action.

Treat your chlorosed vines carefully after the following manner and you will obtain as I did, satisfactory results.

Put in a bottle of the capacity of one litre (1,760 pints), sulphate of iron 50 grammes (77.16 grains troy), spring water 900 grammes (1,584 pints); shake the bottle, making a perfect solution, and when the solution is obtained, add ammonia of 22 degrees 100 grammes (0,176 pints). Shake the bottle afresh while holding it firmly; immediately a copious, very deep colored precipitate will be formed, which is the ammoniate of iron.

In order to operate, have a vessel with a cover able to hold at least six litres (10,560 pints), pour into this vessel the contents of the bottle as above directed, shaking the bottle at the same time; add four litres (7,040 pints) of spring water. Sprinkle the chlorosed vine vigorously with this mixture, preferably towards evening, by means of a painter's brush, fine broom, or pulverizer, being needful to so stir the mixture previous to each sprinkling that the ammoniate of iron shall be found scattered in the most uniform manner possible.

The nerves of the leaves will instantly become green, and the same will be the case wherever a drop of the mixture has struck a leaf. Repeat at the operation, and if the vine has no bad consolidation condemning it to perish irretrievably, the green color, which manifested itself will continue to increase, and the leaf will resume its uninterrupted vegetative life. The wilted tendrils will speedily recover, and lengthen out from day to day. The grapes—should there be any—will grow and mature.

The worst deceased vines will necessitate four or five sprinklings at intervals of eight days, but the liquid employed costs next to nothing, not more than the manual labor.

It might be held unfair to close this article without appending what Mons. Viala in his *Maladies de la Vigne*, says of the action of sulphate of iron in relation to chlorose, "Many viticultors attribute a notable influence to the sulphate of iron; for these, the yellowness is due in most cases to the absence of iron. We have said, apropos, of the cottis, that this action is very problimatical."

I would ask, however, may not the sulphate of iron be one thing, and the ammoniate of iron another in the effective fight against chlorose, just as the sulphate of copper and ammoniate of copper are in that against Peronospora, in a less degree? Still I will admit that I don't see much force in this argument, if chlorose is not so much occasioned by a lack of certain chemical constituents in the soil, as imperfect grafting, or imperfect affinity between stock and scion. Nevertheless, we can do very well without argument, if Mons. Sicard is as right as he holds he is. No matter what the colleges may say, the proof of the pudding is in the eating thereof, and it is easy to check Mons. Sicard; he dares us to.

JOHN A STEWART.

ETTRA HILL, Santa Cruz.

CALIFORNIA RAISINS.

In commenting editorially upon the necessity of an especial care in the curing and packing of our raisin crop for market, the *Herald of Trade* takes the following hopeful view of the business in the future:

It is seldom that the critical public take so kindly to the production of a comparatively new country as they have to California raisins. That they have, is witnessed in the rapidity with which last year's crop of three-quarters of a million boxes went into consumption, and this, too, in the face of a decided strong competition at the east from importers of foreign raisins. The latter, finding their trade slipping through their fingers, put forth every effort to turn the tide, but to-day the reputation of California raisins stands unexcelled, and it rests with the packers here to see that this be not only maintained, but still further strengthened by the greatest attention given to uniform packing, honest weight, attractive packages and all else calculated to favorably impress consumers. If this be done, and we think there need be no fear but it will, then next year's crop of about 1,500,000 boxes will be quickly absorbed by the trade. The placing of next year's crop at so high a figure is due to the large number of new raisin grape vines that will be bearing in 1888. This year the pack is estimated at a little over 1,000,000 boxes. That it will reach the estimate there can be no doubt, and that the entire quantity will be readily placed there is still less doubt. The latter opinion is based on the contracts already made for future delivery, and also the favorable mention by our eastern exchanges of California raisins. So as to see the general favor in which they are held, we give the following extracts from two Chicago commercial journals. In an editorial the *Chicago Grocer* says:

During the past three or four years the trade has seen such a marked improvement in the quality of California raisins, that they anticipated in the near future a quality equal to that of the Malaga fruit. Last season's California raisins showed marked improvement over the preceding season, and as a probable result the importation of Malaga goods decreased from 575 377 boxes up to June 30, 1886, to 452,080 boxes for corresponding period of 1887, a decrease of 122,297 boxes. This is an indication of the increasing demand for the California raisins, as the country's demand must be on the increase yearly. But the point we wish to bring out, at the same time avoiding any discussion as to the relative merits of the two different kinds of fruit in general, is the greater value of California raisins in hot weather, on account of superior keeping qualities. Valencia raisins are more than likely to become sweated during the summer, and in fact the great bulk of them are more or less sugared. California, on the other hand, show their superior keeping qualities by withstanding heat without deterioration. For all purposes the California raisin is no doubt to be preferred during hot weather.

The New York correspondent of the *Independent Grocer* writes as follows:

With the coming of next month, interest will again revive, as new fruit from the orchards and vineyards of Europe will then be spoken of, and contracts offered and closed for fall delivery. Malaga raisins, except the really finer qualities, do not sell in this market. Dealers should not entertain the belief for a moment that the California product has driven this old staple from the field, as the Spanish grower and American importer will do their utmost to keep a hold upon a market that has been theirs for years, and it is but natural that a struggle should take place before the ground is yielded to the enterprising people of the Pacific. Last year's product of California did much to establish a favorable reputation for the fruit in this eastern section of country, and many dealers here, strongly prejudiced, refused to recognize the merits of the samples submitted for their inspection, but before the holiday season had passed were found seeking a stock, and to-day are eager to handle it. The keeping quality of California raisins is now fully acknowledged, and also the honest packing, and this coming season will find the fruit in good demand from the dealers in this section of country.

The Fresno Raisin Yield.

There has been a good deal of estimating done on the forthcoming raisin pack of Fresno, and considerable of it has undoubtedly been done without investigation. The estimate has been placed by some as high as 600,000 boxes, but later investigation of the probable yield and increase of the bearing acreage prohibits the possibility of such an output. Last year the pack reached the fine figure of 252,000 boxes, and while the increase of the bearing acreage is large, it would be expecting a great deal for it to even double the yield of last year. The lowest estimates are now from 300,000 to 400,000 boxes and some place it still higher. An increase of 100,000 boxes would be doing well—would be far ahead of any other district in the State and it is not likely to exceed this.—*Fresno Republican.*

The Raisin Outlook.

We are indebted to the New York Commercial *Bulletin* for the information that the raisin dealers of Spain, fully alive to the competition with California growth, are starting out early to make the coming season a lively one. They have published a circular and sent it broadcast through the growing districts, advising extra care in the growth of the fruit, to throw out goods that are not strictly up in quality, and cautioning packers to exercise great care in putting up their brands for shipment to America. They dwell upon the competition with California, and plainly acknowledge that unless such action as above is taken their industry so far as the United States is concerned, will be ruined

The crop of this city, and of the whole raisin district of this State, is very large this year, and the estimate of 1,000,000 boxes made sometime since, will probably fall far below the eniire output. There is one thing against us however, this year, and that is the freight rates to the East, which are double what they were last season. While Spain is straining every nerve to procure a reduction of tariff, the growers of California should leave no stone unturned to procure a reduction of rates on the railroads. United efforts should be made by all sections where raisins are grown, and the time for such efforts is now very short and there should be no delay in the work. As the rates stand now it will be a tax of a quarter of a million of dollars on the raisin crop of the State.

GREAT BRITAIN received in 1886 in imperial gallons

red wines	8,966,790
white wines	5,595,123
	14,561,913 gals.

of which 148,404 gallons were sent from British Colonies against 63,295 gallons in 1885. 1,127,931 gals. of wine were re-exported from England.

OUR NATIVE WINE SHIPMENTS BY SEA.

PER STEAMER SAN JUAN, AUGUST 24th, 1887.

TO NEW YORK.

MARKS.	SHIPPERS.	PACKAGES AND CONTENTS.	GALLONS	VALUE
C M	Arpad Haraszthy & Co	3 cases Wine	48	$70
Rev Father Pelletier	Lenormand Bros	10 barrels Wine	502	200
F A S	Wm Hoelscher & Co	12 barrels Wine	569	419
Alf Py	Lenormand Bros	54 barrels Wine	2,526	793
E B & J	Lachman & Jacobi	100 barrels Wine	5,005	1,365
F Bros	"	20 kegs Brandy	200	383
J Z T R	Kohler & Van Bergen	3 barrels Wine	149	149
"	"	2 half barrels Brandy	49	98
W Bros	"	5 half barrels Brandy	126	252
B D & Co	B Dreyfus & Co	50 barrels Wine	2,375	1,200
C V Co	"	52 barrels Wine	1,198	600
Total amount of Wine			12,372	4,845
Total amount of Brandy			375	733

TO CENTRAL AMERICA.

J H P, San Jose de Guat	I Gutte	1 keg Whiskey	10	$40
"	"	20 kegs Zinfandel	116	87
"	"	2 kegs Sherry	38	48
"	"	1 keg Port	10	13
Total amount of Whiskey			10	40
Total amount of Wine			164	140

TO FRANCE.

H L, Bordeux	Andre Lafargue	4 barrels Wine	168	$1,001

TO NEW YORK—PER SHIP J. B. THOMAS, AUG. 26, 1887.

S V S	Eisen Vineyard Co	27 cases Wine		$25
W T C & Co	Wm T Coleman & Co	50 barrels Wine	2,525	947
J A S	"	300 half barrels Brandy	7,973	15,946
U S M Co	P G Sabatie & Co	5 barrels Wine	251	84
"	"	3 cases Wine		3
G	J Gundlach & Co	280 barrels Wine	13,470	5,051
A V Co	C Schilling & Co	250 barrels Wine	11,844	4,441
C in half diamund	"	100 barrels Wine	4,751	1,782
A V & Co	"	57 barrels Wine	2,714	1,017
J W & B	Downing & Schmidt	50 barrels Wine	2,400	900
B D & Co	B Dreyfus & Co	500 cases Wine	23,500	8,813
J A S	"	66 packages Brandy	1,867	3,734
"	Fruit Vale W & F Co	44 packages Brandy	1,083	2,166
"	Julius P Smith	113 packages Brandy	3,000	6,000
G & M	R Schmidt	127 packages Wine	15,130	5,674
J P S	Julius P Smith	198 barrels Wine	9,900	3,712
K & F	Kohler & Frohling	270 barrels Wine	13,485	5,087
Total amount of Wine			99,970	$37,256
Total amount of Brandy			13,923	27,816

MISCELLANEOUS SHIPMENTS.

DESTINATION.	VESSEL.	RIG.	GALLONS.	VALUE.
Honolulu	Lady Thompson	Bark	332	$300
Victoria	Mexico	Steamer	175	105
Honolulu	Zealandia	Steamer	108	22
New Zealand	"	Steamer	62	30
Winnepeg	Geo W Elder	Steamer	175	175
Marshall Islands	H L Tiernan	Schooner	249	136
Mexico	City of Topeka	Steamer	255	142
China	Gaelic	Steamer	493	293
Japan	"	Steamer	1,795	765
Calcutta	"	Steamer	80	65
Total			3,724	$2,033
Total shipments by Panama steamers			112,506 gallons	$42,241
Total Miscellaneous shipments			3,892 "	3,034
Grand totals			116,398	$45,275

IMMIGRATION.

The following table exhibits the total number of immigrants arrived at the ports of the United States named below, and from the principal foreign countries, except from the Dominion of Canada and Mexico, during the month ending July 31, 1887, and the seven months ending the same, as compared with the same periods of the preceding year:

PORTS AND COUNTRIES.	Month ending July 31—		Seven Months ending July 31—	
	1887.	1886.	1887.	1886.
PORTS.				
Baltimore, Md	2,663	1,390	27,019	12,263
Boston and Charlestown, Mass	3,929	2,629	25,806	18,141
New Orleans, La	2	112	550	1,209
New York, N. Y	29,657	25,171	248,389	175,685
Philadelphia, Pa	2,690	1,899	22,737	12,971
San Francisco, Cal	139	147	1,030	1,044
Total	39,080	31,348	325,531	221,313
COUNTRIES.				
Great Britain and Ireland:				
England and Wales	7,356	5,370	46,863	29,967
Ireland	4,661	3,755	50,516	34,222
Scotland	1,639	1,116	13,260	7,993
Total	13,656	10,241	110,639	72,182
Germany	7,998	5,954	69,495	46,818
France	340	249	2,837	1,787
Austria-Hungary:				
Bohemia and Hungary	1,567	1,317	10,769	13,207
Other Austria	1,486	1,887	12,171	9,727
Russia	2,875	3,040	16,491	12,687
Poland	407	596	2,982	3,439
Sweden and Norway	5,819	4,575	45,790	31,180
Denmark	892	492	6,772	4,429
Netherlands	315	155	3,738	1,739
Italy	2,331	1,609	34,808	17,023
Switzerland	519	218	3,965	2,969
All other countries	872	1,015	5,071	4,126
Total	39,080	31,348	325,531	221,313

NOTE—The arrivals of immigrants in the customs districts above specified comprise above 98 per cent. of the immigration into the entire country.

ROUGH ON BORERS.

EDITOR MERCHANT:—My remedy for the borer has worked so satisfactorily with me, that I will give it to others who may be similarily afflicted. Last year, 1886, during the latter part of July, I first noticed that the Borers had attacked my fruit trees, about 900 assorted, and on closer examination, found they had made fearful ravages; indeed, I was almost discouraged, but went to work with the knife cutting them out, and in many instances, completely girdling the tree, in my efforts to cut them out, and badly injuring others. I was advised to wrap the trunks with old gunny sacks; but having none convenient, I used paper *i. e.*, pages of catalogues, and in many instances common newspaper. In the Autumn I uncovered the trees and found them in good order, but was at a loss to which to attribute my success. The wrapping with paper, the cutting them out, or a wash of Whale Oil Soap that I gave them.

This season, during the latter part of April, I washed all the trees with Whale Oil Soap, and wrapped nearly all with paper, leaving 100 or so in nursery bed unwrapped, and in some few instances, the paper was torn on those in orchard. On examination, during latter part of July and first of present month, I found every one where the paper was intact free from Borers, infact, not finding a single one while in those uncovered, and where paper had been removed. I found from one to twenty, all sizes. This to me is conclusive proof that I am on the right track. Moreover, the Peaches and Cherries wrapped did not gum a particle, while the unwrapped ones were badly affected—further, the wounds made in cutting the first year, had all nicely healed or were healing over. I shall certainly pursue this course in the future.

The operation is very simple and quickly done. Take a stiff paper (Glazed Hardware is the best) and cut it in strips four inches wide, then commence at top of trunk and wrap spirally to the root, throwing up earth around the paper to keep it in place, or if thought necessary, it can be loosely tied.

A boy can wrap 500 trees in a day of ten hours. The trunks of young trees certainly need some protection from the intense heat of the sun, which often hereabouts is 110° to 112°, and I think this gives it them.

W. G. HUBLEY.

Colfax, August 19, 1887.

HOW CHAMPAGNE IS MADE.

The following is contributed to an exchange by a tourist in France, as a description of the process by which genuine wine is made, and will be found none the less interesting because of the picturesque method of telling the story:

A. The pressed grape juice becomes must, which is put into casks, where by effervescence the must becomes wine, from which, as the cask is not air-tight, much carbonic acid gas is dispersed. A residuum is deposited in the cask, and during the winter the wine is clarified, remaining in the low temperature of the cellars until the following May or June, and of course preserving a variable proportion of sugar, according to the quality of the grape and the character of the season.

B. In May–June, for the first time, the wine is bottled, and in the hermetically-corked bottle the developed carbonic-acid gas, which cannot escape, forms the sparkle and fizz that give character to champagne. Sometimes, however, natural fermentation fails to give sufficient "sparkle" through a want of sugar, and,

C. Diluted sugar-candy is added, the determination of how much and how little is necessary being a special appreciation acquired only by experts. Still, when this is done, our champagne is far from being ready for the table, and much more time and trouble have to be bestowed.

D. Next the bottles have to migrate from the cold cellars to "up stairs", where the storage is in a temperature of 54° to 60°. Here they are placed horizontally, so as to allow a deposit of sediment, for which purpose a fortnight or three weeks are allowed; and where the carbonic-acid gas is in excess six to ten per cent. of the bottles break, so that at this stage a promenade among the stores is only made safe by protecting the face with a mask.

E Again the young champagne is sent down stairs, and this time it is placed for a long time—two, three, four, five or six years—to mature, the bottles still reposing horizontally in bins. Two years are thought sufficient for Germany, four years for England, different countries having different tastes.

F. At this stage, therefore, of maturity, suited for the intended market, the wine is changed from its horizontal position and placed obliquely, neck downwards, in racks of peculiar construction. The object of placing the bottles thus is for a further deposit to fall in the neck upon the cork.

G. Assisstance to them is then given, and daily throughout a month or six weeks skilled hands give each bottle a shake and a twist to help the natural gravitation of the sediment. This labor was immense in pre-Clicquot days, but now it is reduced materially; a clever invention in constructing the rack allows the necessary screw-shake to be made without removing the bottle, which had to be done before, and was treadmill work.

H. At last, sooner or later, the desired result is attained, and the wine in the body of the bottle has become quite clear.

I. But the sediment in the bottle's neck has to be discharged, and this is done by holding the bottle downward and releasing the imprisoned cork, which is shot out, followed by the sediment behind it—kicked out, so to speak, by the vinous gas from the wine's good company. Quick and dexterous hands have to do this operation, for not a precious drop of the good wine must be lost. The bottle is sharply "righted" and set up on its base.

J. Another operator seizes the uncorked bottle and repairs by the addition of old wine, blended with sugar-candy diluted, so as to give the special character desired—dry, extra dry, etc. Thus "dosed," the wine becomes a bottle of champagne.

K. Ready for one man to cork it.

L. Another man to double string it.

M. A third one to make sure by wiring it, when,

N. It is given over to various hands to decorate and daintily dress it up in the uniform of "the house," to go as a "welcome guest" to the high feasts and festivals of the world.

The Santa Rosa *Democrat* says that the superintendent of the county farm is very much elated over his success in the cultivation of tobacco He has one-quarter of an acre planted, and the average length of the leaf of the plants is 34 inches. It is claimed that in growth and quality, it will equal the production of the celebrated tobacco districts of the South of Cuba.

WINE CELLARS.

The principal object in building a cellar, says a daily contemporary, being to obtain a regular temperature, it is obvious that concrete or brick would be the best material, and of these two we would much prefer concrete, as not liable to mold even when affected by dampness. But the cost of hauling the material renders this kind of building more expensive, and for this reason wood is oftener used. We contend, without entering into complicated figures, that a thoroughly put up cellar and wine-house, put up with wood, will cost as much as a concrete unless material is to be hauled a very long distance. We have known of some cellars that approached the standard of temperature and built of wood, and for the benefit of those intending to build we will give the plan:

First excavate about six feet of ground with plow and scraper, say 26 feet wide by 64 or more in length; then set your foundation one foot from the bank and twelve feet high, so as to allow room for a 2000-gallon oak cask. A clear space is thus secured of 22x60, or sufficient for sixteen casks of 2000 gallons each, making a total of cellarage of 32,000 gallons. Take the wall double and fill the space with sawdust; over the whole have a good floor of 1¼-inch pine. On top of this first story put up a fermenting-room of equal dimensions and style of building, fourteen or sixteen feet high, with a ceiling and a roof with enough space between them to cause a good draft. The east, west and south sides should have a shed roof of ten or twelve feet to keep off the rays of the sun and give a chance for a free circulation of air outside of the cellar. The sheds are excellent adjuncts of a cellar, and can be utilized for fermenting-rooms when the temperature of the outside is not too uneven. The main fermenting-room will thus be situated about four feet above level ground, even with the wagons, which facilitates loading and unloading. It will accommodate about twelve ar fourteen tanks, capable of receiving 100 tons of grapes alone. The size is calculated about sufficient for a forty-acre vineyard in full bearing, if the wine be sold before the next vintage. In case of necessity, the wine of late grapes, or the last fermentation, can be kept in double-bottomed redwood tanks in the fermenting-room at least until the 13th of June. While it has always been understood that oak was the only wood that gave general satisfaction for the preservation of wine, there are many who have, for different reasons, been led to experiment with our native redwood, and we believe that so far no evil results have followed when proper precautions are taken to thoroughly prepare the wood. We consider for this purpose the wood should be seasoned and well steamed, then the tanks should have another steaming a few days before vintage, and one or more fermentations of grapes be made in them to thus thoroughly saturate them with wine and coat them to a certain extent with crystal of tartar. Of course small fermenting tanks of seven or eight tons capacity would take more surface room in a cellar than oak casks, but the difference in cost being very material about one-third of the price of oak, would make up the cost of a larger cellar. It is not practicable to conduct fermentations without some provision for the free exit of carbonic acid gas, and thus, if it was desired to use redwood tanks to store wine in, they should be first set up in the fermenting-room and when properly seasoned, they can be moved and set up in the cellar. If the price of wine was established upon a basis of supply and demand of the whole world, as is the case in older wine-producing centers, we could easily dispense with the more expensive part of the cellar outlay, as the most propitious time for moving wines is from March to July following the vintage, and our redwood cooperage with our temperate winters would be sufficient. It is always necessary to have on hand a certain quantity of puncheons and barrels of different sizes, so as to contain fractional quantities of each lot of wine, as a cask, especially of young wine, should be filled without delay. It is conceded that an average temperature of 65 degrees is the best for the proper development of wine. A temperature of 70 degrees is considered as more trying to the wine, causing it to ripen faster, and to evaporate more, while a slower development is accepted as much preferable, especially for fine wines. While it is true that excellent fermentations have been obtained in very poorly constructed cellars, and that at times wine has kept sound, notwithstanding changes of temperature, these are exceptions rather than the rule, and the vine growers should leave nothing undone that can secure and keep for them the highest degree of quality in their wine. The time is coming when a wine must have certain known qualities to be a good article of commerce, and when each man will be known by his product.

No Use For It.

Nine puncheons or 1500 gallons of cherry juice were shipped from this city yesterday on the J. B. Thomas, consigned to a New York house. The packages bore no outside evidence of their contents or destination, and only on close inspection was the fact revealed that each one was stenciled with the name of a celebrated German manufacturer of this wine adulterant. It was impossible to ascertain the house to which the juice was shipped. Viticulturists of this city who learned of the shipment were overjoyed, it being regarded as a step forward in the cause of pure wine.

E. LEGIER, in St. Quentin (Aisne), asserts in one of the last issues of the *Journal of Chemistry*, that French Cognac, formerly exclusively distilled from wine, is at present even in the best qualities, only a mixture of alcohol from grain, potatoes, molasses or beetroots, diluted with water, and additioned with artificial ethers and oily extracts.

A WINE ESTIMATE.

The Yield of the Country Placed at Twenty-four Million Gallons.

Chief Viticultural Officer Wheeler has combleted an estimate ot the wine yield of the United States for the year 1887. He bases his figures for this state on the returns received a short time ago from the various district inspectors. The estimate of the other states and territories is compiled from reports from the Department of Agriculture at Washington.

Judging from the statements at hand, the local vine growers are not alone in having short crops. Placing the California yield at 16,000 gallons, the state will produce 92 per cent. of an average crop. Twenty-nine states and territories will fare worse, and, as far as known, only nine states and territories will have better crops. These states are Massachusetts, Rhode Island, Connecticut, Florida, Wisconsin, Dakota, New York, New Mexico and Utah. Of all the Eastern states, the only districts which produce enough wine to have any effect on the market are those in New York, Missouri and Ohio. The New York yield is placed at 96 per cent., the Missouri at 83 per cent. and the Ohio at 75 per cent. The deficiencies will be made up in the manufactories, or by drawing on California supplies Seven other states send out smaller quantities of wine, and the crop prospects are as follows: Illinois 79 per cent., Indiana 80 per cent., Kansas 75 per cent., New Mexico 100 per cent., Michigan 90 per cent., Georgia 90 per cent., and Virginia 69 per cent.

Throughout the country east of the Rocky mountains, the production of table grapes is steadily growing, while the wine men are becoming discouraged because of the active competition coming from this state. Mr. Wheeler places the wine production of these states at 8,000,000 gallons, or only one-half as much as that of California alone. New York is the heaviest producer.

Subscribe for the MERCHANT.

Alcoholism in France.

The phylloxera is undoubtedly in greaf measure responsible for the increase ot drunkenness in France. Given cheap and pure wine, there would probably be but little alcoholism. Drunkenness is almost unknown in wine growing countries; and intemperance in France prevails principally in the northern departments, where the vine cannot grow. What is more particularly wanted is the stringent application of laws against the sale of bad alcoholic and adulterated wine, combined with facilities of transit, so that pure wine may be brought within reach of the poorer classes. When once the palate is accustomed to natural and wholesome wines, the intoxicants that do so much harm will be considered too coarse to be drunk with any sort of pleasure. A Spanish peasant from the vineyard of Andalusia, accustomed to the unsophisticated Manzanilla or the Montilla of his native country, would find the Schiedam drunk in northern Europe inexpressibly nasty. It is difficult to prevent drinking by act of Parliament, but the Legislature may seek to check fraud and adulteration.— *London Lancet.*

THE SAN FRANCISCO MERCHANT.

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Devoted to Viticulture, Olive Culture, and other Productions, Manufactures and Commerce of the Pacific Coast.

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GOVERNOR BARTLETT.

California Mourns the Loss of Her Chief Magistrate.

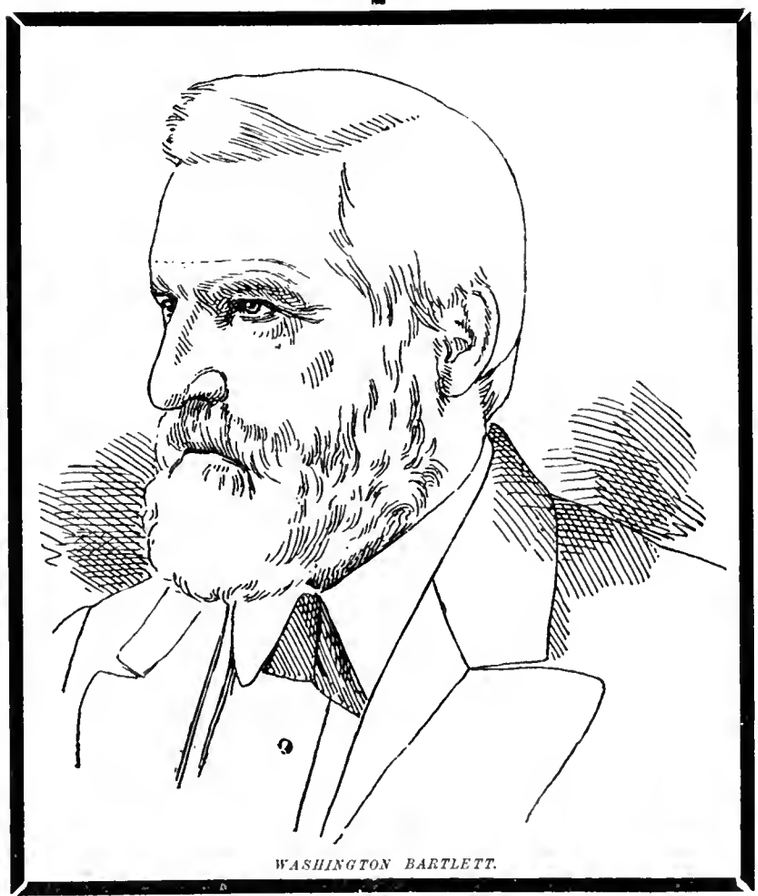
A PEACEFUL ENDING TO AN HONORABLE LIFE.

Washington Bartlett, Governor of the State of California, died on Monday last at his Oakland residence, after a lingering illness. Although his death was not altogether unexpected, the intelligence was a severe shock to the public, who honored the man for his rare integrity and sterling worth. Throughout the length and breadth of the State the news was received with profonnd regret. Politics were forgotten, and irrespective of party, eulogistic expressions of the late Governor were heard from all sides.

In a long and honorable career of public usefnlness, his probity, ability and unassuming modesty, have endeared him to the people he so faithfully served. Ripe in years and honors he has passed peacefully away, and his record stands in blemished. The tale of his life is, as an open book.

He was the eldest son of Cosam Euir and Sarah E. Bartlett, born in Savannah, Georgia, February 29, 1824; and was consequently in the sixty-third year of his life. In his early youth he removed with his family to Tallahassee, Florida. Here he received a fair education, and first acquired a knowledge of printing and journalism, for which he had an especial liking. He made his first venture in this line, shortly after he was twenty-one years of age and pursued the business until shortly after the close of the Mexican war the California gold fever swept the country in its most violent form. Young Bartlett did not escape the contagion, and with printing outfit and all the material complete for publishing a paper he embarked on board the ship Othello, and sailed for California in January, 1849. Leaving the gold hunters to seek their fortune in the mines, Bartlett clung to his purpose of establishing a newspaper and in January of 1850, he started the *Journal of Commerce*, he himself being editor. His connection with this paper continued until 1851, when he associated with B. R. Buckalew in issuing the *Public Balance*, a daily paper. In 1853 the *Daily Evening News* was established by Mr. Bartlett and his brothers Cosam Julian and Columbus Bartlet. This was discontinued in 1856, when Washington Bartlett, in partnership with Edward Connor and Wm. H. Rhodes, ("Caxton") commenced the publication of the *True Californian*.

In 1856 Mr. Bartlett was appointed to the captaincy of an armed company in the Vigilance Committee, which he had joined. It was about this time that he first bagan to take an active part in local and State politics. From October 1857 to October 1859 he was a depnty under County Clerk Wm. Duer, being assigned to the Twelfth District Court. In 1859 the People's Party elected him County Clerk, succeeding Wm. Duer, under whom he had served as deputy. In that official capacity he earned such an enviable record that he was re-elected to that office in 1861, and again in 1867. The Democratic party nominated him in 1886 for Auditor, but he was defeated. When his third term as County Clerk was completed, Mr. Bartlett was appointed by the late Governor Henry H. Haight to fill the vacancy in the Board of State Harbor Commissioners, caused by the death of James H. Cutter. There was a brief period in which Mr. Bartlett practiced law, in association with his brother Columbus. For several years, dating from 1870, he was secretary of the Chamber of Commerce in this city. In 1873 he entered the real estate business with Daniel L. Randolph, the present Vice-Consel for Brazil at this port.



WASHINGTON BARTLETT.

At the expiration of his term as Harbor Commissioner he stood for State Senator and was elected in 1873 by the People's Union and Independent Party, although his associate on the ticket, A. S. Hallidie, was defeated. As a Senator he won not only the esteem of his colleagues, but the good will of the best people in the State by his strict adherence to the principles of governmental economy. Mr. Bartlett acted with the Independents during this session of the Legislature, supporting Governor Booth for United States Senator, and voting for John S. Hager for the unexpired senatorial term. During the next Legislature the Independent organization, or People's Union, had disappeared, and Mr. Bartlett acted with the Democratic party. He was placed on the Judiciary Committee, and made Chairman of the Committee on Public Printing, As a Senator he sustained the reputation he had established, and no asperstions have ever been cast upon him as legislator.

By the election of 1880, the people of this city decided to have a new charter drawn up, and Mr. Bartlett was one of the first selected to serve as freeholder, for the purpose of framing it.

In 1882, he was pitted against Maurice C. Blake, the Republican candidate, for Mayor, as the strongest man in the Democratic party. That the choice was well chosen, was proven on election day, when Mr. Bartlett defeated the Republican champion by a majority of 2,326 votes. He filled this office with dignity and honor, never swerving from the path of duty, nor permitting party principles to overcome his sense of right or justice.

In 1884, the Democratic party again elected him to the office, by a majority of 2,834 votes over his Republican opponent, Captain William L. Merry.

The administration of Mayor Bartlett, zealous in the interests of the people, paved the pathway to gubernatorial honors, and when the Democratic State Convention was called to order in last September, he was nominated for Governor, receiving 309 votes, against 137 for ex-Congressman Berry, and 46 for Michael F. Tarpey of Alameda. The contest at the ensuing election was close, but the people of the interior rallying around him, gave a majority of 652 votes.

His career since his inauguration at the first of the year, is simply a continuation of his life long record for devotion to duty.

The Governor was the organizer of the San Francisco Homestead Union, the first organization of that character: he was a member of the Society of Pioneers; was one of the founders of the San Francisco Savings Union, incorporated in 1862. He was also a charter member of Parker Lodge, No. 124, I. O. O. F., and for some time was a Director of the Odd Fellow's Association.

Governor Bartlett leaves two brothers, Colonel Frank A. Bartlett of New Orleans, Editor of the Morning Chronicle, and Columbus Bartlett. He also leaves a large number of nieces and nephews. One of his nephews, Thomas P. Randolph, is at present Executive Secretary, and has been in attendance upon him during his last illness.

The Fungus Diseases of the Grape Vine.

THE POWDERY MILDEW.

Like the Downy Mildew, the Powdery Mildew of the vine is a native of this country, and attacks the foliage, young shoots, and berries of both the wild and cultivated varieties of the grape, showing a decided preference to those of the Vinifera class. Here the resemblance ceases, however, for the *Uncinula* is a fungus of very different habit of growth from the *Peronospora*, and belongs to an entirely distinct group of parasites—a group embracing what are familiarly referred to as the White Mildews or Blights, of which the common Grass Mildew (*Erysiphe graminis*), the Lilac Mildew (*Microsphœria Friesii*), and the too well-known Mildew of the Hop-vine are examples. The diversity extends even to the climatic conditions favoring the growth of these two fungi, for, while a liberal supply of moisture is necessary to the full development of the *Peronospora*, the *Uncinula* likes a comparatively dry atmosphere, and always occasions most injury during seasons of protracted drought. On account of this fact, the Powdery Mildew has a wider geographical range, having extended into the drier regions of the West, and along the Pacific coast into regions where the *Peronospora* has been unable to gain a foothold. It has long been known as a serious pest in California, and it is in these drier sections of the country that it has done the most damage, for, although it is nowhere entirely absent in the region east of the Mississippi, it effects, in the average season, comparatively little injury in the open vineyard—at least the injury is slight as compared with that wrought by the Downy Mildew.

In the grapery, carelessness in the matter of ventilation is very likely to bring on an attack of the mildew. It may be that a cold draft of air, or a sudden change of temperature, lowers the vitality and consequent resisting power of the vine—it catches cold, one may say—and the mildew comes upon it. It is far more likely, however, that the changes effected in temperature, etc., by the leaving open of a window, were just such as to favor the germination of the fungus spores, already on the vine or wafted in through the ventilator, than that the presence of the mildew should be due to any dimunition in the vital forces or vigor of the vine. Certain it is that where there are no apores of the fungus to germinate, there will be no mildew, whatever other conditions may prevail. That some varieties of grapes are more susceptible to the attacks of the Powdery Mildew than others everybody knows, but this does not warrant us in assuming that such varieties have a lower vitality than others. The preference lies on the part of the fungus, and may result from finding in juices of some varieties a more acceptable and nourishing food than in others. All soils will not produce the same varieties of plants equally well, nor can we suppose that all grape leaves—the soil upon which the fungus vegetates—will nourish equally well the *Uncinula*. There are also causes of a mechanical nature that may operate in the choice by the fungus of some varieties over others. The delicate suckers formed by the germ-tubes of the conidia and ascospores may find the epidermis on the leaves of some too thick or hard for them to easily penetrate. That a vine well nourished and in full vigor of growth is less open to the attacks of fungus parasites than one poorly fed or badly managed, there can be no question, but in seasons favorable to the development of the Mildews or the Black-rot, the best kept and most vigorous vines are liable to suffer from their ravages.

This season I have observed it in all its phases of development, both upon vines in the open air and upon those cultivated under glass here at the Department. Upon the foreign varieties in the grapery it was most abundant and its injurious effects most apparent.

The early history of this fungus is obscure, but as it abounds on the wild grapes of the country, it may be assumed to have always been present, to a greater or less extent, in the vineyards since the earliest days of American grape culture. It has frequently been discussed in our agricultural and horticulturat journals for many years past, under the name of *Oidium Tuckeri*, or simply *Oidium*, it being supposed that our fungus was the same as the European vine mildew of that name, a matter to which I will refer later on. In the Patent Office Report, there appears a brief account of this fungus, and the employment of sulphur, both in a dry and liquid form, is recommended as a remedy. A more extended account appears in the same report for 1854. In this paper, which is written by Mr. J. F. Allen, of Massachusetts, a solution of lime and sulphur, the preparation of which is described, is recommended as a remedy against the mildew in question. In regard to its botanical history, it may be stated that the original specimens upon which the species *Uncinula spiralis* was founded were collected in 1851, in Pennsylvania, on *Vitis Labrusca*, and in 1856, in Massachusetts, on cultivated grape-vines. Some recent authors have adopted the name *Uncinula Americana* of Howe for this fungus but without sufficient reason, as will appear from the following communication from Dr. W. G. Farlow, in answer to inquiries made by me:

The fungus was first named and figured by Berkeley in his *Outlines of British Fungology*. It was then mentioned by name in Sprague's paper in the *Proceedings of the Boston Natural History Society*. Then came Howe's name, *Uncinula Americana*, which was never published by Howe. He sent round to a few people a strip of paper with a printed description, but that is in no sense a publication. It cannot be found in the market in any book, published exsiccatae, or other form of recognized publication. In the *Erysiphei of the United States*, in *Journal of Botany*, Howe's description is quoted publicly for the first time, but with the qualification that it is not apparently different from U. *spiralis*, B. and C. The figure and name actually first given in Berkeley's *Outlines* have more claim to be recognized than the printed slip of Howe, which was merely a private memorandum.

The term, Powdery Grape-vine Mildew, was first applied to this fungus by Prof. C. V. Riley, and as it is descriptive, and at the same time clearly distinguishes this mildew from *Peronospora viticola*, to which the same author has applied the name of Downy Mildew, it has been employed here, with the hope that it may become generally adopted by those who prefer English to Latin names.

There are fewer difficulties in the way of gaining a complete knowledge of the natural history of the species of the group of fungi to which our Powdery Mildew belongs the *Erysiphei*, than in almost any other of the class of *Ascomycetes*, and consequently their nature and habits have come to be very well known. The most complete account of the *Uncinula* described in this report is that given by Prof. W. G. Farlow in the *Bulletin of the Bussey Institution*.

EXTERNAL CHARACTERS OR GENERAL APPEARANCE OF THE POWDERY MILDEW.

The Powdery Mildew makes its appearance usually during the early days of June, and continues its development late into the autumn. Its entire growth is upon the outside of the invaded plant, no portion, excepting the minute suckers, or haustoria, which are said to penetrate the epidermal cells, ever entering within its tissues. It appears in dull, grayish-white patches, most conspicuous on the upper surface of the leaves, and when growing thickly on the young shoots or berries, its mycelium imparts to these organs a similar hue. It never has the bright, lustrous, or frosty appearance that characterizes the Downy Mildew, and the livid brown or seemingly scorched blotches on the leaves that the the latter fungus occasions are wanting, although in thin-leaved varieties of foreign vines a discoloration takes place through the whole thickness of the leaf, visible at the points below the patches of fungus growth on the surface above. In a few instances I have seen the mycelial growth so dense upon the leaves as to give them the appearance of having been spattered and blotched with whitewash, the spots being a pure dead white. Below these spots, on the under surface, there were visible decided discolorations and a slight convexity or malformation, the lower layers of cells in the leaves having continued to grow, while the development of the cells near the upper surface was prevented by the action of the fungus. This mildew is also found on the lower surface of the leaves, but never to the same extent as upon the upper side, and as it is only in the latter part of the season that it has been observed there at all, its presence is doubtless due to an extension of growth from other parts, as from the petiole.

Upon the young and tender shoots the fungus is often particularly abundant, its action being to check their growth. Its presence on the older and half-ripened shoots is indicated by distinct but irregular brownish blotches in the epidermis. Sometimes the *Uncinula* appears during the season of bloom, and, coming on the newly expanded flowers, causes them to abort. Attacking very young berries, when these are no larger than shot or small peas, their growth is permanently checked. Cases have come under my observation where the *Peronospora*, the *Uncinula*, and the fungus of the Black-rot were all engaged in their work of destruction upon a single bunch of grapes. It is needless to say that the destruction was complete.

Upon the older berries the presence of the Powdery Mildew is made evident, before the mycelial threads have obtained sufficient growth to become conspicuous themselves, by the minute brownish spots produced by the action of the suckers on the epidermal cells. These spots eventually become confluent, the epidermis dies or is so affected that it will no longer expand with the growth of the berry and consequently bursts, first forming tiny then gaping tears, the result being the death and decay of the berry. Oftentimes the fungus spreads over only a small portion of the berry; this part ceases to grow and a much distorted or imperfectly formed fruit is the result. The distortions are often carried so far that the berries crack open, exposing the seeds. We sometimes find nearly full-grown berries completely overgrown with the mycelium of the *Uncinula*, so that the brown specks above mentioned, if present at all, are completely hid from view. These berries eventually become dry and shrivelled, and finally drop off. The eating of berries diseased by the mildew is said to produce nausea and vomiting.

BOTANICAL CHARACTERS

The Powdery Mildew consists of a mycelial growth that rests wholly upon the surface of the parts of the vine supporting it, and the reproductive bodies or spores. The threads or hyphæ of the mycelium have a uniform diameter of about 1-6,000 of an inch (varying from 3 to 5 *u*), are much branched and interlaced, and are provided with frequent septa or cross-walls. Where this mycelium is applied directly to the epidermis of the supporting plant, there are developed at short intervals irregular protuberances or suckers, by which the fungus fastens itself to the host and through which it imbibes its nourishment.

REPRODUCTIVE BODIES.

If the fungus be examined early in the season, say in June or early in July, short branches will be seen arising from the threads at right angles, or nearly so, to the plane of their growth. These branches may be found as late as the latter part of October. The branches are divided into several oblong cells by cross-walls. The uppermost cell is slightly larger than that immediately below it, and is rounded at its upper extremity. If this terminal cell be watched, we will soon see its lower end becoming rounded like the upper, forming thus a structure between it and the next cell below, from which it is completely separated and falls off. There is thus formed a spore or reproductive body, called in this case a conidium, which is capable of quickly germinating and producing a new fungus growth. The next cell of the branch quickly passes through the same changes noted in the first, and in this way a number of conidia are formed in rapid succession. Like the conidia of the *Peronospora*, those of the *Uncinula* serve for the immediate propagation and dissemination of the fungus, but dampness, or a moderate amount of humidity only, is sufficient for their germination. They do not require water condensed in the form of drops of rain or dew, as does the Downy Mildew, and they germinate by the immediate production of a germ tube and not by zoospores, as in the case of that fungus. The conidia are thin-walled, oblong cells, filled with a transparent granular matter. Their longest diameter is about 1-1,000 of an inch. One of these bodies falling upon a grape-leaf will, under favorable conditions of temperature and humidity, push forth a short germ-tube, which first sends a haustorium or sucker into an epidermal cell, and then grows into the thread-like branched mycelial formation (thallus), diffused over the surface. By their multitude these threads now become visible to the unaided eye, and we have what has been familiarly termed Mildew, *Erysiphe*, *Oidium* &c. The temperature at which the conidia of the Powdery Mildew germinate most freely is the same as that which most favors the germination of those of the *Peronospora*, but the range of temperature under which they will develop is apparently greater than for that fungus.

When the mycelial growth has attained its full development, a spore-formation of an entirely different character from that above described takes place. Perithecia, or what we may be allowed to term fruits, are formed, within which spores are produced

in a number of little sacs called asci. These fruits are especially abundant on the invaded organs of the vine during the months of September and October. To the naked eye they appear as minute dark brown or black points, thickly dotting the mildewed surface. The formation of these perithecia has been traced by De Bary in some other members of the *Erysiphei*; and the facts he has presented will apply to our *Uncinula*. He says:

The perithecia are engendered where two filaments cross each other. These swell slightly at this point, and each emits a process which imitates a nascent branch, and remains upright on the surface of the epidermis; the process developed from the inferior filament soon acquires an oval form and a diameter double that of the supporting filament; then it becomes isolated from it by a septum, and constitutes a distinct cell, which I qualify as an *oocyst* The appendage which proceeds from the superior filament always adheres intimately to this cell and elongates into a slender, cylindrical tube, which terminates in an obtuse manner at the summit of the same cell. At its base it is also limited by a septum, and soon afterwards another septem appears a little below its extremity, at a point intimated beforehand by a slight strangulation. This new septum completes a terminal short and obtuse cell (the antheridium), which thus becomes borne on a narrow tube, like a sort of pedicle. Immediately after the formation of the antheridium, new productions show themselves both around the oöcyst and within it. Underneath this cell and from the filament which bears it, are seen to spring eight or nine tubes which join themselves to each other by their sides and to the pedicle of the antheridium, while they apply their inner face to the oöcyst, above which their extremities soon meet. Each of these tubes is then divided by means of transverse septa into two or three distinct utricles, and in this manner the multi-cellular wall of the perithecium springs into existence. During thia time the oöcyst enlarges and divides, without its being possible to detect precisely how it happens, into a central cell, and an outer layer, which is ordinarily simple, of smaller utricles contignous to the general enveloping wall. The central cell becomes the single theca proper to the species of *Erysiphe* of which we are speaking, and the layer which surrounds it constitutes the inner wall of the perithecium. The only changes which are afterwards to be observed are the considerable increase of the perithecium, by the fact of the development of all its component cells, the production of the radicular filaments of appendages which proceed from its outer wall, the brown tint which this assumes, and finally the formation of the spores in the theca.

Instead of there being only one theca within the perithecium, as in the case of the species described above by De Bary, there are, in the *Uncinula* of the vine, four to eight. The dark central portion is the perithecium itself, which by pressure has been burst open on one side, and three of the thecæ, or asci, have been pushed out. Proceeding outward from the walls of the perithecium are a number of long, slender filaments, termed appendages, that are rolled inwards at their extremities, forming a kind of hook; hence the Latin name *Uncinula*, from *uncus*, a hook. In their growth the perithecia are at first quite colorless, then pale yellow, and finally very dark brown or black. The appendages are clear and transparent at their extremities, but have a brownish color towards their bases. They are divided into several cells by transverse walls, and are sometimes, though rarely, branched or divided above.

The asci, developed within the perithecium, are delicately-walled, transparent sacs that contain the ascospores or sporidia. These are oblong bodies, rather more rounded in outline than the conidia and somewhat smaller. They are the true winter spores of the fungus. Closely incased within the hard, compact walls of the perithecium they are well protected from injury and the severe weather of winter. In the spring the walls of the perithecium decay or crack open, allowing the sporidia to escape, and bring about a new infection of the vines. Doubtless a sufficient number of these fungus fruits remain adhering to the vines through the winter to bring about a recurrence of the disease as soon as the conditions favorable to the germination of the sporidia prevail.

UNCINULA SPIRALIS AND OIDIUM TUCKERI.

The fungus under discussion has long been referred to as the *Oidium Tuckeri*, the name applied to the European vine mildew of like habit. Whether the European *Oidium* is the same as our *Uncinula* or not is yet a matter of question, owing to the fact that the mature of fruiting form (the perithecia) of the first named has never been discovered, the conidial stage alone being known. De Bary has suggested that the European *Oidium* is an importation from America, as it was not known on this side of the Atlantic prior to 1845, and that, although fruiting abundantly in its native country, it has so far failed to effect a complete development in regions foreign to it. In speaking of the development of the *Erysiphei*, De Bary says:

Growth does not always proceed to the conclusion (*i. e.*, the formation of the perithecia); the fungus may rather form only conidia, and propagate itself by means of these through numberless generations. Most clearly established external causes lie at the bottom of this; climatic conditions on the one hand, lack on the other of the nourishing soil requisite to a full development; that is, the proper host plant. The finest example of this is the *Erysiphe* of the vine. Concerning its first appearance and spread in Europe, it can be accepted as certain that it was transported suddenly from some other flowering species introduced into our vineyards from abroad. *Most probably its immigration is from America.* In spite of its destructive spreading over the whole vine-growing portion of Europe, the most careful investigations in this country have nowhere led to the discovery of any indication of perithecia; the entire invasion takes place by means of the conidia, produced in great abundance, the form of which has procured the fungus the name of *Oidium* (*O. Tuckeri.*) The perithecia are probably found in North America on the native sorts of *Vitis*, and have been described as *E.* (*Uncinula*) *spiralis*, Berk. and Curtis, yet this not certain.

In a paper on *The Mildews of the Vine*, C. V. Riley remarks that—

One of the most interesting facts in connection with this fungus, is that only the conidial form, known as *Oidium Tuckeri*, occurs or is so far known in Europe. There is some question as to the actual specific identity of *Oidium Tuckeri* as found in Europe, and the conidial stage of *Uncinula spiralis* as found in this country. The bulk of opinion is that they are identical. We have, in fact, in this case, one somewhat parallel to that of the grape vine *Phylloxera*. The gall-making form of this insect upon the leaf is of very common occurrence and the form most easily observed in America; whereas in Europe the species very rarely produces the gall. Yet the historic evidence is conclusive as to the introduction from America, both of the *Phylloxera* and *Oidium*, and to my mind they both furnish admirable illustrations of a change in an organism sufficiently marked that, without the historic evidence, the question of the exact specific identity of the parent and its transcontinental issue might well be raised. The interesting question, philosophically considered, is why, if the winter spore is necessary to the perpetuation of the *Uncinula* in America, the species can propagate for an indefinite period without it in Europe.

It may be that the winter spores of the *Oidium* are developed in Europe on some other host plant or in some form the connection with which has escaped the notice of botanists. Rev. M. J. Berkeley, in the *Gardeners' Chronicle* for 1884, figures the *Uncinula spiralis* from specimens on leaves received from the United States, and he remarks that upon the same leaves he found an *Erysiphe*, probably *E. communis*, which attacks a great variety of plants, and he makes the assertion "that, after all, this may be the true result of *Oidium Tuckeri.*" Fuckel refers the *Oidium Tuckeri* to *Sphærotheca Castagnei*, the Hop vine Mildew, but there is no evidence to sustain this view.

Although I do not know of any historic evidence to prove that the *Oidium* of Europe is an emigrant from this country, there is some reason for such a supposition; and the fact that it has there never developed its perithecia or ascosporous form, is not the only example of such a change of habit among fungi.

REMEDIES.

As the Powdery Mildew is wholly a surface-growing fungus, it is exposed to the direct action of any fungicide that may be employed to destroy it. For this reason a curative remedy rather than a preventive is to be sought. Whether there are any remedies that will act as preventives is not known, but it is known that there are remedies which certainly destroy this mildew if properly applied. It is not necessary to enumerate all the materials which have been used with this object in view; it is sufficient to say that trials, more or less successful, have been made with many substances, and that these have all been discarded, excepting sulphur or a compound of sulphur and lime. Both the dry flowers of sulphur and sulphur and lime in solution have been recommended as remedies ever since this mildew began to attract the attention of the vineyardist. In the Patent Office Report (Agriculture) occurs the statement that "sulphur applied to the vine, as well as to peach trees, with a little attention in the early stage of its appearance, will entirely subdue the blight." Mr. J. F. Allen recommends the following wash for the mildew:

Take one peck of lime, not slaked, and one pound of sulphur; put them in a barrel and pour hot water over them sufficient to slake the lime; pour on this three gallons of soft water, and stir the mixture well. In twenty-four hours it will have settled and become perfectly clear. This should be drawn off as clear as possible. Half a pint of this mixture added to three gallons of water will be sufficiently strong, and may be applied over the fruit and every part of the vine when the mildew first appears. The application can be repeated every few days if occasion requires. The first application I have found would kill the most of it [the mildew]; a second and a third is all that I have found necessary for the season.

TO BE CONTINUED.

AN INGENIOUS FRAUD.

A French chemist named Portes has recently called attention to a new material sold by dealers for colring wines. They call it *couleur insavable*, because they claim chemists cannot detect it, owing to its singular property of turning green upon the addition of alkalies, just as natural wine does. The coloring stuff is very puzzling, it seems, because it is composed of three ingredients—namely, indigo blue, tropæline yellow and sulpho-fuchsine. As sulpho-fuchsine is bleached at once by the action of alkalies, it follows that when these reagents are added the blue and yellow only remain which form the green hue observed. The fraud is very ingenious, and M. Portes had some trouble in isolating the three components of the dye stuff. He succeeded in dissolving out the tropæoline with boiling amylic alcohol, and the indigo with water. The mixture is a most excellent imitation of the natural color of wine, as this really consists of red, yellow and blue in unequal proportions. It must be admitted that neither of the components of the stuff is poisonous. But French law makes no distinction, and punishes all dealers and manufacturers of wine colorings. The detection of the fraud in question consists in agitating the suspected wine with an equal weight of finely powdered peroxide of manganese and filtering. The sulpho-fuchsine is easily detected in the filtrate by the ordinary chemical tests, the readiest of which is its immediate bleaching by the addition of ammonia. Of course the test in legal cases must be confirmed by others. With some American wines, very rich in coloring matter, it is found sometimes necessary to dilute wines with an equal quantity of water before adding the peroxide, but then the test works satisfactorily.

WINE MAKING IN MEXICO.

The following interesting description of fermentation under mid-summer heat, on the Los Dolores estate, Lower California, is contained in an extract from a letter of Don H. A. Von Borstell to F. Pohndorff:

During nearly two months the heat has been extraordinary. Instead of 82 degrees, the habitual heat in the fermenting room (the coolest place on the premises), the themometer never showed less than 90 degrees.

Fermentation in the first three tanks was extremely irregular—delay in starting and then violent commencement, sudden cessation and sudden irruption, etc. Instead of racking after six days, as in other years, I resolved to rack on the fourth day. Zinfandel must in the first three tanks is of grand blue black tint. The taste as yet is influenced by the presence of a large proportion of carbonic acid gas, which, however, is escaping with regularity.

At the following tanks I changed tactics. Instead of eliminating stalks, I placed on the lower false head of the tank a thin layer of stalks, put the must, well worked through on the same, then another stratum of stalks, and so on, up to the upper false bottom, under which stalks were placed. I used about one-third of the stalks of the grapes, crushed, placed in the tank. The stalks I had put first in boiling water and allowed them to cool.

The result was a suprise. Fermentation began quickly, and continued with perfect regularity. Color fine and taste excellent. Astringency not in the least excessive. The wine flowed out excellently, and is of very superior quality. There is little left to do for the press.

The Attention of Wine-Growers and all others interested, is called to the most powerful

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The latest invention in Europe. First introduced in the United States last year where it has given entire satisfaction as the testimonials will show.

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Price List at San Francisco.

Exclusively for 1887.

No.	Diameter of Screw.	Height of Basket.	Diameter of Basket.	Capacity of Basket of Fresh Grapes after Crushing	PRESS, Complete. With 2 Wheels $	c.
1	$2\frac{7}{16}$	24	32	$1\frac{3}{4}$	120	00
2	$2\frac{3}{4}$	26	40	$2\frac{1}{4}$	160	00
3	$3\frac{3}{16}$	28	48	$3\frac{1}{2}$	220	00
4	$3\frac{9}{16}$	32	55	5	290	00
5	$3\frac{15}{16}$	$35\frac{1}{2}$	63	8	350	00
6	$4\frac{3}{8}$	$35\frac{1}{2}$	71	$10\frac{1}{2}$	400	00
7	$4\frac{3}{4}$	36	78	$14\frac{1}{4}$	450	00

The above cut shows the Machine complete.

Having secured the entire right for the United States, we take pleasure in introducing this Wine Press to the American public, believing it superior to any other press now in use.

It will be to the advantage of Wine Manufacturers to study carefully the following merits, which we claim it possesses:

First. By an ingenious mechanical application, the "power of resistance" can be reduced to a minimum, and with a single effort, three or four times more power can be obtained than with any other press known at this day.

Second. It does the work more rapidly, and with less labor.

Third. It is cheaper than any other first-class wine press in the market.

Fourth. It has no complicated devices, is so extremely simple in construction and easily operated, that a child of ten years can work it.

Fifth. It is made of the best materials, and by its simplicity not liable to get out of order.

Sixth. All parts are interchangeable, consequently, any part lost or injured can be replaced at little expense.

Seventh. It will extract the largest percentage of liquid.

Eighth. It is built on the ratchet principle, double acting, the lever working both ways, and can be worked in 6 feet space. It has no lost motion.

Ninth. It does not take any more labor to work the largest size than the smallest one.

Tenth. It presses any kind of fruit as well as grapes.

This press is not an experiment, having been used several seasons in the wine districts of Europe, and also in the United States last season.

It has received the highest award wherever exhibited in competition with other presses.

The main features of the press are the ease and rapidity with which it may be worked, and the great power which it applies; as the press stands on wheels, it can be readily moved from place to place.

In order to introduce our press last year, we placed it at a low figure; with the improvements that we have made this year, we are compelled to raise our prices, but they are yet the lowest on the market, while the press is far superior.

Our press is adapted for large vineyards as well as small ones, as we make different sizes. No. 7, shown in the above cut—the basket will hold 14 tons of grapes after crushing, and 4 fillings per day, its capacity being 56 *tons of grapes in one day.*

"LE MERVEILLEUX."

A representative of the MERCHANT has visited the shop where the Paré Bros. are building their wine presses, the "Le Merveilleux," which is claimed to be the best and cheapest wine press made. The platform or bed rests on a two wheeled cart, which enables the operator to move it to any part of a vineyard, or between the rows of tanks in a wine cellar. The basket is made of the best straight-grained Mendocino Pine staves, riveted to three bands of the finest quality of iron. These bands are each in halves. On one side they are connected by a hinge, and on the other are locked with pins, and, by removing these pins, the basket can be opened to any width required, and the must be removed in a very few minutes. The edges of the staves are beveled, the distance between them on one side being $\frac{1}{8}$ of an inch, and on the outside $\frac{3}{4}$ of an inch. This renders it impossible for the grapes to get jammed in between the staves.

Rapidity is one of the strong points of this machine. It takes only from twenty to forty-five minutes to make a pressure. The "screw" which stands upright in the middle of the "basket," is fastened under the "bed" by a nut which is six inches thick, screwed on and riveted to the end of the screw. The operator moves the large lever which is from five to eight feet long, and moves in a space of six feet backwards and forwards. This pushes alternately two small levers, which in turn catch in the ratchets of the combinations on their *forward* motion, and keeps the wheels or combination steadily falling down the main screw. In commencing to lower the crushers upon the grapes, and when speed is required, the lever is placed in an upper combination, which acts directly on the screw, and in a few movements of the lever it has reached the grapes. The Presses have been calculated to withstand the pressure according to their capacity, so if the smallest is incapable of breaking itself, the largest is equally so.

The main feature of the press is the ease with which it may be worked. Mr. Paré forced the lever as far as it was necessary to go in one direction, using only his little finger, upon shavings which had previously been packed so tight, that it was impossible to run a knife into them.—SAN FRANCISCO MERCHANT, Aug. 27th, 1886.

WINE PRESS EXHIBIT.

The French Wine Press exhibited at the Fair by Paré Bros., attracted great attention from visitors interested in wine-making. This press has no merely local reputation, but comes to us from over the seas endorsed by French wine producers generally, and by the leading journals of France. In the Eastern States it is rapidly supplanting all others, and no doubt in California will do the same. The reasons for this are plain. It is a great improvement over any now offered; it is portable and easily carried on a hand-truck from place to place; it is not expensive, and it does its work thoroughly and well; it requires but little attention, and it is labor-saving. It is called in France "Le Merveilleux," and certainly deserves the name. Certainly, those interested in wine production should at once acquaint themselves with the capabilities of the press, its price, and see it working. By it they will save money, as its expense is comparatively small, compared with the amount and character of work it is capable of doing. We certainly commend an examination of its merits.—*The Weekly Commercial Record*, San Francisco, Sept. 16th, 1886.

EXHIBITS AT THE PAVILION.
"Le Merveilleux" Wine Press.

Among the exhibits at the Mechanics' Fair, which naturally attract the attention of the visitors, whether from the city or country, is "Le Merveilleux" wine press. The wine interests of California are fast assuming enormous proportions, and every year sees an immense increase in the area devoted to the culture of the vine. It is only to be expected, therefore, that any invention coming from an old wine-producing country like France, should have great interest for the residents of California. "Le Merveilleux" is a French invention just being introduced here. It has been patented in all European countries and the United States. The entire right for this country is held by Messrs. Paré Brothers, of this city. The press is manufactured in seven different sizes, varying in price from $120 to $450. It is claimed for it that it is more powerful than any other press now in use; that it does its work more rapidly and with less labor; that it is cheaper, without complication, and not likely to get out of order. Being built upon the interchangeable plan, any part lost or injured can be replaced at small cost.

It is constructed on the ratchet system, and the lever can be worked in a six-foot space, and is so easily operated, that a child of 10 years can work it. The lever works both ways, and thus doubles the speed.—*Daily Journal of Commerce*, San Francisco, Sept. 24th, 1886.

THE SUNSET VINEYARD,
Minturn, Cal., Sept. 15, 1886.

Messrs. Pare Brothers.—GENTLEMEN:—We take pleasure in informing you that we have used your No. 4 press this season, at our vineyard, and find it all that you recommend it. It does the work perfectly and with ease, and in our opinion is perfect in every particular. Yours truly,
WEBSTER & SARGENT.

San Francisco, Sept. 17, 1886.

Messrs. Pare Bros.—GENTS.:—The wine press No. 4 purchased of you several weeks ago, has been tried at our winery and has thus far given full satisfaction.
Yours truly, MT. DIABLO VINEYARD CO.,
By Jac. Levy, Sr.

Anaheim, Cal., Sept. 15, 1886.

Messrs. Pare Bros., San Francisco, Cal.—GENTLEMEN:—The Press came at last, and after giving it a fair trial I find it to my satisfaction. Enclosed please find exchange draft for the same.
Respectfully yours, LOUIS SCHORN.

San Francisco, Sept 22, 1886.

Messrs. Pare Bros., City.—GENTLEMEN:—We take pleasure in informing you that we have used your Wine Press No. 5 this season at one of our Vineyards, and find it all that you recommend it. It works well, and is perfect in every part cular.
Yours very truly, B. DREYFUS & CO.

Anaheim, Sept. 27, 1886.

Pare Bros., San Francisco.—GENTLEMEN:—Yours, with shipping receipt and bill, at hand; but the press did not come until a week after, although I needed it badly. As soon as I got it I tried it, and must say that I like the press very well. Enclosed please find check for $140.50. Yours respectfully,
PETER HANSEN.

Pacheco, Contra Costa, Cal., March 15, 1887

Messrs. Pare Bros.—DEAR SIRS:—The "Le Merveilleux" No. 3 press I bought of you is the most powerful instrument to extract juice from grapes—it leaves the pulp entirely dry in a short time. I recommend it to all wine makers. Yours truly,
J. S. HOOK.

Mission San Jose, Cal., Oct. 27, 1886.

Messrs. Pare Bros., San Francisco.—GENTS.:—I have used your "No. 3" "Le Merveilleux" wine press all through my vintage, and it has in every particular given entire satisfaction, both in regard to the ease with which the work was accomplished.
Very truly yours, CHAS. C. McIVER.

I, the undersigned, certify that I bought from Messrs. Paré Bros. a No. 2 wine press, and used it last season, 1886, and it has given entire satisfaction.
Yours truly, A. CHEIGNON.
814 Howard St., San Francisco.

GENTLEMEN:—I take pleasure in telling you that I am entirely satisfied with the press, No. 2 "Le Merveilleux," you sent to me, it does the pressing without interruption. Yours,
B. DISTEL, Mountain View.

Messrs. Pare Bros., San Francisco.—GENTLEMEN:—I used last year one of your presses at the Hon. Jos. F. Black's vineyards of Livermore. I studied it carefully, and I must say it has given perfect satisfaction. It is the most powerful press I ever saw, and the work is very easily done. Yours very truly,
J. MORTIER, Livermore.

FARMERS' AND MERCHANTS' BANK,
Los Angeles, Cal., Oct. 15, 1886.

Messrs. Pare Bros., San Francisco.—DEAR SIRS:—Enclosed please find our check for $335.15, in payment your bill for two wine presses, as ordered by our letter of 30th ult., for

Messrs. Hafen & Niemeyer	$330 00
Drayage	6 00
	$336 00

The parties tell us the presses were received in good condition, and work to their satisfaction.
Respectfully, JOHN MILNER, Secretary.

After trial the Press may be returned to us if for any reasonable cause it is not satisfactory, "and money refunded," as we are satisfied from our experience that parties that have once used them will not afterwards do without them.

N. B.—We are also prepared to fill any orders for Crushers and Separators. For any further information apply to

PARÉ BROTHERS,

BRANCH OFFICES:
Honore Building, Chicago, Ill.
15 St. James St., Montreal, Canada.

OFFICE AND FACTORY:
101 to 107 Mission Street,
Res. 420 Geary Street, S. F.

THE OLIVE TREE.

VARIETIES.

By Adolphe Flamant.

We are told by Coutance that the primitive type of the *Oleaster*, or wild olive tree, has been modified in many manners, that numerous varieties have sprung up, that the nomenclatures prevailing in different localities do not correspond with each other, that it, therefore, is impossible to give a general catalogue which would comprise all the cultivated varieties of the olive tree.

Other authorities on the subject enumerate varieties in vast numbers. One writer will indicate certain ones not mentioned in another, and some of them, not satisfied with the varieties generally known, seem to take the task of discovering new ones, after the manner of an astronomer in quest of new planets. Moreover, the names vary according to the country, and it is often the case that different olive trees are designated under the same name. When thus the high priests in oleiculture have admitted the impossibility of giving a oomplete catalogue of the innumerable varieties of the olive tree, how could I dare to undertake so arduous a task ?

I judge it then more practical to confine my attention solely to the varieties already most generally known in California, that have been acclimatized here after many years of cultivation, and I shall simply cite all that I have been able to learn of their respective merits, leaving it to more daring writers to recommend better ones among the great list of those known in all the olive regions of Europe, Asia and Africa. Let any one who will feel so inclined experiment with some of these latter onea, as regards their adaptability to our soil and climate, and wait years and years before realizing whether or not they will give better products in greater abundance and in shorter time than those that are already known to us.

Why should it be different with the olive tree from what it is with the vine ? Who ignores the faet that in the wine districts of Burgundy, of Champagne, of Bordeaux, and in other places, vineyards in immediate proximity to one another, cultivated in the very same manner, and planted with cuttings belonging to the same variety give wines of a different character; while one will be considered of an ordinary quality the other will rank among the most renowned. Will the combined influences of soil, climate and exposition, which are of great importance for the products of the vine, work in a leas degree for those of the olive tree ?

Moreover, while planting the varieties which are already well known in California if, in yeara to come, it is satisfactorily demonstrated to us that better ones have been acclimatized, it will always be in order to use them for grafting our trees, after the experiments, which are generally pretty costly in agriculture, will have been made by those who have time and money to risk in that beneficent manner.

We have therefore at present these three varieties pretty generally known: The Picholine, the Mission and the Queen or Reyna. We wilt take them by turn and quote what the writers most reputed on the subject have to say of them.

Reynaud.—Picholine, called also Colliasse. This variety was named after Picholini, of Saint Chamas, France, an intelligent agriculturist of the last century, who was the first to graft the Sauvageon on the Saourin and obtained such good results herefrom that a sort of enthusiasm seized the whole country in favor of that practice which has been quite generally followed ever since. In the Gard district, from the plains to the top of the mountains, even in the fissures of the rocks, every spot where there is but a little vegetal earth is covered with this variety of the olive. It should also be said that the Picholine, amongst all other varieties is the one that seems to be the least subject to the attacks of insects. It is known to bear in much greater abundance than the more common trees of the country.

Du Breuil.—Picholine, called Saurin at Nimes, Sourenque at Aix, Plant d'Istres at Bexiers, oil very good. The fruit is the best among those for pickling. The tree is very fertile.

Coutance.—Picholine, alias Piquette, Saurins Coiasse, Plant d'Istres, Lechin: variety cultivated mostly in Provence, France. Oil fine and sweet; esteemed for pickling.

Michaux.—The Picholine gives the most celebrated pickled olives. This variety is not difficult in the choice of soil and climate.

Pohndorff.—Picholine, also called Leehin, Cuquillo, Olea ovalis, oblonga, Taurine, Plant d' Istres, Collias and Coias, known as the fine, sweet-pickling fruit bearing tree, which received its name from an agriculturist of last century of the name of Picholini. This tree is little damaged by insects. The fleshy olives, which stick to the kernel, are of red color when ripe, yielding a very good oil, and for pickling green, excellent. This tree resists in cold regions up to 14° C. below zero (about 7° above zero Fahrenheit).

Bleasdale.—The best olive for pickling is the Picholine (olea oblonga). It is also valuable for oil.

W. G. Klee.—The Picholine is a very hardy and rapidly growing variety.

Bernays.—The Picholine, alias Colliasse, ia known in France, Provence, as the best olive for pickling. It is among other choice varieties for oil. This is amongst the most productive kinds and possesses the additional advantage, in common with a few others, that it never grows large, thus the fruit is easily gathered.

Let us add to the credit of the Picholine that the much lamented Mr. B. B. Redding, while in Europe many years ago, studied most carefully the question of the olive tree. After many careful researches and comparisons he pronounced in favor of the Picholine as the variety that seemed to be most likely to give the best results in the California soil and climate. It is to him mostly that we are indebted for having this most excellent variety among us.

Let us see now what has been said of the Mission.

Pohndorff.—The California Mission olive is the Cornicabra Cornezuelo variety, which requires more heat than any other. In the northern oil zone of Spain, the Cornicabra tree of great size is called Azebuche, or wild olive tree, for the reason that the fruit does not ripen there. The regions of Saragossa and Salamanca in Spain, are not warm enough to allow the fruit of the Cornicabra —know in California under the name of the Mission—to mature. In certain parts of our State, at San Diego for instance, the fruit of the Cornicabra ripens as early as the end of October.

W. G. Klee, of the University of California, tells us that when the mission fathers first landed in California, they brought with them two varieties of olives, one of which especially has been propagated throughout the State, but that, although a most excellent and hardy variety, it is here as it is in Spain, adapted to the warmer parts of the country only.

Gustav Eisen, the well known vineyardist of Fresno, who has planted both the Picholine and the Mission, says: The Picholine seems to do well, is easily grown and transplanted, but the Mission I consider as less valuable. The first year when transplanted it generally loses all its leaves. It grows only very poorly from cuttings, and bears only when six to seven years old.

H. N. Bollander, who had charge of the botany of the geological survey of the State, and John Ellis, of the horticultural department of the University, have reported that the Mission olive is a shy bearer.

Major Utt says that the Mission olives will ripen two months later than other European olives.

As for the Queen olive, Reyna:

Bleasdale says that is of very large size and is pickled for eating. The tree of this variety produces but little fruit, and the fruit when pressed yields very little oil.

Coutance.—Spanish olive; large berry, oil bitter, esteemed for pickling.

After the aforementioned quotations is it necessary to give an additional reason in support of my belief that the Picholine ranks among the most desirable varieties for California? I was born in the oil regions of France, where the Picholine reigns supreme. I was saturated, I might say, from boyhood to manhood with Picholine oil and Picholine pickled olives. On my arrival at Napa, and while visiting its beautiful valley and the surrounding sections, I soon realized the correctness of the reports I had read about its climate compared to that of the south of France and of northern Italy, a very exact confirmation of which was given lately by Mr. Albert Sutliffe in the following words:

"The citizen of California who travels in Italy and the south of France cannot fail to remark the similarity of soil, climate, conformation of ground and general atmospheric conditions to those to which he has been accustomed on the Pacific Coast. In the vicinity of Marseilles the summer is almost absolutely rainless, while the winter rains are copious. The heat of midsummer is warm, but generally tempered by sea winds." It is thus that, guided as much by the sweet remembrances of the past as by the careful studies I made of the subject, I did not hesitate to adopt the Picholine for my own plantation.

OLIVES IN CALIFORNIA.

In discussing the adaptability of the soil and climate of California for olive culture, an exchange goes on to say that from the earliest ages the olive has been an object of the most careful attention of the husbandman. The oldest writers that we knew of speak of it, and it has been an object of paramount interest to all writers on the agriculture of southern Europe, whether ancient or modern. California is probably the only State in the Union where its culture can be profitably carried on; at least, it is the only one in which the attempt has been made. The greater part of the State is exceedingly well adapted to its growth. It has yielded $500 an acre net profit. The Catholic missionaries in California were the first to grow the olive at the Missions, and the first to utilize its fruit. Fifteen years ago the first attempt was made by private parties to plant olive orchards, but the insect pests and disfavoring circumstances soon made them abandon it. Mr. Ellwood Cooper, the patriarch of olive culture in California, was the first to successfully undertake the business. In 1870 he purchased 2,000 acres in Santa Barbara county, and having prepared the ground, a couple of years thereafter planted the first olive orchard of any magnitude that the Golden State has yet seen. The method of propagatng the tree is as follows, as described by Mr. Ellwood himself: "The common and preferred method is to plant the cuttings, taken from the growing trees of sound wood, from three-quarters of an inch in diameter to one and a half inches, and from fourteen to sixteen inches long. These cuttings should be taken from the trees during the months of December and January, neatly trimmed, without bruising, and carefully trenched in loose, sandy soil. A shady place preferred. They should be planted in permanent sites from February 20th to March 20th, depending upon the season. The ground should be well prepared and sufficiently dry, so that there is no mud, and the weather must be warm. In Santa Barbara, near the coast, no irrigation is necessary; but very frequent stirring of the top soil with a hoe or iron rake for a considerable distance around the cuttings is necessary during the spring and summer. About three-fourths of all that are well planted will grow. My plan is to set them twenty feet apart each way, and place them in the ground butt end down, and at an angle of about forty-five degrees, the top to the north, barely covered. Mark the place with a stake. By planting them obliqely the bottom end will be from ten inches to one foot below the surface. In Europe the trees are planted from twenty-seven to thirty-three feet apart, but experience has proved that such distances are not required here." It was about three years after the first planting before Mr. Elwood began to reap the fruits of his enterprise. Two years after he had a good crop, and gathered as many as fifty gallons of berries from a single tree. He was not content with what he had done, but set to work to find new methods of extracting the oil. The result is that ten pounds of berries make one pound of oil, where in Europe it takes sixteen pounds. It is estimated that for the next fifty years the olive plantations of California will yield, tree for tree, double the quantity of oil that is given in Europe. There is a very good market all over the United States, California itself importing many thousand cases annually, and using much more which is really cotton-seed oil. A good article of olive oil, and in sufficient quantity, would spoil the cotton-seed oil market, or rather oblige the latter article to be sold under its proper name. Mr. Elwood produces 20,000 bottles a year, and intends to gradually increase this to 100,000 bottles a year. We conclude by asserting, without fear of contradiction, that there is no country in the world that affords better prespects for the olive grove than does California.

OLIVE CULTURE.

Many of our enterprising interior exchanges are making continuous efforts to interest and encourage the people of California in olive culture. Very gratifying success has been obtained by many, in different parts of the State, who have devoted themselves to this industry. There are many things said in its favor. The olive tree needs but little care while growing, and can be raised from a cutting. The poorest kind of soil answers for it; hill-sides and rocky places are said to be as good as any

other location, and the tree is one of the longest lived of any known. There are many now in full bearing in Europe and Asia, which were historic in the time of Christ. They yield enormous crops and the oil made from their product has a great commercial demand. Almost every farmer has some poor land, land which he considers almost worthless. This, set out in olive trees, would, in a few years, yield a fair return, and it would help to give variety in the production of a place. "Putting all the eggs in one nest," or using all one's land for some particular crop is not generally the wisest course to follow. That farmer who succeeds best, in the long run, is he who has more than one crop to depend upon. Then, failure in any particular line, does not hopelessly cripple him. Hence, a combination, as vines, fruits and olives, with the cereals, is generally advisable.—*Resources of California.*

PLANT OLIVES.

We would strongly recommend to our friends the culture of the olive. It will grow where most other plants would perish, requires no irrigation, and is satisfied with rocky, sterile soil upon which other vegetation would starve. It is well calculated to be one of our most reliable crops in the future. The most of our land is rich and irrigable. This is good for other crops. But there is also that which is poor and rocky, and upon which no water can be brought. This land is, of course, cheap, as vatueless foi most purposes, but it is the home of the olive, and here will be found, in the distant future, some of the richest and most reliable crops of Southern California. Let our friends take a hand in, and get something started on these places before too many years are wasted by neglect. We hope in the future to see a large portion of the mountain sides covered with olives.

CALIFORNIA WINES.

Eastern Markets Opening Before San Francisco Enterprise.

There is nothing more marked and certain, says the *Wine and Spirit Review*, than the constantly increasing flow of California wines to the Eastern market, which signifies, of course, their increasing cousumption, either in one way or another. Until very recently this consumption has very seldom come to the surface, so to speak; and to those quite familiar with the volume of the jobbing business in these goods it has often been a mystery how such a volume of goods has found its way into consumption. It was not long ago that the writer was asked if he had ever drunk a glass of California wine over a bar in New York, where the bartender would admit that it was California wine that he was serving? And he was compelled to answer the question in the negative. How many, indeed, who go around among the retailers of the metropolis could give a different answer, until possibly within the past year or two? And yet look at the figures representing the receipts of these wines in New York during the past seven years, in gallons:

1879.	By Pacific Mail.	1,375,518	
	By rail	741,958	2,117,476
1880.	By Pacific Mail.	1,229,223	
	By rail	800,369	2,029,592
1881.	By P cific Mail.	1,386,670	
	By rail	1,272,786	2,659,456
1882.	By Pacific Mail.	1,271,472	
	By rail	1,342,000	2,613,472
1883.	By Pacific Mail.	1,146,394	
	By rail	1,320,143	2,466,537
1884.	By Pacific Mail.	1,159,753	
	By rail	2,352,074	3,411,827
1885.	By Pacific Mail.	1,117,987	
	By rail	3,000,200	4,118,187
1886.	By Pacific Mail.	606,885	
	By rail	4,668,725	5,365,610

To the initiated, of course, there is no mystery as to how these millions of gallons of wine have found their way through established trade channels to the consumer. While they have all been sold from first hands as California wines, there has been but a small fraction which have maintained their name and identity even so far as to the saloon and the grocery, much less to the consumer, but they have evidently given sufficient satisfaction to create a demand which has risen from about 2,000,000 gallons in 1879 to over 5,000,000 gallons in 1886. And this is saying much for them Indeed, the fact that they have not only held their own but grown in favor and consumption, even though put up under French and German labels, and sold under an *alias*, as it were, is proof positive of some degree of merit and a very considerable degree of salability. But no matter what the methods of selling may have been, not even the French and German labels could hardly have secured such an increase in the consumption of these goods during the past years, and particularly during the past three years, had there not been some improvement in their character and quality. And that there has been such improvement and that it is still going on no one of intelligence can question. In fact, such has been the improvement that at last California wines are really beginning to stand alone, or rather to stand on their own merits, and to find their way even to the consumer under their own names in lieu of under a foreign *alias*. This is certainly a hopeful indication, and it means much, if not everything, for the future of these goods.

But to return to the increasting flow of these goods to the Eastern market, and the growth of the trade in them in the metropolis, we can, with propriety, take notice of the business of a single house, which, with its principal establishment in San Francisco, and its branch house in New York, is conducting a trade in these goods which is simply enormous. We refer to Messrs. Kohler & Frohling, who, at their New York branch, were, during 1868, the largest receivers of California wines, as well as brandies, in the East. Commencing their business in New York bnt three years ago, in a most modest way, and in very modest quarters, they have, within the past year, found their trade sufficiently enlarged to warrant them securing, for their accomodation, the largest cellars in the metropolis. These they took possession of in May last, up to which date they hsd been compelled to store their wines in numerous warehouses throughout the city, and probably not until their entire stock was thus massed did any of their customers have even an approximate idea of the quantity of goods they were carrying. Their new cellars, which run through from Broadway to Trinity place, cover a floor 200x75 feet, and are arranged for the convenient storage of at least a quarter of a million gallons of wine. Or, to be more specific, these cellars, which are admirably lighted and kept at a very nearly uniform temperature at all times, contains 80 standing casks of a capacity of 500 gallons each, 26 of 3,200 gallons capacity, and 30 holding 2,500 gallons, not to mention numerous smaller casks. To these cellars must also be added another cellar immediately adjoining, of floor dimensions of 28x165 feet, which they are using wholly for bottling, which, it must be conceived, is no small feature of their business. Bnt the quarters of these enterprising gentlemen have been selected and fitted and arranged, not more for the convenience and advantageous handling of the enormons stock than for the advantage of the wines themselves. Indeed, it is hardly necessary to remark that the occupants of such a cellar are progressive in their ideas, and fully appreciate the fact that the futnre of California wines must depend upon the care and skill bestowed upon the handling of them. And with the enterprise, intelligence and capital which these gentlemen possess, it is hard to say to what proportions their busines, already so gigantic, will, in the future, develop.

Important Purchase.

Messers. Walden, of Philadelphia and Beringer Bros. of Napa county, have bought from the F. and M. Bank of Healdsburg, the Quitxow vineyard, winery and distillery, near Geyserville, for $10,000.

EAST BOUND THROUGH FREIGHT.

Forwarded by the Southern Pacific Co., August, 1887.

FORWARDED FROM — IN POUNDS.

ARTICLES.	SAN FRANCISCO.	OAKLAND.	LOS ANGELES.	SACRAMENTO.	SAN JOSE.	STOCKTON.	MARYSVILLE.	COLTON.
Barley	.....	161,730	.....	348,650	.....	.....	.....	.....
Beans	1,851,000	.....	.....	.....	.....	.....	.....	.....
Blankets and Woolen Goods	82,050	.....	.....	2,480	.....	.....	.....	.....
Books and Stationery	17,960	4,490	2,680	.....	700	.....	.....	.....
Borax	.....	.....	.....	.....	.....	.....	.....	.....
Brandy	88,570	.....	28,610	100,200	12,160	.....	.....	.....
Canned Goods	5,086,070	2 268,750	34,050	1,029,980	1,558,730	.....	23,800	20,480
China Merchandise	105,960	.....	.....	.....	.....	.....	.....	.....
Chocolate	21,980	.....	.....	.....	.....	.....	.....	.....
Cigars	47,070	.....	.....	.....	.....	.....	.....	.....
Clothing, California Manufactured	38,710	.....	.....	.....	.....	.....	.....	.....
Coffee, Green	472,000	.....	.....	.....	.....	.....	.....	.....
Copper Cement	.....	.....	.....	.....	.....	.....	.....	.....
Drugs and Herbs	15,610	.....	.....	1,090	.....	.....	.....	.....
Dry Goods	15,280	.....	.....	.....	.....	.....	.....	.....
Empty Packages	62,350	.....	156,000	.....	.....	.....	.....	.....
Fish, Pickled	26,090	.....	.....	.....	.....	.....	.....	.....
Fruit, Dried	565,650	.....	185,540	458,280	1,276,100	22,500	518,860	47,480
" Green Deciduous	.....	.....	241,700	10,010,720	1,403,760	80,000	41,250	.....
Fuse	9,390	.....	.....	.....	.....	.....	.....	.....
Glue	21,770	9,000	.....	.....	.....	.....	.....	.....
Hair	11,200	.....	.....	6,650	.....	.....	.....	.....
Hardware and Iron	.....	.....	.....	.....	.....	.....	.....	.....
Hides	90,980	.....	81,350	61,600	.....	.....	.....	.....
Honey	155,760	.....	25,260	.....	.....	.....	.....	.....
Hops	46,930	.....	.....	8,190	.....	.....	.....	.....
Leather	91,280	.....	.....	10,850	7,920	1,480	.....	.....
Lumber	373,250	.....	.....	23,280	.....	.....	.....	.....
Machinery	10,000	.....	.....	.....	.....	.....	.....	.....
Matting	.....	.....	.....	.....	.....	.....	.....	.....
Merchandise, Asiatic (in bond)	84,060	.....	.....	.....	.....	.....	.....	.....
Miscellaneous	196,030	21,300	56,430	17,540	5,910	2,780	2,650	1,030
Mohair	.....	.....	.....	.....	.....	.....	.....	.....
Mustard Seed	47,450	.....	.....	.....	.....	.....	.....	.....
Oils	.....	.....	.....	.....	.....	.....	.....	.....
Oil, Cocoanut	.....	.....	.....	.....	.....	.....	.....	.....
Oil, Whale	.....	.....	.....	.....	.....	.....	.....	.....
Onions	417,380	.....	178,740	.....	.....	.....	.....	.....
Ores	22,180	.....	.....	.....	.....	.....	.....	.....
Potatoes	353,110	.....	23,850	.....	.....	.....	.....	.....
Powder and Explosives	.....	.....	.....	.....	22,300	.....	.....	.....
Pickles	.....	.....	.....	.....	.....	.....	.....	.....
Quicksilver	2,700	.....	.....	.....	.....	.....	.....	.....
Raisins	18,140	.....	.....	.....	.....	.....	.....	.....
Rice	97,480	.....	.....	.....	.....	.....	.....	.....
Salmon, Canned	624,550	.....	.....	106,750	.....	.....	.....	.....
Seed	29,580	.....	.....	.....	20,330	.....	.....	.....
Shingles	509,430	.....	.....	.....	.....	.....	.....	.....
Silk	303,530	.....	.....	.....	.....	.....	.....	.....
Silk Goods	37,160	.....	.....	.....	.....	.....	.....	.....
Skins and Furs	1,012,090	.....	.....	.....	.....	.....	.....	.....
Sugar	8,069,590	.....	.....	.....	.....	.....	.....	.....
Syrup	144,430	.....	.....	.....	.....	.....	.....	.....
Tea	3,816,360	.....	.....	.....	.....	.....	.....	.....
Vegetables	1,559,330	.....	90,750	113,180	.....	.....	.....	.....
Wheat	.....	.....	.....	.....	.....	.....	.....	.....
Wine	2,012,550	570	206,900	40,100	117,900	124,570	1,400	200
Wool, Grease	1,456,650	.....	10,130	120,600	7,450	.....	.....	.....
" Pulled	4,600	.....	.....	88,190	.....	.....	.....	.....
" Scoured	63,490	.....	.....	.....	.....	.....	.....	.....
Totals	30,278,850	2,465,840	943,250	12,554,330	4,433,260	231,330	587,780	95,180

Recapitulation.

San Francisco.	Oakland.	Los Angeles.	Sacramento.	San Jose.	Stockton.	Marysville.	Colton.	Grand Total.
30,278,850	2,465,840	943,250	12,554,330	4,433,260	231,330	587,780	95,870	51,589,820

REPORT OF I. DeTURK.

Commissioner for the Sonoma District.

To the Board of State Viticultural Commissioners.

GENTLEMEN:—The under igned Viticultural Commissioner for Sonoma District, including the counties of Sonoma, Marin, Lake, Mendocino, Humboldt Del Norte, Trinity and Siskiyou, herewith submits a report of the grape growing interest of said district.

Since making the last report, there has been a large increase in acreage, and a marked improvement in varieties of wine grapes.

QUALITY.

We find the quality of our wines improve very much with the age of the vineyards; the Old Mission Grape that some years ago made a very harsh and rough wine, now produces from the same vineyards wines which could not be recoguized as Mission; they are now mild, soft and agreeable in taste. There is no doubt that as the vineyards age, we will be able to produce as good wines as those from European vineyards.

We must, however, look to the best European varieties of wine grapes to produce the fine wines of California, it having been thoroughly proven by actual experience that the fine wine grapes of Europe preserve their best characteristics in California. I would recommend that all those who intend setting out new vineyards should plant only the variety above named, as they are now abundant enough to be obtained from almost any of the vineyards throughout this district.

SONOMA COUNTY.

According to the assessors report of Sonoma County, there are 25,000 acres planted in vineyard, aggregating 20,000,000 vines. Sonoma Valley and adjacent hills have long since proven their superiority for fine wines, and the country lying between the Sonoma Valley, Santa Rosa, Healdsburg and Cloverdale has a well established reputation for fine quality in grapes and wine.

I have found from actual experience that hilly land is by far the best and most profific; not only is it more certain in quantity, but in the quality of grapes. In fact, the same rule applys to California as in Europe, viz: the best wines are produced on hilly land.

YIELD OF WINE.

About three and one-half tons of grapes per acre in Sonoma County, is the best guarantee of fine quality in the wine.

AGEING.

It has been claimed that California wine does not improve beyond two or three years, and that the wine should be drank by the time it is three years old. This advice is calculated to deter people from holding their wine to age. The fact is, that California wine improves as much as any other wine by age. However, the wine for aging must be sound and well fermented. My experience is that wine is not a good and wholesome drink until it is two years old and over.

VARIETIES FOR IMPROVEMENT.

As a greater portion of our vineyards are planted with Zinfandel for Red Wine, I would recommend for improvement in quality, grafting in say from five to ten per cent of Cabernet Sauvignon, Cabernet Franc, or Merlot; these varieties are shy bearers but of high quality. For quantity and quality combined I would recommend the Tannat and St. Macaire, by such grafting we will by degrees improve and change the quality of our wines in a few years, to such an extent as to defy competition and adulteration. Ordinary wines are easily imitated, but fine wines cannot be imitated by artificial wines; neither can ordinary wines be flavored to equal fine wines. To change the vineyards of ordinary white wine grapes, I would recommend grafting in Johannisberg Riesling, Semillon Blanc and Sauvignon Blanc. The Johannisberg Riesling is perhaps the finest of all white grapes, but is a very small bearer.

DISEASES OF THE VINE.

From general information and personal observation, I am pleased to report the absence of any alarming disease amongst the vineyards in Sonoma district, with the exception of phylloxera.

In Sonoma Valley the phylloxera have been found since the earliest knowledge of its existence in the State; and it is slowly but surely advancing, it has reached within six miles east of Santa Rosa, where it has been found in one vineyard.

I am happy in being able to report that Mr. Dressell and others of Sonoma have proven beyond a doubt, that the native wild vine of the Eastern States vitis Riparia thoroughly resists the phylloxera. Further, it is practically demonstrated that the grafting of fine European varieties on this resistant stock is a grand success.

CLIMATE.

The frost has occassioned considerable loss in some of the vineyards through the middle and southern portion of the county; the damage aggregates about 25 per cent. It is thus far impossible to estimate the damage by blight or coulure. I estimate the crop of 1887, 33 per cent less than was that of 1886. The northern part of Sonoma County escaped frost, and the crop prospect is reported to be fully as large as that produced in 1886.

Rather a new district has recently been developed known as Green Valley, lying as it does on the lower part of Russian River, adjacent and amongst the Redwood Country west of Santa Rosa, where there are some of the finest and most promising young vineyards of the State. This country bids fair to have in the near future a reputation second to none other in the county.

The energetic and enterprising viticulturist, Guy E. Grosse of Santa Rosa, has demonstrated the fact, that, there are thousands of acres of land in Sonoma County which though at one time covered with brushwood and heavy undergrowth and considered worthless; now can be classified amongst the best wine and fruit lands in the country. They need only proper clearing of brush and stone. The same lands now carry a value of from $300 to $500 per acre when worked into good condition for cultivation.

NUMBER OF GALLONS OF WINE MANUFACTURED FROM VINTAGE OF 1886.

Cloverdale	200,000
Geyserville	150,000
Healdsburg	200,000
Windsor	150,000
Fulton	40,000
Santa Rosa	500,000
Lay Clark & Co	80,000
Hill Korbell, Lehm Forents	100,000
Sabastopol	80,000
Petaluma	40,000
Glen Ellen	500,000
Los Guillicos	200,000
Sonoma	1,000,000
Bennett Valley	260,000
	3,500,000
Tons of Grapes	25,000

LAKE COUNTY.

There are quite a number of promising young vineyards in this county, and with the climate, adaptability and nature of the soil, Lake County will in the future be one of our first class wine counties.

MENDOCINO, AND OTHER COUNTIES.

Of Mendocino County, I cannot obtain any positive information, but from what I have learned, there is but very little attention given to vine culture. I can also report the same of Siskiyou, Humboldt, Trinity, and Del Norte; Marin County is slowly but surely increasing her vineyards.

Respectfully submitted,

I. DeTURK

Viticultural Commissioner for the Sonoma District.

OENOLOGY IN 1658.

Dr. H. Briem wrote a most interesting little article in the Viennese *Wine Journal* the translation of which its author will pardon us:

A œno-chemical book printed in 1658 gave the Doctor material for reflection, and it seems evident that the art of doctoring and counterfeiting wines is as old as the reputation of ignorance in the handling of the product of the wine is ever recurring.

"Johannis Rudolphi Glauberi Opera Chymica" is the title of the book, whose author, born in 1604, speaks in the robust way of expressing himself that was the merit or defect of the writers and authors of past centuries in Germany

On the outset, Glauber states, speaking of the hidden in nature, that there is much occult in wine, and few are acquainted with it. Divulging it would cause astonishment.

That the proper and entire utilization of all the elements of the grape and its juice was (and we must add is) defective, Glauber proves by addueing the fact that the lees of wine should be employed for multiplying the quantity, through fermenting with it an inferior product, or distilling or accidifying it into vinegar, and of the residues, by making potash from them. Ignorance caused (and causes) the lees to be thrown away as useless dirt. He asserts, and he is right, the processes called gallizising and petiotising were known 200 odd years ago. Gauber speaks in his book similar to modern wine manuals. He notes down a recipe for advancing a slowly-developing wine, saying: "Rectify a spiritum veni or a brandy distilled from lees as perfectly as possible to make it strong. Pour this on burnt tartar or only on burnt lees. Of this add to a tardy must as much as is necessary to render it strong—say to each Frankfort ohm four measures of this strong spirit."

Chaptal's modern receipt says: "Neutralize surperfluous acid wiih powdered marble, and raise the alcoholic content, to obtain a wine of good taste and bonquet."

Glauber was a practical man, and knew that wines treated after his recipe would fall bright sooner than other wines. Also that it would be transportable, a fact not denied by practicians of our times.

As in Glauber's times spirit was rather impure, he advises to use in wine only well-refined, clean essentia vini.

The miractes Glauber performed with spiritus salis and oleum salis were based upon modern principles. Glycerine, a product not at the disposal of Glauber's contemporaries, was by them supplanted for sweetening wine by drying the grapes, evaporating, phlegmatic moisture.

Miserably bad summer weather annoyed the chemist of 1658 as little as sensible people of our times would complain of its influence on the maturity of the grapes. The former complained of the ignorance of viticulturists who would not learn how to assist nature "when the oenological artist will take away what is present in wine in excess, and add what the wine lacks, he can get his wine as ready as the sun would make it in the berries, and grow every year good wine, if he knows how to do it." *Nihil novi sub sole*, we may exclaim in comparing these expressions with the theories of modern vinification.

Glauber found three indispensible matters in wine: mercurius, sulphur and sal, as the philosphers of his time called them. The first two elements were the moisture and spirit, the last, sal, meant tartar and acids. He knew that the proportions of them varied according to locality and heat conditions. His knowledge of the topography of the wines he knew was remarkable. He tried to become acquainted with all the details of wine, and he knew the bad-smelling empireumatic oil, the superfluous product from the destillation of lees, called by him anima vini. With spiritum salis he rendered the spirit free from the unclean taste given it of the grape oil. This oleum vini he dissolved again in the strongest spiritus vini, and this essentia or anima vina he used for improving all the lowest wines.

"A good pleasant odor of wine is the best property, and constitutes the difference between Rhine wine and fresh wine," said Glauber.

His remarks become sugry when he says: "Ordinary mankind is hardly to be persuaded to learn. They pretend their predecessors have also been people of good sense, and had trafic in wine, becoming rich thereby, without having had the knowledge communicated in learned books, therefore they themselves need not try to be wiser than their forefathers. If the wine will not become good by itself, let it turn bad. Somehow it will be consumed. Such people ought to be deprived of the advantages of learning to better their interests.

Again, he exclaims: "What does such a coarse fellow think? Because he knows nothing, will he that others should be like him? O thou blind and stubborn world!"

In many a part this blindness and stubbornness is perpetuated up to our time, we may add.

The similarity of modern times with those of Glauer is illustrated in a line written in 1870, by Dr Bersch in the *Agricultul Journal* of Vienna, reading thus: Those gentlemen, proud of their natural "wine, are too lazy to learn something new; they take the more comfortable way of abusing reformers."

Two hundred and thirty years hence some one will write: May people praise or criticise, those who know what is meant will not despise, but use to their advantage, good teaching.

Let the moral be drawn from these lines: In our young American industry let there be no fossils, but every one should put his shoulder to the wheel progress—and follow the motto the American eagle hovers over.

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FRIDAY.....SEPTEMBER 16, 1887

THE MECHANICS' Fair is an assured success in its display of the viticultural products of California. All the leading grape and wine producing counties have come to the front in grand style, and the display is exceedingly meritorious, not alone from the quality of the fruits and manufactures displayed, but from the very tasteful arrangement of the various exhibits.

On the main floor, in the south portion of the pavilion, the Napa county display of grapes, wines and olive oil, attracts large crowds. Over 300 varieties of grapes grown in this county are on exhibition, one exhibitor alone, H. W. Crabb of Oakville, having no less than 150 varieties in the exhibit. This grand display is worthy of the position Napa holds as the greatest grape growing and wine producing section of the State. Among the exhibitors of grapes and wines are H. W. Crabb, Oakville, who has varieties of Burgundy, Chablis, Zinfandel, Port, Madera, Cabernet Sauterne, Muscatel Catawba, Riesling, Malaga and Blackberry brandy.

M. M. Estee makes a fine display of Sauterne, of which he is justly proud. Also several other wines notably, Cabernet Hock, Muscat Charlnaux, Burgundy, Riesling, Zinfandel, all of which bear the brand of his vineyard "Hedgeside."

A. Brun & Co. exhibit Sherry, Zinfandel, Medoc and Grenache. A. H. Grossman, Zinfandel. Mrs. Weinberger, Riesling, Burgundy, Zinfandel. R. M. Wheeler, Sweet Muscatel, Chasselas and Old Riesling. John Thoman of Bello, Chasselas, Grape brandy, Port, Burgundy, Riesling and Zinfaudel. Jacob Schramm, Sauvignon Vert, Riesling, Hock and Burgundy. Charles King of St. Helena, has over twenty varieties of wines and brandies in the collection. John A. Stanley of Riverdale Vineyard, Claret and Mataro. Other exhibits in this large and attractive collection are from the cellars of the Napa Valley Wine Company, Beringer Bros., W. W. Lyman and H. A. Pellet of St. Helena, V. Courtois & Co. of Lark Mead Station, and G. Mebaum of the Inglewood Wine Cellar at Rutherford. One feature of the Napa County display is a fountain, skillfully covered with grape vines, to which the fruit is hanging in elusters, and from which a stream of fragrant Muscatine is in constant play.

The Glen Ellen exhibit in the Sonoma Valley display, is one of the most creditable in the fair. The Dunfillan Vineyard of Mr. J. H. Drummond is represented by more than twenty brands of white and red wines. This gentleman is at the head of the Sonoma Valley Viticulturists, and always takes the most active interest in all matters connected with the business. His present display, comprising as it does fully one-half of varieties of fruits and wines represented from this district, shows that success has crowned his labors to no slight extent. Aside from the products of the vine, Mr. Drummond also has displayed in his exhibit, an attractive collection of fruit in glass, potted plants of bright foliage and delicate blossoms, vegetables and cereals of all kinds.

The remainder of this tasteful exhibit, is the display made by Mrs. Kate Warfield, the successful and prominent lady vineyardist of California. Mrs. Warfield's collection of the products of her farm and vineyard of 200 acres is unique to say the least. The choicest of wines and brandies are flanked by great jars of snow butter. Magnificent vegetables and cereals intermingled with potted plants, fruits in glass, contrasts prettily with the decorations of bunches of locust, live oak, black oak, white oak, madrona, manzanits, ash, redwood, spruce and pitch pine, neatly tied with lavender ribbons.

The cooperage of both Mr Drummond and Mrs. Warfield, in the center of the exhibit, makes a fine showing and is pronounced by wine dealers of this city to be the finest display of private coopership ever seen in the Fair.

The Fresno grape growing interests are represented by an elaborate display of the products of the Celebrated Malter Vineyard, owned by Capt. J. Chaumont de St. Herbert. It is situated in the north portion of the pavilion near the main entrance, and attracts the attention of visitors by its very tasteful arrangement. Tier upon tier of bottles rise up in pyramidal form, and the brands represented are numerous of white and red and choice vintages of this celebrated vineyard.

The Contra Costa exhibit is yet far from complete. The largest display at present is made by Dr. J. Strentzel, of Alhambra Vineyard near Martinez. One prineipal reason for the small display of the grape, which is really the specialty of this county, is the late season at which the fruit matures. Even the grapes on exhibit are not ripe.

The Sonoma county exhibit of wines is not extensive at present, the principal exhibitors having not yet put in appearance. The wines at present represented are chiefly from the vineyards of R. H. Warfield, of Healdsburg.

DURING THE interim between the present and last issue of the MERCHANT, California has attained her thirty-seventh birthday. Gradually advancing from early youth she is now verging on the full vigor of maturity. From the little village by the bay, a great city has sprung up, the busy mart of the nations of the world. A new and sudden vitality seems to have lately taken the place of the inactive feeling which has overcome the older residents; for their part they rest content with the progress that has been made, surprised when they look back and contemplate the wonderful change which has taken place within a quarter of a century. The same impetus which was given by the rush of gold hunters in the early part of 1849, and which has brought California to the position she maintains to-day, is again being felt in our midst. A new rush of people are crowding into our boundaries, impelled not so much by the quest for gold as by the desire to take advantage of the natural surroundings of soil and climate which were ignored by the more sordidly inclined pioneer of the golden era. The busy hum of business is now spreading over the long neglected portions of the State, which would still be lying dormant, if dependent on the exertions of the people of the State alone. The new blood which is daily being infused throughout the land by immigration from the Eastern States and Europe is the incentive for the "boom" which has lately been working its way from north to south. Coming in waves, it strikes particular sections for a time, and passes onward in its course. This, however, can only be viewed as the forerunner of a steady improvement which will follow in the wake. The excited rushes must eventually quiet down, while the steady press of the incoming population will move on slowly but surely, till in numbers we equal, if not surpass, the older settled states.

California has got the soil and climate, two of the greatest *disiderati* in the needs of the human race. Other states are overflowing, owing to their proximity to the densely countries of the Old World. This overflow will benefit us just so long as the distance between us is only bridged at an expense which will protract the probability of an influx of the beggarly scum of vagrants and licentious persons which is to-day cursing the Eastern States. Low rates of fare within our own borders is well enough, but reductions may be carried to an extreme which will be disastrous to the welfare of the State at large. The question of immigration will be most important in the future history of California. So far the class of people who have been coming in has been all that could be desired. With a new system of railroads and the low prices which may result from competition, the prospect is not so thoroughly assured for the future. Brought within easy distance of the great outside world, California would soon be thickly settled from end to end. As it is the State is filling up to-day at a rate which is within the bounds of reason, and with a most desirable class of settlers. In the future, however, the quality of the material may be more in demand than quantity.

MR. ELLWOOD COOPER, the most extensive grower of olives in the world, has at last won the suit which has been pending for fifteen years, involving 20,000 acres of his land in Santa Barbara County. This will be gratifying news to the olive growing fraternity of California, in which Mr. Cooper is the pioneer. The suit was based on an old Spanish title.

AS THE date at which the trial of Morrow draws near, public interest is concentrating more and more on the subject. While willing that the defendant should have a fair trial, the people are determined that no loophole shall offer an escape from the bar of justice. Morrow undoubtedly considers himself a privileged person. Wealthy and influential through powerful connections, his general bearing indicates his sneering contempt for the majesty of the law he attempted to prostitute.

It remains to be seen whether or not in this cosmopolitan and happy-go-lucky population a case of this kind will not excite a feeling which will foree the rings which control our courtrooms to do their duty. The cowardly action of which this wealthy proprietor in a great corporation is accused, of trying to bribe a juror to rob the widow and children of a man for whose death he is legally responsible, has aroused a feeling against him which will not be easily allayed.

The daily press, through the columns of the *Examiner* and *Evening Post*, is doing good work in making the weak-kneed law officials, paid by the people, do their duty. Were it not for an ever vigilant press, this case would have gone the same way as others similar—be dropped off the calender by some mysterious hand. The judge in whose department an action of this nature occurs should be held personally responsible. He appoints his clerk and court officials, or at least has full liberty to do so, and he should answer for errors or misdeeds. Instances are becoming too prevalent where justice is thus defeated, notably the recent case of Creighton, which has been dropped from Judge Sullivan's calender. This court has heretofore been above suspicion, and it now behooves the honorable judge to produce the culprit and re-establish himself in the confidence of the people.

The complaint of the *Post* that the sides are not fairly matched, and that the position of the prosecuting attorney, handicapped as he is by a press of other matters, is worthy of consideration. He should have assistance, and none more worthy could be extended or acquired than that of the independent and fearless jurist suggested by the *Post*—George R. B. Hayes. By all means let him now be employed, and more confidence will be felt that justice will be meted out.

THE VINEYARDS of France are suffering under afflictions, which seem to grow heavier instead of lighter as time rolls on.

The viticultural journal, *La Vigne Francaise*, is full of complaints, and the aspect of the business throughout the country, judged by its tones, is certainly anything but cheering. The black-rot is now announced as having made its appearance in three departments of Sud-Ouest: le Lot, le Lot et Garronne, le Farm et Garronne, and notably in that of Lot et Garrone. The appearance of this plague, which is more dreaded in France than the mildew and phylloxera, is accredited to the introduction through American wines. It is believed that the germs have fructified after an incubation of some years. The dread of this outbreak had already suggested an appeal to the Minister of Agriculture, requesting a vigorous supervision of all vines in America from which clippings would be made for shipment to France. Hardly had this been done when the outbreak was commenced. M. Lassure, a clever viticulturist, and at the same time a most attentive student of the diseases of the vine, writes as follows

to the *Journal de Lot et Garonne:* "The black-rot has invaded our vines. We have conquered the oidium, mildew and phylloxera, but are now disarmed in the presence of this new plague. We know no remedy for the evil. Black-rot was first announced in France on August 11th, 1885, in the estate of Val de Marie, near Ganges (Herault.)" M. Lassure then goes on to quote the description of the disease by M. Ravaz, Professor in the School of Agriculture at Montpellier, who had studied it on the spot. He arrives, then, at the conclusion that the plague is identical with that which is now announced at all points in the department of Lot et Garonne. In order to confirm his belief, and for fear of creating a false alarm, he sent some specimens to M. Planedon, the eminent botanist, and received a confirmatory reply.

Distressing news from all over the department continues to pour in, and to prove the rapidity with which the disease is spreading, mention is made of a certain vineyard of ten acres in which the taint was first discovered on the 17th inst. Four days later half the crop was affected, and on the 24th all was lost. The press has now commenced to publish a description of the disease, the remedies, etc., and every endeavor is being made to instill a more hopeful feeling among the growers who are dejected over the prospects. The following letter from an American vine-grower of Highland, Illinois, August Pagan, must, in face of the existing crisis, have a chilling effect. The modern Job's Comforter writes thus:

HIGHLAND, Illinois, 8 February, 1886.

The sole disease which disgusts us with the culture of the vine is black-rot. Look-out French vineyardists if that malady visits you. Phylloxera, mildew, etc., are trifles in comparison. Since 1880 I have spent $2000 in experiments for fighting that terrible plague in my ten-acre vineyard, and even now I have no guarantee. On the 21st of June, 1882, my vines looked splendid, promising a crop valued at $4,000 to $4,000. The 22d, at 10:30 in the morning, first signs of black-rot appeared. At 1 P. M. the crop was gone, nothing remaining but a dozen berries fit to eat, and so it has continued from 1880 to 1885. When the temperature rises to 25°, 26° Réaumur, between 10 and 11 A. M., the symptoms of the frightful malady can be found. In France, where the disease has appeared in miniature in 1885, it will be found greater in 1886.

AUGUSTA PAGAN.

The suggestions to wine growers published in another column of this papes are sensible and worthy of attention. If acted upon they would tend to harmonize matters between those directly concerned—the man who makes the wine and he who sells the product. There should be no conflict between the parties, and with fair dealing on both sides there could be none. The market at home and abroad for California wines is such as to justify fair prices to be paid the country grower, and permit of a good and reasonable profit for the merchant. United action and square dealing at home will speedily put an end to the trouble, which has necessitated the present urgent demand for protective legislation. The action of Messrs. Kohler & Frohling of this city, in establishing cellars in New York, if followed up by similar enterprise on the part of other dealers, will have more effect in checking the traffic in spurious wines than all the restrictive laws ever enacted. Under those conditions people in the East who desire California wines can obtain them pure, and if they choose to traffic in outside markets they deserve all they get in the form of poisonous compounds. Branch houses established in New York, where California wines will be sold under the name and with a guarantee of the quality in the reputation of the firm which supplys them, will give consumers a chance to get a genuine article free from any danger of imposition. There has been too much bickering and jealousy existing for years past among California wine men. This should cease. Their interests are identical, and some combined and friendly action should be taken to further them, for the benefit of all. Sixteen million gallons of wine is the yield of this State for the present year, over one-half of the total production of all the wine growing States in the Union. The total consumption of wine in America during the past year was only 22,068,220 gallons, of which 18,366,393 gallons were domestic wines, the remainder being imported. California could therefore very nearly supply the demand herself, and as in quality and variety her wines are far ahead of all others, a market is always an assured fact. Carry the war into Africa and there will be fewer complaints from the East of adulterations and the impossibility of getting a pure California wine unless under a French label.

THE ASPECT of affairs in the Sandwich Islands is most unsatisfactory. The Reform party is carrying matters with a pretty high hand, too high in fact to last long. Now that Kalankaua has been placed under restraint, the power seems to have passed into the hands of a military dictator, whose rule is much more obnoxious than that of the dethroned puppet. Volney E. Ashford is the new ruler, backed by the military company of which he is the chief, and his unbridled will is law. The press is gagged not a line of the comments of the American press has appeared in the local journals, even the proceedings in the law courts are refused to reporters. This aspiring branch of the Ashford family is not alone in his glory. His brother ranks as attorney general under the new administration. With the law of the land and the army under his thumb, the opportunity is favorable for the exercise of autocratic powers. Just how long this condition of affairs will last, is impossible to divine. The muzzled press gives no guiding sign; mute under the piercing eye of the new dictator. A general collapse and universal chaos is nevertheless eminent at any moment.

A HEAVY shipment of Cherry Juice from this city to New York, was noticed in the last issue of the MERCHANT. The reason therefor was not at the time particularly plain, and some hopes were excited that local wine adulterators were about to turn over a new leaf, and desist from the evil of their ways. Unfortunately however, this is another instance of hopes which are only born to be rudely shattered. The shipment was made because there is more money to be made at present in the New York market, than could be realized by working it up into patent bug juice in this city. The rise in New York prices is caused by the total failure of the new crop in Germany and the consequent increase in the value of the old and small stock on hand for export. This channel will probably drain the surplus of our local stock, and for even this small mercy may we all be devoutly thankful. Amen.

GRAPE GROWERS in the southern portion of the State are enthused over so successful shipment of a car load of grapes from Riverside to Chicago by the cold process. The sale of this fruit which arrived in perfect condition, was made at a rate which would give the grower from $55 to $80 per ton. It is now thought that an avenue is opened to dispose of a large portion of the Riverside grape crop, which amounts annually from 8,000 to 10,000 tons. If these were sold at an average of $75 per ton, the returns would be from $600,000 to $750,000 giving a yield of from $600 to $750 per acre net. These figures are based on the calculation of a local grape grower, and may be slightly exaggerated. Still the idea is a good one, and on the strength of the success full shipment already made, it should be be followed up. At half the figures quoted, there is big money in it for all concerned.

THE heavy rains in Arizona, which seriously interfered with the various railroad systems there, did not delay the traffic on the Southern Pacific road more than a couple of hours. The Great Summit Tunnel in the Siskiyons will be finished before the end of the present month. The force of the company at Batts Pass has been increased, and grading is going rapidly forward. Their engineers are now at work in the Gaviota Pass, making the final location for the road through there. A decision rendered in Santa Barbara renders the claims of the S. P. R. R. to right of way through this pass unquestioned.

"SHASTA" is the title of an elaborate little work which has just been issued, descriptive of the wild and beautiful scenery of this northern portion of the State of California. The varied information contained in its pages will prove invaluable to the traveler and pleasure seeker in this interesting section of the country. In literary style the work is faultless, and with its artistic illustrations reflects the greatest credit on the author, Mr. E. McD. Johnstone. It is dedicated in a graceful manner to Mr. A. N. Towne, the General Manager of the Southern Pacific R. R. Company.

Prof. E. W. Hilgard, of the State University, has sent to the Contra Costa Board of Trade the following formula of a preservative fluid for preserving fruit in jars in a fresh state for exhibition purposes: Twenty-five or thirty per cent. of glycerine dissolved in water, to which there is added about an ounce of salicylic acid to every five gallons of the mixture; and bits of sal soda while yet warm, until no more of the acid remains afloat in it, but be careful not to add an excess of soda over what is enough to make the acid dissolve. Or instead of the acid you may use a corresponding amount—about an ounce and a quarter—of commercial salicylate of soda, which will dissolve easily.

ANENT the manufacture of wine in California, we learn from an Eastern paper that surplus apricots are to be used for the purpose. "Experiments show," continues the writer that they make a richly flavored wine, clear and effervescent as the best best champagne.

THE BRITISH ship Langdale, which sailed from this port on the 14th, for Great Britain, carried 21,266 gallons of brandy, valued at $26.155. This is the heaviest shipment of native brandies which has ever been made from San Francisco.

During the past week there has been a brisk demand in the New York and Chicago markets for California raisins, and good prices have accordingly been obtained. This good news is important in view of the proportions to which raisin-making has grown here. This growth can be best appreciated by the following comparison of figures. Only six years ago the crop of raisins in this State was 180,000 lbs. Last year the crop was 14,000,000 lbs, and this year's crop is likely to exceed the latter figure. Some time ago it was stated that the Eastern demand for California raisins had fallen off in considerable degree. The cause was held to have been careless methods of packing which robbed the fruit of its attractive appearance. The present demand and prices show that the negligence has been corrected.

HAWAIIAN GUESTS.

The following Hawaiians have arrived since our last issue, and are registered at the Occidental: J. A. Cuzan, Herbert Dole, Walter Doyle, D. Foster, James A. Hopper and wife, Robert Lewers and wife, T. May and wife, James R. Renton, A. H. Smith, C. B. Welles, Mrs. H. F. Wells, Miss R. M. Wells, Miss Wight, George C. Williams and wife, G. K. Wilder.

SUGGESTIONS TO WINE MEN.

A number of leading wine and grape men of Napa County, determined to improve the present low condition of the market for wines in the hands of the producer, find a proper remedy against the existing evils leading to their ruin and loss of their homes by sheriff's sale, in the following plan and proposition to the wine producers of this State, which plan, also serves as an appeal to fair minded men of means.

1. The producer must be enabled to sell in future no more new wine, having for new wine only one purchaser, the San Francisco wine merchant. Wine makers as a class, have not sufficient means to house two vintages in their small cellars. Therefore men of means should assist and give facilities for storage of wine in the city and in prominent wine districts in the country. Such warehouses would pay their proprietors a handsome interest. In a solid warehouse, wine will be considered a good security. Large quantities of wine under one roof can be extensively advertised cheaply and successfully and be put under proper treatment for a small amount of expense. The market will never be overstocked with good, sound old wine.

2. The producer must be induced to make and to sell no more inferior wine, such as made from Mission and Malvoise. Nothing ruins the prices and reputation of good California wines more than the sale of inferior wines at low prices. The grape man must sell his inferior grapes, and the wine man his inferior wines to the distiller. Large co-operative distilleries should be erected, and all must help in agitating the establishment of U. S. Bonded Brandy Warehouses, not only in New York, but also in Chicago, St. Louis, Cincinati, New Orleans, etc.

3. The producers must assist in the establishment of "Condensed Must Plants."

4. The producer must use his influence at the time of election, to send only such men as representatives of our Golden Wine State to Congress, who are known as honest friends of a proper National Pure Wine Law, and will with all their power and influence, work for passing the much needed law to protect us against shameless adulteration.

RAISIN GROWING.

California the Leading Raisin Producer of the Future.

The *Resources of California* in a recent article on this interesting subject, says that the growing of raisin grapes is now attracting great attention in California. The raisins of the San Joaquin valley, for quality and size, are superior to those of Spain and Italy, and larger and finer than those of any other part of California. Yield, quality, prices and market point to this branch of industry as one of the most profitable branches of farming. The capital required is small, and the time from planting to producing is short. The work is light, and well adapted to women and children. It is infinitely healthier, easier and more profitable than kitchen or sewing machine work. The light labor can be done by thousands of fair hands that now have nothing to do, and it can be the means of rendering large numbers of women self-supporting, who are now entirely dependent upon others.

That there is a future for California as a raisin producing country is no longer a matter of doubt or speculation. The industry has passed beyond an experiment, and is assuming grand proportions in the products of this State. Where our raisins have been sampled in the Eastern States, the verdict has come back that they out-ranked in quality the famed raisins of foreign countries. The grapes usually grown for raisins are the seedless Sultana, Muscat of Alexandria, also known as the Muscatel. Raisin making has been well described as follows by a prominent raisin grower: The sun-laved shores of the Mediterranean offer to the vine no finer soil and climate than the warm valleys of California.

The abundant water supply from the snow-filled canyons of the mighty Sierra, gives health to the vine and size to the berries, while the long summer heat fills the grape with all lusciousness. When the early September days pour a torrid heat upon the earth, the clusters put on a golden tint—the royal amber of ripeness. Sun and water and warmth can do no more. The vintage time has come to make sweet raisins, filled with jelly, and of a fine brown color. It is important that the grapes shall show this yellow color.

The United States is the greatest raisin consuming country in the world, importing annually 1,500,000 boxes from Europe, the products of which are produced almost entirely in the Malaga and Valencia districts of Spain. The duty is two and one-half cents a pound, which of coarse adds to the price paid by the consumer. Of the total amount consumed, not more than one-twentieth is derived from California. Therefore it will be seen that there is a large field for the production of raisins.

George Camp raised raisins which brought him $300 per acre per annum. Scazighini got $3000 worth from four acres in one season; many others might be cited. With regard to the quality, it has been proved by Mr. Blowers and many other vineyardists that the San Joaquin valley raisin equals, if it does not surpass all others. Here again the necessities of small holdings is made apparent, as the work of the entire family will be called into service, and not only can the raisins so picked, cured and packed be sold cheaper, but a greater profit be made than were hired labor used. Therefore, raisin-producing is especially adapted to families owning a few acres.

The following figures will give the approximate cost of starting a raisin farm in the San Joaquin valley, California:

COST ON A VINEYARD OF TEN ACRES.

Ten acres of land at $100 per acre	$ 1000
6750 Muscat cuttings at $5 per acre	50
Plowing and harrowing, $3 per acre	30
Laying out of the land and planting	100
After cultivation at $3 per acre	30
Cost of the first year	$ 1210
Pruning, $3 per acre	30
Plowing and harrowing three times	75
Cost of second year	$ 105
Pruning, $5 per acre	50
Cultivating three times	75
Cost of third year	$ 125
Pruning, $6 per acre	60
Cultivating three times	75
Cost of fourth year	$ 135
Pruning, $8 per acre	80
Cultivating three times	75
Cost of fifth year	$ 155

RECAPITULATION.

First year	$ 1,210
Second year	105
Third year	125
Fourth year	135
Fifth year	155
Sixth year	155
Raisins produced in six years at a cost of 30 cents per box	2,370
Total expense	$ 4,255

INCOME EACH YEAR.

Second year, 100 boxes at $1 50 a box	$ 150
Third year, 800 boxes at $1.50 a box	1,200
Fourth year, 2000 boxes at $1.50 a box	3,000
Fifth year, 2400 boxes at $1.50 a box	3,600
Sixth year, 2600 boxes at $1·50 a box	3,900
Total income	$ 11,850
Cost of six years	4,258
Net profit for six years	$ 7,592

From this time on the vineyard will produce the full profits of the sixth year. From the above can be seen what results can be produced from a small capital invested, and, as shown, there is no possibility of overstocking the market.

LEADING THE MARKET.

An Exchange notes that notwithstanding the determined efforts of Spanish growers and their friends to crush or seriously cripple the raisin industry in California, everything now points to increased demand for the California product. The wonderful growth of the raisin business in this State during the past six years, has not had the effect of lowering the market price in the least, but has rather strengthened it instead. The importation of foreign raisins to this country has continued large, though importers have not found as ready sale in late years as formerly, jobbers preferring to handle the California fruit on account of its better keeping qualities. In this latter particular, our product has proven so far superior to the Malaga or Valencia article, that no trouble is now experienced in selling California raisins side by side with the imported fruit, and at oven a little better price. New York and Chicago dealers are now contracting with California packers at good prices, and there will be no trouble in disposing of the largely increased pack of this State this season at better prices than were at first anticipated.

Our local packers, who were willing to contract for all the raisins obtainable in the early part of the season at five cents per pound in the sweat box, but latter on only offered four cents, are again paying the higher price. Late advices from their Eastern agents justify them in doing so, and we are glad to note this fact. Our packers are liberal-minded men, and do not try to take all the profits of growing, packing and marketing the fruit, but on the contrary, are quite willing to divide with the producer, and give him as large a margin as the markets will permit. But we would also remind the raisin grower that he should not expect too much at the hands of the packer. A profit of $100 to $200 per acre is more than can be made out of a farm devoted to grain raising in any part of the world, and our grape and fruit growers should be satisfied with a reasonable return. Some of our raisin growers refused to sell early in the season at five cents, because they were sanguine that more would be paid. They felt disposed to growl when the price dropped to four cents. They now have another opportunity to sell at five cents, and they can do as they choose about it. We will not advise them either way. The present price may go up. It may go lower than four cents. Five cents per pound will yield a handsome return, and that price is now offered.

MISSION GRAPES.

The Los Angeles *Herald* in pleading for the existence of this vine, think the early vineyards were all of the Mission grape. Vintages from vines of this variety grown on damp lands and carelessly made, had few of the characteristics of noble wines. They were lacking in boquet and in flavor, and they were rough and acid. Thus grew up a desire for new varieties of vines, nearly all of which were imported from France and Germany. Intelligent people know the great difference between the climate along the Rhine, the Rhone and the Elbe and Los Angeles. Ours is much more like the climate of Italy and Spain. The Mission vine came from the latter country. In spite of these facts our best vignerons give themselves over to the opinion that the Zinfandel, the Blauo Elbin, the Malvoisie, the Berger and other foreign vines would make better wines, particularly of the dry varieties. Experience is leading a good many back to the old-time favorite. People here twenty years ago always did know that the Mission grape was capable of being converted into wines of all sorts, and of the noblest qualities. Some of them have seen bottles of white, dry wines made of this grape opened, that sparkled like champagne, that was as clear as a crystal spring, with a boquet the most delicate and a flavor like nectar. Cucamonga wine was famous a score of years ago. The Anaheim people made white wine fit for the table of any connoisseur before a foreign grape had been crushed in the county. For a sweet-wine family all know that the old-timer has no superior in the whole vine family. For port, angelica, sherry, and for brandy, there's nothing like it. As it is discovered that our Zinfandel possesses too much acid and will not become smooth, and that other foreign grapes fail to produce ideal wines, growers are learning to look with favor on the pioneer grape of the country. A revulsion in favor of the Mission grape has already set in. This will grow into a permanent preference for it, which will set it before all the varieties known.

WM. T. COLEMAN & CO.

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Sole and Exclusive Agents for following Brands of Salmon:

COLUMBIA RIVER.

Booth & Co, Black Diamond, Coleman Flag, McGowan Bros' "Trap" Brand, Fisherman's Pkg Co, Aberdeen Pkg Co, White Star Pkg Co, Jas. Williams & Co, Thistle Pkg Co, Columbia Canning Co, McGowan & Sons' "Keystone" brand, Seaside Pkg Co, J. W. Hume "Autograph" brand.

OUTSIDE RIVERS.

WACHUSETTS PKG CO,
"SILVERSIDE" BRAND,
BATH CANNING CO,
GARDINER PKG CO,
HERA PKG CO,
"TOMAHAWK" BRAND,
SUNNYSIDE PKG CO.

FRASER RIVER.

BRITISH AMERICAN PACKING CO.,
BRITISH COLUMBIA PACKING CO.,
ENGLISH & COMPANY

SKEENA RIVER.

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SACRAMENTO RIVER.

COURTLAND PACKING CO., JONES & ANDERSON.

We also offer For Sale of Other Columbia, Sacramento and Fraser River Salmon:

Geo. W. Hume's "Flag" brand,
Hapgood & Co.,
I X L,
Pillar Rock Pkg Co.,
Geo. T. Meyers,
Ocean Canning Co.
Badolett & Co., (Flats),
Washington Pkg Co's "Favorite" Brand,
"Epicure" brand.
Pacific Union Pkg Co.,
Cutting Pkg Co's "Cocktail" (Flats),
A. Lusk & Co's pack,
"Mermaid" brand,
Scandinavian Pkg Co.,
West Coast Pkg Co.,
Warren & Co.,
"Carquinez" brand,
Point Adams,
Wadham's Fraser River.

ALASKA FISH.

Karluk Pkg Co., "Challenge" brand, Arctic Pkg Co., Arctic Pkg Co's "King" Salmon.

We also have the "O & O" brand, an outside river fish, and many other brands, that can be had on application.

WE ARE SOLE AGENTS FOR THE CELEBRATED

Golden Gate Packing Co, "Black Diamond" brand of fruits, Barbour & McMurtry's fruits in glass, Coleman's "Flag" brand of fruit, San Lorenzo Pkg Co, Riverside Fruit Co, Colton Cannery, J. Lusk Canning Co, San Mateo Pkg Co, Sierra Madre Packing Co, Santa Clara Packing Co.

Our lines of Canned Fruits and Canned Salmon are incomparable, and we will make prices F.O.B. or C.I.F. for Great Britain, Australia and the Colonies.

OUR NATIVE WINE SHIPMENTS BY SEA.

PER STEAMER SAN JOSE, SEPT. 1st, 1887.

TO NEW YORK.

MARKS.	SHIPPERS.	PACKAGES AND CONTENTS.	GALLONS	VALUE
A L & Co	Trapolli, Berges & Co	50 barrels Wine	2,390	$956
A V Co	C Schilling & Co	200 barrels Wine	9,526	3,810
S A & Co	"	2 barrels Wine	96	77
C J	"	3 barrels Wine	143	123
A F	C Carpy & Co	25 barrels Wine	1250	362
J F	"	25 barrels Wine	1252	437
P L	"	10 barrels Wine	500	15
P G	"	10 barrels Wine	498	185
P G P	"	25 barrels Wine	1,251	425
F B & S	"	15 barrels Wine	754	215
D F	"	15 barrels Wine	753	217
L C	"	12 barrels Wine	599	222
B D & Co	B Dreyfus & Co	100 barrels Wine	4,723	1,225
L L	Lachman & Jacobi	2 half barrels Wine	33	24
J A P	Lenormand Bros	10 barrels Wine	467	131
F A	Lachman & Jacobi	25 barrels Wine	1,284	363
G F	"	10 barrels Wine	514	145
R F	"	10 barrels Wine	517	146
H C & M	Napa Valley Wine Co.	7 barrels Wine	349	207
Total amount of Wine			26,900	$9,430

TO MEXICO.

A V, Mazatlan	Cabrera, Roma & Co	2 casks Wine	123	$65
F M, Mazatlan	B Dreyfus & Co	1 barrel Wine		
"	"	1 half-barrel Wine	75	65
A P, Mazatlan	"	1 barrel Wine	48	40
C G, Mazatlan	"	1 barrel Wine		
"	"	2 half barrels Wine		
"	"	1 keg Wine	119	90
"	"	1 barrel Brandy	45	125
B F C, Acapulco	W Loaiza	1 barrel Wine	50	32
J M, Acapulco	J O Meyerink	1 barrel Wine	38	28
E L, Acapuleo	Redington & Co	1 barrel Wine	48	83
Total amount of Wine			398	$403
Total amount of Brandy			45	125

TO CENTRAL AMERICA.

J C, Acajutla	Urruela & Urioste	5 kegs Wine	80	$55
J J C, Punta Arenas	"	15 barrels Wine	200	191
"	"	10 cases Wine		40
J M G, Acajutla	"	4 barrels Wine	40	43
M T, Acajutla	"	4 barrels Wine	88	80
O D, Acajutla	"	2 barrels Wine	30	22
J S, Puntas Arenas	"	2 kegs Wine	10	10
L R M, Champerico	"	16 cases Wine		66
L & S, Champerico	Schwartz Bros	10 cases Wine		55
"	"	5 packages Whiskey		90
"	"	5 kegs Wine	50	40
R A, Puntas Arenas	Montealegre & Co	5 packages Wine		40
"	"	2 kegs Wine	30	30
L S A	L S Andrew	2 half-barrels Whiskey	52	247
San Jose de Guatemala	"	2 cases Whiskey		65
"	"	20 cases Wine		110
L A, Corinto	John T Wright	90 cases Wine		361
"	"	20 cases Wine		75
"	"	1 case Whiskey		16
V H, La Libertad	"	1 barrel Wine	50	25
P A A, Puntas Arenas	B Dreyfus & Co	5 half barrels Wine	134	125
H & Co, San Jose de Guatemala	Parrott & Co	10 cases Wine		40
B B & Co, La Libertad	Bloom, Baruch & Co	1 keg Whiskey	12	33
"	"	4 cases Whiskey		34
L S A, San Jose de Guatemala	L S Haas	5 barrels Whiskey	214	535
H V, Puntas Arenas	J Julien & Co	1 barrel Whiskey	39	119
"	"	1 barrel Wine	51	46
"	"	1 barrel Wine	52	52
Total amount of Wine, 181 cases and			785	$1,404
Total amount of Whiskey, 22 cases and			317	1,139

TO GERMANY.

N B, Bremen	C Schilling & Co	1 barrel Wine	48	$48

TO TAHITI—PER BRIG TAHITI, SEPT. 1, 1887.

J B	C Carpy & Co	11 barrels Wine	528	$264
A C & Co	Crawford & Co	1 barrel Wine	49	25
Capt J Palmer	P G Sabatie & Co	4 barrels Wine	200	100
"	"	1 barrel Brandy	22	44
C	"	3 barrels Wine	150	
"	"	2 barrels Wine	100	75
J H C	Wilkins & Co	5 packages Wine	92	52
M in diamond	J E Thayer	1 barrel Wine	35	21
L B	J Pinet	1 half-barrel Wine	27	27
Total amount of Wine			1,181	$564
Total amount of Brandy			22	44

TO CHINA—PER STEAMER CITY OF NEW YORK, SEPT. 1st, 1887.

F V & Co, Hongkong	B Dreyfus & Co	125 cases Wine		$500
Th Kayser, Yokohama	C Schilling & Co	7 barrels Wine	333	166
H E A, Yokohama	H rschler Bros	10 barrels Wine	500	250
H E A, Kobe	"	5 barrels Wine	250	125
H B, Yokohama	C Carpy & Co	5 half puncheons Wine	300	159
"	"	3 cases Whiskey		24
O S Yokohama	Williams, Dimond & Co.	1 barrel Wine	40	30
Total amount of Wine, 125 cases and			1,423	$1,230
Total amount of Whiskey, 3 cases				24

MISCELLANEOUS SHIPMENTS.

DESTINATION.	VESSEL	RIG.	GALLONS.	VALUE.
Honolulu	Carbarian	Bark	390	$273
Kahulin	Anna	Schooner	82	88
Total			472	$361

Total shipments by Panama steamers	28,083 gallons	$12,237
Total Miscellaneous shipments	3,124 "	2,203
Grand totals	31,207	$14,440

GRAPE ROT.

Remarks by A. W. Pearson, Superintendent Vineland Company.

The region known as the "Vineland Tract," in southern New Jersey, since its settlement in 1861, has been largely devoted to grape culture. The vines, principally Concord, were healthy for some years and yielded profitable crops.

About the year 1869, "the grape rot" appeared in South Vineland, thence gradually spreading and increasing in virulence as it spread. In a young vineyard which I purchased in 1872, then bearing its first crop, the manifestations of the disease were scattering and slight; the next year a greater per cent. of the crop was damaged, and by 1876 the destruction caused by rot was nearly total.

Microscopic inspection showed the disease to be the work of a fungus *Phoma uvicola* and distinguished by the European botanist (von Thumen) as being of American origin. In his work, The Fungi of the Grape Vine, he describes this *Phoma* as known to him only through specimens sent from southern New Jersey and from South Carolina.

It appears usually when the berry of the grape is about two-thirds grown, the dates of its first appearance each year in this latitude varying from June 20th to July 10th. A small, whitish spot, about one-sixteenth of an inch in diameter, surrounded by a brownish areole, appears on or in the epidermis of the grape. The areole enlarges until the entire superfices of the berry is involved. It is then dark brown and is covered with a multitude of minute black pimples, which are located immediately beneath the outer skin. These are the peritheeia or seed capsules of the fungus. When they are matured, which is about twenty-five days from date of apparent infection, they burst, rupturing the epidermis of the fruit, and extrude a mass of pores.

Only familiarity with its appearance beneath the lens can give one a realizing sense of the almost boundless fecundity of this *Phoma*. And this must be comprehended before we can account for the visible symptoms of the disease manifested in the vineyard.

After successive crops of the *Phoma* these germs multiplied so that single berries often exhibited numerous "rot speeks" or points of initial infection. I have counted seventeen on one grape, and have seen the entire crop of a vine, say 25 per cent. of fruit, destroyed by a single invasion of the *Phoma*, not a berry escaping.

Some writers have regarded the disease as constitutional, existing in the circulation of the vine and imbibed through its roots, the symptoms developing similarly to the eruption of the smallpox in man; but it is now proved that the infecting germ of the *Phoma* floats in the atmosphere, whence it alights upon and takes root in the exterior of the grape. Disseminated by the wind, these germs drift abroad as do the atoms of vapor in a fog, and thus gradually spread from place to place. I have seen this invasion from an old infected vineyard into and through the rows of a young vineyard planted beside it, the row of young vines contiguous to the old being nearly stripped of fruit by the rot, the next row less damaged, and so on, until the tenth row distant gave scarcely a sign of infection. So, in the uncultivated territory which surrounds the infected region, where new farms are opened and new vineyards planted, which are yet comparatively isolated, and which we see are for a time healthy, we have yearly the proof that the presence of the infecting germ is a prerequisite to production of symptoms of the disease.

In an infected vineyard these germs hibernate upon the fallen and rotted berries and dried petioles of the vine. Their vital activity is developed and their capacity for infection is aided by warmth and moisture. After the germination of the first crop of the *Phoma* in the summer, which is doubtless produced from the debris in the vineyard, successive attacks come during August and September from the spores set free from the peritheeia as they matured in the rotting grape.

But if drought, intense as it sometimes is in this locality, prevails at the season when grape rot is not to be expected, the disease will not appear until there is a moist atmosphere.

Three years ago I decided to try other devices than those already used against the assault of the grape rot. I selected a block of 1,000 Concords, from which, through the summer, I had the symptoms of infection removed as fast as they appeared. All the rotted grapes were picked weekly from the clusters, picked up from beneath the trellis, taken away and burned. The leaves wherever spotted by the *Phoma* were also gathered. The benefit of this disinfection was visible at the vintage, but the difference was yet more manifest the next season, when the vines thus cleaned showed an improvement of at least 50 per cent. in their crop.

The second year I also tried burying all the debris of the vineyard late in the spring

with a plow, leaving the soil thereafter undisturbed during the summer.

On each side of the terris I threw a furrow away from it, then raked the dry leaves and rotted grapes which lay beneath the vines into these furrows, then threw the furrow slice back again and plowed the interspaces, careful to bury all the surface deposits completely. After this the vineyard was left uncultivated and it grew a luxuriant crop of weeds, but it yielded a good crop of grapes also.

The good effect of this suppression of germs of the epidemic, when this vineyard was compared with others adjacent not thus treated, was remarkable. I found, however, upon inspecting the rows during the summer that my men who did the raking had been careless, in some places not doing clean work; besides, the rake teeth failed to catch all of the little rotted berries lying around on the ground; some of these remained on the surface, and wherever I found most of this debris, there above it, on the vines, were the most rotten grapes. It was plain that the germs of the *Phoma* floated upwards from their nidus on the soil beneath.

This spring, 1886, I resolved to make the work of disinfection more thorough. Substituting hoes for rakes, I scraped the surface clean, and then buried everything with a plow, making afterwards a final inspection to see that the job was complete.

For comparison I left one block of vines with the rotted grapes from the previous year unburied, but suffered all my vines to remain uncultivated, after the plowing, which was done late in May.

The result fulfilled my expectation, and has rewarded me for my trouble. In the block where the infection was left unburied there was fully ten times as much as elsewhere. Upon the hundred vines from whence the rotting grapes of this season were not removed there was rather more rot than where the vines were kept continually cleaned of diseased specimens.

These observations enable me to account for phenomenon of the rot which were before somewhat puzzling.

A neighbor's vineyard, which was cultivated constantly and which rotted persistently, was situated on a slope descending from high, dry sand down to heavier soil, which, from its position, was naturally more moist. We every year noticed that the rot was worse in the highest part of the vineyard, which seemed paradoxical, because we were disposed to regard the lowest and most moist localities as being naturally favorable to the development of the fungus.

We may now expect that where the soil was driest and lightest the cultivator most readily stirs up the infecting germs together with the dust. Such was my experience when I cultivated my own vines.

On another occasion when grape rot was exceedingly prevalent, my attention was called to a small vine entirely free from rot, while desolation was all around it. It was upon low ground frequently flooded by the rains, abundant that season, the water sometimes standing upon it an inch or more in depth for several hours after a hard shower.

That these vines, down in the swamp, should be uninjured by disease while those on the high land around were ruined seemed inexplicable. We may now account for this strange exemption on the plausible supposition that the infecting germs of the *Phoma*, doubtless present in this vineyard as elsewhere, were simply stuck fast in the mud.

In unfavorable seasons, when atmospheric heat and humidity prevail, it is doubtful whether in badly-affected districts any of the means of protection here suggested may be effectual, at least not unless they are universally and thoroughly employed. The atmosphere becomes full of the infinitesimal germs of the *Phoma* which will drift everywhere on the wings of the wind. Hence, at such times the attempt of any single viticulturist to protect his vines from rot, provided he be surrounded by neglected and infected vineyards, will be almost useless.

A few years since, during a hot and humid August, I proved the fact of this general prevalence of the infecting gems by removing from the bags in which they were inclosed perfectly ripe, healthy clusters of white grapes and exposing them upon the roof of an out-house, remote from the vineyard. In a few days the clusters were spotted by the infection. I found that I could not take grapes from the paper bags which had protected them, pack them and ship them without endangering their infection even by this trifling exposure. They caught the disease while on the way to market.

Whether the vines may be nourished by special fertilizers as to fortify it constitutionally against assaults of these destructive fungi is a very interesting question, and many illustrations of the plausibility of this proposition might be adduced. For example, in the cultivation of the grape, in this region at least, we notice that wherever the soil of the vineyard is least fertile and the vines are most unthrifty, there they are most damaged by the depredations of fungi. An enormous and exhausting crop of fruit one year will be apt to invite a fungus eruption the next year. I have seen a liberal manureing over a portion of a vineyard maintain that portion in reasonable health while the unfertilized vines adjacent were ravaged by rot and mildew.

The grape diseases in southern New Jersey themselves afford a striking example in general of the injurious effects of insufficient fertility. The soil here is mainly a deposit of sand and gravel from the waves of the sea, and is comparatively sterile. Of two important elements, analysis shows it to possess merely "a trace." These deficiencies are lime and potassa. Under these conditions, rot and mildrew have, in seasons favorable to their development, swept all before them. In other parts of the State, on a different soil, and where lime and potassa had been liberally applied in fertilization, though rot and mildew were yearly present in the vineyard, they worked but little harm. Thus, for example, in one of the most fertile counties in the State, a viticulturist informed me a few years since that he "had some considerable rot in his vineyard," but he had harvested 19,000 pounds of grapes from one acre of Concords.

Contrast this with the yield of an acre of Concords on the land of one of my neighbors. The vines, ten years old, were well set with fruit, but it rotted. I bought the crop; total, 156 pounds.

In one of my vineyards some years ago I estimated, on June 30th, that I had twenty pounds per vine set on 4,000 vines. Rot began July 5th. I finally harvested about two pounds per vine. I mention these experiences just to let outsiders know what *Phoma uvicola* is capable of doing.

We may get instruction upon this subject of vital resistance to disease germs from the grapevine itself. Certain varieties are seen to be especially subject to fungus attacks. Why? It is said "because they are less hardy; innately more liable to disease; the skin of the fruit is too thin, the foliage is not leathery enough," etc. Other varieties are healthy under almost all conditions. Why? "Oh, they are hardy sorts. The skin of the grape is thick, and not easily penetrated by the fungus germs. The foliage is tough, and defended by a peculiar fuzziness, so that the pores of the *peronospora* cannot root into it." But these explanations do not exactly explain. For example, the Ives Snelling is reputed "hardy," and usually is so. I have many vines of this variety, and their fruit has never rotted, though Concords growing among them were badly diseased. Yet, on neighboring farms, growing upon sandy knolls, where the soil might be termed exhausted (if there was originally anything to exhaust), I have seen the Ives seedling completely riddled by rot. It was evident here that it needed something more than its thick hide and hardiness to save it.

From such observations as I have been able to make during the past three years of various experiments over a tolerably widely extended grape culture, I am much disposed to believe that by giving the vine a full supply of all the elements of nutrition—ammonia, phosphate of lime, potassa and lime—and by a general adoption of the means of disinfection which I have indicated, we have little to fear from grape rot.

PRUNING THE VINE.

In the August number of the *Fruit and Grape Grower*, H. C. Schmitz, contributes the following information on the pruning and treatment of the grape vine:

The lengthy teachings of the books seem to confuse; but the pruning of the grape vine is far from offering the difficulties of tree pruning. While an injury done to a tree by faulty pruning is often irreparable, the nature of the vine's growth allows reparation in spring and summer, if proper forethought be used. In pruning the grape vine the first question the operator has to answer, and he must answer it clearly in his imagination, is, "What will this grape vine be in one, two, three and four months hence?"

A few rough sketches of the different future stages of growth cannot fail to make the pruner clearly understand how much and what must be cut away. But the foundation to the future good and safe pruning of the grape vine has to be laid now, when the wood for next year's crop begins to form—when the buds start, and soon the shoots will push to a tangled mass if not restricted. This restriction must be well measured, neither too much nor too little, the main aim of the operation to be to keep the vine in proper bounds, (1) to produce a good crop this year, (2) to produce good healthy wood, with matured fruit-buds for next year's crop.

A few points must ever be present to the operator's mind. Over-pinched vines are apt in a warm fall to push their fruit-buds too far, and these are easily injured in a rigorous winter, if the vines are not laid down and protected. Or the fruit-buds may start all together and become valueless for next year's crop. True, other buds push at once, but these late forming buds are often leaf-buds.

If vines are allowed from the start to form all the shoots they want without restriction, the wood may not ripen sufficiently to withstand the rigors of the winter. The third stages of the growth of the vine is when the clusters are formed—when the bloom has shed. Now is the time to reduce the quantity of clusters, retaining only the best formed as equally as possible divided on the whole vine, and to remove the fruit from the shoots intended for next year's wood. Now or soon the tips also of the fruit-bearing canes have to be pinched, leaving two or three leaves above the uppermost clusters, but do not pinch the shoots intended for next year's wood. Allow them to grow at will and tie conveniently as further growth demands.

Occasions may present themselves where further pinching might be advisable, but in practice it may be found the best policy to allow the vines full sway from now to perfect crops and wood without further interference. Rough sketches, "object lessons from nature," of the different stages of growth penciled by himself, will impress the operator more than lengthy descriptions. Once well impressed on his mind any necessary change can be easily adapted to each different vine, may it be young or old, may the growth have been scanty or small, may the vine have been injured by mildew, insects or disease, by the weather or any other factor influencing the last or the coming crop.

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How to Avoid and Correct Imperfect Fermentation.

— BY —

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The number of grape-growers who have this year become wine-makers for the first time warrants the publication of a few rules for the management of troublesome fermentation. Dry seasons are particularly productive of what, in California wine-makers' parlance, are known as "stuck wines." These are wines which fail either in commencing or completing their fermentation.

TO START FERMENTATION.

Wines which are slow to commence fermentation are easily started. This trouble occurs most commonly with the first grapes crushed, particularly where they lay exposed to the chilling effect of a cold night and are crushed early in the morning before being again warmed by the sun. The must is then apt to lie dormant in the fermenting-vat for several days before the germs show any healthy action. The same delay in starting is sometimes produced in grapes crushed for white wines, when the must is run into barrels exposed out of doors over night, thereby becoming cold. The delay in starting these cold musts is seldom productive of any great evil; but the annoyance and loss of time caused thereby may be completely avoided by crushing the grapes when warm, and then protecting the must against any considerable reduction in temperature.

The temperature most favorable to the action and development of the yeast germ ranges between 75 and 85 degrees. The fermentation would, therefore, be greatly aided in starting by bringing the new must to this degree of heat and maintaining it thus until a good, healthy action prevails, after which the heat produced by the ferment will be sufficient.

If the grapes have been chilled before crushing, it is well, in addition to the warming, to add a little clean, fresh yeast. The best for the purpose is the compressed yeast, sold in small cakes throughout California; although any well-washed fresh yeast will do. Some wine-makers always introduce this yeast into the first must to insure a prompt commencement.

Once the yeast plant gets established in any vat of the fermenting-room it readily takes possession, unaided, of all the must subsequently introduced.

There are some wine-makers, however, who insure a prompt start of each vat after the first, by mixing in some of the lees or yeast of a working or previously finished must.

To raise the must to a suitable temperature a steam coil may be used. In districts where the sugar runs high the steam is blown directly into the must by means of a hose, the opening of which is placed within and near the bottom of the tank. Where steam cannot be had portions of the liquid may be heated successively and returned to the vat or cask until the whole marks 70 degrees or over. In doing this the heated portions should not reach a temperature exceeding 125 degrees. Under peculiar circumstances the yeast plant will stand a temperature approaching 140 degrees, but it would not generally be safe to heat it above 125 degrees.

Very low temperatures, if not changing too suddenly, do not destroy the yeast plant, but render it temporarily dormant and unproductive.

Some wine-makers deprecate the use of yeast as injurious. I have yet to learn, however, of any deleterious results accruing therefrom. Some even resort to a handful of grape leaves or other materials claimed to assist the must in starting.

MUSTS HIGH IN SUGAR.

The trouble in starting the first vat is small as compared with what often comes later, especially when the weather is dry and hot or when the must shows 26, 28 or 30 per cent of sugar. Then comes the new wine-makers's trial and with old ones, too, the trouble not infrequently begins.

Without attempting to explain the causes which may lead the wine to cease fermenting; I will proceed to state the best and commonly adopted methods of avoiding the trouble and the best methods of finishing wines "stuck" with from two or eight per cent of sugar.

Then the season is dry and the must marks over twenty-four per cent saccharine; especially if the atmosphere seems wanting in moisture, and there is an absence of dew, fog or rain, the utmost care should be exercised to avoid any other causes liable to obstruct fermentation in red wine.

SHALLOW VATS.

Shallow vats are invaluable for disposing of troublesome red musts, principally because of the ease with which the same may be worked and aerated; also, because the mass is so spread out as to avoid the excessive accumulation of heat.

For these reasons cement vats are preferred in many of the southern districts of Europe, where wine-makers are similarly troubled.

These vats are made large and shallow, so that the must may be continually stirred and worked over. The cement answers better than wood, as it serves to carry off the heat which accumulates too rapidly in some districts of the South. Some wine-makers, I have learned, ferment commonly in wood, but have their cement vats to which the stuck wines are relegated when they chance to occur.

Next in value to a shallow vat is a shallow mass in a deeper tank, which serves somewhat to alleviate the impairment of the ferment, but this is never equal to the shallow tank in seasons of excessive sugar.

THE USE OF THE STEMS IN FERMENTING.

Fermenting on the stems aids the process, and may be safely adopted in red wines if they be found ripe enough. When the butt of the stem is brown and woody and the whole possesses a tough and wiry appearance—not green, brittle and sappy—it may be safely added, and will aid greatly in avoiding trouble later on.

Much difference in opinion prevails as to whether the use of the stems improves the the wine or not, and this, too, among competent wine-makers; some ferment all red wines on the stems while with others they are never employed. The best authorities, however, agree on their value, being governed by circumstances, the season, ripeness of the grapes, etc., as to the quantity to be used. In the case of troublesome wines which we have under consideration, it is doubtless best to employ part or all of them. They are needed not only to assist fermentation but to increase the acid of the wine—wanting usually in this respect, in seasons of over-ripeness. Such wines, too, can safely stand some of the harshness arising from the stems which will also give them keeping quality.

I should never counsel the use of stems that are green, brittle and sour, but as those seldom accompany troublesome seasons they need hardly be mentioned.

BLENDING IN THE FERMENTING VAT.

The fermenting together of different varieties, or of the same variety from different soils, is a method well to adopt in seasons when trouble is apprehended. Red grapes generally ferment better when ten or more per cent of white grapes are added. The fine wines of Europe are often made in this manner, the quality being improved by the process.

If, for fear of losing color or other reasons, the white grapes cannot be had, the blending of two or more varieties of red grapes will prove healthful to the ferment and will make, too, a better blend if mixed intelligently with a previous knowledge of the qualities of each and their appropriate proportions.

In filling the vats, if the first crushing runs high in sugar, the balance should be made up of grapes running enough lower to bring the whole to a medium strength.

PROPER MATURITY.

It is difficult to indicate the exact degree of sugar desired in all cases, in that it should be governed largely by circumstances. It is safe to say that wines seeking an early market will profit by all of the sugar which can be fermented out. Wines lacking in color will be improved by as complete maturity of the berry as is possible to ferment dry; in fact, there is everything in favor of complete maturity of the grape, except the difficulty produced by its fermentation. Not only does it become difficult to manage the fermentation, but when too high in sugar the wine resulting, though apparently dry, may possess sugar sufficient to trouble it for years after.

These considerations must all be known in limiting the maturity of the grape and in determining at what degree they should be picked.

By a little attention to the mixing of the grapes at time of picking all of the good qualities may be obtained in a single vat, each lot performing its proper function. Not infrequently, however, we find varieties picked and fermented separately, each making a wine which possesses some excess or defect, but which would be corrected by judicious blending with some other variety or lot possessing a corresponding defect or excess, be it color, acidity, strength or harshness.

FERMENTING WITHOUT CRUSHING.

Where there is any promise of trouble in fermentation some wine-makers resort with red wines to what is knownas the "Morel process," viz., that of placing the grapes directly in the tanks without either stemming or crushing. The mass is stirred and worked an unusual amount to start fermentation, which then continues, slow and uniform and usually finishes without trouble. The greatest objection urged to this method is that in the subsequent pressing of the pomace, some grapes that were not ripe enough to ferment and burst, are here opened and contribute a certain amount of sugar to the liquid, by this time supposed to be dry. Drawn into sulphured tanks or a cool cellar for keeping, this sugar manifests itself later on, to the great annoyance of the maker and detriment of the wine. This objection may, however, be overcome by arranging to continue fermentation of the wine when pressed, or, better still, by keeping the press wine separate for further fermentation or brandy-making, retiring only that to the keeping cellar which comes off without pressing.

Be it known that this process conduces to slow, uniform and complete fermentation of just those berries which are ripe enough to make the best wine, and that this drawn off without pressing separates the better from the poorer wine. The method is by no means common, though it has afforded satisfactory results in many cellars and proved an efficient preventive of tumultuous and incomplete fermentation.

WATERING THE MUST.

As a last resort, when the must marks 28 per cent of sugar or over, water may be used for extending the same. This method is recognized as legitimate by the Pure-wine law of California. It is employed freely by some vineyardists and authorized by many good authorities. Others there are who contend strongly against it, and there are laws in Europe prohibiting it.

Without entering into a discussion as to its merits or demerits I should advise that musts showing too high a percentage of sugar should, in the absence of other and better remedies, be reduced with pure fresh water or else fermented with a view to making port wine.

The addition of water alone to high musts will not always insure perfect fermentation, as many people suppose. To obtain the best results, however, the water should be added as soon as the grapes are crushed, and it should be then well incorporated with the mass—bearing in mind that the addition of this, as of any other substance not coming directly from the vine, should be used only as a last resort. To extend the must with water it is found that about five gallons of water are required to reduce the must from a ton of grapes 1 per cent in sugar. For example, to reduce one ton of must from 28 per cent to 25 per cent would require about fifteen gallons of water.

OTHER AIDS TO FERMENTATION.

Œnotannin and cream of tartar are employed by some to assist fermentation and are valuable for either white or red wines. These substances produce, it is claimed, desirable qualities in the wine and improve the color of red wines. Their use is permitted and recognized by our law as harmless. When employed for red wines they should be sprinkled over the must at the time the grapes are crushed, at the rate of two ounces of œnotannin and one-half pound cream of tartar to each ton of grapes. Thus used they have been found to make the fermentation regular and uniform.

STIRRING THE MUST.

Complete and constant stirring forms a valuable adjunct to fermentation at all times; particularly is it necessary when the must is hottest and most active. The measure of success is not infrequently determined by the amount of working over the wine receives. In working red wines in high tanks this is done with a tool made of a piece of scantling about six feet long, enlarged by cross pieces, or even cleats, nailed on at the lower end. A cross piece answers for a handle at the top. A close tined stable fork or other more effective tool may be employed if the tank be shallow and the must is not too deep.

THE "STUCK" TANK.

If selecting and adopting in advance of the work proper precautions, as above described, there is seldom cause for further trouble.

There often occur, however, through carelessness or otherwise, tanks "stuck" at from 2 to 8 per cent of sugar. The wine has commenced fermenting all right, has boiled up tremendously, to the intense delight of the maker: when, lo! on coming out next morning the cap has dropped; the wine has become inactive and cold. The bubbles have almost ceased to rise, and yet the must marks several degrees of sugar remaining.

There is one common and usually effective proceeding to start up fermentation.

The wine, or partly finished wine, if for claret, should be drawn off and the pomace pressed and rejected or sent to the distillery. Let the wine so drawn be placed in two or more tanks and an equal bulk of fresh grapes added. For the best results the grapes added should be, if possible, some variety known to produce good fermentation. See, too, that they are low in sugar. If such grapes are not available secure the same variety from some other locality or soil, taking care that they are as low in sugar as possible.

The desired result has often been obtained by drawing the stuck wine directly onto newly crushed grapes of the same kind and from the same place; but there is greater assurance of success when the variety or locality is varied somewhat, and the grapes chosen are lower in sugar. White wines should be pumped onto new must in a similar manner.

ERRORS OF BEGINNERS.

New wine-makers are prone to fall into the error of only half doing this work by adding a few boxes of fresh grapes to the stuck tank, expecting thereby to complete fermentation. This has been known to succeed in rare cases, when the trouble was light and the variety added was Berger or some other—noted alike for its low saccharine and favorable fermenting qualities. Generally, however, it is time thrown away to do other than what I have indicated at first, viz: If red wine, draw off the wine, press and reject the pomace, and commence fermentation on newly crushed grapes. If this fail—which it will do but rarely—the maker can try the same again, employing fresh grapes of some other variety, still lower in saccharine, and combining all of the precautions indicated in the first of this article, or, if these latter are unsatisfactory, it may be necessary to reduce the newly mixed must to about 24 or 25 per cent sugar by the addition of water. If all of these fail there is left no alternative but to make port wine, or send it to the distillery. There is rarely any necessity of this latter extreme if the first instructions I have given are followed.

In place of pumping the stuck wine onto new pomace some wine-makers prefer to let the fermentation finish in casks or tanks. This it will do if small packages be employed and they be kept in a favorable temperature. Nothing, however, is so certain of good results, nor so frequently practiced, as the method of renewing fermentation on new pomace, or new must, if for white wine, and finishing the wine up before the final drawing or pressing.

I have not attempted here in this hurriedly prepared article to explain the reasons why these troublesome fermentations occur. There are many theories as to their causes, and great difference of opinion exists unnecessary for me to discuss at this time. We know the circumstance under which the trouble usually occurs and the methods of their avoidance. These methods—most of them well known to old wine-makers—I have aimed to present at this appropriate moment. This is done more in view of keeping the inexperienced out of serious trouble by artificial means than of explaining the causes of the natural phenomena which occur as they have in times past, or may occur in the future.

J. H. WHEELER,
Chief Executive Viticultural Officer.

The Fungus Diseases of the Grape Vine.

ANTHRACNOSE.

Early last June samples of grapes were received by the Department from Mr. G. Wanner, of Walhalla, S. C., that exhibited a disease having characters wholly unlike those of either of the mildews of the grape or the Black-rot, excepting in the matter of damage inflicted, which appeared to be quite equal to that of the last named. The affected grapes were the Clinton and Elvira, and, so far as observed by Mr. Wanner, these were the only varieties attacked by the disease, but the loss in the case of the Elvira was complete, every cluster on the vines being destroyed.

Later, samples affected with the same malady were received from Minnesota, Michigan, Illinois, Delaware, and New Jersey. In every case the diseased berries were of light-colored varieties. Mr. A. W. Pearson, who communicated the specimens from New Jersey, wrote that he had observed this disease only on the Riparia family, on the Clinton and Elvira, and on his white seedling crossed between Riparia and Labrusca. He had never seen it on the Concord or Ives, nor on any of the Æstivalis class, and it was only in very wet seasons, like the prssent, that he had seen it at all. Mr. J. T. Lapham, writing from Clayton, Del., states that this disease, which he calls "dry rot," is mostly seen on the white grapes, such as the Niagara and Pocklickton, "and a little also on the Hartford Prolific, which is a blue grape."

Serious and wide-spread as this disease now appears to be it seems not to have attracted the attention of grape-growers in this country before the present season, nor have any of our mycologists, who are always on the lookout for such things, observed it until within the past five or six years. Prof. T. J. Burrill, of Champaign, Ill., was the first to discover and record its actual presence in this country. He first observed it in Central Illinois in 1881, and afterward in many other localities in that State; also in Indiana, near Indianapolis; in Michigan, at Lansing; and in Ohio, at Cleveland.

It is doubtless an importation from Europe, where it has been known to prevail, often to a very serious extent, for many years, and is there designated under various names, as "Charbon," "Brenner," "Schwarse Brenner," "Peeh," &c., but the name now in general use is "Anthracnose," derived from the two Greek words "coal" and "disease."

In the *Proceedings of the American Pomological Society*, Mr. Isadore Bush, of Missouri, in a paper on "Grape Rot," refers to this disease and gives an abstract of a treatize upon it by R. Goethe, a German investigator, wherein its external and minute characters are fully described. It is again described in the Proceedings of the same society, by Prof. T. J. Burrill. In the *Bushburg Catalogue* this disease is clearly described by Dr. George Engelmann, who, however, had never observed it in this country. The most recent and extended discussion of the subject, however, is that given by Viala in his *Maladies des Vignes*, in which all the different phases of the malady are clearly described and illustrated.

Anthracnose, like the Black-rot, is caused by a minute fungus, the habit of which, however, is radically different from the fungus of that disease, as are also the external changes which it induces. All the green parts of the vine are subject to its attacks from the beginning of spring vegetation until the close of the growing season, and, when very abundant, the injury occasioned to the young shoots is quite as serious as its action on the fruit.

EXTERNAL CHARACTERS.

That the external characters of Anthracnose are determined by the growth of a special fungus has been demonstrated by repeated inoculations or sowings of the fungus spores upon healthy shoots and berries.

On the shoots.—There first appear minute brown spots, a little depressed in the middle, with a slightly-raised darker-colored rim or border. These spots soon increase in size, elongating in the direction of the striæ of the bark, the central portion becomes more evidently depressed and usually takes on a grayish hue. The bark is finally destroyed, and, is severe cases, the woody tissues beneath appear as if burned or corroded, so deeply sometimes as to reach the pith.

The appearance and action of the fungus on the leaves is similar to that upon the stems, and it is certainly very evident that where the diseased spots are numerous, and the action of the fungus proceeds without interruption, both shoots and leaves must succumb to the parasite. The intensity of the disease upon the shoots may cause the destruction of the young leaves, even when the latter are not directly attacked.

On the berries.—So far as my own observations are concerned, the severity of this disease has been especially manifest in its effects upon the fruit. The progressive stages of the malady are as follows: There is a small spot, grayish in the center, where the cuticle of the berry has been destroyed, with a dark brown border. Previous to the bursting or rupturing of the cuticle the entire spot is of a deep-brown color.

These spots enlarge, retaining a more or less regular, rounded outline, and between

the light-colored central portion and the dark border-line there is developed a well-defined band of bright vermilion. Finally, under the action of the disease, the berries begin to wither and dry up, leaving nothing, apparently, but the skin and the seeds. There is no browning of the tissues of the berry as in the case of the Black-rot, nor does the skin shrivel as in that disease, leaving prominent and very irregular ridges, but the circular spots first formed are easily seen and the coloring characteristic of the disease are retained. A berry may be attacked upon one side when it is not more than one-half grown; it then becomes irregular in shape, the diseased part making no further development, and it sometimes happens that this side cracks open, exposing the seeds, which are gradually forced out by the unequal growth of the berry,

The fungus.—The fungus af Anthracnose was first described by De Bary in 1873, and named by him *Sphaceloma ampelinum*. It doubtless belongs to the same class as that which includes the fungus of the Black-rot, but the several stages of its development have never been satisfactorily made out. We only know the fungus in its active or disease-producing form. Its mycelial development, which is very limited, takes place just beneath the cuticle. The entire surface appears to be covered with a great multitude of spores held together by their mucilaginous coatings. Water dissolves this covering; this affected the spores will separate from each other, and, viewed singly, they appear as oval or oblong, transparent bodies, rounded at the ends and often slightly constricted near the middle. Two bright spots resembling nuclei are usually visible in each spore. With the aid of dew or rain these spores are spread, and De Bary succeeded in transplanting them with the assistance of a few drops of water upon green and healthy parts of the vine, where there were produced in about eight days the characteristic spots of Anthracnose. In often repeated experiments the disease showed itself exactly at the points infected and nowhere else. Mr. Goethe performed similar sowings of the fungus spores and always with a like result. The germination of the spore in water takes place quite rapidly and there is formed an irregular germinal thread—the beginning of the mycelium. The germ-tube penetrates the epidermis, just beneath which is developed the vegetative growth of the *Sphaceloma*. As stated above, other spore forms for this fungus have never yet been certainly traced, and consequently it is not definitely known how the fungus passes the winter, and it is hardly worth while to speculate upon the subject at thia time.

REMEDIES.

As in the case of the Mildew and other diseaaea of the vine, a great variety of means have been employed and many substances tried to either prevent or cure Anthracnose. It has already been noted that certain varieties are more subject to this disease than others, but if we attempt to avoid the Anthracnose, the Black-rot and the Mildews by a system of selection based upon this principle, we will have to discard grape culture entirely, or at least all those varieties which we prize most highly. Certain kinda that usuallly escape the Mildew are in some cases the very ones most "susceptible" to the Black-rot, and those which may "resist" the latter malady may be the first to succumb to the Anthracnose.

It is certain that the latter diaease prevails most in wet seasona and in low situations or upon poorly-drained land. Too high manuring, especially with fresh stable-dung, seems to favor the development of this parasite.

As with the *Peronospora*, water in a condensed form is necessary for the diffusion and propagation of the disease under consideration, and any appliance that shall prevent deposition of rain or dew upon the foliage or other parts of the vine will secure immunity from the disease. Inclosing the half-grown bunches of grapes in paper bags will doubtless be as useful a protection of the berries against Anthracnose as from Black-rot, and for the same reasons. This system of vine protection, excepting for the berries, is hardly practicable in vineyards of any size, and other remedies of more general application must be sought.

The *Sphaceloma*, as has been shown, grows very near the surface, and as soon as it has burst through the epidermis it is practically exposed in all its parts to the direct action of fungicides. Much mischief to the vine may be done before this exposure of the mycelium and spores takes place, and, consequently, here as elsewhere, prevention is vastly more valuable than cure.

In districts in Europe subject to this disease the practice is quite generally followed of bathing or washing the vines, in early spring, before the buds have commenced to expand, with a strong solution (50 per cent.) of sulphate of iron, applied with an ordinary mop or a large sponge fixed to the end of a stick 2 or 2 feet long. This washing should be done when the atmosphere is damp, in order to prevent a too rapid evaporation of the iron solution, which otherwise might result in injury to the vine. When the young shoots have attained a length of 5 or 6 inches they receive a good dusting with the flowers of sulphur, whether the disease has appeared on them or not. The new growth is then carefully watched, and at the first sign of the malady they are again treated, this time with sulphur, to which has been added one-third to one-half its bulk of powdered lime. If the progress of the disease is not checked by this treatment the sulphur is omitted in subsequent applications, which are of finely pulverized lime.

Where this treatment of the vines with sulphate of iron, followed by heavy and frequent use of sulphur or sulphur and lime, has been adhered to for several years, Anthracnose now rarely appears or has ceased to be injurious, even in locations where before it was exceedingly destructive.

Messrs. Edinger & Jacobi of New York, received during the past fortnight, one hundred and thirty-three thousand five hundred and ninety-eight gallons of wine and two thousand one hundred and nineteen gallons of brandy.

WINE MAKING.

The Variety of Tastes to be Consulted.

[continued from page 150.]

We have before shown that two per cent. of sugar in the must will yield one per cent. of alcohol. It will do this if the sugar undergoes fermentation, and there will be no sweet taste left. If by violent fermentation or other cause the fermentation is checked and all the sugar is not fermented, the wine will be sweet and the percentage of alcohol will be less. Such wine is very subject to disease, especially if exposed. A wine made with 40 per cent of sugar completely fermented will contain 20 per cent of alcohol, and will stand almost any exposure without injury. Or in case of sweet wine with small percentage of alcohol, if brandy be added to bring its alcoholic strength up to 20 per cent. it will likewise keep under careful management and remain sweet, further fermentation being prevented by that quantity of alcohol. Mr. Husman, in his work on wine making, states a normal must to contain about 25 per cent or 240 pounds of sugar to 1,000 pounds of grapes. Such a must well fermented will produce a wine about 12 per cent. strong in alcohol. This is of higher strength than the great bulk of wines consumed by the people of France, but it would hardly be safe to undertake wine making with less than 25 per cent. of sugar in our Carolina climate, especially without a good cellar. Mr. Husmann recommends "Gallizing" Concords on account of their excessive color and flavor. The process is the invention of Dr. Gall, of Germany. Mr. Husman is a recognized authority, and, from personal acquaintance, we believe he is a thoroughly conscientious man. For the convenience of readers who may be interested in the subject we quote the following from his work:

"At that time (when well colored, but not dead ripe), the must of Concord grapes will generally weigh about 65° to 70° on Oechle's scale, and the acidimeter will indicate about 6°. Now we make our calculation as follows: A normal must, to suit the palate here (California), should indicate about 80°, and show 4° on the acidimeter. To reduce the acid to 4°, we must add one-third water, or, in other words, if we have 480 pounds of Concord grapes, which would make 40 gallons of pure juice, we must add 20 gallons of water. To these 20 additional gallons of water we must add 40 pounds of the best crushed sugar, to bring the water up to the ratio of the normal must, 80°. But we have also a discrepancy of 15° in the must if it indicate 65°. To bring this up to 80°, we must add three-eights of a pound of sugar to every gallon of must, or 15 pounds to the 40 gallons. The addition to 480 pounds of grapes would then be as follows: 25 gallons of water, 55 pounds of sugar, and no acid, making 60 gallons of must of normal proportions, instead of 40 of pure juice. These will be about the right proportions for a pleasant and handsome wine of good color, pleasant flavor and not too acid to suit the general taste, with also a proper proportion of tanin, which will be marketable sooner, and and at a much higher price than if we allowed the grapes to hang a month longer and then pressed the natural must, which would, perhaps, not contain an excess of acid then, but certainly an excess of foxy flavor and tanin."

The above furnishes a guide, at least, for the beginner in wine making. "The palate" in California may not be the same as it is in Virginia, and we must use our judgment if we consult the palate of the consumers of wine, which it would be foolish not to do, if the object is to make money in the business. The palate here is hard to define, for this is not a wine-drinking people, considering the masses. If the palate of the average whiskey-drinker is consulted, it will indicate probably a wine 50 per cent. strong in alcohol, and the must for such a wine could not be fermented out If we consult the palate of the few here who drink wine, the result will be an overproduction of wine which must find a market elsewhere; and if we go elsewhere to sell our wine, we must consult the palate of the trade, which can best be done by inquiring of the wine dealers. It would be safe, however, to make wine with 12 to 15 per cent. of alcohol, a good deal of color, and the smallest amount of tanin we can consistently with the extraction of good color. The palate here has great relish for "foxy aroma." It is quite likely that our Concords give too much tanin when they are good ripe. This matter, in our judgment, can be regulated by short fermentation on the pomace, and yet get plenty of color, and by stemming the grapes before crushing, as it is from the stems that much of the tanin is derived. We present these views for the consideration of those who may prefer not to "water" their wines. The color, of course, and some tanin comes from the skins. The common custom is to crush the grapes and allow juice, hulls, and all to remain in a mass for twenty-four to forty-eight hours. This extracts tanin, color and albuminous matter from the stems, seeds, skins and pulp. Long fermentation on the pomace in this way often results in too much tanin, which makes the wine very astringent and of too much color, giving the wine an inky darkness that injures its market value, etc. After short fermentation on the pomice the juice is pressed. Fermentation may be conducted in good clean barrels or kegs, in open tubs or vats, or in demijohns, jugs and jars with good bottoms. Where sugar is added it may be first dissolved in water or put in dry, and the liquor stirred until it is well dissolved. All that is necessary when started is to keep the vessel full by pouring in fresh juice as required, and some slight covering should be kept over the bung-hole or mouth of the vessel fermented in. A cloth tied over the mouth of a jar, or a small bag of sand laid on the bung-hole of a barrel suffices. Under proper conditions, indicated in a general way in this running commentary, the wine will "make" without further assistance. Much valuable information can be gained by various experiments with any one variety or with different varieties of grapes.

A NEW GRAPE.

A new grape is now fruiting for the first time at the Ross place on the Meridian road, a short distance from San Jose. It is of the eastern type, white, the bunches are very compact, and of fair size, while it is very sweet and good.

There are many persons who are very fond of the eastern grapes, and they are rather earlier than any we have from France, and the Isabella and Catawba have been planted to fill the want. We believe this will be a strong competitor for popular favor for a grape of this class. Mr. Ross does not know whether it has any established name or not, and has named it the Ross Superb. We believe he has quite a little collection of the vines.

The Attention of Wine-Growers, and all others interested, is called to the most powerful

INDUSTRIAL EXHIBITION AWARDED TO PARE BROS. "LE MERVEILLEUX" WINE-PRESS 1886

WINE AND CIDER PRESS
"Le Merveilleux,"
(THE WONDER.)

—THE CHEAPEST IN THE MARKET.—

WE CHALLENGE THE WORLD TO SHOW ITS EQUAL.

The latest invention in Europe. First introduced in the United States last year where it has given entire satisfaction as the testimonials will show.

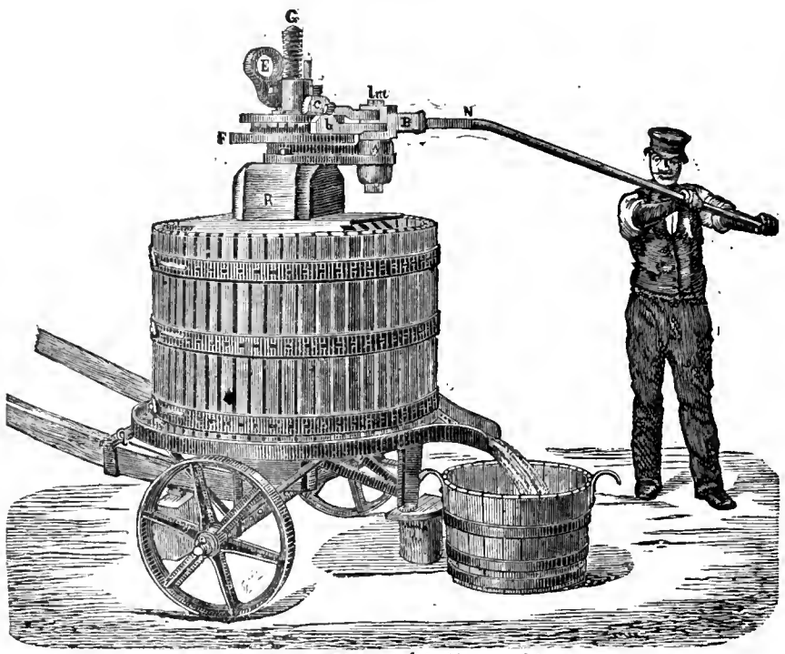
MECHANICS' INSTITUTE SAN FRANCISCO

Patented in the United States, France, Belgium, Spain, Germany, England, Italy, Portugal, Austria-Hungary, Luxemburg, Norway, Sweden and Denmark.

Price List at San Francisco.

Exclusively for 1887.

No.	Diameter of Screw. Inches.	Height of Basket. Inches.	Diameter of Basket. Inches.	Capacity of Basket of Fresh Grapes after Crushing. Tons.	PRESS, Complete. With 2 Wheels $	c.
1	2 7/16	24	32	1¾	120	00
2	2¾	26	40	2¼	160	00
3	3 3/16	28	48	3½	220	00
4	3 9/16	32	55	5	290	00
5	3 15/16	35½	63	8	350	00
6	4⅜	35½	71	10½	400	00
7	4¾	36	78	14¼	450	00



The above cut shows the Machine complete.

Having secured the entire right for the United States, we take pleasure in introducing this Wine Press to the American public, believing it superior to any other press now in use.

It will be to the advantage of Wine Manufacturers to study carefully the following merits, which we claim it possesses:

First. By an ingenious mechanical application, the "power of resistance" can be reduced to a minimum, and with a single effort, three or four times more power can be obtained than with any other press known at this day.

Second. It does the work more rapidly, and with less labor.

Third. It is cheaper than any other first-class wine press in the market.

Fourth. It has no complicated devices, is so extremely simple in construction and easily operated, that a child of ten years can work it.

Fifth. It is made of the best materials, and by its simplicity not liable to get out of order.

Sixth. All parts are interchangeable, consequently, any part lost or injured can be replaced at little expense.

Seventh. It will extract the largest percentage of liquid

Eighth. It is built on the ratchet principle, double acting the lever working both ways, and can be worked in 6 feet space. It has no lost motion.

Ninth. It does not take any more labor to work the largest size than the smallest one.

Tenth. It presses any kind of fruit as well as grapes.

This press is not an experiment, having been used several seasons in the wine districts of Europe, and also in the United States last season.

It has received the highest award wherever exhibited in competition with other presses.

The main features of the press are the ease and rapidity with which it may be worked, and the great power which it applies; as the press stands on wheels, it can be readily moved from place to place.

In order to introduce our press last year, we placed it at a low figure; with the improvements that we have made this year, we are compelled to raise our prices, but they are yet the lowest on the market, while the press is far superior.

Our press is adapted for large vineyards as well as small ones, as we make different sizes. No. 7, shown in the above cut—the basket will hold 14 tons of grapes after crushing, and 4 fillings per day, its capacity being 56 *tons of grapes in one day.*

"LE MERVEILLEUX."

A representative of the MERCHANT has visited the shop where the Paré Bros. are building their wine presses, the "Le Merveilleux," which is claimed to be the best and cheapest wine press made. The platform or bed rests on a two wheeled cart, which enables the operator to move it to any part of a vineyard, or between the rows of tanks in a wine cellar. The basket is made of the best straight-grained Mendocino Pine staves, riveted to three bands of the finest quality of iron. These bands are each in halves. On one side they are connected by a hinge, and on the other are locked with pins, and, by removing these pins, the basket can be opened to any width required, and the must be removed in a very few minutes. The edges of the staves are beveled, the distance between them on one side being ⅛ of an inch, and on the outside ¾ of an inch. This renders it impossible for the grapes to get jammed in between the staves.

Rapidity is one of the strong points of this machine. It takes only from twenty to forty-five minutes to make a pressure. The "screw" which stands upright in the middle of the "basket," is fastened under the "bed" by a nut which is six inches thick, screwed on and riveted to the end of the screw. The operator moves the large lever which is from five to eight feet long, and moves in a space of six feet backwards and forwards. This pushes alternately two small levers, which in turn catch in the ratchets of the combinations on their *forward* motion, and keeps the wheels or combination steadily falling down the main screw. In commencing to lower the crushers upon the grapes, and when speed is required, the lever is placed in an upper combination, which acts directly on the screw, and in a few movements of the lever it has reached the grapes. The Presses have been calculated to withstand the pressure according to their capacity, so if the smallest is incapable of breaking itself, the largest is equally so.

The main feature of the press is the ease with which it may be worked. Mr. Paré forced the lever as far as it was necessary to go in one direction, using only his little finger, upon shavings which had previously been packed so tight, that it was impossible to run a knife into them.—SAN FRANCISCO MERCHANT, Aug. 27th, 1886.

WINE PRESS EXHIBIT.

The French Wine Press exhibited at the Fair by Paré Bros., attracted great attention from visitors interested in wine-making. This press has no merely local reputation, but comes to us from over the seas endorsed by French wine producers generally, and by the leading journals of France. In the Eastern States it is rapidly supplanting all others, and no doubt in California will do the same. The reasons for this are plain. It is a great improvement over any now offered; it is portable and easily carried on a hand-truck from place to place; it is not expensive, and it does its work thoroughly and well; it requires but little attention, and it is labor-saving. It called in France "Le Merveilleux," and certainly deserves the name. Certainly, those interested in wine production should at once acquaint themselves with the capabilities of the press, its price, and see it working. By it they will save money, as its expense is comparatively small, compared with the amount and character of work it is capable of doing. We certainly commend an examination of its merits.—*The Weekly Commercial Record*, San Francisco, Sept. 16th, 1886.

EXHIBITS AT THE PAVILION.
"Le Merveilleux" Wine Press.

Among the exhibits at the Mechanics' Fair, which naturally attract the attention of the visitors, whether from the city or country, is "Le Merveilleux" wine press. The wine interests of California are fast assuming enormous proportions, and every year sees an immense increase in the area devoted to the culture of the vine. It is only to be expected, therefore, that any invention coming from an old wine-producing country like France, should have great interest for the residents of California. "Le Merveilleux" is a French invention just being introduced here. It has been patented in all European countries and the United States. The entire right for this country is held by Messrs. Paré Brothers, of this city. The press is manufactured in seven different sizes, varying in price from $120 to $450. It is claimed for it that it is more powerful than any other press now in use; that it does its work more rapidly and with less labor; that it is cheaper, without complication, and not likely to get out of order. Being built upon the interchangeable plan, any part lost or injured can be replaced at small cost.

It is constructed on the ratchet system, and the lever can be worked in a six-foot space, and is so easily operated, that a child of 10 years can work it. The lever works both ways, and thus doubles the speed.—*Daily Journal of Commerce*, San Francisco, Sept. 24th, 1886.

THE SUNSET VINEYARD,
Mintnrn, Cal., Sept. 15, 1886.

Messrs. Pare Brothers.—GENTLEMEN:—We take pleasure in informing you that we have used your No. 4 presa this season, at our vineyard, and find it all that you recommend it. It does the work perfectly and with ease, aod in our opinion is perfect in every particular. Yours truly,
WEBSTER & SARGENT.

San Francisco, Sept. 17, 1886.

Messrs. Pare Bros.—GENTS.:—The wine press No. 4 purchased of you several weeks ago, has been tried at our winery and has thus far given full satisfaction.
Yours truly, MT. DIABLO VINEYARD CO.,
By Jac. Levy, Sr.

Anaheim, Cal., Sept. 15, 1886.

Messrs. Pare Bros., San Francisco, Cal.—GENTLEMEN:—The Press came at last, and after giving it a fair trial I find it to my satisfaction. Enclosed please find exchange draft for the same.
Respectfully yours, LOUIS SCHORN.

San Francisco, Sept. 22, 1886.

Messrs. Pare Bros., City.—GENTLEMEN:—We take pleasure in informing you that we have used your Wine Press No. 5 this season at one of our Vineyards, and find it all that you recommend it. It works well, and is perfect in every particular.
Yours very truly, B. DREYFUS & CO.

Anaheim, Sept. 27, 1886.

Pare Bros., San Francisco.—GENTLEMEN:—Yours, with shipping receipt and bill, at hand; but the press did not come until a week after, although I needed it badly. As soon as I got it I tried it, and must say that I like the press very well. Enclosed please find check for $140.50. Yours respectfully,
PETER HANSEN.

Pacheco, Contra Costa, Cal., March 15, 1887.

Messrs. Pare Bros.—DEAR SIRS:—The "Le Merveilleux" No. 3 press I bought of you is the most powerful instrument to extract juice from grapes—it leaves the pulp entirely dry in a short time. I recommend it to all wine makers. Yours truly,
J. S. HOOK.

Mission San Jose, Cal., Oct. 27, 1886.

Messrs. Pare Bros., San Francisco.—GENTS.:—I have used your "No. 3" "Le Merveilleux" wine press all through my vintage, and it has in every particular given entire satisfaction, both in regard to the ease with which the work was accomplished.
Very truly yours, CHAS. C. McIVER.

I, the undersigned, certify that I bought from Messrs. Paré Bros., a No. 2 wine press, and used it last season, 1886, and it has given entire satisfaction.
Yours truly, A. CHEIGNON,
814 Howard St., San Francisco.

GENTLEMEN:—I take pleasure in telling you that I am entirely satisfied with the press, No. 2 "Le Merveilleux," you sent to me, it does the pressing without interruption. Yours,
B. DISTEL, Mountain View.

Messrs. Pare Bros., San Francisco.—GENTLEMEN:—I used last year one of your presses at the Hon. Jos. F. Black's vineyards of Livermore. I studied it carefully, and I must say it has given perfect satisfaction. It is the most powerful press I ever saw, and the work is very easily done. Yours very truly,
J. MORTIER, Livermore.

FARMERS' AND MERCHANTS' BANK,
Los Angeles, Cal., Oct. 15, 1886.

Messrs. Pare Bros., San Francisco.—DEAR SIRS:—Enclosed please find our check for $335.15, in payment your bill for two wine presses, as ordered by our letter of 30th ult., for

Messrs. Hafen & Niemeyer	$330 00
Drayage	6 00
	$336 00

The parties tell us the presses were received in good condition, and work to their satisfaction.
Respectfully, JOHN MILNER, Secretary.

After trial the Press may be returned to us if for any reasonable cause it is not satisfactory, "and money refunded," as we are satisfied from our experience that parties that have once used them will not afterwards do without them.

N. B.—We are also prepared to fill any orders for Crushers and Separators. For any further information apply to

PARÉ BROTHERS,

BRANCH OFFICES:
Honore Building, Chicago, Ill.
15 St. James St., Montreal, Canada.

OFFICE AND FACTORY:
101 to 107 Mission Street,
Res. 420 Geary Street, S. F.

THE OLIVE TREE.

THE OLIVE OIL.

By Adolphe Flamant.

The quantity of oil in the olive berry, says Du Breuil, keep increasing until the very last moment it is picked from the tree.

According to this theory, instead of gathering the olive in November or December, when it is already ripe, a larger quantity of oil can be extracted from it by waiting until February or March.

It should however be understood that the early gathering of the berry gives a better quality of oil, so that it is only where quantity is more desired than quality that the picking of the crop is delayed; but if the finest quality of oil is aimed at, then the gathering should take place either in November or December, so soon as the berries are ripe. After having picked those that have fallen naturally to the ground, the others are detached from the tree either by hand or by knocking the branches with long poles. They are then carried to the barn, where they can be crushed and pressed at once if desired, though most generally they are spread in thin couches and turned over with a wooden shovel, once a day for a week or so, in order to keep them from moulding; after which they can be crushed without further delay, or be placed in sacks in which they can either be kept for a while longer, or be shipped to an oil manufacturer if the grower has not secured the simple appliances required for the making of the oil himself.

Steam power is used in most of the large oil-mills of Europe, but farmers with a few hundred or even a few thousand trees can understand the kind of apparatus they need, and the facility with which they can take care of their own crops.

The first pressing, made slowly and gently, gives what is generally known as Virgin Oil. The bags are then removed from under the presa, the paste is stirred up, boiling water is added, and a second pressure, harder than the first one, gives the oil that is most generally sold under the name of Virgin Oil, and which is still of a very good quality. The oil floating in the receptacle above the water is skimmed off with a large concave sheet of copper or tin.

The same paste, to which the fermented olivea are added, with plenty of boiling water, is pressed once more, as hard as possible this time, and an oil of an inferior quality is obtained, which is used mostly in the manufactur of soap, of broadcloth, for lighting or lubricating purposes, etc.

This last operation is generally performed with a different press than that used in the first two pressures, so as to prevent this lower grade of oil from communicating a bad flavor to the better qualities. It is also considered highly essential in the extraction of the better gradea to employ only apparatus of perfect cleanliness, and receptacles that are not used in the preparation of the oils of inferior quality.

When all the pressing is over, the paste left to dry is then cut in pieces and is used for fuel, for manuring, as also for food for horses, cows and other farm animals who are fond of it, and who fatten rapidly when fed with it.

The oil, placed in tin tank, will deposit its impurities by natural rest within a month or so, when it can be drawn off into other cans or packages for the trade.

But, this mode of refining by natural process can be hastened by filtering in cylindrical tin vessels, with cotton batting at the bottom, in which case it can be bottled and sold immediately after. It has then, when just made, a freshness and delicacy of flavor which does not exist to an equal degree in the older product, which gains only a finer color by time.

Decandolle estimates the quantity of oil produced by the olive, at fifty per cent of its weight.

Sieuve says that one hundred pounds of olive berries will give about thirty-two pounds of oil, while other writers give an average proportion of product of twenty-five per cent.

It is, however, proper to state that this proportion varies, naturally, according to the variety of the olive. Some of an inferior quality are known to give as little as fifteen, and even ten per cent. On the other hand, it will vary according to the early or late picking of the crop, for, as I have already said: if you wish quality, pick early; if you wish quantity, pick late.

USES OF THE OIL.

The Scriptural books teach us how the olive oil was considered as a symbol of the divine grace, and, consequently, the important place it occupied in the religious ceremonies of the Hebrews. A person anointed was considered as sacred. Oil signified unction itself, and he that had received it was consecrated king, priest or prophet.

The use of the oil in the Roman Catholic Church is too well known to need special comment. The Christian nations kept up the same traditions, which, from Saul to Charles the Tenth, of France, have hardly known any interruption. It is thus that we find the oil in the sacred lamps of churches, in the administration of Sacraments, for baptism, confirmation, extreme unction for the ordinations and religious dedications. In short, the Roman Catholic begins and ends life with an unction of the holy oil.

In the life of the ancients, a friction with perfumed oil was a hygienic practice followd quite generally. The athletes were rubbed with oil before appearing in the arena, so as to give more suppleness and vigor to their bodies, and this salutary usage began to be gradually abandoned only when the admiration for physical force ceased to enjoy favor among the people.

Bertile says that the elasticity and vigor that were found among the Grecians and Romans, were due, undoubtedly, to the use of olive oil, which was so popular among them. While animal fat is injurious to the stomach, and thins the blood, olive oil helps the digestion, enables the body to develop more suppleness, and helps the brain to attain the highest possible stage of human intellect. The salutary effect of olive oil over the human system has never been disputed.

The oil was also, and is yet, the basis of many perfumed preparations, and, as ladies of fashion and buxom dandies belong to all ages and to all countries, the use made of olive oil in that direction is not of an uncommon importance.

The fatty oils of low grades, either in their crude state or admixed with different preparations, are used also in considerable amount in soap-making, in lubricating, in lighting, in dyeing, in the manufacture of broadcloth, and they enter in the composition of many ointments and liniments.

It seems unnecessary to dwell on the great importance of the olive oil for table use. In the culinary point of view, it was of the very first necessity among the ancients, where oil cooking was predominant, and where it entered into all the seasonings most generally employed. This practice has happily been transmitted to us, and the use that is mads of it nowadays in culinary preparations, sauces, salads, etc., is sufficiently demonstrated by its immense annual production, in which Italy alone figures for about 92,000,000 gallons.

In Spain, where olive oil is the principal seasoning in culinary preparations, enormous quantities are consumed. Italy and Portugal use also a great deal in their cooking.

But it is especially in the south of France that oil cooking predominates. The inhabitants of those regions have but little love for butter and entertain a very moderate esteem for the culinary art of northern people. Let him that has not traveled in those favored sections and tasted their delicious cooking throw me the first stone! I was born there; from my early infancy I was fed on that most excellent and nutritious kind of cooking; I have kept it up through most of my life and feel happy to transmit it to my children who like it as much as I do. How often we permit ourselves to enjoy an innocent and pleasant joke towards the guests who sit occasionally at our modest table. I order for instance an omelet cooked with oil in place of butter. I keep this from my guest; I watch his countenance; he tastes it; "by Jove!" exclaims he, "what a fine omelet!" and I reply with an insinuating smile: "Oil cooking my friend!"

It was to supply the place of good oil, whose production was beginning to fall behind the consumption that the use of butter was introduced and became more and more frequent. It is thus that those sophistications gained many proselytes to the cause of butter; but let us produce a strictly pure olive oil in California, where we have to help us to it a most exceptional soil and climate, we will gain back many followers to the old cause, and, in view of the enormous demand we have to meet in the United States alone, which will keep increasing all the time, and for which we have a protective customs duty of 25 per cent ad valorem on the foreign article, many generations will pass before we will find it necessary to compete in other countries with the European oil, whose production of the pure article, as already said, is not up to the actual consumption of the whole world, and which fact accounts for its many adulterations with cotton, sesame, poppy, cocoanut, lard oil, etc., when it is not something worse.

ENEMIES OF THE OLIVE.

In olive culture there are a number of drawbacks, chief of which are the insect pests. So far, with the exception of some twig-borers, the only insect enemy the olive grower has had to contend with is the scale, coupled, however, invariably with the black fungus, which it is now pretty well understood feeds upon the viscid excretions of the scale. So severe has the attack of this scale been in the moister parts of the State, that only the most persevering men, lead by Mr. Cooper of Santa Barbara, have succeeded in its suppression.

They do not believe as some do, that the sole remedy for this evil is to leave the coast and seek localities where, owing to the intensely dry air, the olive scale seems to be an impossibility. Other factors governing the condition of the tree, and not often considered now, will show themselves. It must be remembered that with the influence of the sea we also lose the more uniform climate which always has been considered of prime importance to the olive. But by starting with thoroughly clean trees and keeping them so I think there need be no fear. For the purpose of keeping the trees clean from the first, whale-oil soap dissolved in a decoction of tobacco water, viz., one pound of soap and one-half pound of tobacco per gallon, is to be recommended. It is here that the small green cuttings previously described are much to be preferred to old cuttings, which nearly always are more or less infested with scales. But the scale is by no means the only formidable enemy the olive grower of the Old World has to contend with.

The principal ones to be feared there are the *Decus Oleæ*, a dipterous insect affecting the pulp of the fruit; the olive moth *Finea oleela*, which like the apple moth feeds on the seed of the olive; finally, the *Psylla*, a hemipferous insect. Of these three, the first, *Decus Oleæ*, is by far the most destructive. According to Pouchet it destroys in France yearly 3,000,000 francs worth of olives; and the other coasts of the Mediterranean do not escape its ravages. It seems to breed all the year round. The fly lays its eggs, one to several, in the pulp of the olive, and the larvæ when hatched live on the pulp next to the pit. It remains here as chrysalis, and finally leaves the olive a flying insect. Whether it has left the fruit before the harvest, or is crused with the oil, it is almost equally objectionable. This insect is *la mouche* of the French and *macha del olivo* of the Italians.

The olive moth works almost like the apple or codlin moth. The eggs are laid while the pit is still young and tender, the larva living on the kernel of the olive until it leaves it a complete moth, causing the fruit to drop prematurely. This insect does not, however, confine itself to the fruit alone, but works also on the leaves and bark, causing tuberosities and crippling of the leaves.

The *Pysslla oleæ* is a hemipterous insect, which like the dreaded white cottony scale, covers itself with a white viscid covering, fastening itself on young foliage and fruit.

We have called the attention to the existence of these pests just now when large shipments of olive truncheons are imported. It is the duty of every one who receives the to guard against such pests by proper disinfection. For this purpose, I think the vapor of bisulphide of carbon the best. A large dry goods box clothed with tin is easiest to get; for a box five to six feet long and four feet high, a couple of ounces of bisulphide will be sufficient for a charge. In the box place the liquid in a saucer on the top of the cuttings, cover the box tightly and leave for half an hour.

AN INTERESTING EXPERIMENT.

In a short time the Viticultural Commission of California will institute an investigation to ascertain the effects of intense cold on wines after fermentation has ceased. The experiments will be similar to those carried on in France, but on a more extended scale. Results of French experiments have been satisfactory. The liquor is exposed to cold, produced artificially, if necessary, and it is then drawn off from the ice thus formed. The effect is almost exactly the same as that produced by fortifying, as far as the quantity of alcohol is concerned, and after twenty-four hours' treatment the wine becomes clear and brilliant and its flavor is greatly improved.

A BIG WINERY.

An Important Enterprise Proposed by The Gallegos Company.

The name of Juan Gallegos is familiar to the residents of Alameda county as that of an enterprising, public spirited citizen who is accomplishing a great work in promoting one of the most important growing industries in this county—an industry that promises to become the most important on the pacific coast. His vineyard and winery at Mission San Jose and Irvington in Washington township is attracting the attention of wine growers and wine dealers everywhere, and the most important results are predicted from his experiments and the methods he is pursuing. As stated in the Oakland *Tribune* articles of incorporation were filed by the Gallegos Wine Company, with a capital stock of $600,000. The directors are all representative capitalists, including E. L. G. Steele, S. W. Holladay, George W. Beaver, Eugene W. Hilgard, Francis A. Cramer, C. F. Montealegre, and Juan Gallegos. Under the provisions of this incorporation Senor Gallegos proposes to convey to the company twenty acres of land, valued at $8,000, on which is located a winehouse of brick and stone, 240x110 feet, three and a half stories high, with galvanized iron roof, and capable of storing 1,500,000 gallons of wine on the first and second floors. The third floor of this winery has a capacity of, for fermenting, 1,000,000 gallons of wine during the season, and in the half story above is the engine and machinery.

This machinery consists of two crushers, two elevators, one hydraulic press, four wine pumps, steam, wine and water hose, and water pipes complete for distributing water conveniently throughout the building. There is also an electric light plant, and one large mixing tank. Each of the three stories of the building is accessible to wagons for loading and unloading. A brick cooper shop, 48x29, and pressing-room is attached to the main floor. The distillery building is of brick, 58x35 feet, and is situated 100 feet from the main building. It contains one large steel boiler, and two stills of 750 gallons of joint capacity. A frame building in the rear of the winery contains thirteen redwood tanks of the aggregate capacity of 20,000 gallons for the fermentation of pomace. These buildings and apparatus are valued at $16,000. A water right and water for the cellar, distillery and land, with about two miles of three and a quarter inch iron pipe, with a head of about 350 feet, supplying not only an abundance of water, but also hydraulic power for the press, is valued at $15,000.

A sidetrack connecting the winery with the Southern Pacific Railroad, shipping from the building directly on the cars, is valued at $2,000. The plant also includes 390 oak casks, having a capacity of 604,500 gallons, valued at 9 cents a gallon, including timber foundations and suppports, $54,405. Besides these casks there are 258 oak puncheons of 150 gallons each. These puncheons appraised at $9 each are valued at $2322. There are ninety-two redwood fermenting tanks, with a capacity of 184,000 gallons, valued at 2½ cents a gallon, including their timber foundations and supports, $4,650. The wine in the cellar amounts to 250,000 gallons. This wine is nine months old and is valued at 25 cents per gallon, or $62,500 in the aggregate. The total value of this property as it stands is $308,827, but in two years it is calculated that the wine alone will be worth 40 cents a gallon instead of the present price of 25 and 30 cents, for which the crop of 1885 was sold while new, to Kohler & Frohling.

This property is conveyed to the company for $300,000, with a payment of 51 per cent cash ($153,000) and 49 per cent (2,940 shares) of the whole of the capital stock to be held by Senor Gallegos. The company is incorporated for the purpose of running the winery on the premises, for the purchase of grapes to manufacture wine and brandy, and to store, mature, and market the product. The certificates of Senor Gallegos's .49 of the shares of the capital stock are issued to him on the same conditions as the .51 of the shares are issued to the others. The capital stock of the company consists of 6,000 shares of a par value of $100 each, of which 50 per cent of par value of the stock is paid on the issuance of the certificates to the respective subscribers, exclusive of Juan Gallegos's, whose 50 per cent is paid for by the property he conveys to the company. A working capital of about $100,000 will be required to purchase grapes and pay running expenses until December 1st This amount is to be paid in on calls by the Board of Directors as it may be required. A thoroughly competent manager, well known as a wine expert, will be employed to direct the operations of the establishment, with a view to the production of the wines best adapted to the locality, and to the demands of the market.

Senor Gallegos contracts to sell to the company his crop of grapes, which he estimates at about 2,500 tons yearly, at the market price. His vineyard consists of 550 acres planted with the following varieties: Cabernet Sauvignon, twenty-four acres; Tannat, five acres; Moudeuse, four acres; Petit Blanche, four acres; Clairette Blanche, three acres; Sauvignon Vert, eight acres; Trosseau, six acres; Burgundy, sixteen acres; Green Riesling, eleven acres; Mataro, thirty-four acres; Zinfandel, 435 acres. To make 500,000 gallons a year, the company will only have to buy, besides this crop, about 800 tons of grapes, which can be contracted for in the neighborhood. The district in which this winery is located has extensive vineyards in bearing, containing a specially excellent selection of French varieties, and the acreage devoted to grapes is increasing annually. The vineyards are in what is known as the warm belt, and the late and early frosts, which sometimes injure vines in other places, never occur here. In fact there is but little frost even in midwinter. There have never been losses from vine diseases of any kind in this district during a period of nearly thirty years. The wines produced in this section have been shown to combine in a rare degree the qualities of deep color, heavy body, high alcoholic strength, and fine bouquet. Apart from direct consumption, they are sought for blending purposes for the improvement of other wines.

They Drink Wine.

During the rifle match at Munich, which took place between June 25 and July 12, the consumption of beer amounted to 240,314 litres. There were further consumed 44,514 bottles of Rhinewine, 6,249 claret, 2,330 of German sparkling, and 1,070 champagnes, 376 bottles of liquors, 5,200 of mineral water, 20,919 of cider, and 425 bottles of champagne cider; a grand total of 325,597 bottles.

A VALUABLE FERTILIZER.

Wood ashes are held in high esteem as a fertilizer by all scientific authorities. They are especially valuable to fruit growers, as may be seen from the following results of analyses furnished by Professor R. C. Kedzie of the Agricultural College of Michigan. Professor Kedzie says: "When we consider how large an amount of vegetable matter is represented by a small amount of ash, the value of wood ashes for manure becomes evident. Thus ten pounds of ash remains from the combustion of a cord of soft wood. One hundred pounds of ash represent the mineral matter of eighty-five bushels of wheat, eighty-five bushels of corn, or a ton of timothy hay. Eleven tons of gooseberries, grapes, blackberries, peaches or apples would each contain only 100 pounds of ash. Seven tons of cherries, plums or raspberries contain only 100 pounds of mineral matter.

"This gives some idea of the large amount of farm or orchard produce which will be represented by a small weight of mineral matter. But small as is the amount of ash, it is indispensible for the production of these crops, and must be present in the soil in available form before profitable cultivation is possible.

"If any soil is naturally deficient in any of the ash constituents, or has been impoverished by excessive cropping, the restoration of these materials in the form of wood ashes appears to be the natural and safe process, because they contain all the mineral of vegetable growth.

"Hard wood ashes were taken from my kitchen stove, the fuel being a mixture of beech and hard maple. Small fragments of charcoal were scattered through the ashes, and a little sand from dirt adhering to the wood. Ninety-three per cent. was soluable in dilute hydrochloric acid; the potash constituted twelve and a half per cent. and phosphoric acid six per cent. One hundred pounds are worth $1.

"I have just received a letter from a very intelligent fruit grower in which he says: 'I can get pure, dry hard wood ashes at $3.20 per ton here, and the same mixed with fish offal, half and half, at $5 per ton. Which is the best for pears, apples, grapes and berries, 'fine raw bone' at $38, or pure ashes, or ashes and fish offal?" My answer is: 'Whatever you neglect to buy, do not fail to buy all the hard wood ashes your means will allow or your land needs, when you can get them for $3.20 a ton. If a man offers to sell you gold for the price of silver, buy the gold and sell it not.'

"Leached ashes were taken from a tannery in Lansing, the leaching having been carried as far as it was profitable. Eighty-nine per cent. soluable in acid. The potash was 1.6 per cent. and phosphoric acid 6.8 per cent. Value of 100, 52 cents.

"If leached ashes are of enough value to be bought in car loads in Michigan and carried by rail to Buffalo to make commercial manures for Michigan farmers, then they are valuable enough to be used as measures at home, where they cost little or nothing, and the expense of double transportation is saved.

"Soft wood ashes were obtained from the ash pit of a planing mill in Lansing, being the ashes from planings of pine, hemlock, fir and basswood lumber, with some soft coal ashes mixed in. It represents the ashes from sawmill and planing mill furnaces. Fifty per cent. of the ashes were soluble in acid, and so much soluble silica was in the ashes that, when treated with acid, it formed a jelly like mass of precipitated silica, twelve per cent. potash and four per cent. phosphoric acid. One hundred pounds are worth 84 cents.

"I may say in general terms that the ashes of wood and land plants of every kind are of value as manure on every kind of soil which has been reduced by cropping; but the greatest benefit is shown upon sandy and pourous soils. On these 'light soils' crops of every kind, but especially root crops and corn, will be benefited by a dressing of wood ashes. Fruit trees and fruit bearing plants having a woody structure will be benefited by wood ashes. Thirty to fifty bushels to the acre, of fresh ashes, will be a full dressing, and three or four times that amount of leached ashes may be applied with permanent benefit."

SANTA CLARA COUNTY.

September Meeting of the Viticultural Society.

Vice President D. Wright called the meeting to order at 1:50 P. M. and the minutes of last meeting read and approved.

Mr. Evans, of the Board of Trade, committee appeared, and explained that it was desired to keep the County exhibit at the Mechanics' Fair well filled with all the varieties of grapes as they came into perfection, and he requested that this society take measures to forward from time to time, such samples as would properly represent the grapes of Santa Clara county. Such samples should be marked with the name of the growers and the region where they were grown.

Capt. Dunn, said a great quantity were needed to fill the space, and L. D. Combe, said he would send six or eight boxes on Monday; that he had some 25 or 30 varieties which he would furnish.

He thought a large variety could be had from the grounds of Mr. J. T. Doyle, and that the University plot on his place would furnish many varieties.

D. Wright said he would send in a box on Monday.

The Secretary read a letter from the President, J. T. Doyle, stating that he could not be present and asking further time for a committee of which he is a member, to report.

A communication from the Alvarado sugar Manufacturing Company was read as to sale of vacum pan and pump which they will sell for $7,000 as they desire to put a larger apparatus in their new sugar house. The Society expressed its idea that they were not prepared to purchase at once, and the Secretary instructed to answer the communication.

The matter of National legislation against the adulteration of wine coming up, Capt. Dunn said that he had seen the material features of the desired amendments, and that every grape grower ought to use every power to promote and favor such legislation, and all the information one could get should be obtained. That the dry wine business exceeded the sweet wine trade as many as eighteen or twenty times, and this branch of the business needs as much attention as the sweet wine branch.

Amendments to by laws were received and will come up for final action at next meeting.

Meeting adjourned.

Wine making will begin about the first of October. There will be four wineries in Glen Ellen this year, viz: Walter Phillips, Burnham & Sons, Davis & Son, and Whittaker & Sons.

FOREIGN VINEYARDS.

Small but Productive Tracts of Land in France and Spain.

The Los Angeles *Herald*, in a long article commenting upon the mistake that is made here in doing things on a large scale that may be best done on a more contracted one, describes the way some of ou growing industries are conducted in Europe, as follows:

Grapes growing for whatever purpose it be, is an exceedingly nice industry. The cultivation of citrus fruits is, if anything, a more exact agricultural science. Both of these require the greatest amount of skill procurable from close study and long experience; and they require care as unremiting as the skill must be exact. Our plan in this respect is the very opposite of the practice which obtains in countries where generations of experience have taught people how best to do it. The largest vineyard in France is La Fitte. It contains fifty-two acres of wine grapes. In that country this property is not called a farm, nor merely a vineyard. It is dignified as "an estate." For several generations the product of these vines have been handled in the same way. All the grapes are converted into a natural red wine—a claret. In vintage time each bunch is examined by an expert. The perfect racemes with the perfect berries on them go into one receptacle, all imperfect berries being first removed. The ordinary bunches go into a second crusher, all poor grapes being first taken away. Of the fine bunches there is made the first grade of wine, bearing the La Fitte brand, and the others go to produce the standard brand of La Fitte claret. The sales from this vineyard of so small dimensions that it would be despised in California, aggregate on the average an annual amount of $100,000. This is close to $2,000 an acre revenue from a vineyard. The estate makes the wine, cures it, bottles it, cases it, and sells it with the proper label and marked cork. The standard grade sells for $18 per case of one dozen bottles, and the noble grade sellsfor $24, or $2 per bottle. Five bottles to the gallon is $10 per gallon. But the wine is five years old before it is allowed to leave the cellar of the estate.

One more instance is a kindred industry. The province of Malaga, in Spain, contains about 4,000 square miles of surface. Remember this is a patch of ground a little more than sixty miles square. Of this there are only nine hundred and twenty square miles suitable for raisin culture. Of this latter area three hundred and fifty square miles are devoted to the production of the famous Malaga white wine, and the product of over fifty square miles goes to foreign countries packed in cork dust as fresh grapes. We now have about five hundred square miles left for raisins. From that area Spain exports yearly 600,000 centals of raisins.

In France five to ten acres of vineyard is an average holding. The same is true of the Spanish raisin province. In Spain the raisins are dried on the vines; children aid in the work, and go through the vines twisting the stems so as to stop the flow of sap. To this is due the pale purple color of the famous London Layers, the bloom of the grape being all preserved. In France each bunch is carefully picked over so as to remove every imperfect berry before the grapes go into the crusher. In both countries the overseer of a vineyard inspects each vine carefully about once a week to see if it is in perfect health. No flock of animals is tended with closer care. That is the true way to do it. That is what we have to come to. Cut up the land into small holdings. Let vines and trees have good care and they will pay. It is reported that Mr. A. B. Chapman of San Gabriel, netted $500 per acre from five acres of oranges, last year, in spite of the fact that the trees were run down and required much extra care, involving fertilizing with imported matter procured at heavy expense. There is the result of doing things in the true way; and it is to this method Of treating our vines and trees we are tending. Five or ten acres will furnish a nice home and produce a good living for a family.

BOGUS WINE.

How French Wines are Sometimes Manufactured.

Our readers do not need to be told, says an exchange, that most of the beer sold in this country is adulterated, to a greater or less extent, with various drugs, such as quassia, nux vomica, aloes and strychnine, to impart the bitter taste and to give it the foam that similates genuine lager. Mention has also been made in our columns, more than once, of the quality of much of the domestic wine in our market, which has been proved to be manufactured from fermented dried fruit, colored and flavored to suit the eye and the taste.

Much of the alleged French wine sold in this country is also made up from many ingredients, the least of which is the real wine from which the whole is sold. Great complaint has been made in France of late years concerning the ravsges of the phylloxera, which has killed hundreds of acres of the native vines, and lessened the native product by many thousand gallons. And yet we find, on comparing statistics, that both the exports from France and the imports to this country of alleged French wines are as large as ever. Furthermore, we find, on comparing the figures, that the quantity reported as exported is more than double the total product, as officially reported, of the French vineyards, and this without taking into account the notoriously large home consumption in France. There is only one explanation for such facts as these. The wines exported must be largely adulterated.

Not long ago the chemists of the municipal laboratory in Paris made analysis of a large number of the wines sold as claret and Burgundy in that city. Out of 3,361 samples examined, only 357 were declared "good," and 1,093 "tolerable," while 302 were declared to be decidedly injurious. Those that are bad without being positively hurtful, are produced by mixing a little of the genuine wine with something much poorer and cheaper, while the positively injurious contain logwood, campeachy wood, fuchsine, carbonate of potassium and soda and other like substances.

Some of our cheaper native wines are exported to France, "doctored," labeled "St. Julien, Bordeaux," or some other name that will help to sell them, and re-exported, to be sold in this country at more than double the original price.

In view of facts like these, it is evident that the purchaser of foreign wines run a great risk, to say the least, of being defrauded. There is no business in which adulteration pays better in immediate pecuniary returns, and consequently none in which it is practised more.

CALIFORNIA WINES.

Their Value Recognized by Competent Judges in Europe.

Dr. Springmuhl, whose efforts toward a practical application of his well-known views upon the feasibility of concentrating grape-must for exportation recently called him to Europe, has just returned. While there he took occassion to put samples of the best qualities of California wines before competent judges in London, Bordeaux and Cologne, and their opinion of hocks and wines of the Bordeaux type is highly satisfactory, although he did not find the sherries and ports generally regarded as equal to the original Spanish and Portuguese wines.

Dr. Springmuhl delivered a lecture on California wines at the Langham Hall, London, at which there was present four hundred wholesale wine dealers. He illustrated his remarks with samples. According to a report in the *London Times*, he said:

France, up to the present time is the richest of the wine producing countries in the world, for many years has not been able to satisfy the demand for pure red wines in consequence of the ravages produced in her vineyards by the phylloxera and other enemies of the vine. France is obliged to import more than 250,000,000 gollons of wine annually, from Italy and Spain, for her own consumption and for export. The quality and purity of the red wines in the world's market severely suffered through this deficiency. The price of pure good wines has risen, while at the same time a large quantity of artificial wine of the worst quality has beeen brought into the market.

I am sorry to say that this state of things has also produced a diminution of the sale of red wines in general. The analysis of the wines to be found in the London market shows indeed a marked deterioration in quality and many millions of gallons of wine prepared from grapeskins and sugar solutions, from currants and raisins, and finally artificial wines, which contain no element whatever of the grape, are drunk as French wines, often to the detriment of the consumers' health.

CALIFORNIA'S STAR RISING.

While the star of France thus is on the wane, a new star is rising in the far west. The State of California, stretching from north to south on the Pacific Ocean, has proved during the last few years that it can produce a variety of excellent wines, such as we do not find in any other country except France and Italy.

A noble result lies in this fact produced by the effort of the principal viticulturists and wine growers of the State, men of untiring energy. A golden future shines upon the country, for the product of the vine can procure greater wealth than all the shining gold which the gold diggers have furnished since 1848.

The soil and climate equally favor wine culture in California, and the rapid development of the viticulture of this State proves that the capabilities of California as a wine-producing country have been recognized by competent men.

We can form further conclusions from results obtained up to the present time. It is not too much to say that in the course of twenty years California will stand at the head of the wine producing countries of the world, and that her wines will command the world's market. California is the only country until now which can produce hock of a good flavor and identical to the well-known Rhine wine in its chemical and physical properties.

California produces red wines, Bordeaux as well as Burgundy which can can competo with good French wines in every respect. As proof of this fact I may state that experts in Cete (Bordeaux) to whom I presented claret for their opinion without mentioning its origin, pronounced it to be French wine of good quality.

Several experts in Cologne on the Rhine firmly asserted that a California hock, which I set before them, must have been grown near Ruedesheim, a place well known for good Rhine wines.

I do not of course mean to say that such wines are produced throughout California, but only that the country can produce such wines by proper choice of grapes and careful preparation of the wine.

A HINT TO WINE-MAKERS.

The S. F. *Call* says that the idea of bringing Eastern wine-dealers in to direct competition with the handful of local dealers who control the trade in this city appears to be taking shape. It is proposed to establish a large warehouse in New York capable of holding three or four million gallons of wine. The owners of the warehouse would buy of the growers here as much new wine as their warehouse would hold at say twenty cents a gallon, being careful to buy none but the best grades, and absolutely pure. These goods would be shipped round the Horn to New York, time being no object, and the sea voyage being calculated to benefit rather than injure the wine. Once in New York, the wine would be kept in the ware house three years from the time of its manufacture, and not touched except to be racked when required. It is reckoned that transportation, interest, warehouse charges and other expenses would amount to about fifteen cents a gallon; add this to the twenty cents paid to the grower, and the wine would stand the owners in thirty-five cents a gallon at three years of age. Such wine ought to sell for one dollar a gallon, without any difficulty. Thus the operation would net a profit of two hundred per cent in three years—not a bad deal in these days of close trading.

Leading wine-growers will probably send a judicious person to New York to see if this scheme cannot be carried out. If they can count upon an Eastern market for three or four million gallons of wine in one block, the home market will be so depleted that they will have to go to them for terms, instead of dictating terms as they do now. This new market once opened, we should never hear again of cast-iron rates of fifteen cents and sixteen cents a gallon for wine in the vineyard. It would not be long before the nominal price of new sound wine would be twenty-five cents, and the Eastern men would have to be satisfied with one hundred and fifty per cent profit instead of two hundred.

The practical way to accomplish the object would be to form a company in which California growers might take stock as well as Eastern dealers. In this way no money would be locked up. The stock of the company would be good collateral at bank, and persons who had use for their funds to extend their vineyards and cellarage could borrow seventy-five per cent of the amount they had invested in the enterprise.

THE value of the probable product of the raisin crop in California, for this year is estimated at $2,000,000.

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FRIDAY.....SEPTEMBER 30, 1887

THE MECHANICS' FAIR now open contains no feature more suggestive of the wealthy future in store for California, than the display of her productions from the vine and olive. In these exhibits centre the leading attraction for visitors, who view with mute astonishment a varied collection of wines and oil which could successfully challenge competition with the manufacturers of the old world, backed as they are by decades of experience. The dull monotony which generally enshrouds the exhibition is this year agreeably relieved by the lavish profusion of this artistically arranged viticultural display.

No expense has evidently been spared to make the exhibit as complete as possible, and the results acheived reflect the highest credit on all concerned. To the many visitors from the Eastern states and Europe, the picture must appear as magnificent as it is pleasing to the eye. Overhanging festoons of vines, with their pendant clusters of many colored grapes, run from pillar to pillar garlanded with hops and evergreens, supported at their base, with sheaves of golden grain such as only California can produce. Grapes everywhere, and of endless variety, attract the eye. The choice and rare lie in distinctive bunches, under the shadow of great pyramids, which rear themselves in solidified masses at consecutive intervals along the line of display. In central positions rise up great stacks of neatly bottled wines, cool and tempting as they reflect the rays of light in their many colored hues, while here and there, a brightly burnished barrel of immense proportions standing out in bold relief, gives a substantial coloring to the scene which is most effective.

The display of both grapes and wines from Napa and Sonoma valley which greets the visitor as he enters the building, is so equally grand, that, taken as a whole, discrimination would be impossible. The Napa exhibit is located in the south-east corner of the Pavilion, and occupies a space of 150 feet in length. Over four hundred varieties are displayed of the grapes grown in this section, among which are especialy noticeable the Chasselas, Semilon, Sauvignon blanc, and Riesling in white grapes, and Zinfandel, Verdot, Black Burgundy, Merlot and Pinos among the red kinds. Among the well-known viticulturists who take prominent part as exhibitors of the choice variety of light table wines for which this county is justly famous. May be mentioned, Charles Wheeler, H. W. Crabb, M. M. Estee of Hedgeside, Charles Krug, W. W. Lyman, Berenger Bros., John Thoman, of St. Helena, Mayor Scheffler of the Hill Vineyard and Tiburcio Parrott.

On the right hand of the Napa exhibit and covering a space of 6,000 square feet, appears the wonderful and varied display of the Sonoma valley. Figuring prominently in the central position is the exhibit of Captain J. H. Drummond of Dunfillian, the President of the committee in charge of the exhibit, and Commissioner for that section of the County. The interest taken by this gentleman in the welfare of his district is evident. The collection that he has individually sent for exhibition is one of such a varied character, that the visitor cannot fail to be impressed with the evidences of the productive faculty of the soil, and the prosperity and enterprise of its proprietor. Every branch of the agricultural and viticultural industry is represented in his individual display, and in that of Mrs. Kate F. Warfield, adjoining. All classes of fresh and dried fruits, and mammoth vegetables. Preserved fruits and every variety of pickles, mineral waters, argols, and every thing imaginable down to moss from the creek, and fourteen samples of the fertile earth. In wines alone, Captain Drummond and his enterprising lady partner in this exhibit, make a showing second to none, and it is an open question who has more varieties, Drummond in the Sonoma valley, or Crabb in the Napa exhibits. These two prominent individual collections add a strength to what must be considered collectively a remarkably fine exposition of this prolific section, which will doubtless carry much weight with the considerations of the judges of award.

The other residents of Sonoma valley who have made some remarkable displays, and done much towards making the exhibit a success, are, D. B. Shaw, Star Vineyard, Wm. McPherson Hill, Edward Steiger, L. Watson, R. B. Thomas, Robert Howe, M. G. Vallejo, T. S. Gloister, M. K. Cady, R. L. Watt. To the ladies of the Valley much credit is also due for the untiring devotion to the interest of their county. Among these may be honorably mentioned Mrs. C. C. Carigen, Orange Grove; Mrs. Hood, Los Guillicos,; and Mrs. Boyles, Aqua Rica. The display made by Mrs. Kate Warfield is one of the largest and moat varied exhibits in the Fair.

Fresno County has not the representation of her wine interest, which might have been expected. The display made is confined to the wines and grapes of the celebrated Malter Vineyard. The display made by the enterprising proprietor is large, and gives a fair idea in itself of this prolific section of the State. The wine growers of this district are conspicuous by a lack of enterprise, in missing one of the best opportunities which has been extended for years, to advertise their products in wine and fruit.

Kern County exhibits some samples of the Isabella grape for which the county has gained great celebrity. This exhibit is small, but shows a desire on the part of producers to do what they can toward showing up in as strong a light as possible the wonderful resources of California.

THE SOUTHERN PACIFIC RAILROAD, with Governor Stanford at its head, has outlined a liberal policy under which settlers will be transported free of charge from Ogden to this city. The intent of the railroad people is actuated by the best of motives, yet it is extremely doubtful whether the plan will in reality prove a boon to the state. The privilege is liable to be grossly abused. The moderate expense of the journey, at present may seem to act as a drawback to the growth of California in point of numbers. Yet it has the effect of checking an invasion of a class of people, who are better at home. A question now suggests itself, and it is a serious one to decide, in considering the future welfare of the state. Will not the reduction in fares to a nominal rate, open a channel to this state for the pauper element of the old world? The Eastern states are themselves raising an outcry about the nuisance, and their relief would mean disaster to us. Land all over this state, in city and country is now selling at one-tenth of its value ten years hence. The settlers who are steadily swelling the population, bring with them the necessary means to build up the county. They are only too willing to pay the moderate rate of fare, for the privilege of sharing the advantages California offers in soil and climate. Population will increase rapidly enough in the future, without throwing the state open as an asylum for the over-flowing scum of the East and Europe. Every visitor who enters our gates for a short stay, leaves with a longing in his heart to return and make his home here, and his glowing descriptions are safe at any rate to send ten of his friends to see for themselves. The late boom in lands of the Southern counties, was due solely to the excursion parties from the East, which visited them during the past year. This is the best advertising we can have, as the result has proved. The population then did not exceed 150,000. In 1860 the census returns were 350,000. in 1870, 560,000; in 1880, 864,000; and to-day a low estimate gives us a population of not less than 1,200,000. The prospect for a more rapid increase in the future, looks bright enough to warrant the belief that every vacant spot in the state will yet command a premium, let alone go begging a market. All California requires is the inauguration of an effective thorough system of advertising her many advantages. The railroad assistance will be most valuable in that respect. Excursion parties scattered over the country, during the next six months, will build the country up quicker than any other plan. Cheapen the round-trip fare for transient visitors. Fifty per cent. of them only go back to pack up their belongings, and say good-bye to their friends. But God defend us against the free fare immigrant class, whose only requisite for a pass is a satisfactory proof to the agent that his stay in California is not to be transient. That may be safely assumed as a foregone conclusion. With no money to come on and none to get out, it is a sure bet, he will be a stayer. We have no use for this class of immigration at present. Keep up the fares.

THE FOREIGN correspondence of the *Wine and Spirit Review*, contains the following information on the prospect of the coming vintage in Europe: From France news comes that a violent hurricane has devastated the districts surrounding Bordeaux. The township whose vineyards suffered most in the Medoc, were Labarde, Assac, and portions of the Macan, Ludon and Cantenac districts. In the Graves: Merignac, Pessac, Talence, Gradignan, Leognun, Ville Nave d'Ornon. On the right bank of the river Quinsac, La Fresne, Caugnan Bouliac, and Fluac. The disaster is serious. In the Lot et Garonne, Dordogne and both Chauntes grapes are abundant and in a healthy condition. In the Nantais grapes are doing well, especially Muscadels and Gros-Plants. In the Herault the vines are bending under their load of grapes. In the Awde and Roussillon the crop promises fine quality. In lower Burgundy the vineyards were hail-smitten to a considerable extent.

The Mildew made its appearance early in August, in the Champagne.

Imports of wines into France during the first six months of 1887, $57,834,800 worth, against $57,834,400 in 1886; export $26,-104, 000, against $27,242,600.

In Germany, the wine region stands sorely in need of refreshing showers; otherwise the product will be a dry, brandy-like wine, not much to the taste of Hock consumers. Making due allowance for the damage, resulting in a good many localities from early frosts and late hail-squalls, it may be asserted that as regards abundance there are but few proprietors who will have reason for complaint, At Rheingaw, although backward three months, in May, the vintage has since recovered all the time lost, and promises well in every respect. In Nahe district the crop outlook is fair. In the Haardt Mountain district, the persistent drouth is commencing to do mischief. In the Moselle region the crop prospects are tolerably fair. In Spain the market is glutted with the wine of 1886, one-third of which is stilll unsold. The crop this year will be bigger than ever and the people of the interior make room for the same as they are short of empty casks, will either have to let the 1886 wine run to waste in the sand, or get it distilled, to make a poor brandy of it.

In Portugal the vintage is unusually early. Nothing has occurred to blight the hopes of both abundance and good quality, especially as regards the red wines, suitable for France, of which enormous amounts can be spared that county.

Hungary has suffered from a severe drought, which has lasted for six weeks. It will require a plentiful rainfall to remedy the harm done, and turn the Hungarian vintage out, at least approximately, as fine as it promised early in July. Grapes have been maturing slowly but uniformly.

ALFRED GREENBAUM & Co., the well-known San Francisco firm, are about to take a step in the right direction in the interests of Eastern consumers of California wines. They propose to establish a branch agency in New York to supply the trade and consumers with the superior wines of the Inglenook vineyard, the product of which is under their sole control.

Among the exhibits at the Fair, which attract the attention of the visiting crowds, is the Le Merveilleux Wine Press. This is a French invention, which is in general use among the leading wine producers of that country. During the short time that lapsed since its introduction into America by the purchasers of the patent right (Messrs. Paré Bros. of this city), it has steadily worked its way into favor among our local wine-makers, and the testimonials which pour in from every section of the State, speak in the highest terms of recommendation. Naturally it has excited considerable opposition from rival press-makers, but merit always tells, and the returns for the past year have been more than satisfactory to the manufacturers. The chief opposition encountered was from a peculiar circumstance, which is worthy of mention, as showing how far a feeling of supposed slight will provoke vindictive antagonism. At the Mechanics' Fair, held last year, a prominent wine-maker took a fancy to the press of this pattern then on exhibition. He insisted that it should be sold to him, bnt was informed it was not for sale, and that an exact duplicate would be built for him immediately. This was apparently satisfactory, and the press was finished in the haste begotten of the urgent demand of the purchaser, and shipped to his place in the country. It did not work as desired, and the manufacturers, after explaining the reasons therefor in the hasty work of construction, offered their services free to put it in proper condition. This liberal proposition was refused and the press condemned as worthless, although a neighboring wine maker was so thoroughly satisfiee with one which he had purchased at the same time, that he ordered another. The unhappy circumstance of this hastily constructed machine has never been forgotten, and anything that the purchaser has been able to effect in throwing a cloud on an invention which has stood the critical test of the wine makers of Europe, and for that matter, in this country also, has not been neglected. The work done by this preas in every establishment where it has been adopted, speaks for itself, and the animus of the spiteful attack which has been made, from most unjustifiable reasons, ought to be considered by all fair-minded persons, before passing upon its merits in a spirit of condemnation. Le Merveilleux possesses qualities superior to any other invention of its kind. It is strongly constructed, rapid in operation, and easily worked. The platform or bed rests on a two-wheel cart, which enables the operator to move it to any part of a vineyard, or between the beds of tanks in a wine cellar, The testimoniala from the many wine-makers in this State who now use it to the exclusion of all others, speak volumes for the satisfaction it has given in every respect.

The Proposal of the English government to hold an International Conference on sugar bounties, is naturally exciting considerable discussion in interested circles, especially in France and Germany. At present, judging from the tone of the leading French jonrnals, the probability that the manufacturers of that country, will agree to the said convention, looking towards the abolition of premiums, is rather remote at present. Their *Chambre Syndicale*, has also addreased a protest to the President of the Council, in which the fervent hope is expreased that the French government will refuse its assent to the conference. The chief reason assigned for the objection is that the suppression of premiums will inevitably and irrevocably bring with it the extinction of the sugar cultivation and industry in the country. The real truth of the opposition, however, seems to be based on the belief that the sugar industry in France is absolutely nnable to contend agains Germany. The latter country can produce sugar under economical conditions impossible to realize in France. The Germans on the other hand are more moderate in their views, and the only cause of anxiety which appears, is as to the future competition of cane sugar. The *Deutsche Zucker Industrie*, which has been endeavoring to contribute to the solution of the question how the abolition of premiums can best be brought, has published an estimate showing that according to data, the accuracy of which is unquestionable, the five largest sugar growing countries of Europe, viz., Germany, Austria, France, Belgium and Holland, could, without suffering any loss to the treasury, reduce very considerably the rate of taxation on sugar, and thus effect an eventual unification of duties, without which it would be difficult to establish a practical and lasting International Convention. The German view chiefly tends towards an endeavor to produce sugar at as low a cost as possible. The French on the other hand are more concerned about the reduction of taxes in presence of great financial necessities, and begrudge the giving up of any part whatever of their splendid revenue from this source.

The *Sucrerie Belge* likens the conduct of Germany to the national fox, "who wishes all his companions to undergo the same amputation as himself, and states that the abolition of premiums all over Europe would give the German industry a superiority greater than it now possesses." The attention of Germany is thus divided for the probable result of the change, as regards the competition of colonial sugar. The view taken is that the manufacturers of beet sugar would be unfavorably affected, while that of cane sugar would be materially improved.

In the meantime the British Sugar Refiners Committee, are making unjust appeals to the government for relief, urging that the principle of a duty to countervail a bounty should be admitted by Her Majesty's government as necessary to the maintenance of Free Trade, and as the only way in which the permanent interests of the consumer can be secured.

Ex-Governor St. John of Kansas, in his insidious attacks on the great wine industry of this State, leaves himself constantly open to the charge of prejudice. Wine-drinking nations are at all times the most temperate and free from crime, in comparison with those addicted to excessive consumption of spirits. The statistical tables prepared in France for the study of these questions are remarkably accurate and complete. Moreover the statistics of our own Government since 1840, clearly prove that as the consumption of wine increases the use of whiskey decreases to a marked extent.

Within the period named, the figures show that the consumption of whiskey has fallen off one-half, while that of wines has increased 40 per cent. This question has been repeatedly discussed with much vigor and in the broadest light and by none more fully than Mr. C. A. Wetmore, ex-Chief Executive Viticultural Officer of this State. His illustrations taken from French statistics, are clear to the point and tend to prove that the evil results of alcoholic excesses are worse in the case of spirits, and feasts, if at all to be mentioned in the case of wine. An instance quoted to show the comparison is worthy of note.

In the Department of Seine Inferciure consumed only twenty-one quarts of wine per head per annum, but where ten quarts of spirits per head wine was drank, the police returns showed a conviction of seventy-six persons in each 10,000 of its inhabitants for drunkenness, while in the Department of Aude, where 260 quarts of wine and one quart of spirits were consumed per head, there where only a little less than three persons out of every 10,000 convicted of drunkenness. Figures are not apt to lie, and when Mr. St. John says that wineries are more dangerous than distilleries,

and that wine paves the way for whiskey, he exhibits a reckless disregard for facts, which is hardly in accordance with the position he assumes before the world as moralist and reformer.

The display of natives wines made by J. Gundlach & Co., at the Fair presents a most attractive appearance. It is situated at the right of the main entrance, and by its tasteful and costly get up, claims the immediate attention of visitor son entering the pavilion. No better site could have been selected, and the general appearances of the exhibit is well worthy of the important interest it represents, and highly creditable to the enterprise of this well-known firm. Here are to be found all the justly celebrated brands of fine wines, the productions of their Rhine-farm vineyard, in Sonoma county. The untiring efforts of Messrs. Gundlach & Co., have succeeded in placing California wines upon an equal footing with imported brands. This firm has always been noted for the vigorous and determined fight it has made in the interest of pure wine. Its efforts to this end are praiseworthy and have won for them a name in the market which has brought the wines bearing their labels into demand, not only throughout every portion of the United States, but also in Europe.

The vintages carried in stock, and which are all produced at their own vineyards, extend as far back as 1865. They are noted for their excellent body and choice flavor, which have repeatedly won a recognition in the shape of gold medals, at different exhibitions throughout the States. The main office of the firm in this city, is located at the corner of Market and Second streets, other extensive cellars are located on King street, Montgomery ave., and Third street. Also at the Rhine-farm near the town of Sonoma.

The present management of the Fair will doubtless confirm the judgment of their predecessors by conferring additional honors, on a house which has spared no effort nor expense to further the wine interests of California.

A new feature of the year in the Mechanics Fair is the exhibit of olive oil. Aremarkable display is made by George F. Hooper in the Sonoma Valley exhibit. The oil is pure and clear, the color excellent. The marked success of Mr. Hooper is convincing proof of what can be done in the way of olive culture in California. The soil and the climate are adapted to the growth of the olive, and when the commercial importance of this crop is fully realized, the industry will undonbtedly find many recruits. The counties surrounding the bay of San Francisco are all more or less adopted for the business and must sooner or later develop a production which will affect the oil markets of the Old World.

Dr. Springmuhl will leave far Europe in a few days. The enterprise which this gentleman has inaugurated in California will eventually open up a market for our vineyardists, which will test them to supply. The exportation of concentrated grape-must, must evidently assume enormous proportions. The production of the wine-making countries of Europe is steadily decreasing, while that of California is as yet in its infancy. Over 4,000 tons of grapes could to-day be disposed of in this manner, which is pretty fair to start with. What the result of the demand will be when California enters the market, is not difficult to predict. The outlook for a home supply, at low prices, does not however improve under the circumstances. If the present experimeets result in a practical success from a financial standpoint, as it undoubtedly will, Condensed Must Plants will be as plentiful throughout the country as vineyards. Grape-growers will not then have much cause to dread that their products will ever again be a drug in the market. The delay in the sale of wine until it is ripened, wil be avoided, and the returns immediate, as the condensed must will sell as soon as it is produced. May no shadows fall on the "Must Plant," nor on the pathway of its projector.

It takes money to run a paper like the San Francisco Merchant. No expense is spared to present to our subscribers a readable paper, replete with all the latest news and information pertaining to the important industry of which it is the sole representative on the Pacific Coast. The outstanding amounts, many of which have been for years, are individually so small, that without an occasional reminder, they easily escape the memory. To us however, the sum in the aggregate means thousands of dollars, which would be very useful just now. Dunning subscribers is a system which has never been in vogue in this office. In fact it has never been necessary. Our subscribers, as a rule, belonging to a well-to-do class, who become delinquent, without probably being aware of the fact. In lieu of sending out a statement of each separate account, we would ask our readers who may be delinquent for one or more years, to kindly remit the amount to the office in this city.

The Statement of the U. S. Consul at Lyons shows that the export of wines to the the United States for the month of August amounted to $2,906, as against $5,000 for the same month in 1886, showing a decrease in the value of shipments for the present year of $2,094. During the first months of 1887 the shipments only amounted to $57,965, against $65,337 in the same period of 1886, a decrease of $7,372.

HAWAIIAN GUESTS.

The following Hawaiians have arrived since our last issue, and are registered at the Occidental:

W. T. Monsarrat,
Mrs. Monsarrat,
S. A. Monsarrat,
James Hopper & wife,
W. C. Parke,
J. A. Cruzan,
Mrs. J. D. Strong & child,
W. A. Wall,
Mrs. J. I. Dowsett,
Edward Dowsett,
H. Halstead & wife,
C. Netthein,
Alfred S. Hartwell.

WHAT IS IT?

Some time ago Mr. John Hunter, of Anaheim, wrote the following letter to the *Gazette* on one phase of the vine disease in Los Angeles county, and we gladly make room for it in the MERCHANT. We hope other observing vineyardists will take the hint conveyed in the last paragraph and tell us what they know about this matter.

A friend of mine called my attention to a pamphlet published under the authority of the Department of Agriculture on the "Diseases of the Vine." I have also been informed that what is termed Downy Mildew in this pamphlet meets our case exactly. But as far as my observation goes, I must say that it does not meet my case; the symptoms more resemble what the pamphlet calls Black Rot, although differing in some respects from that. I will give you my experience in the matter: Our vineyard was not irrigated last year. The vines kept growing very well up to within two weeks of the harvest, when they suddenly stopped growing. The leaves commenced to show some signs of red spots; these spots grew larger every day, and finally the foliage thus affected dropped off, leaving only a little on the tops of the vines which was not affected with the red spots. Then as to the berries. They began to show signs of a brownish color on one side, which extended to the whole berry in most cases, except near the top of the cluster where they kept a sickly green color and remained in that state and did not ripen, so that many had to be left on the vine. They had a peculiar taste. I saw in some paper that pruning early would correct the disease; so, in November I had them pruned. I saw nothing remarkable; they seemed all alive. So, after the first rain I ploughed away from the vines and then took a shovel and dug away the ground around each vine; there I found more work of the disease. The surface roots of many were affected in this way. The roots seemed full of sap, but the bark was checkered all ways and showed signs of some species of mildew or other disease. Well, I cut away all roots, that I saw affected. I afterwards irrigated the vineyard and worked as usual. Some of the vines have been very late in putting out shoots, yet they all came, or nearly so, and those show signs of buds starting near the ground. Some put out very sickly shoots, yet they all came, or nearly so, and those show signs of buds starting near the ground. Some put out very sickly shoots and remained so until a few days ago. Fresh shoots have now started and they are vigorous and seemingly healthy, and their elder brethren, the weak ones, are putting on fresh vigor and seem to be doing better. They are to all appearances well loaded with grapes and maye yet do well.

In this letter I have only spoken of the Muscat variety. Our Mission variety are badly used up. A great many have not yet entered an appearance, and those were the best vines in the patch. I have not troubled to investigate them, as walnut trees have been planted amongst them which are now bearing, so that in order to give the trees more room the vines must be removed.

But now having said so much, I will leave it to others to tell what they saw and we may come to some conclusion what the remedy needed will be; or perhaps Nature will yet cure the disease.

Messrs Kohler & Frohling will go largely into wine making this season. Farmers no doubt will be able to dispose of their entire crops at fair figures.

THE CAYON OLIVE.

EDITOR MERCHANT:—Several gentlemen have written to me saying they saw what I said about olives in the MERCHANT, and wished for the particulars. As all the gentlemen appear to be readers of the MERCHANT. I trust they will excuse me if I endeavor to save time and answer them through its columns.

When I spoke so favorably of the Cayon, I meant to confine myself to what I simply saw on my own place in the Santa Cruz Mountains. It may be quite true that the Cayon does not do so well in the interior valleys of the State, or in Arizona. The proximity of the Santa Cruz Mountains to the ocean, giving them a much less dry, a cooler and more equable climate than the interior valleys of the State or Arizona have, and this will account for the different behavior of the Cayon in the different regions; still I have got to be convinced that the Cayon will do well anywhere above the generality of this showing. I hold by it enthusiastically for my own part and for the Santa Cruz Mountains at any rate. *This is my ground*, and I hope it is distinctly understood that I go no further. A man can surely speak as he deems best of what he sees and knows without being called upon to answer for what he sees not, neither knoweth. Let each experience stand on its own legs; gives us however as much of these independent and self-supporting experiences as possible.

The Maronamler is an excellent olive certainly, but I did not give it the space I gave the Cayon because I have not had it so long. Californians can easily get it from Prof. Hilgard, and if the gentlemean who writes me from Florida will write the Professor at the State University, Cal., I believe he will find him ready to give a helping hand to Florida; it is worth trying the Professor at any rate. I would say to the same gentleman that Mr. Felix Gillet of Nevada City, Nevada Co., Cal., will procure him Cayons from France; possibly Mr. Gillet has young Cayons for sale.

I don't sell any olives because first, I have not got half enough of oilves for myself, second, I can't be troubled rooting young plants. Mr. Ludemann, of San Francisco, can supply and amount of Picholines at very reasonable rates indeed. It is cheaper in my opinion to go to Mr. Ludemann for Picholines than to raise them yourself. I mention Mr. Ludemann because he has best served me, which I suppose is fair enough.

The Bazzo, Mignolo, Correggiolo, I have got of course, but so has Judge Lagan of, Santa Cruz, Santa Cruz county, and whoever desires cuttings of these for rooting, should apply to the Judge, who is the only man in the State except myself, so far as I am aware; that is in possession of Bazzo's, Mignolos, if not Corregiolos.

JOHN A. STEWART,
Etha Hill Vineyard.

THE REASONS WHY.

The "five reasons for drinking" are found in an old Latin triplet, the exquisite beauty of which can not be reproduced in an English translation. The following will give the substance of it:

If I the reasons well divine,
They are just five for drinking wine.
Good wine, a friend, or being dry,
Or lest you should be bye-and bye,
Or—any other reason why.

The Latin original was written by Dr. Henry Aldrich, Dean of Christ Church, Oxford, about 1690.

TEMPERANCE DRINKS.

The Massachusetts State Board of Health recently analyzed a large number of so called temperance drinks, and has found that all of them contain alcohol, one of them containing as much as 44.3 per cent; some contain more than 40 per cent, and a very large proportion more than 20 per cent.

The *Anti Adulteration Journal* publishes the following list of those analyzed, and the percentages of alcohol:

Carter's Physical Extract Tonic, Georgetown, Mass., 22 per cent.

Hooker's Wigmam Tonic, Haverhill, Mass., 2.07 per cent.

Hoofland's German Tonic, Philadelphia, 29.3 per cent.

Hop Tonic, Grand Rapids, 7 per cent.

Howe's Arabian Tonic, New York, 13.2 per cent.

Jackson's Golden Seal Tonic, Boston, 19.6 per cent.

Liebig Company's Cocoa Beef Tonic, New York, 23.2 per cent.

Parker's Tonic, New York, (advertised as without stimulants), 42.6 per cent.

Schenck's Sea Weed Tonic, Philadelphia, 19.5 per cent.

Atwood's Quinine Tonic Bitters, Boston, 29.2 per cent.

Atwood's Jaundice Bitters, Portland, 22.3 per cent.

Baxter's Mandrake Bitters, Burlington, 16.5 per cent.

Baker's Stomach Bitters, New York, 42.6 per cent.

Brown's Iron Bitters, Baltimore, 19.7 per cent.

Burdock Blood Bitters, Buffalo, 25.2 per cent.

Carter's Scotch Bitters, Georgetown, 17.6 per. cent.

Colton's Bitters, Westfield, 27.1 per cent.

Drake's Plantation Bitters, New York, 32.2 per cent.

Flink's Quaker Bitters, Boston, 21.4 per cent.

Goodhue's Bitters, Boston, 16.1 per cent.

Hartshorn's Bitters, Boston, 22.2 per cent.

Hoofland's German Bitters, Philadelphia (claimed to be free from all alcohol), 25.6 per cent.

Hop Bitters, Rochester, 12 per cent.

Hostetter's Stomach Bitters, Pittsburg, 44.3 per cent.

Sulphur Bitters, Boston, (contains no sulphur), 20.5 per cent.

Lengley's Bitters, Boston, 18.1 per cent.

Mexican Tonic Bitters, Boston, 22.4 per cent.

Porter's Stomach Bitters, New York, 26.9 per cent.

Bush's Bitters, New York, 35 per cent.

Sherry Wine Bitters, Wakefield, 47.5 per cent.

Cinchonia Bitters, Providence, 13.1 per cent.

German Bitters, Concord, 21.5 per cent.

Strengthening Bitters, New Bedford, 29 per cent.

Old Continental Bitters, Lynn, 11.4 per cent.

Walker's Vinegar Bitters, New York, 6.1 per cent.

Warner's Safe Tonic Bitters, Rochester, 35.7 per cent.

Warner's Bilious Bitters, Boston, 21.5 per cent.

Wheeler's Tonic Sherry Wine Bitters, Boston, 18.8 per cent.

Ten thousand olive trees will be set out near Templeton this Fall and Winter.

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BRITISH AMERICAN PACKING CO.,
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We also offer For Sale of Other Columbia, Sacramento and Fraser River Salmon:

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Hapgood & Co.,
I X L,
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Badolett & Co., (Flats),
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"Epicure" brand.
Pacific Union Pkg Co.,
Cutting Pkg Co's "Cocktail" (Flats),
A. Lusk & Co's pack,
"Mermaid" brand,
Scandinavian Pkg Co.,
West Coast Pkg Co.,
Warren & Co.,
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Point Adams,
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Karluk Pkg Co., "Challenge" brand, Arctic Pkg Co., Arctic Pkg Co's "King" Salmon.

We also have the "O & O" brand, an outside river fish, and many other brands, that can be had on application.

WE ARE SOLE AGENTS FOR THE CELEBRATED

Golden Gate Packing Co, "Black Diamond" brand of fruits, Barbour & McMurtry's fruits in glass, Coleman's "Flag" brand of fruit, San Lorenzo Pkg Co, Riverside Fruit Co, Colton Cannery, J. Lusk Canning Co, San Mateo Pkg Co, Sierra Madre Packing Co, Santa Clara Packing Co.

Our lines of Canned Fruits and Canned Salmon are incomparable, and we will make prices F.O.B. or C.I.F. for Great Britain, Australia and the Colonies.

OUR NATIVE WINE SHIPMENTS BY SEA.

PER STEAMER GRANADA SEPT. 15th, 1887.

TO NEW YORK.

MARKS.	SHIPPERS.	PACKAGES AND CONTENTS.	GALLONS	VALUE
U S Whs	P G Sabatie	10 cases Wine		$50
"	"	1 case Brandy		10
W & Z	Wm Hoelscher & Co	1 barrel Wine	480	36
A V Co	C Schilling & Co	175 barrels Wine	8,295	3,318
M T	"	2 barrels Wine	96	57
G F	C Carpy & Co	40 barrels Wine	1,920	693
G B	"	26 barrels Wine	1,275	422
"	"	1 barrel Brandy	25	52
B D & Co	B Dreyfus & Co	125 barrels Wine	5,862	1,900
F A	Lachman & Jacobi	25 barrels Wine	1,245	352
E V B in diamond	"	40 barrels Wine	1,995	700
B B	"	25 barrels Wine	1,249	353
A V	"	20 barrels Wine	1,006	335
A in diamond	"	15 barrels Wine	752	251
S in diamond	"	25 barrels Wine	1,256	355
E B & S	"	100 barrels Wine	4,946	1,349
F G	"	15 barrels Wine	757	363
A H	"	24 barrels Wine		
"	"	10 three-quarter barrels Wine	2,377	1,153
"	"	2 half-barrel Brandy	54	134
Total amount of Wine			33,079	$11,627
Total amount of Brandy			79	196

TO CENTRAL AMERICA.

P A & Co, Amapala	Montealegre & Co	3 barrels Wine	102	$76
B B & Co, La Libertad	Bloom, Baruch & Co	6 cases Whiskey		45
"	"	1 keg Whiskey		44
"	"	30 cases Wine		120
G & H, Corinto	B Dreyfus & Co	50 cases Wine		240
"	"	5 cases Brandy		60
A S & Co. Corinto	"	2 barrels Wine	205	
"	"	7 kegs Wine		185
J A, Champerico	McCarthy Bros. & Co	11 cases Whiskey		138
C B, La Union	"	4 cases Wine		38
M Y, La Union	Kohler & Frohling	4 cases Wine		16
"	"	6 octaves Wine	96	52
E C, Corinto	Wilkens & Co	4 barrels Wine	112	65
R & H, San Jose de Guatemala	Hellman Bros & Co	1 package Whiskey		25
A M, San Jose de Guatemala	Eug de Sabla & Co	10 cases Wine		33
E de S	"	1 case Whiskey		14
"	"	5 cases Wine		17
"	"	5 cases Wine		17
G T, Corinto	Cabrera, Roma & Co	5 cases Whiskey		45
Total amount of Wine, 108 cases and			515	$864
Total amount of Whiskey, 25 cases				311
Total amount of brandy, 5 cases				60

TO MEXICO.

B, San Blas	J Gundlach & Co	10 kegs Wine	169	$109
"	"	2 kegs Brandy	32	84
H W E, Tinale	Kohler & Frohling	10 half barrels Wine	269	161
"	"	15 half barrels Wine	410	410
"	"	2 half barrels Wine	55	56
P D & Co, San Blas	W Loaiza	2 casks Wine	118	50
A B, Manzanillo	J H Deckmann	1 barrel Wine	18	16
Total amount of Wine			1,039	$802
Total amount of Brandy			32	84

TO PANAMA.

A C	B Dreyfus & Co	20 cases Wine		$85
P	"	15 half barrels Wine	407	225
Total amount of Wine, 20 cases and			407	$310

TO GERMANY.

T G Dinsberg	C Schilling & Co	1 octave Wine	22	$30

TO LONDON.

E S	C Schilling & Co	2 octaves Wine	44	$48

PER BRITISH SHIP LANGDALE, SEPT. 14.

S in diamond, Bremen	Waldron & Co	694 packages Brandy	22,246	$25,000
S in diamond, Liverpool	J Gundlach & Co	5 casks Wine	247	124
A A, Halifax	"	1 cask Wine	50	30
K & M, London	Kohler & Frohling	50 packages Brandy	1,020	1,000
J R B, Liverpool	Wm T Coleman & Co	1 barrel Wine	22	37
J C A, Liverpool	"	1 barrel Wine	50	38
K S, Liverpool	"	1 barrel Wine	50	37
L in diamond, Liverpool	S Lachman & Co	40 barrels Wine	1,887	
"	"	27 half barrels Wine	721	1,692
"	"	375 cases Wine		1,296
"	"	15 cases Wine		142
T B	"	41 cases Wine		180
W G B	"	1 puncheon Wine		
"	"	1 barrel Wine	139	139
G O in diamond & square, Eng.	Bozo Radovich	11 barrels Wine	550	300
C in diamond, England	"	11 barrels Wine	550	300
Total amount of Wine, 416 cases and			4,294	$3,991
Total amount of Brandy, 15 cases			23,266	25,150

TO HONOLULU—PER STEAMER AUSTRALIA, SEPT. 13.

H J	Arpad Haraszthy & Co	50-5 gal kegs Wine	350	250
"	"	1-10 gal kegs Wine	10	7
"	"	3 half barrels Brandy	60	66
M & Co	Kohler & Frohllug	50-10 gal kegs Wine	500	372
"	"	70-5 gal kegs Wine	350	262
"	"	3 half barrels Wine	75	56
G W M & Co	C R Lilienthal & Co	60 cases Whiskey		430
W C B	B Dreyfus & Co	12 barrels Wine		
"	"	85-5 gal kegs wine		
"	"	55-10 gal kegs Wine	1,300	1,100
F A S & Co	J Morton & Co	2 casks Wine	125	93
G W M & Co	Spruance, Stanley & Co	40 cases Whiskey		290
"	"	30 cases Wine		120
Lovejoy & Co	"	5 half-barrels Whiskey	130	261
"	"	5 cases Whiskey		38
McF & Co	C C Shattuck & Co	4 half-barrels Wine	100	66
L & Co	Lachman & Jacobi	7 half-barrels Wine		
"	"	9 kegs Wine	290	262
R Co	Lenormand Bros	1 half-barrel Wine	26	21
G in diamond	Donald Gedge	11 kegs Wine	110	82
Total amount of Wine, 30 cases and			3,136	2,685
Total amount of Brandy			60	66
Total amount of Whiskey, 105 cases and			130	1,019

TO TEW YORK—PER P. M. S. S. Co's STEAMER STARBUCK, SEPT. 24.

A V Co	C Schilling & Co	100 barrels Wine	4,745	$1,900
B B	E Garnice	30 barrels Wine	1,440	462
G in diamond	S Lachman & Co	11 barrels Wine	552	191
S in diamond	"	50 barrels Wine	2,442	387
A L	"	5 barrels Wine	251	91
W B G	"	5 barrels Wine	250	90
A in diamond	J Gundlach & Co	10 quarter casks Wine	251	526
H in diamond	"	5 quarter casks Wine	526	247
G & B	Kohler & Van Bergen	5 barrels Wine	251	251
H M	"	51 barrels Wine	2,544	2,544
M H	"	5 barrels Wine	251	251
"	"	5 half barrels Brandy	130	260
"	"	4 barrels Wine	200	200
A S & S	"	1 barrel Brandy	48	96
"	"	1 cask Wine	86	86
M & L	"	1 barrel Wine	50	50
"	"	47-¾ puncheons Wine	5,187	1,938
C D K	Lachman & Jacobi	17 barrels Wine	857	466
L F S	"	1 half barrel Brandy	26	56
"	"	2 barrels Wine	55	31
N R W	Williams, Dimond & Co.	3 barrels Wine	141	75
Total amount of Wine			20,879	$10,288
Total amount of Brandy			204	412

TO MEXICO.

N P, Acapulca	M Garcia	1 keg Wine	34	$16

MISCELLANEOUS SHIPMENTS.

DESTINATION.	VESSEL	RIG.	GALLONS.	VALUE.
Victoria	Mexico	Steamer	188	$68
New York	Mexico	Steamer	2,500	1,600
Nanaimo	Empire	Steamer	10	25
Mexico	Newbern	Steamer	1,895	1,227
Batavia	Belgic	Steamer	129	63
Honolulu	Forest Queen	Bark	2,014	1,174
China	City of Peking	Steamer	34	26
Japan	City of Peking	Steamer	1,613	687
New York	Mexico	Steamer	2,500	2,500
Victoria	Mexico	Steamer	121	87
Total			10,904	$7,457

Total shipments by Panama steamers	59,612 gallons	$24,035
Total Miscellaneous shipments	10,904 "	7,457
Grand totals	70,516	$31,492

The Raisin Market.

The *The Riverside Press*, commenting on the raisin situation, says that generally speaking, prices have opened at 4, 4½ and 5 cents per pound for raisins in the sweat box, and then advanced. When the price opened at 5 cents this year we expected to see the figure advanced to 6 cents before the dried fruit was ready to deliver.

Packers who have their capital largely invested in raisins, make a study of the market, and are in better position to arrive at a correct conclusion. It is a fact, however, that they are interested in combinations, and frequently make them to advance their own interest, and hence it is hard to tell what to do after hearing their statement of the case.

The *Press* would not advise growers to sell at 4 cents. The price may go to 5 or 6 cents, but it cannot, or is not likely to go below 4. The producer has everything to gain and nothing to lose by holding for higher figures, although it would consider 5 cents a fair price for this season, as freights are higher than last year, and the crop is going to be large.

THE PRESENT season's grape crop in Northern Ohio, promises to be nearly equal in quantity as well as quality to that of 1886, which was one of the best vintages ever matured in that section. Early varities, such as Concord, Delawares, etc., will probably yield three-fourths of an average, while Catawbas, Ives, Norton's Viginia Seedling, and other late varieties, promise a full average crop of excellent quality.

A good three-year-old raisin vineyard, under favorable circumstances, should yield an average of twenty pounds per vine, or six tons per acre. The yield of grapes when made into raisins would be a little over two tons per acre, worth about $120 per ton. Wine grapes are not as profitable as raisin grapes for several reasons. They yield heavier crops per acre, but the price rules much lower, and they have to be disposed of in a fresh state to wineries or to dealers. —*Fresno Rep.*

MESSRS. KOHLER & FROHLING received from California at their New York cellars, during the month of August, fifty-six puncheons, and two hundred and forty-one barrels of California wine, and two hundred and forty packages of brandy.

WINE MAKING.

The Santa Clara Co-Operative Wine Company.

The Santa Clara Valley Co-operative Wine Company has already begin work. For the past few weeks workmen have been busily engaged in fixing up the buildings and getting the plant in order. The property is situated on Front street, and extends to the Narrow Gauge depot building. The main buiding faces Front street. It is 250 feet in length by 32 feet in width. It was formerly used as a hay warehouse, but has been altered to suit the requirements of a wine-making establishment. The walls are double, the space between them being being filled with sawdust, and the room is so arranged with ventilators that the temperature can be easily regulated. In this room are sixty fermenting casks, each having a capacity of 2,000 gallons. In the second story, at the center of the room, is located the crusher, having a capacity of seventy-five tons a day. From a platform in the yard on the north side of the building an elevation has been placed, by means of which the grapes will be carried from a wagon to the crusher. By means of a system of shutes the crusbed grapes will be carried from the crusher to the casks.

Yesterday the men were engaged in placing in position in the center of the room a large hydraulic press of the best improved make, and an apparatus is being arranged to convey the fermented grapes from the casks to the press. The machinery will be run by a twenty-horse power engine, which is stationed near the elevator. The storage house is a brick building, with a cement floor, 50x100 feet in size, situated about sixty feet north of the press room. It contains forty wine tanks of a capacity of 3,500 gallons each. The wine will be conveyed to these tanks by means of a wine pump and underground pipes.

On the east of the storage house is the distillery, a building fifty feet square. It contains a still having a capacity of 500 gallons, and being one of the best in the State.

Between the distillery and storage house is located the steam boiler and pump. Two water tanks are being constructed, which will have a combined capacity of 30,000 gallons. In the west end of the press and fermenting building the laboratory and private office will be located.

The company has already secured a large quantity of grapes. They are giving the privilege of taking the company's stock and paying for it in grapes. The capital stock is $50,000, and all has been subscribed with the exception of $15,000, which, it is expected will be taken by grape-growers.

The work will be superintended by Frank Duchatel, an experienced wine and brandy maker.

It is the intention of the company to turn out nothing but first-class wines and brandy, and they will use none but the best quality of grapes. They intend to get a reputation for their brands, and always maintain the standard of their goods. It is a grave mistake to put an inferior article on the market. Much injury can be done to the county in that way. The best plan is for the grape-growers to co-operate and all endeavor to establish the reputation of Santa Clara county wines for superiority. There have been large stills of the best make brought into the county lately, and that will be a great benefit to the grape growers.

OUR FUTURE VINEYARDS.

There are some fool owners of vineyards, say the San Jose *Herald*, even in Santa Clara county, that continue to howl about the low price of wine, and to insist that there is nothing in grape-growing. It is the old story over again. Only two years ago the same howl was raised by the growers of apricots and prunes. The canners and speculators had combined, and between the two fruit was hardly worth the picking. The result was that every person with a few acres of orchard made preparations to can or dry his own fruit, and the very next season broke the combination and brought fruit to a fair figure. This year there is about ten times as much fruit as there was two years ago, and all has been sold at prices higher than ever were known before.

The sober truth is that the average American citizen cannot see an inch before his nose. Two or three years ago fruit was cheap, and everybody planted vines; now grapes are depressed and everybody is going to plant trees. The natural and inevitable consequence will be that in two or three years grapes will be held at a premium, and those who are now so crazy to sell their vineyards will curse their stupidity. And they will deserve all the cursing they will get, for surely nothing is plainer than the coming reaction. New wineries and expensive distilleries are making their appearance in every part of the country, and all the large growers and all the combinations of small growers are making preparations to mature their wine at home. The consequence is that when the speculators come around next spring they will find that there is no good wine to be had, and they will have to take such wine as they can get. That, with the old wine which they now have on hand, will probably tide them over next year, though even that is doubtful; but the year after they will have to pay fair prices all around. This has been the uniform experience in all the industries of California. First a boom is started, and everybody rushes in. No care is taken about securing a market, and at first prices are demoralized. Speculators take advantage of the necessities of producers, and prices fall so low as to leave the growers no profit. As soon as the producers can be made to realize the situation efforts are made, and made successfully, to control the market for themselves. Then comes the reaction. Prices are higher than ever, and the prudent ones who held on make fortunes in a year or two.

In view of these facts it does seem absurd to hear the whining there is about the alleged low price of grapes, though even that is exaggerated. Of course, there are some fools who have failed to attend to their business, and left their grapes to get ripe before they looked for a purchaser. These must now sell at any price, and may be thankful that they can sell at all. But those who made contracts for their grapes some weeks ago, have little reason to complain. They are getting from twelve to twenty dollars a ton, according to the quality, which is a fair and reasonable price.

All that is necessary is for vine growers to exercise a little common sense. In two years they will be refusing a thousand dollars an acre for vineyards which they now seem willing to sell at four or five hundred dollars an acre. It is merely a question of waiting, meanwhile taking good care of their vineyards; replacing inferior varieties with the best; building their own wineries whenever possible, and where that is impossible, organizing and combining with others. This can surely be done by any one with the smallest grain of courage or common sense, and the vine growers of this country are surely not going to admit that they lack either.

The Raisin Outlook.

The raisin crop of this year is estimated to be at least 50,000 boxes more than last year, and the crop is very fine in quality.

As regards the marketing prospects for the coming season, the following telegram from New York, in regard to the foreign supply, is very important. It says: "Cablegrams are at hand from Denia advising rains, which is regarded by some as likely to damage the raisin crop now in course of curing. The price in that market has advanced to 19s 6d, and some packers refuse to name the price at which they will accept order. The market just now is somewhat unsettled. The shipments from Denia to New York since the opening of the season to date, show a deficiency of about ninety thousand boxes, as compared with the corresponding period last year.

Our Wine Trade.

The wine business is looking up. Since the 1st of September no less than thirty-one thousand two hundred and seven gallons of wine have been shipped from California by sea to foreign ports, of the sworn value of nearly fifteen thousand dollars. The number of shippers represented in these shipments was forty-eight, and the number of consignees sixty-one. Surely with these facts in view, no one will doubt the future prosperity of viniculture in California.

PRESERVING GRAPES.

Noticing in various horticultural papers so many plans of keeping grapes through the winter, some of the directions involving so much unnecessary labor and requiring a great deal of pains to be taken which tend to defeat the object in view, namely: the preservation of the fruit in best condition I feel inclined to give my method. Having provided a number of crates the bottoms and sides of which are made of laths and each of the capacity of fifty pounde, I select a warm dry day when the grapes are fully ripe, and clip the stem of each cluster with a pair of shears, being very careful to handle the fruit only by the stems, if possible without touching a grape. The bloom of the grape, which is a fine wax, must by no means be rubbed off as it protects the fruit from the air. A cluster being clipped from the vine, I lay it carefully in a corner of the crate, then another by its side and so on till the bottom is covered. Another layer is placed on the bottom layer, then another over that and so on until the box is full, say four or five layers deep. I leave the crates out of doors in a sheltered place until the stems are shriveled, when I place them in the cellar.

My cellar is an ordinary one no better than the generality of cellars. It used to be wet, the water standing in it for some time at once in fall and winter, but having been drained it is now dry and has been for ten or twelve years. Formerly both grapes and apples froze in it every winter, yet still they kept in very good condition until April if left undisturbed until slowly and perfectly thawed out. I have had them frozen three times during a winter and yet a great proportion came out good in the spring. The best conditions for keeping the grape and the same of the apple is to have the cellar as cold it can be yet not freeze, and quite damp. Since I have drained my cellar it is quite dry and neither apples nor grapes keep so plump as before, though they are just as sweet. At any rate our folks and friends manage to worry them down.

The variety of grape which keeps best with me is the Isabella. The Diana keeps well until mid-winter, but it then begins to rot and by March is nearly worthless. I have not been able to preserve the Concord in good condition later than December 1st, Clinton keeps well and is good for pies all winter. I presume other varieties may keep as well as the best of those I have mentioned; indeed I have eaten Delawares in February. Every fall I usually put into the cellar several crates of grapes. Until March or later my Isabellas scarcely rot at all. Dianas rot a good deal after January. The varieties which keep best should, of course, be depended upon for the latest supply. My conclusion is that the less we handle grapes in picking the better. If we keep the bloom or wax which covers the fruit intact there will be little danger of decay.

F. R. S.

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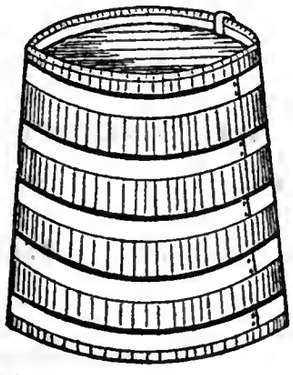

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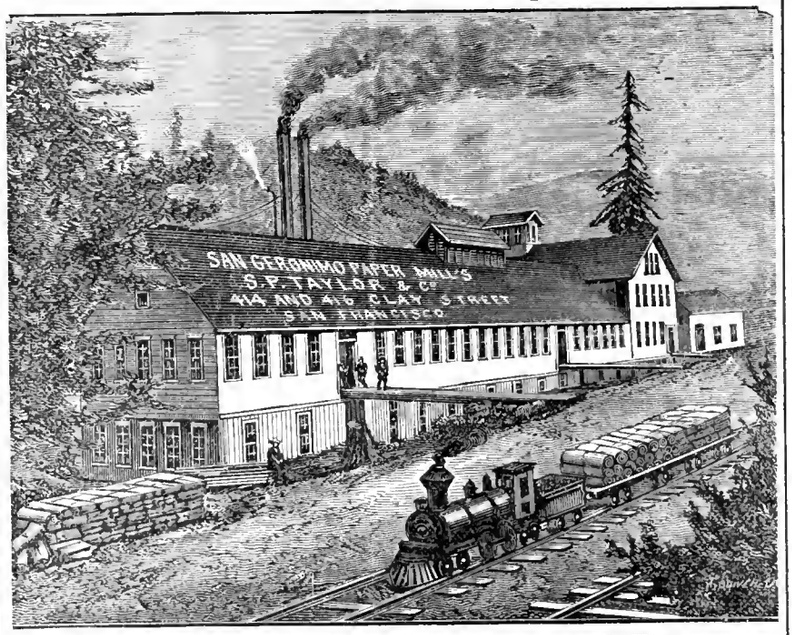

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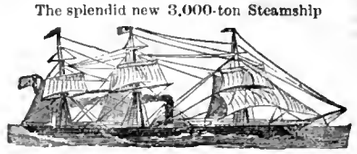

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VOL. XVIII, NO. 13. SAN FRANCISCO, OCTOBER 14, 1887. PRICE 15 CENTS

Notes on Vineyards in Europe.

(By Thomas Hardy.)

My former descriptions of what I saw in the wine cellars and vineyards in America, having been so well received, especially by the class to whom I have the honor to belong, and by the public generally, who always take a lively interest in the natural productions of a country, I am encouraged thereby to give the results of my extended trip through Portugal, Spain, France, and Germany during the vintage.

After spending about five weeks among our friends in England, my son Robert and myself went on board the s.s. Tagus, one of the South American traders bound for Lisbon, on September 10. We have plenty of introductions from our friends Messrs. Hopkins, Forrester, P. B. Burgoyne, and others in the wine trade in London, and as we have left Mrs. Hardy in England we expect to get over the ground rapidly and follow up the vintage into France, and be back to England in a month or five weeks.

We got stuck on a mudbank in the Southampton Docks and did not get away until the next tide, early on the 11th; and after a very fine passage across the Bay of Biscay got to Lisbon at 10 a.m. on the 14th, and had to wait at the Custom-house until 2 p.m. to get our luggage examined. The Portugese officials cannot be hurried. Lisbon is beautifully situated on the broad Tagus. The buildings rising above one another and looking white and clean give the city a very pretty appearance from the river. Many of the streets are wide and straight, and there are many squares, very prettily paved with black and white stones, and planted with trees, but they are generally small and rather scant of foliage. The acacia, is the best shade tree. We had a walk through the principal streets in the evening. The shops are all small, but well stocked, especially the jewellers' and ivory and fancy goods shops. Got up early and saw from our window crowds of people, mostly women and children, going off in steamers and boats to bathe down the river. At 6 a.m. we started by coach for Cintra, seventeen miles from Lisbon; fare, 3s. Saw many well-kept gardens outside the town, and many trees planted, mostly the elm, acacia, and the Tasmanian bluegum, also a good many pepper trees and the alianthus. Saw many arbors overlooking the road, covered with vines, but the foliage rather scanty. The common bamboo, or Spanish reed, is largely grown, and is used for various purposes, among others for sticking peas and tomatoes, the latter looking very luxuriant. All the gardens are watered from wells or from reservoirs. The water-wheels, with earthenware pots and worked by a mule or donkey, are numerous, and there are a few Yankee wind-pumps. Saw a great many orange and lemon trees, but nearly all of them looking very poor and full of black blight and dead wood, the fruit very small, and inferior, and the old trees covered to the tops with moss, none of them so healthy-looking as our own. Stopped twice on the road to rest the mules. As soon as we alighted, we were surrounded by beggars. On the coach we found two Englishmen who both spoke the language of the country, and who got on very well. At the first stopping-place we all went into a small wine-shop and got some of the red wine of the country, for which we only had to pay twenty reis, or one penny, for a small glass drawn from the cask; it was as light as a common Médoc, but not so rough, At the next place we stopped we tried a white wine called Bucellas, taken from bottles, and were charged twopence per glass for it; it was very good and light, and had a slight sherry flavor. Soon after leaving the suburbs we came in sight of the Penha, a fine palace built on the crest of a rocky mountain nearly as high as Mount Lofty.

We got to Cintra about 10, and had breakfast at Lawrence's Hotel, and then hired two donkeys and driver to take us to Collares, a village about five or six miles down the valley towards the sea. The driver, who did not know many words of English, was directed by Mrs. Lawrence to take us to some of the wine-cellars and vineyards. They were all small places. The first cellar we came to was a pretty lofty one, with wide doorways at each end, and all aboveground, with very thick walls, the roof of titles laid on boards. There were no windows, and the only light was from the doorways. There were about twenty casks of about 300 gallons each, and all fitted with manholes and brass screws and caps in front. Two men were here getting ready for the vintage, and the only plant we saw was three or four tubs, of 150 gallons each, and one deep one of 250. One of the tubs was half-filled with black grapes just gathered. They were sweet, but with very thick skins and small stalks. There was no mill or press, and we understood that they trod the grapes in the tubs. The men were doing a little bottling, and had a Gervais corking machine, which was the only machinery we saw. The wine they were bottling was of the previous vintage; it was very fair wine, of good color, and in fine condition, and reminded us of our Tintara Mataro, only lighter in strength. Noticed here a handy funnel made of boards, about nine inches deep, and long enough to come quite to the front of a 300-gallon cask. The men seemed quite ready to show us everything, and to give us wine to taste, and a present of a few reis to some small boys belonging to them made all pass off pleasantly, and we then mounted our steeds again and proceeded further down the valley, to the next cellars, situated in the village of Collares.

The village of Collares consists of a few houses scattered among the gardens on both sides of the creek running through the valley. It is here crossed by a bridge of many arches, built of stone, and about six feet high from the bed of the creek. Against the arches are placed moveable boards, which dam back the water of the creek, and nearly all of it is now diverted into channels on both sides to irrigate the gardens below. Near the bridge is a small square, fenced in with stone posts, and shaded with plane-trees, which grow very luxuriantly here. There are stone seats beneath the trees.

We went into another cellar here and tasted the wines, There were ten 300-gallon casks, but only one or two full. The wines were nearly all red, and similar in character to those we had sampled before, and all of the last vintage. At the back of the cellar was a nice garden, full of fruit trees, flowers and vegetables, all irrigated.

We then crossed over the bridge and entered another cellar, which was merely a low lean-to shed, and very hot. A woman here gave us a glassful each of fair red wine drawn from a cask. We were rather surprised to find these thin wines stand so well on draught from the cask.

About a mile below the village we came upon the vineyards. They are on both sides of the creek, and extend nearly to the sea—perhaps three miles. The soil on which the vines are grown is as pure a sand as our sandhills on the seaside. In many places the sand has been removed to a depth of five feet, and thrown up on each side, leaving a trench wide enough to take three or four rows of vines at five feet apart. On the top of the bank is a breakwind, made of bamboo set on end in two rows and filled in with brushwood and fastened together with longitudinal bundles of bamboo on both sides, and fastened with willow ties. These breaks are breast high, and from fifty to sixty feet apart, and at right angles with the run of the valley. Many of the bamboos take root, and form a living fence. The purpose for which they are erected is to prevent the vines from being buried with drifting sand. The hills beyond the vineyards are thinly covered with stone pines, and they furnish the only firewood we saw from the prunings and a few trees cut down. The banks are generally planted with pumpkins of the ironbark variety, and some very large ones are grown. Near the creek, and as far as the water can be led from it, the land is planted with fruit trees, mostly apples, peaches and pears. The margin of the creek is planted with the basket willow, and dammed at short intervals with earth dams, and trenches cut from them a distance of two or three chains. Into the gardens at the end of each trench is a water-hole, from which the water is raised with a whip and bucket to a stone-built channel, about six feet high, and so carried still farther into the garden, and then distributed to the trees in earth gutters. The trees are small in size and very closely planted, and very little cultivated; but the fruit is very fine. We found a man and his son, in one of these gardens, gathering apples, and they very readily volunteered to show us round and explain to us the culture of the vines and trees. We noticed that the peach trees are not pruned. We tried to find out from them how often they irrigate the trees, but did not succeed. The vines are very closely planted in the rows, and are pruned to leave one rod from two to four feet long. Sometimes two are left if the vine is very strong. The rods are laid about in all directions, and kept off the ground about a foot with props of bamboo, and the growth covers nearly all the ground; the foliage is rather scanty, and many of the bunches fully exposed, but we did not find any of them scorched with the sun, as we do in this country. The grape generally grown is a small round black grape, very similar to the Spanish grape we have under the name

of Ferastes Colora. I think the long rod-pruning and taking the grapes early before they begin to shrivel is the reason for the light and sound character of the wine made here. The crop is very light—not more than one hundred gallons to the acre, if so much as that. We met many of the laboring people; they all appeared well clad, and many of the children wore boots, and all looked happy. On our return we overtook our friends—the man and boy taking in their loads of apples. They are put in deep baskets, holding about a hundred pounds, and two of them is a load for a donkey. We saw a few carts, drawn by pairs of bullocks, taking lemons and other fruits to Lisbon, the wheels solid and axles of wood, and turning with the wheels. The sqeaking and creaking of them can be heard a mile away, and created a good deal of amusement for us, as did also the cries of the drivers to their cattle. Our donkeys took us well over the sandy country. They are small, but very strong, and are much used by tourists. We paid 1,800 reis—about 8s.—for the two and driver for the day, but suspect that we were made to pay far more than a native of the country would have to.

We missed the coach in the evening and had to stop next day (Sunday.) This enabled us to go to the Penha and enjoy the splendid view from the towers of the palace. We also visited the beautiful grounds of Viscount Cooke, a London merchant, and in the morning saw a small procession of priests and children with flowing robes and silvered helmets; but side spring boots rather spoiled the effect. It was headed by a band, and often stopped and let off rockets, a novelty to us in the daytime. We found Lawrence's Hotel very comfortable, and did not regret having been delayed here, except that it prevented us seeing a bull-fight at Lisbon in the afternoon.

Started at 8 A. M. for Oporto, distance 206 miles. Breakfast at Entrocamento, for which we were charged 500 reis. or 2s. 1d. Dinner at Aviero, 600 reis. At both places wine is put on the table free of extra charge, but it is generally very poor stuff, being so green and astringent. The second-class carriages are not equal to the third in England, and smoking is general in all. Women with bare feet come to the trains with water in earthenware jars, very clear and cool, and expect 10 reis (equal to a halfpenny) for a drink. Small clingstone peaches and a very nice small green fig are cheap enough.

Called at Messrs. Forrester's & Co.'s office in the Rue Inglese. The manager, Mr. Atkinson, being away, Mr. F. Standrin took us across the Douro to their "lodges" or wine cellars. They have them in three places, but near each other. The largest consists of three adjoining cellars, each about 400x50 feet, and from twenty to twenty-five feet high, and all above ground. The roofs are boarded over the rafters, and red tiles laid on the boards. They are lighted from the roof and at both ends, and are kept moderately light. The wine is all in pipes of 115 gallons, and set in four tiers in each cellar, with ample roadways between. Each tier is three pipes in height, the bottom one very close to the floor. The two top rows are set leaning a little forward for convenience of drawing off. The racking is all done with the tap and bucket, and no pumps are used. There are three vats for blending wines, all fitted with stirrers, worked by hand, the largest holding eighty pipes. They are said to be only used for blending inferior wines. Here are the offices and sampling rooms, and a sample of every shipment is kept and numbered, and all particulars of the blend entered in a book. The samples are kept for three years, and from them they can blend a wine to follow up any particular shipment that may have been sent out. We tasted some ports of the last vintage and older, and at prices from £25 to £52 per pipe. The wine of a good year is kept by itself and sold as a vintage wine; the inferior vintages go into blending and come out as one, two or three diamond ports. We tasted a very fine wine of '81 vintage, which they said would be kept as a vintage wine, being very full and of a deep rich color and fine flavor. We also sampled several white ports, very sweet and strong; it is nearly all sent to Russia; also a very fine Muscat wine, very sweet, but clean and of fine flavor. The cap piece of all was a port of 1815, called the Waterloo port. We had tasted it before in Messrs. Forrester's office in London. It is the color of brown sherry, of exquisite flavor and bouquet, and is kept as a curiosity. It has been kept filled up from time to time with newer wines, to "resresh" it as they say, so that how much of the 1815 wine there is in it would be difficult to find out. At this cellar is the principal cooperage, where a dozen or more men are employed making hogsheads and quarter-casks (pipes are bought ready made.) The only noticeable thing among the cooper's tools is the horse, in which the cask is laid to be grooved for the head. The staves are boiled for two hours, and afterwards soaked in a tank of cold water to extract some of the tannin from the wood. The casks are all said to be seasoned with new wine before being used for shipment. Previous to use they are all measured by filling them with water from a tank with a glass gauge at the side, and if over or under measure, are returned to the cooper and made to the proper size. We saw very few people at work in the cellars, and no racking going on. The utensils used are wooden buckets, holding about six gallons, and tub-shaped funnels of large size. Rotary pumps are used, but only for the new wines. The head cellar-man is 77 years old, and a fine, hale, hearty old man. He pointed to his teeth, which are still good; and when Robert said that port had been very slow poison for him, he said he knew another cellar-man ten years older than himself, and still able to work. He has been nearly all his lifetime in the cellars of the company.

The cellar contains about 220,000 gallons, the next one below and nearer the river 200,000, and the lower one, where the new and inferior wines are kept, 150,00; and with the exception of a few tonnals, the wine is all in pipes. The casks after racking are not filled up again for nine or twelve months, and the ullage caused by evaporation is not considered at all objectionable. Cork bungs are used. Both red and white wines are considered to be benefited by a certain amount of light. There is no particular arrangement for ventilation, and the walls are all black and the floors mouldy. In one of the cellars a man was employed cutting hoop-iron into lengths, and punching these with two holes in each end; he did it by the eye, and so true that the rivets dropped into their places quite easily. We saw men carrying empty wine pipes on their head, and all seem to prefer that way of carrying burdens. Women do most of the carrying. We met a man, looking like a working backsmith, in the street, and a woman trudging alongside of him with a hundred-weight bundle of rod iron on her head, which we suppose he had purchased and employed her to carry for him.

In the early morning during our stay in Oporto we visited the various markets, and saw in them many novel and interesting sights. The busiest time is from 6 to 7, and then one may see the middle-class women doing their marketing. Some ladies have a servant with them to carry their purchases; others hire carrier women, who stand in the market ready to be hired. All cover their heads with gaily-colored shawls or kerchiefs, and we only saw one in the market with a French hat on. The carrier women wear no shoes or stockings, and wear a band or roll of stuff around them below the waist. The largest market was near our hotel, and was open every morning (Sundays included), and nearly everything is sold in it—heaps of sweet and water melons, some very large. The stone fruit is generally very inferior, and the grapes mostly are the common wine grapes of the country. We saw a few fine white grapes, which we found to be the Belas Blanco, also a red grape like the Malaga Muscat. Apples very small; pears good, but not so fine as ours; peaches large, but nearly all clingstones; tomatoes and capsicums very fine. There are no good fruit-shops in the city; people all seem to go to the market for their supplies. Maize bread is brought in from the country in large loaves, and is cut up in pieces and sold by weight; meat of all kinds; sausages of queer appearance; olives, both green and black; earthenware, baskets, and mats of all kinds, wooden spoons, and many articles of wearing apparel, boots and shoes, etc. We noticed that housewives purchased a very small quantity of meat to a large basket of vegetables and fruit.

We arranged to start early next morning to visit the port wine vineyards on the Douro, Mr. Standrin having kindly offered to accompany us.

GRAPE TALK.

The Wines and Vineyards of South Carolina.

Speaking of the grape interest in South Carolina, particularly of the Greenville district, the Colten Plant says:

Grapes have come and gone, and the vineyardists have hardly yet sufficiently rested from the rushing work they had to go through with to count the costs and profits. Greenville growers shipped many thousand pounds of the luscious fruit to the Northern and other distant markets, and the returns were various—some satisfactory some indifferent and not very encouraging, and others not yielding expenses. Like all other products of the soil, grapes are at the mercy of fickle and fluctuating markets, and as they are perishable they must be sold on arrival in the markets at the ruling price of the day, be that what it may. On this account grapes are at a disadvantage as compared with some other farm products. On the whole, the prices obtained by shippers, so far as we are able to learn so soon after the close of the season, were sufficient to pay a small profit. The average price in Philadelphia for Concords was about 7 cents, although some early shipments were sold as high as 10 cents. New York quotations ranged lower, and not many Greenville grapes went to that city. A good many grapes were shipped to Chattanooga, Tenn., Providence, R. I., Birmingham, Ala., Charleston, S. C., and other points. The best returns came from Birmingham, where in the middle and latter part of the season Concords sold readily for 10 cents. We shall say no more on this subject in our next. It is rather early for a concise review of the year's business. Many thousand gallons of wine have been made, principally from Concord Ives and Clinton grapes.

We should remind some of our Northern exchanges that they are guilty of rash and rather sweeping statements when they say that "the grape crop of the South is an entire failure." Such has never been the case in this section. While we have sporadic attacks of mildew. and black-rot, the grape crop of the Piedmont section of South Carolina has never been anything like an "entire failure." The loss from rot this year has been very slight, except in one or two isolated instances, and in some vineyards it may have been a benefit in thinning out the fruit on vines that were overladen. The Piedmont country of the Carolinas can, we think compare notes with New York and New Jersey with perfect complacency, so far as the rot is concerned. We have much to learn and not a little to unlearn in grape culture, but the progress so far made indicates very clearly that all the hill country of this State, or more properly speaking what is known as the Piedmont region, is well suited for the business and likely to become a grape-growing centre. Even in the lower half of the State, where the climate is more moist, carefnt growers are succeeding with the Concord and other hardy varieties, to say nothing of their complete success with the Scuppernong, the Flowers and the Thomas grapes, from which they make excellent wine and lots of it.

During last month Greenville grape-growers had the pleasure of a visit from Mr. G. Wanner, of Walhalla, who came, he said, to see and learn something. The shoe was on the other foot, however, for Mr. Wanner proved himself to be abreast of the best methods and management, and he certainly left his impress upon viticulture in Greenville. Mr. Wanner understands fhe natnre and habits of the vine, and he is a man of enthusiam and indomitable energy, His vineyard near Walhalla is said to be one of the finest in the State. Mr. Wanner is devoting some attention to a new species of grape which he obtained throngh a sea captain while in Charleston from the Cape of Good Hope. The bunches of this grape are of the most enormous size, and the fruit of very superior quality. Prof. Scribner, who is at the head of the Section of Plant Pathology in the United States Department of Agriculture, pronounces it a grape known by the French name of "Teinturier male," or "Dix fois Colore." It will be a great acquisition to the grapes of America if it proves a snccess in this country, which we can all hope for.

The present indications are that the grape area will be largely increased during the coming planting season. Some people will go into it blindly, indulging a hidden hope that when their vines begin to bear they will turn the fruit into money with ease and get a good deal of glory out of the business at the same time. A wagon load of luscious ripe grapes neatly packed in clean baskets, and this coupled with the cheerful countenance of the producer, is enough to tempt almost any one to go into the business. But "all is not gold that glitters," and while far be it from us to say one word to to discourage the industry or those who are likely to embark in it, there is snch a thing as going into business rationally, with judgement and forethought, and above all, with

some idea of what is to be done with the crops of grapes when they are produced. If marketing the fruit is the intention, an entirely different variety of grapes should be planted to what would be if the grower intended his business to be wine-making; for while it is true that grapes best for the market will make a tolerable wine, there are others—the strictly wine grapes—that had best be plated for that purpose. Prof. George Huseman, of California, is entirely correct when he says that for wine we must depend upon the *Eastiralis* and *Riparia* species. The *Labruscas* and hybrids are the grapes for market and for the the table. It will pay a beginner to spend a year looking into all such questions before making any considerable start in grape culture. Freight trains are too slow for the shipper of grapes unless all combine and load refrigerator cars and ship to the same market. Express rates are high. The cost of baskets are considerable and flucuating—sometimes glutted—marketa make prices capricious. We have never heard of a vineyard in this section of the country being abandoned, and we don't know the grape-grower who is sorry he went into the business and who is not planting more vines every year. But we know growers who would if they could afford it uproot hundreds of their vines and plant other varieties in their stead, but they can't stand to lose three crops from the bearing vines while the new sorts would be getting age and roots. It is folly to assume that there are not serious questions connected with grape-growing in every sense of the word. Ours is not the only State or section of the South that is going largely into the business.

We can show encouraging figures, and we would not say a word to chill the ardor of those who contemplate splendid vineyards or small ones. As the business now stands it now beats the cotton to death. But is it not sound advice when we say, do not go into it in hot haste? Study the subject well first, and then go at it with vim. As Davy Crockett used to say, "Be sure you're right, and then go ahead."

GRAPE MUST.

Dr. F. Springmuhl's first works for the concentration of grape must, situated about one mile north of Clairville, Sonoma county, is nearly completed.

The huge machinery is adapted to concentrate more than 200,000 pounna of grapes in ten hours, and more than 10,000,000 pounds will be exported this year.

A new town has been laid out, and a railroad station called Springmuhl has just been erected.

The stockholders of the American Concentrated Must Company have decided to largely extend the new industry and to concentrate extract of tanbark and similar products during the other part of the year.

Dr. De Barth Shorb of Los Angeles and Dr. Springmuhl have bought a tract of land around Springmuhl station, and a number of houses and cottages will be built for the employees of the firm.

Baron von Schilling intends to build a splendid hotel in the valley near the Russian River.

The whole land bought by Drs. Shorb and Springmuhl, except the part reserved for the town, will be planted with vines and will be cultivated by employees of the Must Company.

THE AMOUNT of alcohol mostly of potatoes imported into Spain in 1885, was 25,045,455 U. S. gallons, or 948,081 hectolitres.

GRAPE CULTURE.

Some Light Thrown on the Question of Over Production.

In an article on the above subject, E. W. Maslin writes as follows:

We are met every now and then by the question, "Is there not danger of over production?" To be sure there is. There is danger of over production of poor raisins, inferior table grapes and coarse wines, but I feel sure that if we can guard againt these evils, the future of the grape interest is assured. The area in this State adapted to the growth of grapes for shipping, either as green fruit or raisins, is not as large as it is generally supposed to be. The area cannot be precisely stated, but the intelligent reader can draw a general inference when we consider that the profitable growth of grapes for shipping is only possible along the lines of the transcontinental railroads and their connections, say within five or six miles on each side of the road; that an irrigated grape cannot be, or will not hereafter be, shipped, which fact practically excludes most of the southern counties, where irrigation is necessary, and generally confines the growth of table grapes to the counties north of San Francisco and including the county of Santa Clara.

In this section it is likely that table grape growing for shipping purposes will be confined to the counties of Colusa, Butte, Sutter, San Joaquin, El Dorado and Amador (limited), Yuba, Placer, Yolo, Contra Costa, Solano and Sacramento. Other counties have favorable climates, but transportation will be too costly, unless the roads favor the them with special rates.

I endeavored, in 1884, to obtain from the Assessors of the various counties a report of the number of acres of grapes growing for table and wine, but the returns are only approximately correct. For instance, Placer is reported as having 155 acres of table grapes five years old, when to my own knowledge there is one vineyard at Loomis alone containing 40 acres. Other Assessors were more careful, and their returns are useful until better ones are supplied. The following shows the number of five-year-old vines, and the total of five years and under for table use, of the counties named:

	5 years and over.	5 years and under.
Amador	100	100
Butte	186	215
Calaveras	160	750
Contra Costa	175	3,175
El Dorado	10	20
Placer	155	367
Sacramento	548	943
San Joaquin	133	288
Santa Clara	713	3,622
Solano	138	832
Sutter	42	54
Yolo	5	200
Totals	2,365	10,566

THE PRODUCTION IN 1887.

In 1887, if no more vineyards are planted than those reported in 1884, there will be over 10,000 acres of bearing vines growing in the counties named. This may seem startling; but it must be remembered that only a certain per cent of growers will present a marketable grape, as only the very best will be shipped, while a large area of the above counties are too far from the railroad to supply much more than the home market. Admitting that we should have 15,000 tons of grapes to ship in 1887, it does not seem incredible that, with cheap transportation, we should be able to find a market among the 50,000,000 of people who live east of the Sierra. I will leave some one else to compute the number of cars necessary and whether the cars can be furnished for transportation.

The estimate of the wine production is upon another basis. The Assessors for 1884 reported that there were growing in the State grapes for wine as follows:

Acres of vines 1 year old	17,391
Acres of vines 2 years old	12,550
Acres of vines 3 years old	8,986
Acres of vines 4 years old	5,809
Acres of vines 5 years old	20,033
Total number of acres	65,779

The report is exclusive of Los Angeles, whose Assessor made no report save to write, "about 25,000 acres," and what proportion of that amount is devoted to wine grapes I have no means of knowing. Mr. Wetmore estimates that there will be, in 1885, 70,000 acres of vines five years old and over; in 1886, 105,000 acres; in 1887, 140,000 acres, and the percentage of table, shipping and raisin grapes will be about 20 per cent; that the wine crop for 1884 was 14,000,000 gallons (estimated); that for 1885 it will be 15,000,000, and that in 1887 we shall make 16,000,000 gallons of wine and 2,000,000 gallons of brandy. So far as I have heard, we have had no difficulty in disposing of our wine, and the queation is, will the taste for our wines in the east keep pace with our productions? We must estimate that a certain per cent of vineyardists will utterly fail to make a marketable wine.

Again the taste for excellent wine will be so cultured in a few years that a common wine, or the wine which passes muster now, will not be salable. Of course this will be the ruin of some who planted heedlessly, but the end will be the establishment of commercial types of wine which will meet the wants of the people of the United States. The future success of wine growing lies in producing a cheap and transportable wine within the ability of the larger class of people to purchase. That we shall produce such a wine is now past all doubt. Within the past three years—thanks to the stimulus of the Viticultural Commission and the enterprise of a number of gentlemen—large plantations of the noble wines of Europe have been made, and, as the report says: "The wine markets within the next three years will witness a veritable revolution of general average and quality." Hence I say that there will be no over production of wine from vineyards intelligently planted, but to those who are planting coarse varities in the interior, such as the Mission and Malvasia, and unsuitable varieties, such as Zinfandel, I can offer no hope, except they shall graft over their vines with other varities suited to market and locality.

Speaking of table grapes, so far the only grapes which have stood shipment to the east are the Tokay, Muscats, Cornichon, Black Ferrar and Emperor, and possible the Purple Damascus. There are other varities, no doubt, among those lately imported, which will prove valuable. We are looking with great interest to the Natoma vineyard, at Folsom, for the result of the experiments by Mr. Livermore. Those who are wise enough to plant resistant vines, by the time the stocks are ready to be grafted, will be in a position to select the best varieties from that vineyard.

In respect to the proper wine grape to plant the field is a wide one. He would be a rash man who should recommend any one or more varieties for every locality in the State. The most that can be done is to do as the Executive Officer of the Commission does, i. e., lay down general principles by which intelligence may be guided. It strikes me that we should seek to approach the types of wine which are the favorites in Europe and which are drank in all parts of the world. It may be patriotic and administer to our pride as Californians to try to produce a distinctive California wine; but I fear it cannot be done in our generation. We must leave that for our children. However, we can do much towards that end even while imitating European wines. To us there are known certain types of wine, to wit, the so-called claret or Bordeaux wine of the Medoc type, Sautern, Hock, Burgundy, Port and Sherry. The taste for and the types of these wines have been established for centuries, and California wines are judged in the United States by the standard of those wines. The authorities in the State Library tell me that the wine of the south of France, produced on the Mediterranean, from the Matoro, Grenache and Carignan grapes, is exported to the Bordeaux country to be blended with its wines, and hence Mr. Wetmore has wisely encouraged the growth of those grapes in the warmer portions of the State. We can never expect to grow a so-called fine, light wine in the valleys of the interior or in the foothills of the Sierra. We must start with this as an accepted fact. In the valleys and on the lower slope of the foothills we may expect success with wines of the sherry and port types. There is now no excuse for any one to manufacture a nauseous imitation of port and sherry from the Mission grape, as has been done and is being still done in the State, when we have the true port and sherry grape easily obtained. Plant or graft on the Trousseau for port wine, and the Verdelho, Pedro Ximmenes and Palomino Blanco. The two last varities are scarce, but may be obtained in a few years. Mr. Haraszthy gave it to me as his opinion that the future white wine of California would be grown near the snow line of the Sierra, and this is a hint for those who contemplate planting planting vineyards about Colfax, in Placer county. I shall have something to say hereafter about the latter plantations. I am of the opinion that the grapes for red wine will best succeed in the foothills, and it is of the greatest moment that we should start right, or we shall all suffer.

TOO MUCH SUGAR.

The San Francisco *Chronicle* states that the complaints from all over the State in regard to the failure of fermentation in this year's wine product have become quite serious. The continued hot weather has caused a large amount of sugar to be secreted in the grapes. The trouble is worse than ever before, and in many cases vinegrowers who intended to produce dry wines have been deterred by the expense, and will produce only sweet wines.

The sugar trouble is most serious in the vats. In the process of fermentation the grape skins and seeds rise to the top of the vat, forming what is known as the "cap." Under this the sugar changes, half becoming carbonic acid gas and half alcohol. This year the cap has become so solid that the gas cannot escape, and, returning, prevents fermentation. In order to offset this the wine has to be strained into another vat, causing considerable trouble and expense in time and money to the producers. The production of sweet wines, although greatly in excess of former years, will not produce a glut in the market.

A Common Complaint.

Some persons seem to think this paper is run for the fun of the thing, and that we send it to them out of compliment; at least they never pay up.—*Hollister Free Lance.*

RAISINS.

The latest New York mail advices report as follows: "Additional lots of off-stalk Valencia, via England, have come to hand, and have most all been disposed of at 8c. The first direct steamer is due here on Tuesday, and for stoek ex this vessel 7½e. is asked and has been paid. Shipments are held at 7c., at whieh 1,000 boxes sold. New Malaga to arrive are held at $2.30 for two-orown and $2.85 for London Layer. The Nevada, to hand, has 1,300 pkgs, which sold at $4 for Dehesa clusters, $3.75 for bunches. London Layer $2.65, half boxes $1.40, and two-crown loose $2.30. Spot Sultana are selling at 9@10c. Late shipments are held at 6½c. for prime. Of New California, sales of car lots have been made to arrive at $1.45 for two-crown and $1.65 for London Layers."

The Fresno *Republican*, Sept. 23, says: "The sudden rain storm of Wednesday night and the showers of Thursday were unfortunate, but not so disasterous as the croaker would have us believe. The raisins on trays, when the storm came, were damaged considerably, but will be by no means a total loss. The second crop and the grapes on the vines were not damaged, and already the price of raisins has advanced."

Raisins are not strong. There are peculiar circumstances at work (the chief element of disturbance being the fact that there is intense competition shown in this article this year, as has been the case heretofore) affecting this product. By all rules of trade, California rairins should sell in the biggest market, this is the Missouri river valley and Chicago, on the basis of the cost of Malaga fruit in New York, of equal grades, with freight added to western points. In point of fact, California raisins are selling, delivered at western points, at much lower prices than the Spanish fruit can be landed for in New York. This is all wrong. California raisins are fully up to the Spanish standard, but as long as the present competition lasts we will see cut prices. All this unsettles and disturbs the market. And this feeling is further emphasized by the fact that large operators here have not taken hold with their wonted activity, and it is said that lower prices may be looked for.

CALIFORNIA RAISINS.

The *Mail and Express* says: California raisins have reached such perfect that they are now able to compete successfully with the finest Spanish fruit. Already some of the present season's crop is in the market and presents a handsome appearance. Loose native muscats are now packed by machinery, which has enabled packers to compete with the low-priced manufacturers of Spain.

FRESNO RAISINS IN CHICAGO.

The following is taken from the Chicago Inter Ocean, one of the most reliable dailies in that city:

The Inter Ocean has on repeated occasions, by special correspondence and otherwise, given to its readers fresh and valuable information on the great fruit growing sections of California. An exhibit now being made in the Exposition Building by a prominent San Francisco and Chicago firm tells plainly to what an extent this industry is carried on, and to what gigantic proportions it has reached in the past five years. Shown in the exhibit is a box of raisins, the first dried the present year, being nearly a month in advance of any other raisins in the market. Fresno County, from which this sample box was sent, is located in the center of the State, east and west between the two mountain ranges some two hundred miles south of San Francisco, in the San Joaquin valley, and is drained by a river of the same name. It goes without questioning that Fresno is the banner fruit county of the State, the climate and soil being such as to insure to the grower maturity about six weeks earlier than in other portions of the State. This is of great advantage, especially to growers of peaches, plums, apricots, grapes and berries of all kinds which are ready for the market from two to three weeks in advance of other sections. Fresno county in the matter of fruit growing alone is in a position to open the way to thousands, whereby snug little fortunes may be made, and that too, on a very small beginning. Each year the demand is far in excess of the supply.

In an interview B. O. Van Bokkelen, President of the Meade-Van Bokkelen Company, of Chicago, working in conjunction with George W. Meade & Co., of San Francisco, represnting their interests of Fresno county, where they have large packing houses, the following facts were obtained: Of 703,000 boxes of raisins, twenty pounds each, packed in 1886, Fresno furnished 225,000 boxes "We are constantly adding improvements," said Mr. Van Bokkelen in conclusion, "and while the wages paid in Spain are from 15 to 20 cents per day for raisin packing, the pay in Fresno is from a $1 to $1 25 per day."

Opportunities were never better than they are to-day for beginning fruit growing in this section.

THE CALIFORNIA DRIER.

For some time we have known of this new fruit drier, but have delayed calling the attention of our readers to it—not from want of appreciation of what we have seen it do in making raisins and in converting various vegetables into a merchantable commodity, but from a feeling of responsibility in noticing machinery for such a purpose, with the knowledge that up till now nothing but failure has attended the attempt to make raisins by mechanical means. In saying that, we have no reference to the many small forms of apparatus which do the work fairly well, but to the big "driers" that have been put up on a large scale in several places in Southern California, which have resulted in nothing but financial disaster and general disgust and unbelief in any artificial raisin producer. The interests of our readers and of a very large portion of the old and new settlers of this State are too much involved for us to treat the subject in a cursory and off hand manner. In what product of the soil lies the money—the future prosperity? Is it in wheat? If it be so we have no objeetion, but we have a strong belief that it is in fruit. In which of the fruits? Does it lie in the Citrus family? Perhaps so. We prefer the grape and its products. The wine makers are now pretty well able to walk alone and compete with the world in their own special growths, therefore we have now the *would be* makers of raisins to look after.

The vast issues involved in the question as to whether raisin making can be made a commercial success in California by artificial and mechanical doing, has induced us to institute a thorough investigation into the subject and we hope in our next number to lay before our readers an account of the "California Drier," and its claims to being the only apparatus on a large scale, which, relying upon natural laws in its operation, will produce raisins and other dried fruits with all the best qualities of the sun dried, but with the greater certainty to which uniform conditions conduce in all kinds of manufacturing. When we add that this result is avoided without the assistance of the chemicals now in general use, and, in the case of raisin making, without excessive heat and without the aid of sweat boxes, our readers may be prepared to expect a description of that which we at present believe to be a much needed practical raisin drier.

WINES AND GRAPES.

The Situation at Home and Abroad Discussed.

The Indian and Colonial Exposition in London preceded the American exhibition. The latter is said to bo only a partial success. Its object was different from that of the first mentioned display, which was a practicable study of the capabilities of inherent parts of the British empire. This study of products of the outlying colonies has the tendency of measuring their resources, fostering and utilizing them for enlarging the circle of home commerce, and touch far off foreign markets advantageously with colonial products, according as they are nearer at hand for distant markets. Of comparatively less interest to the nation in whose capital the American Exposition was taking place, from a politico-economical standpoint, was the study of what was presented to the visitors for the sake of widening the purchase market among them.

The American Exposition in London must nevertheless have opened many new trade connections. As regards American wines, the limited number of specimens shown, and chiefly the lack of quantities of useful types, will prevent, as yet, any serious American advantage in England.

Different has been among thousands of other British colonial products the success with wines from the Cape of Good Hope and Australia in the other exhibition.

Victoria is one of the wine growing colonies, which, from small beginnings a decade before California was tried as an American grape producing state, has struck out bravely. After calm advance for twenty years, only lately fostered by the sympathy of the population in Australia, encouraged by the recognition of success both in England and home exhibitions, that colony considers grape growing one of the very important industries, the occupation a truly noble one, and extension of grape plantations a sure means of lasting and increasing prosperity and colonial wealth.

The short-sighted views of prohibition cannot impair the sober and sedate Australian's work. Should the knife thrusts of that singularly absurd hobby wound the Australian, the scar will easily heal over. The American ultra proscription views may for a time hinder the progress of wine production in the minor regions, but the Pacific coast can stand unjust and injudicious aggression of ignorance in matters of hygiene and nutrition. The wave of progress in viticulture is no more an isolated ripple. It rolls on, followed by one after the other of achievments of the industry which will place America on a level with countries that for ages have produced grapes, made and consumed wine, and gained and preserved for ages fame thereby and by the practice of sobriety.

Perennial and probably more than such permanent displays of products of art, industry, and agriculture must exert great influence in promoting the desire and practice for excelling. For Washington and the whole United States a permanent exhibition will be of incalculable importance. The mere possibility of comparing the improvements periodically is a self-educating opportunity even to those less interested. Emulation is the sign of iotellectual life. Nothing can tend more to raise the standard of many a product than the opportunity of knowing how far it has been possible to shape it.

The Mechanics' Fair in San Francisco, the twenty-first repetition of a month's show each autumn of California products, contains at this writing some agricultural features of the greatest interest to many of the thonsands of visitors that each evening concur there. Several counties display in an artistic and attractive manner, each in a separate space, the products of their farms, orchards, vineyards, and gardens. To gain a faithful opinion of what the Pacific coast is capable, an hour's examination of nature's beauty in the precincts of the different counties at the fair is a lasting pleasure. Napa county has a display of over 150 feet in length. Entering the archway of vine branches and grapes a fountain throwing up sherry from the To-Kalon vineyard is the first object. The walls are lined with thousands of bottles of wines, fruits, and flowers in garlands placed on all sides. The tables contain the most elegant arrays of fruit. Chief among these, of course, are grapes, for Napa county's last vintage produced enough of these to make nearly 6,000,000 gallons of wine. H. W. Crabb presents from his To-Kalon plantation nearly 250 bunches of grapes of as many varieties propagated from all parts of the globe.

The amount of care and patience to reproduce in the course of years such an unprecedented number of noble varieties, those initiated in the details of extensive grape planting, can easily be estimated. Mr. Crabb occupies among California grape growers the highest place for his thoroughness, modesty, rectitude, and experience, of whieh he is always ready to give his brother vintners the benefit.

One remarkable objeet of attraction at the Napa exhibits is the pioneer wine press used during the first baby vintages conjointly by the first half dozen grape growers in the two counties, Napa and Sonoma. Charles Krng, one of the two survivors, exhibits this historic treasure, a simple cider press made thirty years ago. Five thousand of such presses would not do the work required at the present vintage of the two counties. F. Pdff.

SOLANO WINE.

R. H. Sterling is satisfied with his vintage over in Solano county. On his place near Fairfield the crop of grapes has been fully up to the average as regards both quality and quantity. He has thus far made 60,000 gallons of wine and has 100 tons of grapes yet on hand to go through the crusher. No trouble has been experieneed in fermentation and an excellent grade of wine is the result. Mr. Sterling is buying considerable wine this year—much of it in this valley, paying in some cases as high as 20 cents. He has an office in San Francisco to which consignments are sent and from which sales are made.

THE OLIVE TREE.

THE PICKLED OLIVE.

By Adolphe Flamant.

The pickled olives appear in Europe on all tables as *hors d'œuvres*, or side dish, as an aperitive condiment; and the culinary art knows how to employ them in a thousand different ways.

In the United States they are found in French, Italian and Spanish restaurants with a few exceptions, as also on the tables of the wealthy classes who, having traveled abroad, have learned and adopted this most pleasant habit. They are also found quite extensively in the best bar-rooms, where they are offered to consumers with the traditional cracker so as to predispose them to enjoy the drink they are going to imbibe.

They are a great resource for the poorer classes of the old countries, and in the southern regions of Europe they are still one of the principal elements of their sober alimentation. A piece of bread under his arm, a flask of wine, and a pocket full of olives, such is the equipment for the noon meal that many laborers carry away with them to the field where they are going to spend the whole day.

The pickling of the olive is a very simple operation. This is the method recommended by Coutance:

"The celebrated olives pickled after the manner of Picholini are submerged in a strong lye rendered more alkaline by an addition of quick lime. After leaving them in it for a certain time, which depends on their size, on the strength of the lye, and which is to be limited to the moment the pulp is penetrated to the pit, they are withdrawn, washed, and kept afterwards in water, to which is added about ten per cent of its weight of salt."

This is the mode given by Du Breuil: "Among the several receipts in use to take away the bitterness of the olive, we will indicate the one which we owe to the brothers Picholini of Saint Chamas, and which is considered the best: The olives are picked from the tree when they have reached their full development, but when they are still green, which is about the middle of September. They are dipped in a strong lye of potash, where they are left until the flesh is penetrated to the kernel. The lye is then replaced by fresh water which is removed twice a day for the first five days; after this they are kept in a strong brine."

In Bernays we find also the following recipe: "The method of preparing picholines in France, consists in putting the olives into a lye made of one part of quick lime to six parts of ashes of young wood sifted. After having left them half a day in this lye, they are taken out of it and put in fresh water, where they are allowed to remain eight days, the water being carefully renewed every twenty-four hours. After this a brine is made of a sufficient quantity of marine salt dissolved in water, to which is added some aromatic plants."

Here is now a process which is mostly the repetition of those I have just given, but which contains a few additional particulars which have come under my observation while pickling olives in Europe as well as here;

In the first place, the strength of the lye in which the olives are to be submerged has to be regulated. To that end I have employed the "American Concentrated Lye," which is found here at all groceries, in a solid state, in one-pound boxes. After breaking the tin envelope I dissolve this cake of concentrated lye in a wooden bucket into which I throw one gallon of hot water. When fully melted I have a lye of 13° to 14° strength, measured by the Beaume's hydrometer, which can be had at such hardware stores as Justinian Caire, of San Francisco, who imports them from Europe. With such a degree of strength the flesh of the olives is penetrated to the kernel in about five hours, which can be easily ascertained by taking one of them every five or ten minutes, after the first four hours, and cutting a slice from it with a pen-knife. The moment the flesh is fully penetrated I draw off the lye, and I replace it by fresh water, which I renew in its turn five or six times at intervals of from six to eight hours. This renewal of water has for effect to clear the olives from the taste of the lye. Still, as they retain yet a little bitterness, it is finally removed by placing them for two or three days in a brine prepared on the basis of ten per cent. of marine salt. Wild laurel leaves being thrown in this brine, will impart a delicious flavor to the olives, which are then ready for market. Whilst transferring them to bottles or barrels for shipment, these packages should be well filled with a new brine of the same strength.

There are a few other points in connection with this which I consider it important to follow.

1. Pick only from the tree the well developed berries that are perfectly green, and have not commenced yet to turn to a purple color. This can be done here in September, or the very latest, early in October. By waiting later they would be spotted by the oil forming in them, and would be unfit for the trade, though just as good for private consumption.

2. The pickling operations should be done only in wooden vessels, and rubber gloves should be used when the hands have to come in contact with the lye.

3. The lye should be left to settle as completely as possible before covering the olives with it, otherwise the strength of its sediment would spot many of them.

4. The olives should be covered with sacks or straw, with stones above, in order to keep the top ones from floating, in which case they would turn black.

5. The vessels should be so disposed as to allow the lye to be drawn off rapidly and completely, otherwise by too long a contact with this strong lye, some of the olives would be spotted or would turn soft.

While operating on large quantities, the wooden troughs should be disposed in such a manner that the same lye can be used in turn for all the olives that are to be pickled, provided, however, it is drawn every time in a separate trough where its strength can be regulated by a slight addition of fresh concentrated lye of a higher degree, and care taken that it settles well before using it again.

It can thus be seen that the pickling of the olive is a very simple, very rapid, and very cheap operation. The more so, as the moderate expense of making the lye, of which a small quantity covers a great many pounds of olives, can be brought down nearly to nothing by its use, or its sale, as a winter tree wash, for it happens to be the very best preparation that can be used to that effect for ridding fruit trees of the numerous insects that live or deposit their eggs on them.

We can thus safely claim that nothing, or next to nothing is lost in the transformation of the product of the olive tree into a trade article.

OLIVES IN TULARE.

The *Delta* in a recent issue says: In a few years Tulare county will be well known for its olive orchards. The cultivation of this fruit is receiving the attention of many farmers in this community. We have heard of a number in the foothills who are intending to plant olives next winter, and within a few days have learned that others in the valley will engage in the business on a large scale, and are now making arrangements to secure cuttings and rooted trees. Among some the opinion prevails that the winter in the valley is too severe for the olive, but such is not the case. It is a much hardier tree than the orange, and in Europe is the staple product in regions where the winter is much more severe than here There are olive trees in Tulare county thirty years old, and an orchard in Fresno county seventeen years old. The trees have never been injured by heat, cold or lack of attention, and have borne well and regularly. They are a profitable and inexpensive tree to cultivate, and we hope to see many thousands of them set out during the coming season.

PROFITS OF OLIVES.

When it comes to profits, says the *Templeton Times*, olive growers can show figures that should satisfy the most exacting. Major Utt has an olive orchard of twenty-five bearing trees, planted in orchard seven years to include 1886; the product from ten of them last year was 750 gallons of olives. He sold the surplus crop at forty cents per gallon, easks furnished, or $12 per tree. Fifty gallons of average crop to the tree at twelve years from the planting of the orchard would be a low estimate and this amount would make six and a quarter gallons of oil. Elwood Cooper gets $10 a gallon for his oil. Increased production will lower the wholesale price to $4 per gallon, or at the lowest $25 per tree, equal to $900 per acre. Allow one-half for expenses and interest on investment, and you have the net sum of $450 per acre as net profits. Mr. Loop has been offered eighty cents a gallon for all the pickles.

OUR WINE INDUSTRY.

The leading industry of the land owners in the vicinity of St. Helena, as well as those throughout the entire valley, is the culture of the grape and wine growing.

The subject of viticulture is ever a profitable one to study and contemplate, as all who have given it the slightest attention will realize. In the past few years it has assumed vast proportions, and its importance cannot be over-estimated.

THE FIRST VINEYARD.

The pioneer vineyard of the St. Helena district was planted in the year 1861. For years the growth of the wine industry was slow, the people generally regarding it with distrust. It was positively discouraging up to about eleven years since, when a change came o'er the scener

Men who had devoted their lands to the raising of wheat and corn, began to realize that for years they had been making a mere pittance, compared with their neighbors who had laid out their broad lands in vines.

That valuable monthly journal, *Peck's Farmer and Grape Grower*, published at Charlottesville, Virginia, has recently been enlarged and much improved, and the subscription price reduced from one dollar to fifty cents a year.

A Mysterious Wine Trouble.

The attention of the Viticultural Commission has been called to a mysterious wine trouble, which has just been noticed at Searsville, near Redwood city. The vines are dying off, and from the descriptions at hand the disease approaches black knot nearer than anything else. It is believed that it is due to some salt in the soil. Chief Viticultural Officer Wheeler has gone thither to make an examination of the vines, and to secure soil for analysis.

A New Fungus.

At the meeting of the Society for the Promotion of Agricultural Science, in New York, recently, Prof. Scribner announced the discovery of a new and unclassified fungus attacking the grape in North Carolina which he names "Greeneria fuliginea." This fungus bids fair to take the grapes that escape the black rot. This makes the fourth species of rot now recognized by scientists.

Big Shipments.

But few of Fresno's citizens realize the immensity of the raisin and dried fruit industry. Living among acres and acres of orchard and vineyard, the fruit question, except to those whose money is invested, is of but little interest. The stranger sees, realizes, and is properly astonished. The shipments from here now average from three to four carloads of raisins and one carload of dried fruit per day. This is an immense output, and if next year shows a corresponding increase of this year, as does this over last, the daily average shipments of '88 will be ten cars per day.

THE report of Mr. Kyle, manager for A. J. and D. C. Twogood, published in the *Press and Horticulturist*, says that as far as reports have come in regarding the raisin crop of 1887, they are very favorable. Those who are now picking found that their crops were so much heavier than they expected that they had to send in orders for more trays. Etiwanda will have an immense crop. They have already bought 6,000 trays, and they expect to have 50,000 boxes. The quality of the grapes is all that could be desired.

HAWAIIAN GUESTS.

The following Hawaiians have arrived since our last issue, and are registered at the Occidental:

H. Waterhound,
R. J. Little & wife,
Mrs. J. A. Crugan,
Chas. P. Bishop,
W. C. King,
J. K. Farley,
Mrs. Ward,
Miss Ward,
Miss Titcomb,
F. S. Sabson & wife,
H. M. Whitney,
A. C. Panara,
Harry Couzens,
Mrs. H. Waterhouse,
Robert Lewers & wife.

SPANISH PAPERS denounce the stretching of wine with reduced grain spirit in Pasajes, a small port on the Spanish-French frontier, convenient for transportation across to France of the spurious wine. The rigorous control on the part of the Custom House analysts on the French frontier will easily put a stop to that nefarious industry.

IS VITICULTURE A FAILURE?

In a discussion of the question lately the *Valley Record* remarks as follows:

Californians get unduly excited about every thing and jump into speculations without the proper amount of forethought as to the probable outcome of everybody rushing into the same kind of business. After a lapse of years a setback takes place and the disgust engendured thereby creates as great an anxiety to get out as was formerly used to get in. It is not many years since when vineyardists were digging up their old mission vines because no price could be obtained for either grape or wine. Then came the rage again for ziufandel and other varieties. Everybody rushed in; thousand and thousand and thousand of acres were planted and but few stopped to think of what they were going to do with the grapes when the vineyards all come into mature bearing. The few vines that yielded three or four years since, readily commanded for their product $25 to $30 per ton. Each succeeding year saw a dimunition of price until the present year a beggarly $10 or $15 is being offered for fine variety of grapes. Estimating an average yield of three tons per acre and $3 as the cost of picking and hauling; this would net to the vineyardist an average of about $9 per ton for his grapes or about $27 per acre. The cost of cultivation, pruning, etc., etc., would be somewhere near $20 per acre leaving a bare $7 as the interest on an investment of probably approximating $250, not 3 per cent.

The fruit orchards have paid from $50 to $200 with the same cost and care. Immediately the average Californian begins to talk about digging up his vineyard and planting trees, not stopping to consider whether his depression is likely to last, whether there is a reason for its cause and whether that cause cannot be averted. These gentlemen do not stop to consider whether the same causes that have affected the vineyard interest will not eventually act upon the fruit interest as well. Have they not already done so? Have not the fruit men gallantly met the occasion and by proper means made such disposal of their products as to place themselves upon profitable vantage ground?

It is not a fact that the officers of the viticultural association sounded the alarm several years since and plainly told the vine growers that only by a system of cooperation could they arrange for a profitable disposal of crops in the future? A system of wineries, cellarage and banking facility was pointed out as being very needful, but as the vineyardist had no grapes to sell on the second and third year of his vineyard, he treated the matter with indifference or Micawberlike, "waited for something to turn up." His fourth year (generally that of 86) gave him a poor crop, but pretty fair prices. The market at the begining of 87 was tolerably bare of wine, and vineyardist chuckled over a prospective big crop and prospective big prices. But nature mulcted him of from 30 to 40 per cent of his crop and a few members of the wine interest in San Francisco decreed low prices for grapes, and at once every little winery throughout the length and breadth of the State followed suit and made their thieving offers even lower than those of the big robbers.

The confiding vineyardist has no winery, no cellar, no capital and consequently is forced to accept any price which will pay for picking and hauling, that the wineries see fit to offer. He sees his brother of the orchard doing well and at once resolves to dig up his vineyard and plant trees. He does not stop to consider whether there is a remedy and if so, how it can be applied. His best and truest remedy is to dispose of enough of his vineyard to put himself in possession of capiial to work his land in good shape gather his grapes and crush them himself, procure the necessary cooperage, build a cellar and inform himself about the simple means of fermentation, racking and keeping his wines. This takes some capital and some more will be required to keep the wine two or three years until it is fit to put upon the market. We shall probably be told that the vineyardist is unable to do this, that he cannot command the capital etc. etc. Probably not, but by cooperation he can. The old story of the single stick's weakness and the invincible strength of the bundle, need not be dilated upon. A moderate winery plant is not very expensive. There are plenty of hills generally near enough to vineyards to form excellent cellars. Wine presses are reasonably cheap and cooperage can be supplied at moderate rates. If the wineries can afford to pay for a year old sound Zinfandel 18 cents per gallon, the grower can or ought to be able to hold himself, at the same price. To do this requires capital. The cooperative wineries should be placed in charge of the local bank's representative and funds advanced by that bank upon the storage in the wine vaults. Let this winery buy its grapes as cheaply as it can. The seller of the grapes becomes a participant in the profit of the winery as a stock-holder and if he losses money in producing grapes, he gains it in the product of wine. If the prices of grapes are high the prices of wine will surely be high also.

Besides this year will probably solve the question of the must condensing process. The falling off of the wine product of France is yearly equal to the whole product of California. If the condensation of must and its export to France, is a success, that process alone will be carried on to such an extent as to make the grape crop for many future years to come, command not less than $15 net to the producer. At this figure grapes will pay. At a less one they will not A good bearing vineyard ought to be worth from $300 to $500 per acre and pay 10 per cent interest on those figures. They are worth a good deal more in France and Germany and will be here also, at some not far distant day.

This talk of sacrificing vineyards is the veriest bosh. Keep up your vineyard. Don't plant any more until you have secured wine making and cellarage facilities. Be able to age your wine and will find your 20 cent article will at the end of two or three years, command at least 75 cents to $1 per gallon readily. The wine merchants cooperate against the vineyardist and the latter should show fight by adopting the enemy's tactics. The wine merchant is rich and became so by reason of cooperation. The vineyardist is poor from the want of it.

THE FOREIGN VINTAGE.

The *Wine Trade Review* of London in a recent issue remarks as follows:

The reports which we publish upon the vineyards of the principal wine-producing countries will be read with much satisfaction. It is true that here and there the vines have suffered from local or other causes, but, taken as a whole, the year's vintage certainly promises to be above the average for the last few pears. For the most part, exceptionally favorable weather has prevailed throughout the most critical periods, and the result is that the grapes are sweet and well developed. Another matter for congratulation is that the phylloxera, the great enemy of *vigneron*, really appears to have been successfully grappled with in France, and that mildew has not been nearly so destructive as it has been in some previous seasons. Altogether, the vineyard proprietors, possessing both abundance and quality in the grapes, ought as a body to have a fairly prosperous year. The unfortunate owners of hail-swept vineyards must, of course, suffer much loss, but they are, happily, only rare exceptions, and the great majority of the proprietors are indulging in pleasant anticipations of a good and prolific yield. Our Bordeaux correspondent is almost jubilant over the prospect in his district, and our reports from Reims, Cognac, Oporto, Mayence and other places scarcely indicate the presence of a single cloud to throw a shadow over the general rejoicing From the Jerez report we gather that the vintage in Spain will produce good quality, though the quantity may not be greater than it was last year, or even so great.

EAST BOUND THROUGH FREIGHT.

Forwarded by the Southern Pacific Co., Sept., 1887.

FORWARDED FROM — IN POUNDS.

ARTICLES.	SAN FRANCISCO.	OAKLAND.	LOS ANGELES.	COLTON.	SACRAMENTO.	SAN JOSE.	STOCKTON.	MARYSVILLE.
Barley	53,250	1,615,030			119,956			
Beans	2,721,000		21,050					
" Lima	213,120							
Blankets and Woolen Goods	70,430				2,970			
Borax		92,350	23,200					
Brandy	139,600		59,500		117,420	9,780		
Canned Goods	5,635,170	3,649,300	1,300	281,100	1,403,040	1,689,460		262,470
China Merchandise	87,780							
Chocolate	31,340							
Cigars	21,940		360					
Clothing, California Manufactured	34,340							
Coffee, Green	105,930							
Copper Cement								
Drugs and Herbs	15,080						11,560	
Dry Goods	9,030		1,070					
Empty Packages	43,360		153,260					
Fish, Pickled	241,720							
Fruit, Dried	1,352,140	20,000	261,860	125,720	447,090	1,252,620		1,321,770
" Green Deciduous	62,040	20,520	118,950		5,424,740	1,952,570	120,000	21,220
Fuse	2,730							
Glue	25,850	8,210						
Hair								
Hardware and Iron								
Hides	91,730		40,700		91,590			
Honey	57,100		112,420	44,570				
Hops	81,160				416,910			131,240
Horses					20,000			
Leather	101,770				27,870	40,410		
Lumber	157,790							
Machinery								
Matting	33,620							
Merchandise, Asiatic (in bond)	66,710							
Miscellaneous	209,390	31,710	26,380	100	16,090	116,250	1,120	6,550
Mohair								
Mustard Seed	53,610							
Oils								
Oil, Cocoanut								
Oil, Whale								
Onions	329,610							
Ores	23,110							
Potatoes	594,010							
Powder and Explosives	23,110				43,270			
Quicksilver	7,650							
Raisins	20,000				135,030			
Rice	154,100							
Salmon, Canned	2,177,070				45,070			
Seed						26,880		
Shingles	310,180							
Silk	274,270							
Silk Goods	24,420							
Skins and Furs	71,980							
Sugar	3,069,590							
Syrup	144,430							
Tea	3,641,350							
Vegetables	2,531,370		42,870		114,430			
Whalebone	92,190							
Wine	3,336,150	1,450	375,010		409,970	67,830	14,940	
Wool, Grease	883,170		283,880		107,410	10,950		
" Pulled	6,400				93,150			
" Scoured	96,140							
Totals	27,597,380	5,440,110	1,592,210	451,490	9,036,000	5,166,700	149,540	1,763,450

Recapitulation.

San Francisco.	Oakland.	Los Angeles.	Sacramento.	San Jose.	Stockton.	Marysville.	Colton.	Grand Total.
27,597,380	5,440,110	1,592,210	9,036,000	5,166,700	149,540	1,763,450	451,490	51,196,880

REPORT OF GEORGE WEST.

Commissioner for the San Joaquin District.

STOCKTON, June 30, 1887.

To the Board of State Viticultural Commissioners.

GENTLEMEN:—A review of the progress made in viticulture in this district since my last report is very gratifying. Two years years ago the only counties that made any pretensions toward grape growing were San Joaquin and Fresno, while now the greatest interest is taken in viticulture throughout the whole San Joaquin Valley, and there has been an immense increase in the acreage both of wine and raisin grapes, notably in Fresno County.

SAN JOAQUIN COUNTY.

It has been impossible to obtain an exact estimate of the acreage planted in vines in San Joaquin county for the reason that the lands were long since divided into comparatively small holdings, and as they are almost universally fine and nearly all well adapted to grape growing; a great many small vineyards have been planted the exact acreage of which has been impossible to obtain. However, I consider 2,000 acres a low estimate and I am pleased to note in this connection that nearly all the vineyards that have been planted in the past two years have been planted in the very choiceat varieties of vines, the preference for wine grapes being for the Tannat, Cabernet Sauvignon, Cabernet Frane, Mondeuse, Verdot, Malbeck, St. Macaire, Petit Bouschet, Trousseau and Mataro for red wines; the Folle Blanche, White Prolific, Boal and Colombar for white wines and brandies. For table grapes, the Black Prince, Tokay, Emperor and Black Ferrara, are almost exclusively planted.

I would urge the planting of resistant stocks in all cases, the extra expense being amply repaid by permanency of the vineyard secured thereby.

PROSPECTS OF INCREASED ACREAGE.

It is probable that the coming winter will see a large increase in the acreage of vines, as the profits derived from the industry in this section are very satisfactory, the yield being phenominally heavy and the quality of the product excellent. San Joaquin county is so situated that both sweet and dry wines can be produced. No vineyards are planted in raisin grapes for the reason that the season for drying is so short as to make the venture hazardous.

TABLE GRAPES.

Table grapes of a quality unexcelled are produced on the black lands around Stockton and a considerable acreage is devoted to their culture. These grapes are mostly shipped to the Eastern markets, and the profits of the growers are very large. I look for wonderful developments in this branch of the industry. Lands can be purchased at from $50 to $150 per acre according to location and many of our wheat farms will be subdivided and sold at those figures during the coming winter.

No irrigation whatever is required for the growth of the vine in most parts of San Joaquin county and wherever it is practiced unnecessarily, it is at the expense of the quality of the product.

STANISLAUS AND MERCED COUNTIES.

Stanislaus and Mereed counties are just awakening to the importanee of grape growing to the future developments of their lands. Both these counties contain a small acreage of old vines and a more considerable acreage of vines of recent plantation. Good wines have been made in both counties, and with the better varieties of vines now being planted we may reasonably expeet an improvement in the product. Raisins of excellent quality will undoubtedly be produced, as the warm dry nights would seem especially adapted to the curing of the grape. Both of these counties contain countless acres of fine land, all of which has been devoted to wheat growing.

Several irrigation schemes are assuming definite shape, and a large amount of land will soon be placed on the market. It is probable that both Stanislaus and Merced counties will make the same rapid advancement that has been made in the more southern county of Fresno.

FRESNO COUNTY.

No county in the district can show such wonderful development in so short a time as Fresno. At the time of my last report the acreage of this county was placed at 7,500 acres, while now it will be seen from the statistics appended to this report that nearly 15,000 acres are planted in raisin and wine grapes, of which 9,500 acres are in raisin grapes the balance in wine grapes. The profits from both branches of the industry are satisfactory to the growers.

The vintage of last season amounted to about 1,500,000 gallons of wine, nearly all of which has been sold at remunerative prices. The vintage of 1887 will be much heavier as a large acreage of young vines will be in bearing. A large part of the young plant of Fresno county is devoted exclusively to Port, Sherry and Brandy varieties, it being generally conceded that the San Joaquin valley will excel in these products. Fresno county will undoubtedly be the banner raisin producing county of the State, the climate being exceedingly well adapted to the curing of the grape,

THE RAISIN INDUSTRY.

The raisin pack of 1886 was about 250,000 boxes, and the amount will be materially increased this season. The profits of the business are large and it is one particularly attractive to people of limited means, the heavy investments necessary to the wine business not being required. Many growers sell their products to the packers, in the sweat boxes and realize a handsome income from a small acreage of vines. An immense number of small vineyards will be planted this winter in raisin grapes throughout Fresno county.

A few years ago the only vineyards in the county were in the immediate vicinity of Fresno City, but lately large tracts of land both north and south have been brought under irrigation and planted in vines.

The vineyards around Minturn and Madera in the northern part of the county are devoted almost exclusively to wine growing, while around Fowler, Selma and Kingsburg on the south, the preferenee is given to raisins. Appended to this report will be found a complete list of the vine growers of Fresno county, together with the number of acres and varieties of vines planted by each. Had it been praeticable I should have made a similar list from the other counties in my district, but the acreage of vines did not warrant the expenditure whieh would have been required to canvass so large a territory.

TULARE COUNTY.

Tulare county is at last realizing the fact that she has countless aeres of fine land well adapted to grape growing, but it is only within the past three years that any important plantations have been made. There are probably 800 acres of vines in the county principally in raisin grapes, and as the conditions are similar, her products will undoubtedly equal those of Fresno in excellence.

Kern county also has planted a considerable acreage of vineyard in the past few years, and as a heavy immigration is pouring into the whole San Joaquin Valley, it will be but a short time before the wonderful resources of this county will be more fully developed. Regarding the future of the industry in general, I have no fears. Prices for grapes this season are very low, but I do not believe the depression will be of long duration.

The business of condensing must is in its infancy, and when fully developed will undoubtedly relieve the market of a large part of the surplus crop. Our principal trouble has arisen from the fact that our wines have been marketed too young, but I believe most growers will now hold them until they are properly matured, and sales in the East will be materially increased in consequence.

Respectfully submitted,

GEO. WEST.

Commissioner for the San Joaquin District.

AN EXPERT'S OPINION.

The attention of Mr. R. Lochman, foreman at the Napa Valley Winery, has been called to a paragraph appearing in a recent St. Helena paper, to the effect that owing to an increased percentage of sugar in this season's grapes, fermentation was rendered very difficult, and while some wine-makers used water to reduce the percentage of sugar, others used green apples and claimed the same effect therefrom without impairing the quality of the wine. "Of all things," says Mr. Lochman, "we should avoid impairing the quality of the wine produced in Napa valley. The admixture of green apples cannot but produce this. No one would think of making wine from green grapes, why then spoil good wine by mixing them? It is a remedy in my judgment little superior to water, and either remedy is about as bad as the trouble intended to be cured. When the wine on the pomace carrying an excess of sugar has fermented all that it will, I press it out, draw it (the must) off into a separate vat, and put into it grapes freshly crushed, adding about 25 per cent. of new material where there is a large excess of sugar, and including in this some of the Berger variety, they possessing better fermenting qualities than any other grape we have. The effect you can easily see is this, that so far as the already partly fermented must is concerned on which an effect is sought, the added material is like so much water; the percentage of sugar may be the same in both the grapes that made the must and those making the the added wine on the pomace, but the one having already partially fermented, the addition of fresh juice at once reduces it. I say it is like water only so far as the old stock is concerned, because of the difference between them, caused by greenness in the one and partial fermentation in the other. And of course it is best to use grapes carrying as low a pereentags of sugar as obtainable, but fresh grapes of the same variety and carrying the same percentage as the old stock, will accomplish the same result.

"I have, in the case of grapes carrying 24 and 25 per cent. of sugar, used Berger only in fermenting, and found that about one-sixth in quantity of Berger added, caused a rapid and perfect fermentation You can easily see the immense advantage of careful management in this mode over that of using water and green grapes. Not only is fermentation secured in a normal time and manner, but the quality of the wine produced is kept strictly up to the highest standard the grapes used are capable of producing.

"I claim nothing new in this, for it is generally known to experienced wine men, but I am led to speak of it from the allusion to green apples and water as a fermentation producer, because I consider it of the highest importance that anything calculated, as they certainly are, to impair the quality of the wine produced here should be guarded against. And as they are entirely unnecessary, I hope for the sake of our reputations they will not be longer used."

BLACK ROT IN GRAPES.

Hon. Norman J. Colman, Commissioner of Agriculture, being asked if there was any reason to expect good results from the employment of the sulphate of copper remedies in the case of black rot in grapes, says:

"I have to say that the experiments made this season with these remedies have demonstrated that they are of no value in treating this disease. Their very decided action in preventing development of the mildew (*Peronospora viticola*), and the gray or brown rot, which is the result of the growth of this fungus in the berries, had led us to hope that we might by the same means control the genuine black rot, but the experience of the past few weeks has clearly shown that, however effective the the remedies may be in the one case, they are of no value in the other. Bagging the clusters when they are about half grown, is to-day the only method known to be effective in preventing the true black rot. It is very evident that grape growers have mistaken the brown for the black rot in those cases where they claim to have cured or prevented the rot by the application of the sulphate of copper compounds.

It was through scientific research that the remedies now employed for the downy mildew were discovered, and our knowledge of the habits of the fungus (*Peronospora*) is so complete that we are able to demonstrate the amount of material required as well as the time when the application should be made in order to insure success. By like scientific studies we may hope to be able to overcome the ravages of the black rot. The two fungi—*Peronospora viticola* and *Physalospora Bidwelli*—are very unlike to their botanical characters and habits of growth. With respect to the former our knowledge is very complete, but in the case of the latter much remains to be discovered.

The chief of the section of Vegetable Pathology has clearly described and illustrated the several stages in the development of the fungus of the black rot, but we have yet to learn how the sporadia escape from the organs in which they are formed, and exactly how the infection of the berries is brought about, and conditions which favor or which are unfavorable to the germination of the several spore forms belonging to this fungus. When the biology of this fungus is fully understood, it is possible that we may discover some vulnerable point in its development which will indicate a successful line of treatment."

MUSCAT GRAPES from Valencia fetched in the fruit market of Marseilles, the equivalent of $5 to $8, according to quality per 100 kilogrammes.

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FRIDAY.....OCTOBER 14, 1887

THE MERCHANT, in a recent issue, referring to the enormous profit which yearly accrues to the governments of France and Germany from the manufacture of beet sugar, suggested the development of the industry in California. It seems now that at that very time the subject had attracted the attention and was under serious consideration by the leading sugar manufacturer on the coast, Mr. Claus Spreckels. Not content with the information that might be picked up by correspondence, Mr. Spreckels went to Europe and spent a considerable length of time in investigating the growth of the raw material and the process of manufacture. The resnlt of his researches were so satisfactory that he determined to introduce this great and most profitable industry into California. Mr. Spreckels found the beet-sugar farmers about Magdeburg, Germany, capitalists and bankers. They have rsised the value of their lands to $1,000 per acre, and some of it in fact sells as high as $1,500 an acre. The owner of twenty acres of land is rich. The grower is also a manufacturer, the farmers being banded together and all owning shares in a manufacturing plant. During the last seventeen years they have raised the saccharine matter from two and a half per cent. to fourteen per cent, making thereby as high as eighty per cent. profit by the use of a certain process. Mr. Spreckels proposes to try the experiment on a large scale, and he will invest over $300,000 on the first plant. He bought while abroad a quantity of special machinery which has never before been introduced into this country and to the use of which is due the high and profitable rate of production in Germany. Seed is now on the way from Magdeburg and also from France, so that the enterprise will be started, as far as material and machinery is concerned, on a basis similar to the experimental tests made in Germany. It only, then, remains to be seen what the soil and climate of California will add to the value of the production. The result of this experiment, backed as it is by unlimited capital and the best practical skill in America, will be awaited with much interest by the agriculturalists of California. Its success will be the means of opening up another avenue of wealth, with unlimited possibilities in future. Mr. Spreckels, in his statement about the prosperous condition of the beet-grower in Germany, does not exagerate in the least. The growth of the industry in that country, fostered under the jealous and watchful care of the government, has developed into proportions which have threstened the very existence of cane sugar. The manufacturers of France, surrounded as they are by the most careful restrictions, cannot compete with the German producer in the matter of cheapness, and this is really the chief incentive to the strong opposition which they have made to the meeting of a continental congress, which might result in the abrogation of the bounty system which is at present being agitated by the English manufacturers. What can be done in Germany can be done to as good if not a better advantage in California. The extra expense of labor will be more than met by the heavier crop which our lands will produce. California is naturally adapted for this business, and it is only a matter of time until the manufacture of beet sugar will be one of our leading industries.

THE viticultural display at the Mechanics' Fair was the best and most varied that has ever been exhibited in this city. No stronger evidence could have been furnished of the prosperity and progress of the enterprising vineyardists of California. Such a lavish outpouring of the wealth of vine and olive could not fail to impress the minds of visitors from the East and Europe with a fitting idea of the resources of this State, and convince them that the stories of enormous vegetable growth, which are apt to be received abroad with an incredulous smile, are based on something more material than fiction. The vineyard and olive groves of California are still in their infancy, yet their products are already entering into active competition with those of countries which have for over a century controlled a monopoly of the business. California wines are held in high esteem by the connoiseurs of the old world, even now, and a demand for them is steadily growing in the great centers of the foreign wine trade. If appreciated so highly at this early stage, what may be expected in the future, with vines matured by age, and a largely increased area of lands in vineyards? The progress which is now being made is something marvellous. Visitors to the fair during the past few years must have remarked the vast improvement in the late exhibition, even in comparison with that of the year previous. And yet many of the wine-producing districts made but a feeble showing. Only three of the leading counties were represented in a manner befitting the importance of the industry. Fresno, in particular, might have done better. Its exhibit was confined to one vineyard—the Malter—which was undoubtedly a host in itself. The formidable display in this solitary instance only made the absence of others more striking, and suggested the belief that if there were many more like it at home, the magnificent and profuse display of the northern counties might have paled into insignificance. Sonoma county carried off the palm for the best and most varied exhibit, with Santa Clara coming in a good second. Napa county ranked third in the general display, but to it was awarded the the premium for the best display of wines by any county in the State. In table grapes, Sonoma valley received the premium, variety and excellence considered, while Napa again carried off the premium for the best display and quality of wine grapes. In this department, the second premium was awarded to Sonoma valley. In olive oils, the exhibit of George F. Hooper of Sonoma valley received the premium, and the same gentleman carried off first honors for the best samples of pickled olives.

It is pleasant to note that the untiring energy and unflagging zeal displayed by Captain J. H. Drummond and Mrs. Kate F. Warfield, in the interest of the Sonoma valley display, met with a special recognition from the Committee of Awards. Aside from their magnificent and varied individual displays, the success attained by Sonoma valley may be justly attributed in a great measure to the combined exertions of these representative and enterprising vineyardists. Although standing out prominently as individual exhibitors, their sole pride seemed to be bound up in the success of their district. This was the acme of their hopes, and the eventual realization of which can be safely said to have been a greater source of congratulation, than any individual honors which might have been showered upon them.

THE FOLLOWING is a summarized statement of the wine imports, and exports of the United States, for the month ending July 31st, and for the seven months ending the same, compared with corresponding periods of 1886. The imports of Champagne for July 1887, were 14,790 dozen, against 13,686 dozen in the same month of 1886. For the seven months including in July 1887, 135,168 dozen, against 117,334 in same period of 1886. The value of the imports for the seven months of 1887, being $1,845,620 against $1,576,175 in 1886.

Of stilll wines they were imported in July 1887, in gallons 177,200, and in bottles 214,334 dozen, against 214,834 gallons and 18,920 dozen in the same period of 1886.

For seven months ending July 1887, the imports were 1,969,304 gallons, and 850,969 dozen, against 2,087,662 gallons and 163,448 dozen for the same period in 1886. The value of imports for seven months of 1887, were $2,133,082, against $2,264,264, for the same period of 1886.

The exports of foreign Champagne and other sparkling wines during July 1887, were 321 dozen, against 104 dozen in July 1886. For the seven months ending July 31 1887, 2002 dozen, against 2,343 dozen in same period of 1886. The value of exports for seven months of 1887, was $25,280 against $30,077 in 1886.

Of Foreign still wines 3,725 gallons, were exported in July 1887, against 5,655 gallons and 210 dozen in same period of 1886. During the seven months ending July 31 1887, the exports were 30,975 gallons and 2,996 dozen, against 38,695 gallons and 3,828 dozen in 1886. The value of the exports during the latter term in 1887, was $27,997 against, $36,598 in 1886.

Domestic wines were exported in July 1887, to the extent of 25,580 gallons and 422 dozen in the same period of 1886.

For seven months of 1887, ending in July the exports were 2,972 dozen and 196,672 gallons, against 2,641 dozen and 90,355 gallons, in same period of 1886. The value of exports in seven months of 1887, was $141,932 against $87,618 in same period of 1886.

ONE of the most varied and tasteful exhibits at the late Mechanics' Fair was that of Mrs. Kate F. Warfield of Glen Ellen in Sonoma county. The San Francisco journals have been unanimous in their commendation, and the following extract from the *Evening Post* is a fair illustration of the tenor of the many laudatory notices received by this enterprising lady. It says: Mrs. Warfield is one of those women who have entered into competition with men, and with the most astonishing results. Her vineyard of Ten Oaks is one of the most charming spots in all California. It is 240 acres in extent, and 80 acres are under the very finest vines known. So excellent is the wine that local judges have declared that her home made wine is foreign. Mrs. Warfield has grafted on to her old stock of old Mission and Zinfandel the choicest French varieties, and for richness of flavor, density of color and body the California Chateau Lafitte, Clos Vougeot, Chateau Yquem, Sainte Macaire, Gros Maucin, Tannat, Hermitage and Reisling wines and brandies are unequaled. Mrs. Warfield has been fortunate in many expositions. In 1884, in Lonisville, she took the prize for Reisling wines, and four years ago the first premium for brandy was awarded to her at the State Fair. Connected with the winery at Ten Oaks are a steam elevator, a steam crusher, steam stemmer, and brandy distillery.

So highly thonght of is her wine that the firm of Werner & Co., of New York, buy it without samples. The cooperage of her wines is also noticeable. The barrels are of oak, with nickel-plated hoops and lavender-colored ends with lettering in gold. This year E. T. Crane suggested that her wine be especially recommended. Not alone grapes does the farm of Ten Oaks produce, but also a variety of fruits of the most delicious flavors. Mrs. Warfield exhibits peaches, pears, apricots, crab apples, of unnsual size and richness. Then, also, she shows cereals of several kinds. In her booth there is a lesson to be learned—a lesson which men should copy—that where there is courage and enterprise success must follow, and in both these attributes Mrs. Warfield is highly gifted.

The variety of the products of one small section of California, is well illustrated by the following list of articles noted in th Sonoma Valley exhibit:

Every variety of pickles, preserved fruits, cucumbers, melons, English marrow, corn (some of it fourteen feet high, with four ears on each stalk) Japanese persimmons, English hawthorn, Scotch rowan tree, tomatoes, peppers, gigantic sunflowers, plants, wild flowers, ferns, grasses, mosses, cereals in sheaves, sacks and bottles, Indian chutney, building stones, chalk, cork oak, cotton, wool, bamboo, cheese, butter, milk, leather, charcoal, coal, hops, argols, 150 specimens of native rocks, mineral waters' natural fire and petrified woods, Rhus tox, fourteen samples of earth, vine cuttings; some handsome cooperage is also shown.

THE FOREIGN correspondence of Bonfort's *Wine Spirit Circular*, has a more favorable time in regard to the European Vintage. The latest news Bordeaux is much more reassuring than that of a fortnight ago; the hailatorm of August 15th, did not do near as much harm as was thought at the time, and the succeeding rains did much good. The grapes are generally looking well, and growers are anticipating an excellent result for the vintage. The Clarets of 1887, it is said will rank among the best. The vineyards of Burgundy are looking very well. Some of the districts on the plains are more or less affected by mildew, but not seriously enough to be sensibly felt in the vintage.

New wines continue to arrive at Cette, from Algiers and Spain. The outlook in Champagne appears to be very good, although it is probable that the yield will vary considerable in different localities.

News from Germany about the vintage is most favorably and if the weather continues good the vintage will be most excellent, both in quality and quantity.

In Hungary the rains change the aspect of vineyards, and growers are now looking forward to an average vintage in quantity and a very good one in quality.

In Italy very little business is doing, as every one is waiting for the new wines, which will certainly be abundant, and accordingly the quotations for old wines have had another fall.

In Spain a smaller vintage than that of last year is looked for, although it is hoped that the quality will be better. Some French buyers have made their appearance in the vineyards, but up to our last reports they had confined themselves to observations. The movement set on foot against plasterd wines will probably result in the offering of much less plastered wine this year.

In Charentis it appears that with the exception of those vineyards that have suffered from hail, the vintage will be very superior to what it has been for several years, particularly as regards to quality.

THE FIRE which recently devastated the central portions of California, has caused ruin to many vineyardists. Over $200,000 worth of property was swept away, and in many instances the lives of the inhabitants were in eminent peril. It is safe to say that the fire was caused by carelessness. An unextingnished camp fire flamed into lively activety by a passing breeze. This custom among travellers of picking up stakes and starting off in the morning, leaving a smouldering log to mark the camping site, is unfortunately too common. It is in itself a heedless act, which in reality should be treated aa criminal neglience.

Land owners in the country will find it necessary to establish some sort of a police force during this season of the year, whose duty will be to look out for such instances, and arrest the perpetrators for malicious mischief. This is not the first time that the practice has wrought injury to the California agriculturist, and it is high time it was stopped.

The theory of protecting the undergrowth is all very well, ao far as the perservation of forests in the future is concerned. The question now however is to preserve those we have at present. This can only be done by the eternal vigilance of the farmers themselves, who will yet be forced to do something as a matter of self preservation from fire; as the destruction of the forest may involve the loss of private property accumulated by years of economy and toil.

THE LATEST reports from the districts where wine making is in progress, are not so satisfactory as might have been expected from the appearance of the crop in the earlier part of the season. The excess of saccharine matter, involving as it does a considerable delay in wine making, will cause a heavy loss in the crop, as it will be impossible under the circumstances to handle the grapes which are now rapidly coming in. The estimated profit, according to the information received by the Viticultural Commission, will not be much over 17,000,000 gallons, if it amounts to that. In some of the districts the yield will not average within fifty per cent of the estimate in the earlier part of the season, and the loss in the other districts may be safely estimated at twenty per cent. Any calculations which run the output for the year up to $30,000,000 are absurd and unreliable.

IT IS with with regret that we record this week the death of Charles Le Franc, a pioneer vineyardist and wine dealer of Santa Clara valley. In attempting to stop a runaway team at his home on the Alameda road, on Saturday last, Mr. Le Franc was knocked down, and being trampled upon received serious injuries, under which he succumbed on the ensuing day. He was a native of Franee, aged 62 years. He came to California in 1850 and planted the New Almaden vineyard, where he has since resided. He leaves a wife and three children to mourn his untimely end. Mr. Le Franc was buried in San Jose on Tuesday last, and the funeral is said to have been one of the largest ever seen in the valley.

COLONEL FLOURNOY the lawyer, who is to to prosecute Morrow, is taking a serious responsibility on himself in refusing the assistance tendered him of special Counsel. It seems strange that the gentlemen holding as he does a public office, should be allowed to dictate in this important matter. If it is the will of the people, as expressed by the desire of their Chief magistrate, that especial powers be brought to bear upon this mass of corruption fes ring among us, and of which Morrow is only a representative, Mr. Flournoy should either obey, or else step down and out. Is he one whit more capable than the talented men who, were nominally in charge of the attack which scattered the Tweed ring in New York, and sent its leader to the Penitentiary. Yet they made no objection to the tender of assistance which was made them. Mr. Flournoy depends on his evidence to convict Morrow, and proposes to enter the arena single handed against the brightest legal talent which can be obtained in the State. His attempt to gather laurels is probably inspired by professional vanity, but are the interests of the people staked on the chances? Personal felling to be professional curtesies should not be allowed to dictate in an important case of this kind. The additional Counsel should be pointed by the City, without the slighest regard for Mr. Flournoy or his opinions.

RESPECTING THE present area of vineyards producing grapes for Cognac, the following semi-official statistics give authentic information: Upper Charente had 263,711 acres, of which 123,455 acres are either annihilated or near destruction by phylloxera, thus leaving 138,756 acres for production.

Lower Charente possessed 379,226 acres of which have been devastated or are near annihilation 183,573, remaining 195,653 acres.

VINEYARDS ON THE RHINE.

Grape growing on the Rhine is an industry which gives occupation and profit to the inhabitants of a wide area of country. For some seventy or eighty miles the mountain sides on both banks are covered almost or quite to the top with the vines, and it seems almost impossible that such careful culture can be carried on under such unfavorable circumstanees. Slopes which are next to perpendicular, and on which it looks as if no foot could retain its hold, will have the most carefully tended vineyards. The soil, to a great extent, is rocky and sterile in the extreme, and the vines grow on made ground. They require constant manuring and constant weeding. The majority of the vineyards include less than an acre af ground, and they are nearly all in the hands of peasant proprietors, and are their sole support. Early October is picking time. Peasantry for miles and miles back of the river turn out in a body, and fairly swarm the banks. So many hands make quick progress, and a couple of days is generally sufficient to insure the gathering of the grapes. The occasion is made a gala one; the pessants go back to their villages and for several days sing, dance and feast on the juice of the grape. They always keep the best wine to sell, contenting themselves with the poorest. The grape goes through three processes, or to express it more plainly, three grades of wine are pressed from each batch of grapes, and the peasantry keep for home consumption only the third. The influence of sunshine on the quality of the grape is really remarkable. Two vineyards side by side will be apparently under exactly the same conditions, receiving exactly the same degree of sun and shadow, but the difference, imperceptible to the eye, is shown when the grape ripens and the juice is pressed from it. The day I spent on the Rhine an incident occurred the memory of which can never be effaced. The flag of Germany floated from many embattlements as we passed by, but at last one emblem was noticed of large size, flying from a staff on the lawn of a villa close by the water's edge. As we drew nearer we saw it was the star-spangled banner, and without concert, but from simultaneous impulse, the hat of every American on that deck was off his head, and the banner, not of rapine, pillage of violence, not of unholy ambition or conquest, but of the "free and the brave," was saluted as only Americans can. We heard afterward that the villa had been leased for the summer by an American gentleman, and from the day he took possession that banner had floated in the sunshine and in the storm. Honor to him, whoever he may be.—*Cor. Baltimore Sun.*

NATIVE BRANDY.

A Double Crop This Year in Santa Clara

At the present time in the bonded warehouse of Foss & Staniford, in this city, about 17,000 gallons of native brandy are stored, valued at $25,000 or $50,000. The largest quantity stored there at any one time during the past year has been 22,000 gallons. The counties of Santa Clara, Santa Cruz, Monterey, San Benito and San Luis Obispo constitute the Fifth Division of the First Revenue District of California. Nearly all the brandy manufactured in this revenue district is produced in Santa Clara county. Santa Cruz county has one distillery, and there are none in the other counties mentioned. The establishment of a bonded warehouse at this city has imparted a decideed boom to brandy production. The temporary saving of a Government tax of 90 cents per gallon has greatly stimulated this industry. Several large distilleries have been erected, and will powerfully affect the statistics of the present season. They are owned and located as follows: By J. P. Pierce, at Santa Clara; by the Co-operative Winery, at Los Gatos; by J. B Portal, at the Burgundy Vineyard, seven miles from this city; by the Santa Clara Distilling Company, near the narrow-guage depot; by the Co-operative Winery Company, at Saratoga. This season's brandy crop in Santa Clara county will approximate 60,000 gallons, and will be worth, exclusive of the Government tax, about $90,000. Nine-tenths of it will be bonded. The bonded warehouse has a capacity of 80,000 gallons, and, if necessary, it will be enlarged to the extent of all demands that may be made upon it. The law permits a manufacturer to bond his brandy for a period of three years, if he so desires. Receipts and removals are constantly going on, however, as the condition of the market requires. The day is evidently not far distant when the manufactnre of brandy will be one of the most profitable industries of Santa Clara county. The wash, pomage and wastage connected with wine making can be utilized in producing an excellent article of brandy, and this saving alone pays the entire expense of manufacturing a crop of wine. The brandy product of Santa Clara county this year will be more than double that of any preceding season, and the business of manufacturing it in our midst is merely in its infancy. Public attention can only be said to have been fairly attracted to the subject.

Mome-Made Ice.

Take a cylindrical earthen vessel and pour 3½ ounces of commercial sulphuric acid and 1¾ ounces of water into it and then add 1 ounce of powdered sulphate of soda. In the center of this mixture place a smaller vessel containing the water to be frozen; then cover the vessel, and if possible revole the whole with a gentle motion. In a few minutes the water in the small vessel will be converted into ice. The same mixture can be used a s cond or third time for making a block of tce. The operation should, if possible, be performed in a cool plwce, in a cellar for example.

THE ITALIAN journal *La Setti Mana* over the signature of P. Lorenzi informs its readers that Spain and Portugal have this season a very large grape crop—French reports in general speak of an abundant one, Germany has a good middling yield, Austria with some exceptions a good one, Hungary expects a less abundant crop, and Greece, Sertria and Danubian grape regions have a very large output.

PAICES OF wines in Lower Italy and Sicily had gone down in August to a rate that corresponds to eleven cents per gallon. This relates to good sound 1886 wines of 11 to 13 per cent of alcohol, stocks of such wines b ing still considerable and the casks holding them being needed for the pretty abundant crop of 1887.

IN THE two districts of Beniearlo and Vinaroz, where from in 1886 about 4½ million gallons of wine were exported, entered 159,000 gallons of potatoe alcohol for fortifying wine.

CHAMPAGNE.

Where, When and How to Use It.

The following observations on the use of champagne, by a writer in the *Analyst*, are interesting and readable:

Of whatever materials composed, I never knew a party that could be said to go off ill where there was a judiciously liberal supply of good champagne. I say judiciously liberal, because there may be too much as well as too little, though the error, comparatively speaking, is seldom on the side of excess; but I have seen, when a party has been raised to what I call the champagne point of conviviality, than an extra quantity has caused a retrograde movement, by clogging the digestive powers. In this, as in all other matters relating to the table, but here especially, much must depend upon the eye, the judgment and the resolution of the master. He must have liberality to give, attention and skill to regulate, and courage to stop. There are two classes of dinner-givers to whom I do not address myself on this subject, because I know it would be in vain. The first is that class who began their career and had their habits formed during the war, when champagne was double the price it is now. They gave it then like drops of blood, and I have never yet seen an instance of liberalization. The second class is that who merely give it as a part of their state, and deal it out to the state prisoners round their table only to tantalize them. I have no hope, then, of producing any effect, except upon those who date their assumption of table government on this side the battle of Waterloo, and who have, or are capable of acquiring, the same contempt of show that I myself have.

To give champagne fair play, it ought to be produced at the very beginning of dinner, or at any rate after one glass of sherry or maderia. Any other wines rather unfit the palate for it. The usual mode is, as with other delicacies, to produce it after the appetite is somewhat palled, and I have often thought it particularly ungallant and ungracious, where there are ladies, to keep it back till a late period of dinner, and such a practice often presents an absurd contrast of calculation and display. According to my doctrines, the champagne should be placed upon the table, so that all may take what they like, when they like, till the presiding genius pronounces in his own mind that there has been enough, which is not difficult to a practiced eye. This supposes a supply at discretion up to the champagne point, which is very agreeable on particular occasions, or now and then without any particular occasion, but would not be convenient to most people, or even desirable, if convenient. I am far from objecting to a limited supply, even the most limited—that is, one glass round; but I do object to the period when it is usually served, and to the uncertainty with which it is served. Where it is handed round, and meant to be so only once, twice, or any greater fixed number of times, to which limits there can be no objection, the rule I would lay down is, that it should be handed round after the first glass of sherry, and if more than once, without any other wine between, and that it should be contrived to notify beforehand what the supply will be. It might be thought rather awkward to make the communication. That, I think, would depend on custom and fact. I am sure I should have no hesitation in making it, and, at any rate, the awkward effects often arising from uncertainty would be much greater. What can exceed the awkwardness of two persons who are going to take wine together beating about the bush to get each the other to propose champagne—a scene I have frequently witnessed between the best bred people? What can exceed the awkwardness of asking for it when there is no more, or of waiting till a fresh supply is brought, contrary to the original intention? All these awkwardnesses are the consequences of uncertainty, and are much at variance with the ease that is essential to conviviality. An annunciation that there is champagne without limit, or that it will be handed round once or twice, or oftener, saves these embarrassments. If it is placed upon the table, I would make a similar annunciation, as indeed I always do, that there is to be one bottle, or two, or more, or at discretion. Then the people know what they are about, and are at their ease, for want of which there is no compensation. By means of previous annunciation, even the entertainers of the old school and the men of state might make their calculation available to a satisfactory purpose, The advantages of giving champagne, with whatever limit, at the beginning of dinner, are these; that it has the greatest relish; that its exhilirating quality serves to start the guests, after which they seldom flag, and that it disposes people to take less of other wines after, which is a relative and sometimes even an absolute saving to the pocket of the host, and it is undoubtedly a saving to the constitution of the guests, With wines, as with meats, serving the most delicate first, diminishes consumption—a desirable effect in all respects. I know that a couple of glasses round of champagne at the beginning of dinner will cause a less consumption, and with better effect than the same quantity, or more, at a later period, and where there are ladies, the portion they choose to take is most grateful to them upon this plan, and often the only wine they wish to accept. At the present price of champagne, if it is judiciously given, I believe it is on many occasions little or no additional expense, and its effect is always contributive of exhiliration. By promoting exhiliration it promotes digestion, and by diminishing the consumption of other and perhaps stronger wines, is consequently favorable to health. No other wine produces an equal effect in increasing the success of a party; and a judicious champagne-giver is sure to win the goodwill and respect even of those who can command it at pleasure, because a great deal depends upon the mode of dispensing it. If it is handed round often, it should not be handed round quick, at least after the second glass, but at such intervals as the host points out. If it is placed upon the table within everyone's reach, his nicely regulating power is necessary to give it sufficient, but to restrain over-circulation. As the only anxiety of many, who give parties regardless of expense, is that they should go off well, I must repeat that they cannot fail if there is a liberal supply of good champagne, heartily given. Of course, there will be various degrees of success depending upon various circumstances, but champagne can always turn the balance to the favorable side, and heartiness in giving will compensate for many defects in other particulars. I must here add, that in little *fetes champetres*, champagne has great efficacy, and is a specific against that want of spirit that not unfrequently occurs; also on any convivial occasion, where there is an absence of something desirable in the way of comfort or convenience, or where any disappointment has happened, champagne is the most powerful auxiliary in remedying the omission and making it forgotten. In short, where the champagne goes right, nothing can well go wrong. I think it quite a waste to produce it unless it is iced, or at least of the temperature of cold spring water, and in hot weather its coldness is one of its most effective qualities. The less it is mixed with other wines the better it agrees with anyone, and the objectionable effects attributed to it are often in reality the result of too much combination with other liquids. Taken simply and in due quantity, I think there are few constitutions to which it would not be beneficial, and I have frequently seen invalids who I thought would have been all the better for an alterative course of it.

With respect to the kind of champagne to be preferred, that depends, I think, upon the occasion. The kind I have been alluding to throughout this article is the sparkling. I know many people effect to hold it in utter contempt in comparison with the still; but I suspect not a few of them do so to show their grandeur and their learning, rather than from their real taste. Undoubtedly still champagne, generally speaking, is a higher class of wine, and in a more perfect state than the sparkling; but it is almost as difficult to compare the two as it would be to compare champagne with port. Still champagne is suitable to a grave party talking over matters of state. But the sparkling is much better adapted to give brilliancy and joyousness, and for that purpose I believe would be preferred by almost everybody. Its very appearance is inspiring. In wines there is about the same difference between these two that in poetry exists between "Paradise Lost" and "The Rape of the Lock." When sparkling champage is opened, the cork should not fly out as from a bottle of soda-water; when it does it marks that the wine is in too crude a state, and has not been sufficiently fermented. I think its good qualities are the most effective when it is somewhat more active than merely creaming; when it has a certain liveliness, combined with flavor and coldness, which makes it, according to my taste, delightfully grateful. I believe I am now come to the end of the observations I had to make upon the use of champagne. I will here supply a slight omission in the proper place on the subject of deserts. I have stated that I was no great friend to them, but I must mention that the most eligible mode I ever saw of serving them was by grouping the fruit upon a low wooden plateau, which was placed in the middle of the table. It was the least trouble in setting on; it left the greatest space, and had the richest and most tasteful appearance. I doubt whether after dinner is a proper time to serve ice, that is, if dinners are arranged, as I have recommended in a former number, according to the season. I am rather inclined to think that ice would be better alone, and later in the evening. It certainly spoils the palate for a time for wine, and is principally grateful, before the desert, in counteracting the heating and oppressive effects of overgrown repasts.

The Eastern Grape Crop.

Pancoast & Griffiths, Philadelphia, writes: "Grapes in Georgia, the Carolines and Virginia have been so near a failure this season as to preclude any shipping North of any account. The Jersey crop is near about a total failure; none to ship. The New York State crop promises well, and will be the sole dependence of this market."

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FRASER RIVER.

BRITISH AMERICAN PACKING CO.,
BRITISH COLUMBIA PACKING CO.,
ENGLISH & COMPANY

SKEENA RIVER.

BRITISH AMERICAN PACKING COMPANY

SACRAMENTO RIVER.

COURTLAND PACKING CO., JONES & ANDERSON.

We also offer For Sale of Other Columbia, Sacramento and Fraser River Salmon:

Geo. W. Hume's "Flag" brand,
Hapgood & Co.,
I X L,
Pillar Rock Pkg Co.,
Geo. T. Meyers,
Ocean Canning Co.
Badolett & Co., (Flats),
Washington Pkg Co's "Favorite" Brand,
"Epicure" brand.
Pacific Union Pkg Co.,
Cutting Pkg Co's "Cocktail" (Flats).
A. Lusk & Co's pack,
"Mermaid" brand,
Scandinavian Pkg Co.,
West Coast Pkg Co.,
Warren & Co.,
"Carquinez" brand,
Point Adams,
Wadham's Fraser River.

ALASKA FISH.

Karluk Pkg Co., "Challenge" brand. Arctic Pkg Co., Arctic Pkg Co's "King" Salmon.

We also have the "O & O" brand, an outside river fish, and many other brands, that can be had on application.

WE ARE SOLE AGENTS FOR THE CELEBRATED

Golden Gate Packing Co, "Black Diamond" brand of fruits, Barbour & McMurtry's fruits in glass, Coleman's "Flag" brand of fruit, San Lorenzo Pkg Co, Riverside Fruit Co, Colton Cannery, J. Lusk Canning Co, San Mateo Pkg Co, Sierra Madre Packing Co, Santa Clara Packing Co.

Our lines of Canned Fruits and Canned Salmon are incomparable, and we will make prices F.O.B. or C.I.F. for Great Britain, Australia and the Colonies.

OUR NATIVE WINE SHIPMENTS BY SEA.

PER STEAMER ACAPULCO OCT. 1st, 1887.

TO NEW YORK.

MARKS.	SHIPPERS.	PACKAGES AND CONTENTS.	GALLONS	VALUE
F in diamond	B Dreyfus & Co	52 barrels Wine	2,492	$900
D T	C Carpy & Co	15 barrels Wine	735	300
"	"	1 keg Brandy	48	100
"	"	1 half-barrel Brandy	25	50
F B & S	"	1 barrel Brandy	27	50
C B	Kohler & Van Bergen.	1 barrel Wine	51	51
"	"	1 barrel Brandy	47	94
J S	"	6 barrels Wine	296	296
"	"	1 barrel Brandy	47	94
J B	"	10 barrels Wine	489	489
A V Co	C Schilling & Co	150 barrels Wine	7,101	2,840
G W	"	2 octaves Wine	55	59
"	"	20 cases Wine		95
W H H	"	3 octaves Wine	80	68
"	"	2 cases Brandy		21
H S	Lachman & Jacobi	65 barrels Wine	3,289	930
F A	"	25 barrels Wine	1,264	358
R A G	"	15 barrels Wine	753	392
P L	"	10 barrels Wine	503	203
O H	"	24 barrels Wine	1,218	565
"	"	2 half barrels Brandy	55	123
R B & Co	Napa Valley Wine Co.	20 barrels Wine	1,001	315
Total amount of Wine, 20 cases and			19,327	$7,861
Total amount of Brandy, 23 cases and			349	522

TO PANAMA.

F A	L F Lastreto	10 barrels Wine	484	$212

TO CENTRAL AMERICA.

T R, Puntas Arenas	Montealegre & Co	1 barrel Wine	33	$25
B B & Co, La Libertad	Bloom, Baruch & Co	2 cases Wine		7
R & R, Corinto	Robelto & Phippin	50 cases Whiskey	225	375
V A, Champerico	B Dreyfus & Co	6 kegs Wine	60	70
I C Y, Puntas Arenas	"	22 cases Wine		85
"	"	3 half barrels Wine	81	75
M C, Champerico	Eug de Sabla & Co	13 cases Wine		68
M B, Puntas Arenas	"	1 barrel Wine	27	16
J A L, Corinto	"	2 kegs Wine	10	9
J P L, Corinto	J W Grace & Co	16 cases Wine		70
B R, Acajutla	F Daneri & Co	4 kegs Whiskey	40	120
"	"	4 kegs Wine	40	30
"	"	4 packages Brandy		60
"	"	6 packages Wine		48
T M, Corinto	John T Wright	4 kegs Wine	40	24
J P, Acajutla	"	2 half-barrels Wine	50	30
J S, Puntas Arenas	Urruela & Urioste	1 case Wine		3
O D, Acajutla	"	30 cases Whiskey		300
S Co, Corinto	Schwartz Bros	50 packages Wine		440
M M, San Jose de Guatemala	"	2 casks Wine	54	43
Total amount of Wine, 111 cases and			325	$1,023
Total amount of brandy, 4 cases				60
Total amount of Whiskey, 30 cases			265	795

TO MEXICO.

V & Co, Acapulco	B Dreyfus & Co	2 barrels Wine	131	$80
"	"	2 kegs Wine		
B & Co, Acapulco	W Loaiza	1 barrel Wine	50	33
Total amount of Wine,			181	$113

TO HONOLULU—PER STEAMER AUSTRALIA, OCT 11.

H J	Arpad Haraszthy & Co	2 barrels Wine	100	$75
"	"	5 half-barrels Wine	124	86
"	"	20-10 gal kegs Wine	200	130
"	"	50-5 gal kegs wine	250	260
"	"	11 cases Wine	26	40
N M	C Carpy & Co	1 barrel Wine	34	25
G & W	"	1 puncheons Wine	63	
"	"	cases Wine		100
W S L	Lenormand Bros	3 barrels Wine	149	117
N W & Co	"	5 cases Brandy		72
W C P	B Dreyfus & Co	15-10 gal kegs Wine		
"	"	30-5 gal kegs Wine	300	280
G W M & Co	C R Lilienthal & Co	70 cases Whiskey		495
F A S & Co	J Morton & Co	2 casks Wine	123	95
L in diamond	S Lachman & Co	5 barrels Wine		
"	"	10 kegs Wine	303	268
G W M & Co	Goldberg, Bowen & Co	25 cases Wine		95
"	pruance, Stanley & Co	80 cases Whiskey		581
W S L	Wilmerding & Co	2 barrels Whiskey	74	130
H J	"	1 barrel Whiskey	42	74
G in diamond	Donald Gedge	145 kegs Wine	1,078	872
"	"	2 half barrels Wine	105	39
"	"	2 cases Whiskey		19
Total amount of Wine, 11 cases and			2,855	$2,482
Total amount of Brandy, 5 cases and				72
Total amount of Whiskey, 150 cases and			116	99

TO TAHITI—PER BARKENTINE TROPIC BIRD.

C J P	P G Sabatie	6 barrels Wine	250	$150
J E	Lillienthal & Co	3 cases Wine	146	78
J H C	Wilkens & Co	4 packages Wine	40	28
R P & Co	J Pinet	2 barrels Wine	96	48
"	"	12 barrels Wine	575	201
L M	"	3 barrels Wine	145	58
"	"	1 half-barrel Wine	27	18
W F C	Crawford & Co	2 barrels Whiskey	62	78
A C & Co	"	7 barrels Wine	333	133
"	"	1 barrel Wine	49	14
"	"	4 barrels Wine	190	76
"	"	1 barrel Wine	48	24
"	"	5 barrels Wine	240	96
Total amount of Wine			2,139	$938
Total amount of Whiskey			62	74

MISCELLANEOUS SHIPMENTS.

DESTINATION.	VESSEL.	RIG.	GALLONS.	VALUE.
Nanaimo	Wellington	Steamer	245	$41
Japan	San Pablo	Steamer	495	395
Victoria	Geo W Elder	Steamer	361	205
Nanaimo	Empire	Steamer	10	9
Kabulin	Risorio	Schooner	135	141
Mexico	Whitelaw	Steamer	250	90
China	City of Sydney	Steamer	40	24
Japan	City of Sydney	Steamer	760	320
Honolulu	Planter	Bark	1,550	1,356
Victoria	Mexico	Steamer	86	51
Ontario	Mexico	Steamer	250	290
Mexico	Newbern	Steamer	847	465
Total			4,829	$3,390
Total shipments by Panama steamers			20,317 gallons	$9,209
Total Miscellaneous shipments			9,823 "	6,810
Grand totals			30,140	$16,019

BEN LOMOND.

Successful Results of the Prominen Vineyard Company.

The *Courrier Item* contains the following interesting description of this fine property:

The mountain rises on its northern side abruptly and almost precipitously from the banks of the San Lorenzo river and Boulder creek, its almost perpendicular sides being clothed with a dense growth of fine redwood and fir, to the plateau which forms the summit of the mountain at an elevation of 2,400 feet above sea level. To south and west the land drops towards the sea in a succession of gradually sloping ridges, covered on its higher levels by magnificent groves of forest trees and nearer the sea by stretches of open hillsides, while at the foot of the mountain, along the ocean shore, are broad acres of level land unsurpassed on the coast for its fertility. This portion of Santa Cruz county, known as Ben Lomond, reaches from the San Lorenzo river to the ocean, a distance on an air line of about eight miles, and on a parallel line with that stream of about twenty miles in a southerly direction. Here on the most elevated portion of the mountain the Ben Lomond wine company, J. F. Coope, manager, have commenced the development of what in time will prove to be one of the finest pieces of vineyard property in the State of California. This property consists of a tract of land of 300 acres, of which 70 acres have been planted to vines, the greater portion of them not yet in bearing. The older vines are now a marvel of beauty, with their dense foilage and loaded clusters of ripening grapes.

The cuttings planted the present season have made a wonderful growth. In one patch of four acres only eight vines failed to start. This success is undoubtedly due to the thorough method of cultivation adopted by Mr. Coope. Orchard and vineyard alike present the appearance of the most perfect cultivation, not a weed to be seen in all the long rows of vines or trees. The soil mellow and pulverized to the consistency of an ash bed, and, as a result of the subsoil plowing, the moisture reaches the surface during all the long dry summer months, giving vine and tree a whole season of growth. Although wine making is the principal business a variety of the fruits are in successful cultivation on the place. A 15 acre prune orchard is doing handsomely. During the past season 40 acres of land, overgrown by large forest trees, has been cleared with the aid of Mr. Coope's invention, the steam stump puller. This tract has the appearance at the present time of a cyclone-swept district, with its immense trees scattered in all directions, torn up from the roots by the powerful machinery. At the proper time this fallen timber will be fired, and the process of clearing be completed in time for next spring's planting. The vintage of '86 amounted to 30,000 gallons. This year's vintage will amount to about the same in quantity but a better selection of grapes will be used, and a much finer quality of wine will be produced.

The Ben Lomoud Co. will adopt a new plan in handling their wines hereafter. When the wine is drawn off into casks and goes through the first fermentation it will be shipped at once to San Francisco, and handled there until ready for the market. This company will purchase all the grapes on the mountain this season that are suitable for their purpose, and expect to be able to handle and manufacture all that are of the right quality for several years to come. With this end in view the company have made the most thorough preparation in the shape of a commodious and convenient winery, abundance of water pumped everywhere on the premises and ample machinery for all purposes. All the improvements on the place are made with an eye mainly to utility and to make every dollar count.

California Grapes.

One of the largest auction sales of California fruit that has been held here for several weeks took place in New York last week. The fruit consisted of 900 boxes of Tokay grapes, which arrived in excellent condition. Considering the fact large quantities of grapes are being received daily from vineyards near at hand, the prices obtained were excellent. The grapes readily sold at prices ranging from $1.10 to $1.70 a crate.

A LOT of the finest 1861 Castle Johannisberg wine, 200 bottles, has been sold by the Rhenish firm of Dresel Bros., to a connoisseur in England at 105 marks per bottle.

THE SANTA CLARA VINTAGE.

EDITOR MERCHANT:—Our vintage work is in full blast here at present, and the quality of the grapes is excellent, the only variety having suffered is the Zinfandel. The quantity of grapes raised in this valley will not fall short of that of '86, as the young vineyards are making up for the deficiency in the old ones. The quality of the wine will be much superior to that of last year, and even better than that of 1885. The wine-makers who used to make wine of anything that grew on a vine, and caused us so much damage, were so bitten last year that their mishaps has brought a little sense into them and they are disposed to leave the business in the hands of those who use care and judgment in the manufacture of wine.

The addition of a number of new stills of the best patterns, will effectually dispose of all low grades of grapes or wine, and we venture the assertion that this year will prove a turning point in the wine industry of this county.

In reading a recent number of the *O. N. C. Review*, published in London by Messrs. William Hudson & Son, I saw a statement made by some one representing a large California house to the effect that good, sound and pure California wine could be delivered in London for three pounds sterling per hogshead i. e., $15.00 per 46 gallons. I have no doubt such wine as was brought here last year for 10 or 12 cents per gallon might be delivered there for the price stated; but to insinuate that our average red wine could be placed an the London market at such a figure is simply an absurdity, and a sorry compliment to the good sense of the consumers of wine in the United States.

The same paper confesses in another number, that they have to pay in London $40 00 per 46 gallons for ordinary Bordeaux, which is known to be an amalgamation of Spanish and Italian wine with whatever addition is convenient to the French mixer. We would suggest that it would be much more appropriate for the above mentioned California house if it would put good, sound and pure California wine in the English market, and let it meet French competition on a fair footing; let its quality be tested, and let the price be fixed accordingly. We will welcome the test.

San Jose, Oct. 3, 1887. L. D. COMBE.

ARSENIC WASH FOR VINES.

A series of experiments to ascertain what strength of arsenic washes can be used with safety on grape vines were instituted at the vineyard of H. W. Crabb, at Oakville, by Chief Viticultural Officer Wheeler, some months ago. As the grapes are now ripe, Mr. Wheeler has returned to Oakville, and the grapes from the vines experimented upon will be made into wine, after which an analysis will be made to see if, in providing against the ravages of insects, the taint of the arsenic has been communicated to the grapes and is discernible in the wine.

The *Merchant and Manufacturer* is the title of a new journal recently started in New Orleans. It will be published in the in the interest of trade, and judging from its general get up, the proprietor is fully capable of looking after the interests of the business men of the Crescent City.

THE VALUE of fruit imported in Great Britain in 1886 is close upon $30,000,000, of which 10,000,000 fell to the share of exporters in Spain.

AERATION OF MUST.

EDITOR MERCHANT:—Mr. Pasteur in his *Etude sur le vin*, writes that without contact with the air all life is absent. This implies that the initial germs cannot exist, much less multiply except in the ratio, that they find themselves in contact with oxygen. Mr. Duclaux writes to the same effect, also A. M. Desmoulins. They both hold that the "Mecrodema Ellipsoides" requires a large amount of air and saccharine must in order to rejuvenate itself and become prolific. The conclusion to be drawn from the above is that we ought to aerate our musts, and the more we do so the better. How does this conclusion stand in relation to the employment of hemetically sealed covers on our fermenting vats? Directly opposed to it. Here the point comes in again. M. Pasteur asserts that "when the must is exposed over a large surface to the contact of air for many hours, or is agitated with air, the fermentation of the must is incomparably more active than the same not aerated." Experience according to M. Desmoulins confirms M. Pasteur's assertion. The former however adds that the opinion that unless aeration is proceeded with from time to time acidification will result, and even the safety of the whole contents of the vat may be threatened. He then goes on to quote with an apparent fervour the expression of an old Burgundy friend, "I oxyenate perpetualty."

I do not intend to use any hermetically sealed covers myself; nor diaphrams. Both are generally out of favor this year in my part of the country. The practice is to use light movable tops, and in a few cases floating covers, but above all foulage and aeration by means of pneumatic pumps. We believe that even if we should be, in part, exposing ourselves to acidity, that will not be so bad as to obtain an imperfect fermenting out of all the sugar in our musts through locking them up from the air and thus leaving our future wine open to the last atmospheric changes.

Etha Hiit Vineyard. J. A. STEWART.

LOS GATOS VINES.

Every variety of grape flourishes here better than in its native place. The climate soil and other circumstances agree fully with the famous Bordeaux section of France. There is the same deep red gravelly soil, the same sweep of a sea-breeze deprived of its moisture and modified in temperature by intervening mountains. Here, also, the wine grapes, such as the Malbec, Matero, Pineau, Zinfandel, etc,, show extra quantities of coloring matter and tannic acid. The Malbec, so shy a bearer in Europe, and raised with trouble to qualify wines wanting in body and color, becomes here a good bearer with increased good qualities. The same may be said of the Matero, and the Zinfandel, according to Professor Hilgard, is nearly equal to the Malbec of Europe, in every respect. In addition to these good qualities, it has the additional merit of being an abundant bearer. The wine cellars of the vicinity compete in quality with the famous Bordeaux clarets and have all been obliged to double their working capacity to meet the constantly increasing product. These results have given an impetus to the production and sale of claret that will probably carry it safely through the war of prejudice made on California wines.

The vines yield with field culture four to ten tons per acre; but by trellis work the yield might be doubled or tripled. Thirty tons to the acre have been raised by Yocco, one of whose vines, 18 years old, yielded 52 boxes of 25 pounds each, and were picked a few days before Christmas.

A. Richardson, who resided in Bordeaux for ten years, and purchased here, owing to the similarity of soil and climate, has 120 acres of land, plain, terrace and mountain, and has planted the Bordeaux class of vines comprising Malbec, Cabernet, Sauvignon Franc, Pinot, Semillon Blanc, Sauvignon Blanc. Total—32,000. The public road is set with pepper trees, the avenue to the house with orange trees. He has an olive orchard for home use, a variety of roses, Japanese quince, etc. He has also a few tropic fruit trees, such as date-palm, cherimoya, guava, and a few bananas; a French cottage with tower. He shows home-made wine resembling the *Chambertin*. He is constantly enlarging his vineyard, extending it by choice up the mountain side. The place was commenced five years since.

SALICYLIC ACID.

The use of this acid as a preservative from fermentation is more extensive than is generally expected or known, and since the few remarks made by Prof. Hilgard as to its effects when used to keep unfermented wine, have extended an investigation somewhat farther to ascertain more fully what there really was of its injurious effects. There have been several kinds of preservative powders, or at least such powders have been sold under various names, during the last few years for preserving fruits without sealing, and it is supposed that either this acid or some salt if it is used by some in milk to retard spoiling. It is probably used most in wines and beer. Not only in unfermented wine, but in any wine which has been stretched by the addition of water or other substances to its bulk.

In clarifying beer, gelatine is used in order to hasten the process and produce that beautiful clear quality so much in demand. Unless great care is used a part of this is retained in the beer, and as gelatine is a substance that is quite prone to decomposition when in very weak solution, salicylic acid is added to prevent a change.

As stated by one of our able physicians a month or so ago this acid is not a proper substance for daily use. In addition to these effects we find also that it has a tendency to produce kidney troubles or to aggravate them, and the prevalence of kidney diseases among beer-drinkers may have one of its causes in this acid. Its continued use also tends to injure the bones and teeth. It hinders digestion, and the proper chemical action of the various digestive fluids.

For these reasons we would advise every one never to use this acid in the preparation of unfermented wine, but to rely entirely on hermetical sealing to preserve it.

THE SEVILLE daily *La Andalucia*, states that the price of alcohol distilled from wine can be estimated at 50 to 60 pesetas (5 to the dollar) per hectoliter, of 26 2-5 United States gallons, provided the cultivation of prolific varieties of vines, the grapes of which are proper for a wholesome spirit, be actively taken in hand. The same paper dwells on the absolute necessity of producing such alcohols in order to raise the wine industry, and leave off using grain and tuber spirit imported from other countries.

FEAT IN WINE MANUFACTURE.

Dr. H. K. McClelland, Santa Cruz, is the discoverer of something new in the *modus operandi* of wine manufacture, and took pleasure yesterday in exhibiting the process to a number of friends at the Pacific Ocean House. This discovery may be termed a viticultural feat. Its salient features are its simplicity and cheapness, but very little machinery being required; and the peculiar method by which is imparted that mysterious *bouquet* of flavor supposed to belong only to certain old brands from the vineyards of Italy and France. The doctor has never before given much attention to the subject of wine making, and his discoveries are the result of mere accident rather than research and study. But they are none the less valuable, and those who witnessed the process were unanimous in their verdict that it was a great feat in wine making.

GRAPE ROT.

How they work with it in the East.

Many remedies have been proposed for grape rot, but none appears to be effective. Perhaps no substance will ever be discovered which can be depended upon to destroy the growing *Phoma*, and arrest the rot without at the same time injuring the vines.

There are preventives which, if used properly, and in time, no doubt would check the rot. By way of prevention, which is really more important than cure, two methods seem worthy of extended trial. First, prompt removal and burning of all diseased grapes. Second, protection of the grape clusters from rain and dew. The first method has been tried with uniform success in Michigan, New Jersey, Tennessee, Mississippi, North Carolina, and other States, and why may not it have been done in Virginia? We gave these remedies to our growers nearly four years ago; and what did they do with them? Nothing! But waited until the rot become an epidemic, and swept their vineyards! Now, this method is based upon sound principles. Now we have got the black rot badly. No use to smother out the fact; will not stop here to discuss as to how we got it; no doubt much rain and hot suns had a great deal to do with spreading the disease. The grape rot is an infectious disease, propagated by diseased berries. The berries should be picked off each day and burned—not buried. Where this treatment has been systematically followed, for even a single year, great benefit has been experienced the year following.

The second method, the protection of the fruit from moisture, is based on the well known fact that the spores of *Phoma* will not germinate if kept dry, and on the oft-recorded observation that the rot almost entirely disappears in times of drought. There are two ways of keeping grapes dry: First; by covering the individual clusters with paper bags—bags should be put on soon after the grapes have set and before the spores of the *Phoma* have lodged thereon. The second way is, by roofing the trellises with wide boards or with cotton cloth.

Whiskey Must Go.

We are informed by a gentleman who is posted on such matters, that the sale of whiskey at bars has fallen off about one-half in the last year in Petaluma. Wine seems obe driving whiskey to the wall.