

Correspondence.

ST. GEORGE, Jan. 18, 1869.

Ed. News.—Having been engaged in horticulture some fifteen years in this Territory, I have acquired considerable interest in its advancement. The great success that has attended the labors of the Saints in producing the different varieties of fruits adapted to this climate is very encouraging. In many of the colder sections of the Territory, where the apple would hardly succeed at first trials, now, the peach and apricot thrive admirably. The culture of the grape has been sadly neglected in most of our settlements, probably on account of the scarcity of the plants, and a want of confidence in their success. I fully agree with bro. Bonnell and Bertrand that the grape can be successfully cultivated in most of the settlements north and south of Salt Lake City; and that excellent wine can be made in large quantities at moderate prices. The importance of the subject is not realized by our community. In this wild, broken, desert land, where once volcanoes and earthquakes reigned supreme till its whole face was marked by their terrible violence, the grape has found a home, as congenial, I presume, as it enjoys in Syria or Persia. It is better adapted to our climate and soil than any other plant we cultivate. We have been very diligent in procuring the choicest varieties we could obtain, or have any knowledge of, and contemplate that in a few years hence we shall enjoy as good wine as any other people on the earth. I must confess that we were taken by surprise by the following, which appeared in bro. Bertrand's letter, published in the News of July 1st: "I hope and trust that bro. Bonnell in Arizona, bro. Dodge in St. George, and other Swiss grape culturists in our Dixie, will succeed in making raisins equal to those of Malaga, and in manufacturing excellent wine, as alcoholic as sherry; but with the most scientific manipulations they will never produce any thing approaching, in the least degree, any of the aforesaid Burgundy wines. Why? Simply because the climate of their locality is too warm." Again, in your paper of Sept. 2nd, bro. Bertrand says: "It is a fact, indubitable, that Mr. Bonnell, Mr. W. E. Dodge of St. George, and several other grape cultivators in our Dixie, will soon succeed in manufacturing large quantities of wine, equal, and perhaps superior, to the best brands of Madeira, Malaga, Tenerife, Sherry, etc., but I say again, nothing which can compare with the peerless aroma of the first class Burgundy ones. It is an utter impossibility." He also says: "I do affirm that the first class brands of Burgundy, mentioned in my first communication, are, by their unsurpassed aroma, the very best light wines in the world."

These are sweeping statements, but I must confess that I am wholly infidel to their correctness; and to defend our grape culturists against these statements, the other side of the picture should be shown. In the first place, it is not true that all our wine would be heavy or too alcoholic for any well-balanced head. There is a great difference in the quantity of saccharine matter contained in different varieties of grapes; some would make a very strong wine, while some other varieties would only make a very light wine. We have the double advantage in a climate in which we can manufacture every grade of wines that are pure. In some colder locations, and more unfavorable soils, the most sugary grapes that could be grown under such conditions, would only make light wines at best.

Let us now examine the French standard for wines. I will refer the reader to the report of the committee of the United States Commission at the Universal Exposition of Paris, in 1867, on the culture and products of the vine, which is the most valuable publication on the vine I have ever seen printed, and comes from the highest authority in our nation. The committee report: "When American wines were tasted by jury at the Exposition, the French jurors, whose scale was from one to four, with a zero at the foot, generally complimented our Catawba with a zero, and they remarked that the more of the natural flavor the wine possessed, other things being equal, the lower they should estimate it."

In America, the very contrary is known to be the case. The German jurors, accustomed to wines of high bouquet, held quite different opinions from the French, and were much pleased with the American samples. A French wine grower has introduced the Catawba into his vineyard, and uses it *jeu à jeu* to mix, in very small proportions, with the native grapes, to flavor. Any considerable addition of the Catawba musky quality, would be more than the French palate, trained to like only that which is negative, could very well bear. The peculiarity of the better sort of Rhenish wines is bouquet, and of the inferior sort, acidity. Compared with them, their French rivals are quite negative. A French wine, white or red, must be very poor indeed if it shows any acidity, and must be very fine indeed if it possesses any *easily tasted bouquet*. Altogether we must award the palm of excellence to the white wines of the Rhine, as we do to the skill and industry of the vine dressers who produce them."

From the above quotations, we find that the peerless aroma of the Burgundy wines is fully appreciated only by the "French palate, trained to like that only which is negative;" also, "that the first class brands of Burgundy are, by their unsurpassed aroma, the very best light wines in France, but not in the world."

It may be instructive to our vine growers to compare our soil, geologically, with some of those favored spots or places in Europe that produce their best wines. We may, perhaps, form a more favorable opinion of our locality, and come to some definite conclusion whether our sun is too warm for producing delicate flavored wines. I will quote from the report of the committee above referred to: "The soil of Medoc, where stands Chateau Margeaux, Chateau La Fitte, and Chateau La Tour, is a bed of coarse gravel, among whose pebbles the eye can barely detect soil enough to support the lowest form of vegetable life. In the vicinity of Bezires, on the other hand, the land is rich, and strong enough to yield any kind of a crop; yet Medoc grows wine that often sells for ten dollars per gallon, while that of Bezires sometimes sells for the half of ten cents per gallon. In Burgundy there is a long hill on whose dark red ferruginous limestone sides a wretched thin covering of earth lies, like the coat of a beggar, revealing, not hiding, the nakedness beneath. Here stand little starveling vines, very slender and very low; yet here is the celebrated "Clos Veaugeot," and this is the hill, and these are the vines, that yield a wine rivalling in excellence and value that of Medoc. At its base spreads out a wide and very fertile plain, covered with luxuriant vines, whose juice sells from ten to twenty cents per gallon. If you go further northward and examine the hills of Champagne you will find them to be merely hills of chalk."

From the foregoing any intelligent mind will comprehend that the large amount of heat absorbed by the bed of pebbles, or coarse gravel, is the principal agency of success in wines on the slopes of Medoc. The "little starveling vines, very slender and very low," of the golden hill, are on soil calculated in every respect to give good results. The vines trained very low that the fruit may receive the reflected heat from the ground; the soil very shallow and resting on a warm base, with a southern aspect.

The vines and their roots would receive a warmth belonging to a more southern clime, the fruit would more perfectly ripen, and have more delicacy of flavor than would be realized in more unfavorable situations.

The chalk hills of Champagne may be better understood, when I treat on aspect, before I close this communication.

The following is from the Supplemental Report: "The vineyards to which attention was more specially given, were those of the borders of Lake Geneva, those of Pfalz or Rhinish Bavaria, and of the banks of the Rhine, the Neckar and the Main. With regard to the quality of the soil, we have the same remark to make here, as was made in the former report, viz: that the vines yielding the best wine were found to be growing on the poorest soil. Geologically, the soil throughout all the above districts is very much the same, viz: basalt and sandstone, both formations usually seen in close proximity, the basalt uppermost and resting on the other. The soil of the Rhinegan seems to be of red sandstone, mostly, if not wholly. The Johannesberg hill reminds one strongly of the soil of some parts of New Jersey, and Connecticut, and in the neighborhood of New Haven in the latter State, the basalt is seen resting upon the red stone, just as it does upon the hills that skirt the Rhine. In considering the merits of the different soils as geologically distinguished from each other, we seem drawn to the conclusion that, so far as our observation has gone, the red sandstone is the superior one, but we confess ourselves unfit to make any such sweeping generalization, and will only say that the soil in question, for aught we can see, seems as fit as any other to grow a superior wine."

It is clearly seen from the above that a great portion of the soil in the vicinity of St. George, has the elements necessary for growing wines of the highest quality. We have here all the good qualities of the soil of the Golden Hill of Burgundy, coupled with those of Johannesberg hill. Providence has been very profuse in heaping together here the elements particularly suited to the vine. I will copy a few lines from Boussingault to show the deficiency of heat in the wine regions of France and Germany, and the great importance of a sheltered southern aspect for producing wines of high character. He says: "On the deep slopes of hills towards the south, and sheltered from the northeast, the grapes attain the greatest maturity, and the vintage is most certain. So great an influence has a favorable exposure that in the same vineyard, the greatest difference exists between the wine made from one part, and that made from another, merely because there is a turn round the hill, and the aspect varies a very few degrees. A change of soil produces a similar effect. The famous Rhine wine called Johannesberg, when made from the grapes which grow near the Castle, is worth twice as much as that made a few hundred yards further off. Here, both soil and aspect change. The Clos de Vougean, which produces the finest Burgundy, is confined to a few acres; beyond a certain wall, the wine is a common Burgundy, good, without extraordinary merit. The vineyard of Schmalzberg, for example, near Lampertsloch, which has been under my management for several years, yields wines of the most dissimilar characters from one year to another. Some idea of this may be formed from the different quantities of alcohol which the wine of different years contain." (Here follows a table of the mean temperature for five years which I omit.) "If we now inquire how the meteorological circumstances of each of these five years influenced the

production of our wine, we see at once that the mean temperature of the days which make up the period of the cultivation of the wine, has a perceptible influence. The temperature of the summer was 63.1° of the year that yielded the strongest wine, and only 58.4° in 1833, the wine of which was scarcely drinkable." The above author also says: "But in France the stakes, and the low training are the only matters suitable to the climate."

From the foregoing we find that there is every possible advantage taken to concentrate the greatest amount of heat in locations or situations, on steep sides of hills, sheltered from cold winds, with southern aspect. In some instances they have hauled the desirable soil the distance of several miles and built up their vineyard some three feet. And yet only in a very few instances have they obtained any remarkable results, for the want of a warmer southern aspect. In Dixie we will not have to resort to the steep slopes of hills for a suitable aspect. Our grapes ripen equally as well six feet from the ground as they do within a foot of it.

In summing up the evidences in favor of our own locality compared, geologically, with the favored localities in France and Germany, we find the following:—The latest formation is a broken, shivered strata of limestone which rests on basalt, the basalt partakes of iron, and rests on red sandstone, a thin strata of limestone lays in the red stone. The above, principally compose our soil. There is also red volcanic clay soil, partaking of the above elements, which the vine appears to thrive in admirably. Thus we have combined the essential elements of the celebrated hill of Burgundy, and those of the Rhinegan. Also, we find our climate is the crowning point, to make our locality a first class wine growing region in every respect. The mean temperature of Sept. is from 78° to 80°, warm enough to ripen any "exotic grape to perfection." All varieties of the grape that have been introduced, both American and exotic, do well, and in place of disappointment, we are only surprised by the fine quality of the fruit. I would advise your Tooele correspondents to be a little careful how they make their dashes into Dixie with their French velocipedes, as our volcanic and red sandstone locality is not just the place for such locomotion, and the future will reveal that our wine growers here were wiser than some of their northern neighbors.

L. S. HEMENWAY.

SERICULTURE—A GLANCE AT THE HISTORY OF SILK.

BY LOUIS A. BERTRAND.

To the Jacquard loom, a valuable machine invented by Mr. Jacquard, of Lyons, has been mainly ascribed the sudden extension of silk manufactures in Europe. This loom is now universally in use, but the magnificent effects it can produce have been nowhere pushed to so great an extent as in France, and particularly in Lyons. The same may be said of Calais in its application of the Jacquard loom to blondes, or figured silk laces.

The city of Lyons, three hundred and fourteen miles south of Paris, and two hundred and eighteen north of Marseilles, is the great silk mart of the world. It has a population of two hundred and ninety thousand inhabitants, of whom, one hundred and ten thousand,—more than one third of the whole, are engaged in some way in silk manufactures. Of this number only one thousand three hundred are women, and about four or five hundred children. There are over sixty thousand silk weavers. There are nearly six hundred silk merchants; these buy the raw silk from all parts of the world, and give it out with the patterns to master weavers, who generally have from three to eight looms in their dwellings, and employ weavers to execute the work. In Lyons alone they use us, annually, about six million pounds of raw silk, valued before working at about thirty-six million dollars.

Saint-Etienne is for the speciality of silk ribbons what Lyons is for manufacturing the most splendid silk tissues in the world. Saint-Etienne contains ninety thousand inhabitants, and with its suburbs gives employment to twenty-three thousand six hundred and twenty-two persons, of which the greater part are women and girls. It has fifteen thousand looms. According to the Chamber of Commerce, the value of its productions for the year 1866, was sixty million francs (twelve million dollars), five-sixths of which were disposed of to the United States, England, and the city of Paris.

Before dropping the present subject, I will say that several of the above distasteful facts were extracted from the report of Mr. Elliot C. Cowdin, United States Commissioner to the Paris Exposition. Whosoever desires to read a more extended account of the silk business in Europe and America, is referred to this able report.

THE BEST MANAGEMENT OF THE SILK-WORMS FOR UTAH.

The annual silkworm (*Bombix Mori*), which produces by far the best silk in Europe, is born in the spring, ordinarily about the middle of May. It feeds on the leaves of the mulberry tree and attains its full growth in about six weeks. During that period it changes its skin four times, and according to Mr. de Quatrefages, of the French Institute, increases its weight seventy-two thousand times. Early in July, hav-

ing reached its full development, it establishes the workshop of its wonderful manufacture. Placed in a comfortable and secure position, it proceeds to envelop itself in a cocoon formed by a filament of exceedingly fine silk, emitted from the stomach of the insect. It soon disappears in the centre of the cocoon or silken envelop, and, after about seventy-two hours of unremitting labor, produces a thread ordinarily not less than sixteen hundred yards in length. In that chosen retreat the silkworm again sheds its skin, for the fifth time, but the insect which comes out is no longer a silkworm, but a chrysalis—bearing but a slight resemblance to the worm. After two weeks or more, according to the temperature, the skin of the chrysalis opens, and, changing for the last time, it becomes a butterfly, lays some hundreds of eggs, and dies.

Now, without enumerating here the peculiar modes of raising silk in different countries, I will merely say that a first class cocoonery in Europe is, at this time, a very costly concern. The largest in the world is located at Hyeres, a fine town, thirty-six miles west of Marseilles. It is the warmest locality in France. The form of the building is circular; it belongs to the Count de Beauregard, a distinguished sericulturist. Such is the magnitude of this nursery that eleven pounds of eggs, that is to say about eight millions of worms can be hatched and simultaneously fed within its walls. Beginners will be frightened, in reading the full nomenclature of apparatus, of tools and scientific implements invented by modern sericulturists or borrowed by them of the "Celestial" breeders. For instance, not only the leaves are carefully gathered one by one from their standard mulberries, and cut in the nurseries before feeding the worms, but they are cut with a peculiar knife and distributed with a Chinese sieve. Fortunately, our dry climate is so well adapted to that branch of industry, that we are exempt from all these minute and trifling practices.

I will do my best to simplify, in the full sense of that word, the process of raising these precious insects in Utah. To arrive at that end, the most natural mode ought to be adopted by our breeders. "Give the silkworms air, fresh and pure; let them be comfortably warm and dry, and cleanly; and with sufficient space to prevent them from coming in contact, with ample supplies of healthy food." These directions alone, given by Mr. Louis Prevost to the Californian sericulturists, are sufficient to insure the most perfect success to our infant cocooneries.

HATCHING THE EGGS.

The eggs are generally laid on paper or cloth, and must be kept in a cool, dry place in the cellar, where, to prevent them from hatching, the thermometer never rises above fifty degrees. In Europe they have to use artificial heat for their hatching. A special room is used in large cocooneries, and a very ingenious hatching-box (*une couveuse*) in small ones; but here in Utah, we have no need of artificial heat. The eggs should be taken out when desired to be hatched, and gradually exposed to the heat of the outside air. A sudden change from a cool to a very warm atmosphere is considered detrimental. The right time for hatching can not be accurately indicated. But as soon as your mulberries begin to shoot their leaves, you may gradually expose your eggs to a natural heat.

After remaining in a warm atmosphere from five to eight days, the eggs will assume a whitish color, a sure symptom of the formation of the worms inside. They will soon begin to show themselves, and the moment they make their appearance, they begin to look for food. Place some tender leaves from your mulberries on the paper, and they will at once begin their occupation for life—eating.

At the end of the first day, after they begin to hatch, take all the worms off the paper containing eggs and place them on separate papers. This can be done by removing the mulberry leaves upon which they are feeding. Do the same thing for about three days. By this time all the eggs that are good and strong will, most likely, be hatched. The balance may be thrown away. All hatched the first, second and third days must be kept separate, and for this purpose may be marked first, second and third, by a pencil, on the paper containing them. The object of this division is that you may feed and treat those of the same age exactly alike. One day's difference in the age of an insect that has only from thirty to forty days to live, it must be remembered, is a good deal. And especially is this the case with the silk worm, which in that short period of time goes through five different periods of existence. The transformation from one of these periods to another consists in shedding the skin, or, in other words, laying off the old garment. These changes are called moultings. While undergoing any one of these five changes, each of which occupies from twenty to twenty-four hours, dependent on the health and vigor of the worm, they will not eat, nor must they be fed, or on any account disturbed. In this fact will be seen the reason for keeping each day's hatching separate; for when the first day's hatching is five days old they begin their first moulting, and if the second day's hatching are mixed with them the latter are not ready to moult, and require feeding. To do this disturbs the former and endangers their lives. The same difficulty and danger will occur at each of the several moultings. Hence the great necessity of keeping them separate; and precaution must be observed or failure, during the hatching period, is certain.