more perfect under this last tedious fermentation ; in others however it is mischievous, and hence the destruction of many wines. Thus Champagne is destroyed, and often very quickly : thus Burgundy also is easily ruined ; and thus even our Port is not a very durable wine, though the de­struction is here accelerated by the intermixture of brandy used in this particular manufacture. Age, which thus me­liorates one wine, destroys another, independently of that loss of flavour which occurs in some of the more delicate, though this also is the result of the slow fermentation under review. In the sweet wines the same process tends con­stantly to diminish that sweetness ; and hence the compa­ratively dry qualities of ancient Malmsey and of Paxaret un­der the same circumstances. In this class of wines also the flavour is injured by the same process, or by age ; and hence, though age may confer merit as well as honour on Malmsey and Malaga, and generally on the sweet Spanish and Greek wines, which have little flavour, by diminishing their lusciousness, it destroys or injures the highly perfumed wines of Frontignan, which can scarcely be drunk too new.

By the same considerations we can account for the benefit which Madeira wines receive in a hot climate, or in a hot cellar. The effect of the heat, and, in the case of a sea-voyage, united to the agitation, whose action was con­sidered before, is that of accelerating the imperceptible fermentation, and thus ripening the wine sooner than would have happened in a low temperature and at rest. But it is a mistake to imagine that this is peculiar to Madeira, or that it is the only wine which can be benefited by this treatment. It is the same for all the Spanish wines, for Sherry and for Port ; and it is also true of the better and safer wines of France, of those of Hermitage and the Bordelais. Claret becomes drinkable in a much shorter time in a warm than in a cold cellar ; and that is equally true of many more of these wines. But that which some will bear, others will not ; and thus many of the wines of France, so far from admitting a high temperature, can scarcely be preserved even in a low one. As to Port, it is a useful piece of knowledge to be aware that it may speedily be rendered aged by heat. And in this case it deposits its colour, and assumes the marks of old wine to the eye as well as to the palate. One year will thus do that for Port which might have required five or six ; but the period of its entire duration is consequently shortened, as might be expected. The effect of heat is indeed such in this case as is suspected by few. In America it is a well-known practice to boil Madeira, or to heat it to the boiling temperature ; and the effect is that of rendering it good and old wine, when previously harsh and new. The same practice is applicable to Port. If newly-bottled wine be exposed to the sun, it begins shortly to deposit, and improves in flavour ; and even the rawest wine of this kind may, by heating it in hot water, be caused, in the course of a day, to assume the quality which it would have had after many years of keeping. It is so far from being in­jurious, as might be imagined, that it is a valuable secret ; and, as we believe, one that is but little known to those whose interest it is to give the complexion of old wine to new, and who generally effect this purpose in a fraudulent manner, by putting it into foul and crusted bottles.

It is important, in another view, to consider the effects which follow from a portion of undecomposed sugar re­maining in wine. It is supposed to be a means and a test of the security of wine; and the French chemists assert, that as long as any portion remains undecomposed, such wine cannot run into the acetous fermentation. This ap­pears true only in a limited sense. In Hock, it would seem as if every atom of sugar had vanished, and yet the durability of that wine appears to be endless. If that is not absolutely the case in Claret and Madeira, still these are very durable wines ; the most so, after Hock, at least of the dry class. None of these, when of a good quality, ever runs into the acetous fermentation. Perhaps this may depend on some peculiar balance of principles, which che­mistry has not yet found the means of discovering ; for, in other cases, it is certain that the chemists in question are under an error, and that the acetous fermentation will come on though sugar should still be present. This hap­pens in many of the French wines of the lighter kinds. If, in the sweet wines from the grape, that effect does not take place, it is very certain that it happens in the wines made in this country in imitation of them from various sub­stances. In these cases even sweet wines are found to be occasionally *pricked,* as the technical term is, or vinegar and sugar are co-existent in the fluid at the same time. Nor are even all the foreign sweet wines of the grape ex­empt from this disease ; as must be well known to those who have an extensive knowledge of wines, or of the wine market.

There is reason to believe, that the cause of this must be sought as a circumstance which these chemists seem to have overlooked. If the balance of principles in a sweet wine has been perfect, and the process of fermentation has also been complete, and if, in addition to this, these wines have been so carefully racked and fined that no lee or leaven remains in them, they may be safe, because there is nothing left in them to re-excite a fermentation, or to bring on the acetous stage. But if that is not the case, if any impurity, any leaven in any form remain, the sweet­ness offers no security against the change into vinegar, or at least against the partial change which constitutes a *pricked* wine. The acetous fermentation may commence, and proceed as far as the circumstances allow ; and thus vine­gar and sweet wine may exist together in the fluid. The nature of the acetous fermentation is indeed very ill under­stood, as little as that of the vinous ; and we are at present incompetent to reason much about it. It is a common opi­nion that it must be preceded by the vinous ; yet this does not appear to be true. Certain mixtures of sugar, leaven, and water, will immediately tend to vinegar, without our being able to detect a previous vinous stage; and this seems always the case when the solution is very weak, or the water in large quantity, provided, of course, there be access of air. It is indeed unquestionable, that in the com­mon process of making vinegar, the acetous fermentation is going on in a saccharine fluid, so that the mixed taste of vinegar and sugar is perceptible until that process is com­pleted. Vinegar can also be produced by passing alco­holized carbonic acid through water, another obscure ope­ration ; and in the human stomach it is produced in a very few minutes, when we can scarcely imagine that any pre­vious vinous stage can have taken place.

When all the favourable circumstances above stated are present, the fermentation begins, and passes through its regular stages, till there is produced wine, perfect and dry if the sugar has been thoroughly and accurately propor­tioned to the other ingredients; sweet if it has been in excess ; and acid, as in Hock, when this substance has been in undue proportion to the other ingredients. The unfa­vourable circumstances must be sought in the temperature, or in the quality of the fluid. The juice of the grape rarely labours under any defect but the want of sugar, arising from a bad variety of this fruit, from a bad season, or from imperfect ripening. In the latter case, however, there may be added to defect of sugar or excess of water, an excess of acid and an excess of extractive matter.

In the wine-countries, the defect of sugar is remedied by different expedients. In some, sugar or honey is added to the juice or must ; in others, a portion of the juice is eva­porated and added to the rest ; and sometimes all the juice is boiled before it is submitted to fermentation. These seem to have been the *vina cocta* of the ancients, which,