

THE  
WINE MERCHANT'S MANUAL :

A TREATISE

ON THE

FINING, PREPARATION OF FININGS, AND GENERAL  
MANAGEMENT OF WINES,

BEING

THE RESULT OF FORTY YEARS' PRACTICAL EXPERIENCE IN  
THE TREATMENT OF THE DIFFERENT WINES  
CONSUMED IN THIS COUNTRY.

By T. SMEED.



LONDON :  
SMITH, ELDER AND CO., 65, CORNHILL.

1845.

London :  
Printed by STEWART & MURRAY,  
Old Bailey.

## PREFACE.

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**THIS** little Essay on the Treatment and Fining of Wines is presented to the trade, in the hope that it may prove generally useful both to the merchant and the cooper.

If there is one species of knowledge more essential to a wine merchant than another, it is a perfect acquaintance with the most wholesome, safe, and efficient treatment of his wines.

I should premise that this treatise is not the product of mere theory, or founded on other books on the subject, but is the result of above forty years' extensive and uninterrupted experience in the management of wines, aided by the instruction of which I had the advantage in early life from old practical coopers.

Without noticing the many systems which experience has exploded, or going further into the

details of the manufacture of wines than is necessary to elucidate my system, I shall confine myself entirely to the treatment which wines require at the hands of the importer or merchant when they come into his possession ; and by explaining the nature, principle, and application of fining, and the mode of subduing the harsh and coarse qualities which are occasionally exhibited, to enable every merchant or his cellarman to pursue a safe, simple, wholesome, and certain mode of treatment, adapted to every variety of wines, under all circumstances.

It is also my object to show the benefit to be derived from attentive racking ; and the most efficacious method of discharging the colour of white wines, as well as to show the occasional expediency of blending wines, and give a few general hints necessary to be observed in the cellar.

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ON  
THE TREATMENT  
AND  
FINING OF WINES.

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It is well known to those experienced in the trade, that the wines of the highest character are the produce of fruit favourably vintaged, after a propitious season, when the grapes have attained their full ripeness.

The culture of the grape and the making of wines are now conducted, in most countries, with greater attention than formerly; more care is generally bestowed on all that concerns the vintage, namely, in the selection of the grapes, at the gathering, the cleanliness of the vessels used in the fermentation, and in all the other details essential to the production of a clean and pure wine.

Notwithstanding the adoption of all these "means and appliances," we must not forget,

that, from the operation of various causes,—the nature of the soil, accidents of weather, or an unfavourable vintage,—an inferior quality of wine will sometimes be produced; and it is on the treatment necessary to the improvement and preservation of such wines that I shall presently offer the results of my experience.

It will generally be found that wines of the first class and character arrive in better condition, as regards appearance and retention of lee, than wines of inferior quality. It is also well known to merchants and men of experience, that pure and generous wines gradually ameliorate and develop their valuable properties without artificial aid, needing only a simple treatment, and an ordinary but efficient fining, to perfect their condition and brilliancy for bottling.

It will occasionally happen, when this class of wine is allowed to remain too long a time under finings, that a few flyers, or some light substance having too much buoyancy to remain long in adhesion to the subsided lee, after once fining, will ascend and become suspended again in the wine, in a greater or less degree. This will sometimes occur to an extent to render it prudent to rack the wine, in which case the repetition of a light fining becomes necessary; but it is very seldom that the finest description of wines re-

quires to be subjected to any further process, provided that the finings used are properly prepared and applied.

The ordinary wines imported owe their character, in the first instance, much to the nature of the season, to the mode adopted in the vintage and manufacture, and to other contingencies, on which I shall have frequent occasion to remark.

Such is the difference arising from the nature of the grape, soil, and climate, that some wines will readily deposit their tartarous qualities, whilst other wines will retain them in suspension; and, when the latter is the case, the development of their more generous properties becomes retarded, and the influence of the unfavourable quality disengaged, deprives the wine of its chance of amelioration. It is on such an occasion that the skill of the merchant or cooper is called into requisition, in order to the extraction of the quality so inconsistent with vinous purity. A fining efficacious to the remedy of this defect has long been a desideratum with all who are concerned in the management of wines. Many kinds and qualities of wine, when coming into the hands of the importer or merchant, require a specific fining for the complete liberation of those noxious qualities: this can only be accomplished by the application of suitable finings, combined

with the process of racking. This system is absolutely essential to render such wines clean and fit for consumption.

Now, as regards wines that are free from such defects, we know that it is attributable to the due balance of the desirable constituent properties present in the fruit, when subjected to the press, combined with the care and skill required to be exercised in the process of fermentation. The grower, or factor, when these advantages are secured, is enabled to produce a pure, perfect, and grateful wine. The shipper, importer, or merchant, has only then to apply an ordinary fining, properly prepared, to effect the perfect condition of such wines.

When the merchant takes into his stock any quantity of wine intended for immediate consumption, of whatever description, the process of fining follows, as a matter of course; and he administers himself, or leaves to the cellarman to administer, such fining, and in such proportion, as he deems necessary to perfect the subsidence of lee, and expecting, doubtless, to insure the brilliancy of the wine, and to improve, as far as possible, its general condition. After a reasonable time allowed for that purpose, he probably finds it bright, and from the apparent brightness and condition of the wine, the merchant will deter-

mine on the expediency of bottling it, as occasion may require. Relying upon the quality of the finings used, he calculates on a continuation of the brilliancy of the wine bottled; and supposing the finings to have been appropriate, and due attention to have been bestowed on it in other respects, he will, so far, have performed his duty. But supposing that, at no distant period, flyers make their appearance in the wine, or it exhibits a dulness, or probably becomes gradually cloudy, and ultimately foul, to what cause will it be attributable? Such a result has very frequently been a subject of complaint, and it not only brings discredit on the merchant, but is often attended with serious inconvenience and loss. It is quite evident that this must arise from mismanagement in some shape or other, or from the inefficiency of the fining applied, and occasionally to both of these causes.

Important, however, as is due attention in the treatment of wines, much depends on the efficiency of a fining, and that efficiency depends on the preparation of it. Every person concerned in the management of wines knows that *isinglas* is the principal ingredient used, and that it is the most pure and appropriate of ordinary finings for white wines, when properly prepared. But the system that has been, and is at the pre-

sent time, adopted by many, of dissolving isinglas for *wine finings*, is far from being proper. The mode most efficacious and practically applicable to all white wines has long occupied the attention of the trade. The system adopted in many instances has been found but partially effective, and that even when the isinglas has been proved to be of the finest quality, which sufficiently demonstrates a defect in preparation. Various plans are followed both by the fining-makers and the merchants who make their own. A great proportion of the finings vended is made with strong acidulous liquids variously compounded. These acids do not form the basis essential to the completion of a fining, so as to render its action effective and incorporate the matter precipitated with the subsided lee,—a result indispensable to the brilliancy of the wine. In fact, these compositions in some instances operate quite adversely, and are decidedly objectionable on account of the abominable odour which they emit, and with which wines have in many instances become imbued. The frequent failures ensuing from the use of finings thus improperly compounded sufficiently prove the fallacy of many of the systems pursued. The subject is one of the utmost importance to every one concerned in the trade, and if a uniform system can be

pointed out (which I propose to do) for the preparation of a fining perfectly simple in its properties, and efficacious and practically applicable to all *white wines*, the advantages would be unquestionable. The main point to be regarded in the formation of a fining for all description of white wines, is the action of precipitation upon, and combination with, certain particles suspended in the wine, indispensable to secure stability of lee—a process essential to the permanent brilliancy of white wines.

In the course of my remarks, I shall have frequent occasion to advert to the mode of preparing finings, in order that every one may clearly understand the relative properties and true constituents of a fining.

Without, of course, asserting that there is no system of fining at present in use which is not objectionable, I have no hesitation in affirming, that the true principle in the preparation of finings is very imperfectly practised, and that the mode generally pursued is very defective.

The objects to be regarded, as I have already observed, in the preparation of a *fining* from *isinglas*, is the intrinsic purity, sympathy, and coexisting principle of the ingredients used in dissolving the *isinglas*;—secondly, the steady action of the fining in effecting the precipitation of the suspended particles present in wines, and their

permanent adherence to the sediment when completely formed into lee. These are qualities indispensable in the preparation of a *fining*, to which alone we can look for the maintenance of the brilliancy of wines. The method employed by many is founded upon principles the very reverse of these, and in some instances operates injuriously upon the quality of the wine. Many of the ingredients used in the dissolving process absolutely tend to the dissolution of the lee; in fact, the modes often resorted to are in every respect futile,—the invention of some idle habit; they serve no real object, and yet they are used by persons who are too careless to inquire into the subject, and who are probably wholly incapable of assigning any reason for the results.

It must, I imagine, be very evident to any person of ordinary experience, that the condition, amelioration, and preservation of wine in bottle, depend wholly on the degree of its previous condition and maturity in wood, and to the perfect freedom from all detrimental particles which it might at any time have held in suspension. It is highly necessary that this fact be borne particularly in mind, the brilliancy of wines in bottle being wholly dependent on it.

Every cooper and cellarman of experience, who has watched the action, progress, and ultimate re-

sults of finings, variously prepared, must admit the impropriety of dissolving isinglas with strong acids, stale cyder, and other powerful acidulous liquids. I admit that the isinglas may readily be dissolved with such compounds, and that the brilliancy of the wine may apparently be perfected; but in nineteen instances out of twenty the wine so fined and bottled becomes, at no distant period, flyery or foul. If we introduce in the composition of a fining any ingredient possessing, in however small a degree, the fermentative principle, we immediately hazard the steadiness of the lee, which is readily acted upon by any fermentative application; and thus a reaction takes place in the sediment formed, and the lee becomes disturbed. Consequently, what one part of the fining perfects, the other subverts; in which case, the lighter particles of subsided matter, from their natural buoyancy, separate and ascend, and we perceive the particles floating in the wine. Thus it is with wine when it assumes a dull or cloudy appearance after having once attained brilliancy: the defect is generally attributable to one and the same cause.

It must, I think, be manifest to those who well consider this subject, that a very essential and important point in the preparation of an ordinary fining for white wines, is the fitness of the ingredients used in dissolving the isinglas; its

coefficient influence on the precipitant substances, in causing their permanent incorporation with the sedimental lee. These relative principles must exist in the composition of a perfect fining; and, as I have already observed, it is only by a fining combining these affinities and immutable properties, that we are enabled to effect the condition and brilliancy of wines, with a certainty of their retaining that condition for any length of time after being bottled.

I have already mentioned, that it is not my design to dwell upon the manufacture of wines; but in order satisfactorily to enter upon the merits of the treatment applicable to the different varieties, it is absolutely necessary to notice the cause of the difference of quality. I shall merely make such allusions as will enable me to explain my views upon certain points relative to the necessity for the variation of finings; and I feel convinced that I shall be enabled to lay down a system that shall be applicable under all circumstances, and to all descriptions of wines.

Now, for example, we know that the purity, and every other desirable property of wine, are owing, in the first instance, to the state of soundness, maturity, and perfection of the grape, and to the abundance of the saccharine property present when submitted to the press: yet the saccharine

principle will remain inactive, unless it is combined with other natural qualities in quantity sufficient to cause that mysterious change necessary to perfect the fermentation. The second essential for a pure and perfect wine, is the judicious mode pursued and the attention exercised in the fermentation. Thus the factor or shipper is enabled on these favourable occasions to obtain such wines in a state of purity; and here we arrive at a point to which I am desirous of drawing the especial attention of my reader. For the sake of illustration, we will suppose that a portion of such wine has been received, and found to be a clean, pure, generous wine. In this case we have only to follow one general rule as regards the fining; assuming that they are white wines, we need but the finest quality of isinglas, appropriately prepared (the direction for which will be found in another part of this little work) to effect their perfect condition and brilliancy; and, in the other case, we require but the white of fresh eggs for red wines of a like good quality.

Now, as regards the treatment of this quality of wines, there can be no difficulty in deciding on the preferable mode; namely, the most simple. The necessity of properly preparing the isinglas, to render the fining efficacious, must be borne in mind.

It may not be thought out of place if I here hint at the propriety of securing, after a particularly fine vintage, as large a portion of the wine as may be convenient. I think it will be admitted that the import and shipping houses of respectability are always willing to afford the merchant every facility on such an occasion. At all events, it behoves the merchant to be alive to the advantages of securing a portion of the wines, exceeding his immediate wants, for many obvious reasons; one (the most prominent) of which is the value of such wines in blending and bringing up other wines wanting character, probably the produce of a less favourable vintage. There are many circumstances under which the blending of wines, when skilfully managed, becomes as satisfactory to the consumer as it is advantageous to the merchant.

The respectable shipping houses and foreign correspondents invariably endeavour every season, and particularly on the occasion of a favourable vintage, to procure a portion of the choicest wines commensurate with their expectation of orders for shipment; and it is obviously their interest to bestow such attention on these wines, both previously to, and at the time of, shipment, as shall render them as clean as possible, and thereby ensure their progression to maturity and the development of

their vinous properties ; thus leaving little for the future management of the importer or merchant. When these results are satisfactory, and the merchant is convinced the wines have been properly treated, he has only to apply an ordinary fining to perfect the condition of that wine, when intended for the bottle. In order to perform this necessary operation with success, the merchant's first care should be to place the wine in a situation the temperature of which is suited to its character : this is a point very essential in promoting the perfect and permanent brilliancy of the wine. It is then equally important that the finings be pure, appropriate, and judiciously applied : all this being effected, the merchant may look forward to the attainment of the object desired.

Much might be said of the great advantages which the opulent and influential houses possess over others less fortunate ; but as such advantages are, I presume, generally familiar to the trade, it would be useless to lengthen this treatise by dwelling upon them. We know that particularly good vintages do not often follow in quick succession ; that the most opulent houses, notwithstanding their anxious endeavours to procure and ship their wines in the most perfect condition, are occasionally to some extent, from unavoidable accidents, foiled in their object, especially in the

event of a succession of unfavourable vintages. The full, fruity, pure wines retained in store, adapted for blending, have probably become exhausted, which leaves but one obvious alternative to the shipper. To this point he directs his operations, and applies the most judicious treatment his means afford for the general improvement of the wines intended to be shipped. However, in seasons unfavourable to the vintage, the merchant must expect to find some portion of the wines short of perfection ; the tartarous and other qualities opposed to the vinous properties exist more abundantly. This defect, after the voyage and the allowance of a little time for maturing, may in a great measure be remedied. There are means simply and conveniently applicable, which it is unquestionably expedient for the merchant to adopt for the amelioration and preservation of such wines.

It is not so much to the species of vine itself, as it is to the nature and quality of the soil and climate in which the grape grows, that wines owe their peculiarities of flavour, fragrance, and general excellence. Nevertheless, the productions of these favoured spots are not invariably exempt from the common accidents that frequently operate unfavourably both on the vine itself and the product. Despite the care of the cultivator, canker

and several other diseases frequently affect the vine, and the unfavourableness of a season acts prejudicially on the grape; indeed, the accidents tending to the deterioration of the fruit in its progress to maturity are innumerable. When the grape becomes affected from any of these natural causes, the injury, as a matter of course, extends to the produce of the press, however careful and judicious may have been the management of the frabricator.

Now, on the arrival, or reception into store, of any wines little or much affected from the causes just referred to, the propriety of submitting them to a simple and wholesome process of fining will not be disputed. Indeed, all wines that exhibit any defects on their arrival ought to be subjected to this process, and then carefully racked; for this simple reason, that, as the wine gains age, it naturally continues to precipitate its extraneous particles, and, at proper periods in its progress to maturity, we are enabled, by an appropriate auxiliary fining, with the ordinary fining of isinglas or eggs, and judicious treatment in other respects, to assist and finally complete the subsidence of all superfluous matter, and thus enhance the purity and wholesomeness of the wine.

We know that wines, the product of fruit that has imbibed any obnoxious quality, are, after

undergoing fermentation, chiefly dependent for their future character on judicious management during their progress to maturity. If, therefore, we find, on the arrival of wines, or on receiving them into stock, that this important process has been neglected, and that there is a predominance of some quality opposed to the vinous property, it unquestionably becomes the duty of the importer or merchant to adopt the means necessary to free such wines as far as possible from the objectionable quality.

It may here be observed, that, although this has been a subject which has engaged the attention of most persons in the wine trade, it is acknowledged that the system pursued for thus correcting and improving the flavour of wines, has been generally inefficient to the end purposed, the finings usually employed having been unsuitable to the purpose.

It must be very evident, that before any permanent improvement can possibly be effected in wines possessing any degree of coarseness, harshness, &c., we must remove, by an appropriate fining, the existing defects; then, by carefully racking the wine, we separate it from all objectionable matter which it previously retained in suspension, thus affording the vinous properties the power of development. It will not be improper here to impress on the mind of the

*young cooper*, that wines which have not fully deposited their impurities will invariably improve from the operation of careful racking after the application of efficient finings; in fact, it is the only system practically applicable for the attainment of their ultimate condition. I may also, before I proceed further, urge upon him the expediency of performing these operations with all wines of ordinary and inferior quality, whether designed for bottling or blending. If intended for bottling, they invariably require to be once or twice properly fined and carefully racked, otherwise they seldom retain their brilliancy; and if intended for blending, the cleaner we can get them the better.

If, in the fabrication of wines, there should be a deficiency of the saccharine property, a generous wine will not be produced; but if the saccharine property, and other essential qualities present in the grapes when submitted to the press, should be tolerably proportioned, the fruit moderately free from decay and extraneous matter, a good ordinary wine will be the result. When the saccharine property proves abundant in the grape, and the fruit itself is pure and free from defect, a wine possessing the highest qualities and character will be produced, if proper attention be exercised in the fermentation.

When inequalities in the saccharine property and other vegetable qualities necessary to produce fermentation occur, different results will be exhibited. When there is a deficiency of the saccharine property, and a predominance of any quality foreign to the vinous purity, in the grapes when submitted to the press, the result will be the production of inferior wines, varying in quality proportionably to the foreign matter with which the fruit became charged. We know that *sugar*, *tartarous* and *malic acid*, *vegetable extract*, and *aqueous matter*, are the ingredients in the composition of the grape; and, as I have already observed, according as these qualities vary in quantity in the fruit previous to its conversion into wine, different results are produced. Hence arises the variety in the qualities of wines.

Now, if we admit the existence of defectiveness in the grape, even in a slight degree, previously to its conversion into wine, we need no great argument to show that a corresponding defectiveness will be exhibited in wines after their having completed their fermentation. Experience sufficiently proves, that the quality opposed to the production of a pure wine does not readily disengage itself by free deposits, and when left suspended in wines it deprives them of their proper flavour. Moreover, the same defects will be discoverable in the wine

in bottle, and will prove as injurious to its preservation as it will to its appearance.

It is to the treatment of the ordinary, or what may be termed the second and third class wines, that I shall now proceed to advert; and here it may not be amiss to observe, that the casual shippers frequently send off their wines before they have had sufficient time to deposit their impurities; in short, wines are shipped in different stages of condition, and it is principally from this cause that we meet with so many various qualities of wines in the market.

As regards the treatment of the ordinary or coarse description of wines, I need scarcely observe, that the adaptation of a fining for remedying the defects I have adverted to, has engaged the attention of every practical man concerned in the management of wines; but to attempt to enumerate one-half the ingredients that have been employed, the mode of preparation and application, would be as tedious as it is unnecessary; I shall therefore content myself by a brief reference to what has commonly been used;—thus, prepared chalk or lime has been applied previously to the use of the ordinary finings, in the proportion of half a pound or a pound to a pipe or butt of wine. Various calcined earths have been similarly applied; Spanish earth and prepared chalk mixed

together, in the proportion of a pound of the former to half a pound of the latter, have also very frequently been used to a pipe or butt of wine ; but the chief advantage of this mixture is found in its application to wines that have become *scuddy*, in which single instance its use is not only not improper, but will generally be found to produce the desired effect, particularly in such wines as may be affected from their having been transported in skins. Gypsum and similar ingredients have been, and are now, used in various ways ; but I hold them to be utterly unsuited to the purpose. In some countries a sort of limestone is obtained, which, when baked and pulverized, is employed occasionally with some little advantage. However, these methods generally fail in producing the full effect desired ; their advantages are but partial, and the use of them is often more injurious than beneficial. Their earthy qualities render them generally inappropriate, and constitute a grave objection to their adoption. Without retorting upon the advocates of these old practices (assuming they have been pursued with the best intentions), I must express my conviction, that they have often been employed by persons ignorant of the true principle of treatment.

What we have first to regard in a fining is its freedom from any peculiar smell or flavour, as it

is very evident that those qualities will be communicated to the wine; and although this may rarely be detected, it will at all times be prudent to bear in mind the precaution, especially in the case of delicate wines. Secondly, the power of the materials of which the fining is composed, to effect the entire subsidence of the obnoxious substances. Thirdly, its stability when in combination with the sedimental lee, so essential to perfect and complete the brilliancy of the wine. Now, with regard to the ordinary and inferior class of wines, we have, in most instances, two objects in view,—the riddance of all objectionable qualities, in order to get them into the best possible state of condition in wood previously to showing them for sale, &c.; and the retention of their brilliancy.

The treatment necessary to the improvement of the ordinary and inferior quality of wines, is to some, I am aware, but a secondary consideration. To the holders, however, of such wines, it is obviously a matter of importance, and one which is well worth their attention. I shall here make a few observations upon the action of the usual finings of isinglas and the whites of eggs, and, at the same time, point out an auxiliary, really efficacious and practically applicable, for the improvement and preservation of this class of wines.

Its peculiar operation in connection with isinglas or eggs, together with its purity, renders it eminently adapted to the purpose. However, as on this subject, as well perhaps as on others, prejudice often prevails over thorough experience, some of my readers may differ from my views; I shall, nevertheless, freely give my opinion on the mode of treatment for which I contend, and which is founded upon long practical experience. It is well known to all those conversant with the management of wines, that isinglas or the white of eggs is admirably adapted, when properly prepared, for finings for all kinds of wines, and all-efficient for wines possessing intrinsic purity. It must, at the same time, be allowed, that neither the one nor the other has much influence on that extraneous and tartarous quality to which the occasional coarseness and harshness exhibited in wines are attributable.

I presume it will be admitted, that it is both prudent and expedient to free such wines as have retained in a greater or less degree the unfavourable qualities derived from the grape, from the defects already adverted to. It must, I think, be evident, that if such obnoxious qualities are not worked out in the course of fermentation, or corrected shortly after the completion of that process, the wine cannot possibly progress or improve

in flavour; but if left to remain in that state, it gradually deteriorates, from the influence of those noxious matters imperceptibly suspended in it. Now, in these instances of coarseness, harshness, or other incidental defects in wines, isinglass or the white of eggs has this beneficial effect, as it has upon all sorts of wine: it assists the precipitation of such matter, perfects the compactness of the lee formed; and this is the extent of its influence. There is no property in either the one or the other tending to neutralize or correct the exciting quality of the coarseness and other defects in wines.

That both are admirably adapted for finings for all qualities of wines is indisputable. Nevertheless, if an auxiliary ingredient intrinsically wholesome can be brought in to operate upon, and to remedy to a considerable extent, the defects adverted to, surely the expediency of its adoption will be obvious; and here it may be remarked, that were this system more generally acted upon before the symptoms of decay become apparent, a greater portion of the ordinary wines would leave their bonded habitations. We are well aware, that, notwithstanding the attention bestowed by the cultivator and factor, a portion of ordinary wines will unavoidably be produced, the quantity and quality being dependent on the in-

fluence of the season. Those who are familiar with the trade know also that wines from various causes are frequently shipped in an imperfect state. The amelioration of wine depends invariably upon the presence of foreign matter in contact with it; therefore I contend that such wines as have been more or less affected by any unfavourable quality existing in the grape, and transmitted to its produce, require and deserve, at the hands of the importer or merchant on their coming into their possession, a large share of their attention, and that much may often be done in way of improvement by a judicious mode of treatment.

From the preceding remarks it will be obvious, that, if we possess any means of remedying these casual defects, by converting the obnoxious matter into a perfect subsidence of lee, and, by thus separating the wine from it, we preserve and enhance its wholesomeness, it is our own fault if we do not take advantage of the system. Now long and careful investigation has discovered a means of perfectly accomplishing this purpose; the method is acknowledged by those who have adopted it to be based upon the soundest principle, and those scientifically experienced have pronounced it to be unsurpassed in certainty and simplicity.

All those substances which we find diffused in

wines that form what may be termed the natural lees, are easily separated by the finings prepared with isinglas, or with the aid of the whites of eggs; simply for this reason, the predisposition of these substances to separate and precipitate themselves, renders it merely necessary that they be combined with heavier matter to effect their total subsidence. But if it be borne in mind that the noxious quality causing pungency and other defects in wines, to which allusion has been particularly made, is retained principally in an incorporated and undecomposed state of fluidity, and diffused through the whole body of the wine; it will be evident that an auxiliary fining, specifically calculated to disunite the obnoxious matter, is not only a desideratum, but absolutely indispensable. Pre-eminently adapted to this purpose is the **CONCRET MARIN**.

The *concret marin* is by no means a new preparation, it being well known to a few. It is composed of marine shells, of which there are some peculiarly adapted to the purpose; but the vast improvement that has recently been effected in the sublimation of this article has originated in my suggestions, the result of much consideration, and several experiments on the subject.

Where the *concret marin* is brought into use, it will establish a uniform mode of treatment with

all those wines that are in any degree affected by the causes referred to. "The concrete cannot possibly be surpassed for its intrinsic purity. It is more tasteless than isinglas or eggs, and the little fragrancancy it possesses is decidedly preferable to either. In every instance in which I have used the concrete, in its present state, I have succeeded in perfectly divesting wines of the coarseness and other qualities opposed to their true flavour, being assisted of course by the ordinary finings, combined with attention and cleanliness in the operation of racking, so needful on these occasions. The favourable influence which the concrete has on wines may be perceived in a few days.

I trust I may not be thought presumptuous, if I here refer to a complimentary remark, in a letter I received from a merchant in the vicinity of Bordeaux, who, in the autumn of 1843, possessed a considerable stock of vin de grave, which, for the most part, assumed an unfavourable character, and continued in a very indifferent condition. He had solicited my advice as to the best mode of treatment to be adopted. His letter is dated last October:—

"With respect to the application of the method you were kind enough to advise me to pursue with my vin de grave last autumn, I am happy to inform you that it answered exceedingly well.

I succeeded in perfecting their condition completely, and they improved much beyond my expectation, and, as you justly observed, I have found the adoption equally advantageous in other wines; indeed it has yielded most excellent results, which to me have been of great importance."

The *concret marin* is applied with the greatest advantage to wines, as it is peculiarly adapted to counteract and neutralize all acescency, a material point in the treatment of those of the ordinary class. I am aware there have been many absurd and ridiculous ingredients employed occasionally for various objects, and regarded by some as great secrets. I could specify sufficient to fill a volume, but it would be a waste of time, and foreign to my purpose. The instructions contained in this little work are intended to render the management of wines easy to all connected with the trade; to propound a system free from intricacy and infallible in practice, and guided by which the merchant may ensure the preservation of his wines, and prevent or remedy the various accidents to which they are liable.

I have endeavoured in my preceding remarks to describe the action of a fining, and the necessity for its modification to the different qualities of wines; I shall here make a few observations

upon the well-known fact of wines becoming *flyery*, cloudy, or foul, both in wood and bottle, after having been fined and become bright. The real cause in some instances is not easily to be defined. I freely confess it has often puzzled me to account for it; when, however, it does happen, it operates to the annoyance of the merchant in a variety of ways; and when occurring to wine in bottle, after being sent out, will, of course, injure his reputation with the consumer; indeed, the inconvenience and loss accruing to the merchant from such occurrences on some occasions, are very serious. It is a subject to which the young cooper, or any person desiring to become skilled in the management of wines, ought particularly to devote much of his attention.

I may, perhaps, differ from some of my readers on the causes of these accidents; however, I shall candidly express my opinion on the subject, and explain the method I have adopted to obviate them. It must often have been observed by most merchants and coopers of experience, that *flyers* have occasionally appeared and afterwards disappeared in wines in wood, after they had attained a tolerable brightness from the fining applied. To precisely account for the cause of this disturbance of lee on all occasions would be next to impossible; but I think it may in general

be pretty accurately explained. There is no question that these incidents may be often traced to the fact of sufficient time not having been allowed for the disengagement and deposit of the particles generally present in wines. I need not, I presume, in order to make this evident, instance the different wines that continue for a lengthened period to make deposits in various degrees. The nature of the grape, soil, and season, may be regarded as having something to do with it. We may take the single instance of port wines: there have been many disputes as to the number of years port wines will continue to deposit the matter which forms the crust; the same reasoning is in a measure applicable to many other kinds of wines. I have known, as have no doubt most experienced merchants and coopers, some of the most highly esteemed white wines, to form in various degrees, crust on the bottles. I can cite two instances in particular, of the finest Madeira and white Burgundy that I ever met with, and for which the most extravagant price might have been obtained, having formed a complete crust;—that of the Madeira a perfect buff colour, and that of the Burgundy a shade lighter. The crust so formed in both instances adhered to the bottle so firmly that the wine was decanted perfectly bright to the last drop. Now, how shall we

account for it? It is true I have heard many theories on these and similar facts, but I can assign them to no other cause than that I have adduced.

I need scarcely observe that it is the object of the merchant to ensure the perfect brilliancy of his wine, and to preserve that brilliancy when attained. When wines in wood show any disposition to become flyery or cloudy, after having been fined, the most prudent mode to adopt will be to carefully rack such wine at once with a bottling-cock, in order that the lees may be as little disturbed as possible. I am aware that many have an objection to racking wines, from an idea that it weakens them, but this is assuredly a mistaken notion. I am convinced of the efficacy of the plan I recommend, however delicate the wine may be to which it is applied. Wines do not lose an atom of their saccharine property in being carefully and cleanly racked, while on the other hand we rid them, by that operation, of whatever is opposed to their vinous perfection. I have achieved far greater advantages by attentiveness in racking and applying a moderate dose of finings, than I have ever derived from any other mode of treatment. It is much the practice with the British merchant and cooper to administer a top fining, when wines are found somewhat stub-

born, and this sometimes repeated two or three times over. To say the least of such a system, it is decidedly injudicious, and in nineteen instances out of twenty the wine becomes in a greater or less degree either flyery, cloudy, or foul in bottle.

We perceive occasionally, in wines in bottle, flyers assuming two different appearances; sometimes they may be seen floating in the form of a flaky substance, yet the wine will show bright with that exception; and at other times they appear as exceedingly small dark crystal-like particles; and on the bottle being shaken, the wine immediately becomes foul. In other instances, a peculiarly fine sand-like sediment may be observed at the side or in the punt of the bottle. Some will persist that these deposits are neither more nor less than crystallized tartar, and that the Rhenish and French white wines are most liable to be thus affected; others maintain that the evil arises from some foreign admixture introduced during the fermentation, or from the blending of different varieties of wines previously to the entire completion of the fermentation. However, those who thus reason do so from mere supposition; the probability is, that these defects are attributable to the natural causes to which I have just referred, and probably more often to the

want of proper treatment and the inefficacy of the fining.

I am aware that these accidents have been the subject of the keenest investigation, and many conjectures and arguments have been hazarded on their cause. The subject is, perhaps, scarcely susceptible of perfect explanation, but I conceive we cannot arrive at a more satisfactory conclusion than by referring these accidents generally to the causes I have assigned; that is, when the wines have been properly fined. I feel convinced that little can be advanced to impugn the accuracy of my remarks. Various have been the modes adopted in both the treatment and fining of wines, with the view of preventing these occurrences. No one will attempt to deny that it is essential before bottling to separate the wine from any abundance of lee; this, of course, can only be effected by efficient fining and racking, which should be performed in the most careful manner, so as to prevent any agitation in the lees, in order that we may not disturb that objectionable matter from which we desire to rid the wine. Hence, at the time of bottling, there will be but little sediment to disturb, and we thus avoid, as much as possible, the ascendancy of flyers, or other deposited matter. These are operations most beneficial, and indispensably necessary for per-

fecting the permanent brilliancy and condition of wines.

The finest classes of Hocks, White Burgundy, Moselle, Hermitage, Amontillado, Sherry, and the pure Sercial Madeira, are, indisputably, the choicest of white wines, yet we must admit, that they are liable to these accidents, as well as wines of inferior quality, though less frequently and in a much less degree, when proper attention and appropriate finings have been used. I have in the preceding remarks, I conceive, clearly shown the cause of the tendency in the pure and perfect wine, and of the ordinary or inferior wines, to deposit early in wood that tartarous quality, which no one will deny to exist, in some degree, in all wines, until they have attained their perfect state of maturity. Experience teaches us that the freer the fruit is from any tartarous impurity, the finer will be the product. Thus it is, from this natural cause, that the perfect wines more readily and freely deposit those qualities necessarily present in perfecting the fermentation. Hence wine gradually ameliorates until it has attained its maturity, and for the perfection of its brilliancy a simple fining only is needed. It is not so with the ordinary and inferior class of wines; they retain, in suspension, more or less, some particles of the

impure qualities of the grape; hence the imperfection of this character of wine.

The preceding remarks, I hope, will serve in some measure to assist the inexperienced merchant and cooper in the treatment best adapted to the different qualities of wine, and enable them prevent, in a great degree, their wines from becoming flyery, cloudy, and foul in bottle.

I have often heard many remark, on discovering these imperfections, that the finings were properly prepared and applied, and that the wine was bottled perfectly bright; that every care was bestowed upon it, and they could not account for the change in bottle. I grant, as I have already acknowledged, that it is a difficult problem to solve at all times satisfactorily, but I am greatly mistaken if, in these instances, we might not often, on close investigation, find something like neglect or want of efficient finings to be the cause. However, what ought to be done immediately on housing any delicate wine, by way of accelerating its brilliancy, and ensuring the maintenance of its condition, is to place the wine in as steady a temperature as possible, not under 50° Fahrenheit; and let the wine remain for a few days, until it feels the effect of the change of locality before we attempt to fine it. If it be a very delicate wine,

be moderate in the quantity of finings used, a delicate wine invariably yielding more kindly to a moderate than an over dose of finings; while the subsided lee will generally be found more stable. I have very frequently, in the case of delicate wines, adopted the plan of boring the tap hole when the wine has been laid on the scantling, or previously to fining it, and driven in a cork, so as to save boring the cask in order to introduce the bottling-cock at the time of bottling the wine. This mode enables us to tap the cask with much less chance of disturbing the lee. Were this plan generally adopted, I am convinced, that it would often prevent the appearance of flyers, and the cloudiness often perceived in bottled wines: other rules are necessary to be observed to insure the quietness of lees. No damp rubbish, or wet saw-dust, should be suffered to accumulate under the bulge of the cask, where the lees naturally rest; but whatever may tend to create or imbibe dampness, should be raked away, and if the earth under the cask be of a cold clayey nature, some mode should be adopted to subdue the influence of the cold upon the cask, in order that the lees may not become affected by it. These are precautions necessary to be observed in such cases, for, where the bulge of the cask rests near to a cold bottom, the lees very rarely become perfect, quiet, and com-

pact, in which case the wine has not a fair chance of maintaining its brilliancy and condition. I know these are held as secondary matters with many, but when the wine is perceived to become foul in bottle, they will probably think it worth while to attend to the hints which I have thrown out on the subject.

It is admitted by men of the first practical experience, that about the time the vine puts forth its buds, there may, occasionally, be observed a sympathy between the wine stored in the cellar and the vine; that is, the lees of many sorts of wine become more or less affected at these periods. This is chiefly observed in wines not fully matured, or wines not above three years old. This sympathetic phenomenon occurs at the periods when the sap of the vine is rising, and is watched for by one experienced in the management of wines. The indications are palpable enough to a practised eye: one of the signs is, an almost invisible greyish vapour. Immediately that this is observed, the wine should be racked before it assumes a perfect dulness. At other times, abundance of flyers are discovered swimming in the wine. In this latter case, the wine rarely becomes suddenly foul. However, these are certain indications of disturbed lee, and therefore are sufficient grounds for racking, in order to

separate the wine from the disturbed sediment, when it will immediately regain its brilliancy, and most probably become improved in condition.

In other instances the lees may only become so far disturbed by these sympathetic changes, as merely to throw up a few flyers, scarcely discernible, and which, after a few days, may perhaps disappear; but it may here be remarked, that in these cases we may reasonably infer the once-subsided lee to be in a fickle, unstable, and incompact state. Now, if the wines giving these indications be bottled, without having been first racked and cleared from the disturbing cause, the result will invariably be that the wine becomes, in a greater or less degree, flyery or foul in bottle. However, as regards these unfortunate occurrences, much depends on the natural disposition and quality of the wine. I have frequently known wines, after having been once fined, to retain their brilliancy for years; and I have known other wines, until they have become aged, to exhibit these strange sympathies every vintage, although they have had the best attention bestowed upon them; and I have often found it necessary to rack wines in spring and autumn, in order to secure them from these contingencies.

It is astonishing, also, how these influences act on the aroma and flavour of some wines, if left to

themselves during the disturbed state of lees. The question, therefore, is, what plan of treatment promises most success, with reference to the permanent condition and brilliancy of wines so affected ?

To this point I shall now address myself.

In the first place, it is necessary that the cause of the disturbance of the lee, after its supposed subsidence in wines, should be well considered. Now we know these accidents are often productive of great inconvenience, and when they occur to wines in bottle are of serious consequence. When we have good reasons for suspecting that the deposited lee has become disturbed, from whatever cause, the proper course to pursue will be to rack the wine so affected. By this operation we are enabled to separate the wine from the further contamination of the disturbed lees, and other objectionable matter.

The British merchants and coopers, however, have commonly adopted, and still pursue, the system of giving the wine, in these cases, what is termed a top fining, which, I contend, is most injudicious, when the maintenance of brilliancy of the wine in bottle is the object. In the first place, we cannot properly administer the fining without disturbing the whole body of subsided lees, and bringing back into suspension the sedimental matter, thus

strengthening the already excited fermentative principle which causes the disturbance. We may force back the substances affected, but we do not rid the wine from their influence. It is necessary to bear in mind, in these instances, that these changes are attributable to some active instigator of the fermentative principle present in the lees. One fact favourable to this conclusion may, at all events, be adduced, which is, that when wines to which these accidents occur are left to themselves, in nineteen instances out of twenty, they revert to almost their original foul condition. I do not assert that we cannot in these instances reproduce the brilliancy of the wine with the ordinary finings, without recourse to racking; what I assert is, that the system affords little or no security for the future condition and permanent brilliancy of the wine in wood, and especially in bottle.

The plan I recommend is, I am satisfied, the most advisable: it is to carefully rack the wine from the lees, which, with the assistance of suitable finings, insures the maintenance of its condition and brilliancy, both in wood and bottle.

I have dwelt at some length on the qualities of which it is essentially necessary a fining should consist; and I have endeavoured to make apparent the necessity of variation in the application of finings, corresponding with the different qualities

of wines. During my experience, of forty years, in the practical management of wines, I have witnessed many fatal results, from these important operations being performed by persons ignorant of their business ; as also from the application of unsuitable finings. I shall, therefore, in dismissing this subject, prescribe a few rules applicable to different descriptions of wines generally found in the merchants' cellar, for the guidance of those who may be desirous of improvement, and feel disposed to adopt a system, the efficiency of which practice will abundantly demonstrate.

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#### ON THE APPLICATION OF FININGS.

First, put the finings into a clean wooden can, or some other vessel that is perfectly clean and convenient for mixing the finings, add about two quarts of the wine to the finings, and whisk it gently up for a minute or two ; then add three or four quarts more of the wine, and mix the whole together with either the whisk or rousing stick, but do not agitate the finings so as to cause much froth. Now, if the following plan be adopted in pouring the finings into the cask, in two portions (particularly for a pipe or butt of wine), in-

stead of pouring the whole in at one time, the finings will be more equally distributed over the surface of the wine ; for, with a little expertness in the use of the rousing stick, we are enabled to catch the finings before they have sunk too deep in the wine. To effect this perfectly, we ought to endeavour, whilst rousing the wine, to throw the fining to each head of the cask, and not continue throughout the operation to rummage all one way. Many cellarmen persist in rummaging the wine round one way only, and fancy it is the most systematic mode. However, I object to that plan ; maintaining that it is necessary for perfectly uniting and spreading the fining over the surface of the wine, to work the rousing stick different ways, in the commencement of the operation, moving it from head to head, as well as round. There is no occasion to particularly agitate the wine, but only to take full and efficient strokes with your rousing stick, so as to send the fining the greatest possible distance ; and, lastly, before withdrawing the rousing stick, to rouse the wine round one way by ten or twelve steady strokes, in order, after the finings having been perfectly united, to draw the precipitating matter to the centre, so that the deposit may be made as much in the bellying part of the cask as possible. A rousing stick ought

not to be more than three feet long for the purpose of rousing in the finings of a pipe or butt of wine, and two feet and a half for hogsheads, aums, &c.

The great object, as I have just remarked, in rousing the finings into wines, is to unite and spread them so as to form, as it were, a sheet upon the whole surface of the wine, that the fining may have the desired effect on all the particles floating and suspended in it.

It has not unfrequently happened, as has already been remarked, when this operation has been performed in a slovenly manner, and the finings have not been properly united, particularly when wine is in a rather unfavourable temperature, that flyers are observed to linger in the wine; the same remark applies also to bottling wines thus carelessly fined, which have appeared bright from the fosset. We may often perceive a few bottles to run flyery; and, at intervals, the wine will run brighter at one time than at another: it may happen that a bottle or two may appear a little cloudy, then again the wine may run bright, or, probably, become so foul as to render it prudent to stay the further proceeding of bottling. This will generally happen near the end, or when the cask is raised. The result most annoying to the merchant in these occurrences, is the whole bulk

of the wine becoming flyery or foul in bottle ; but, even if the evil should be only partial, the discovery at the consumer's table is anything but desirable, as detracting from that satisfaction which the merchant is desirous at all times to give ; consequently it behoves the cellarman or manager of any stock of wines, to pay the strictest attention to the judicious application of his finings.

The fact of which the merchant or cellarman has first to satisfy himself, previous to the application of a fining, is the intrinsic purity of the wine. He then only needs a fining prepared in the most simple yet appropriate way, to perfect the brilliancy of the wine, and to counteract its liability to the accidents already alluded to ; while he must bear in mind that occasions may arise to render it necessary to once rack and refine such wine. Now, the first and principal requisite in a white wine fining, is the purity of the isinglas ; the next is the fitness of the ingredient to dissolve it. I know no mode of dissolving isinglas, combining wholesomeness and efficacy, to surpass the following. I have tested its value in some hundred tuns of different white wines. It consists in first mixing a portion of some dry wine with an equal portion of Rhenish stum, and then dissolving the isinglas in it, by placing the vessel containing the ingredients in some warm place,—say in a tem-

perature of seventy or eighty degrees of heat, allowing the fining two or three days for perfect dissolution.

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TO MAKE FININGS FOR A PIPE OR BUTT  
OF WINE.

FROM RHENISH STUM ALONE.

For a pipe or butt of any delicate white wine, such as Amontillado, or any other fine pale sherry, Sercial Madeira, clean delicate Bucellas, &c., add to a quart of Rhenish stum half an ounce of the finest quality of picked isinglas; let it remain for two or three days to dissolve, during which time occasionally stir it up, as convenience offers, say two or three times in the day, after which it may be used, or reserved for future occasions. For a hogshead of wine we of course need but half these proportions, and for a quarter-cask one-fourth of the quantity designed for a butt; these proportions will be applicable to a hogshead of any kind of Rhenish or French white wines, to which a heavy fining is decidedly unsuitable, and which, above all other wines, need a fining of intrinsic purity.

It may here be proper to observe, that isinglas ought to be dissolved in an earthen vessel having

a top, or otherwise secured by a covering of some sort, in order to preserve it from the influence of the air, dust, &c. ; the common white jars with covers, which may be obtained at any of the earthenware shops, of various sizes, are well adapted for the purpose.

The ordinary full-bodied wines, as Sherry, Madeira, Lisbon, Teneriffes, Marsala, Capes, &c., require a larger portion of finings than those of a more delicate character, and for which the following increased proportions of isinglas and Rhenish stum will be found appropriate.

For a pipe or butt of full-bodied or ordinary wine, add to three pints of Rhenish stum three quarters of an ounce of isinglas, and dissolve it as already directed. Any quantity of finings that may be required is easily made by increasing the proportions of the Rhenish stum and isinglas. For instance ; suppose you require a gallon of finings, you must then add the following proportions : one gallon of Rhenish stum to two ounces of isinglas ; thus, it is easy to make whatever quantity of finings one's necessities require, by increasing accordingly the proportions of the Rhenish stum and isinglas.

It is evident that isinglas, from its nature, can gain after its dissolution no addition to its desirable properties ; therefore it is obviously

imprudent to make a larger quantity of finings at any one time than may be required for use within a reasonable period, say a month; by this precaution the merchant is secured against the liability of using any that may have become stale; such inadvertences it is very necessary to guard against.

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#### TO DISCHARGE THE COLOUR OF WHITE WINES.

To discharge the colour of white wines so effectually as to render their ultimate brilliancy in bottle perfectly secure, is an object of much importance.

Sad errors have been committed from the systems pursued, and ingredients used for reducing the colour of wines, and very unfavourable results have occasionally ensued from the practice of such injudicious systems; I shall therefore adduce an uniform method, suitable to all kinds and qualities of wines.

The operation of reducing colour demands the cellarman's close attention, indeed, none of his operations in the cellar require a greater share of his skill and care, and without the observance of these he cannot perform his duty with credit to

himself, or to the interest of his employers. There is a certain description of white wines, which, from the nature of the grape, retains in the skin more of the colouring matter than others, and approximates in nature and quality to the tannin matter found to exist in the skin of the grape, from which port and other red wines are produced. These descriptions of white wines are generally coarser and more pungent than others; they will often be found to improve when a portion of the colour is extracted; their pleasantness of flavour is much promoted, especially in the instance of wine that is somewhat coarse and high-coloured; indeed, the general condition of these wines may oftentimes be very materially improved, for this reason,—the degree of coarseness and somewhat acrid quality which are frequently found to exist in these wines, may be traced to the tannin matter, or vegetable extract, with which the skin of the grape becomes charged. The unfavourable quality is imbibed, in a greater or less degree, according to the favourableness of the season; thus, in wet and unfavourable seasons, wines of such products are subject to the predominance of that quality which tends to impede the amelioration of the wine, and robs it of that agreeable flavour it might otherwise have possessed. The decline of such wines is often

attributable, in some degree, to the presence of that extraneous quality when unchecked. We know that the ordinary finings, however appropriately prepared, have little or no effect on this peculiar quality, yet the extraction of colour is very simple, and the ingredients necessary for the purpose are perfectly unobjectionable.

We ought on all occasions, when about to subject any description of wine to a particular mode of treatment, to consider well the object we have in view, and then apply the means for effecting that object. Now, to do this, it is indispensably necessary thoroughly to have investigated the causes of the defects in wines, as well as the constituent qualities of the most pure and generous wines, before one can become sufficiently skilled in the management of them, as to be able, on tasting different qualities, to decide on the most judicious mode of treating them.

As regards the discharge of colour in different wines, Sherry will be found the most difficult wine to submit to that operation, and Madeira, Lisbon, Teneriffe, Marsala, and Capes, the most easy.

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TO REDUCE A HIGH COLOURED WINE TO A  
LIGHT GOLD COLOUR.

Obtain, for a butt or pipe of white wine, three quarts of good milk, put it into a clean brass skillet, or some other appropriate vessel, place it over the fire until it just arrives at a boiling point, then pour it into a clean pan to cool, and when cool take off the scum which forms the greasy matter, and having so done, add to it half a pound of marine concrete; you will find by mixing them together that the milk will assume the appearance of thick cream; then add to it a gallon and a half or two gallons of the wine, keeping the whole well stirred during its addition; then pour it into the cask and rummage it well up for two or three minutes. When the wine is tolerably bright you may rack it; bag the bottoms if you think proper, and mix the bright wine with that racked, then fine it with the ordinary finings, bearing in mind that a stout full-bodied, or young wine, needs a larger quantity than a fully matured wine of a lighter character.

You will find, after a week or ten days' rest from this fining, that the wine will attain its perfect brilliancy; supposing it, however, to be a

coarse description of wine, and that you intend to bottle it, then it would be prudent to rack it a second time, in order to separate the wine, as far as possible, from all objectionable matter that has existed and become subsided; by pursuing this plan you cannot fail to promote the development of all those desirable properties that the wine possesses. It is from thus seasonably racking this description of wines that we are enabled to effect their general improvement, and to ensure their brilliancy in bottle.

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#### TO OBTAIN A PERFECTLY PALE WINE.

The portion of milk must depend on the colour of the wine; it should also be remembered that an old wine does not need so large a portion as a young wine. Supposing it be desired to reduce the colour of a high gold sherry to that of a pale wine, and also that the wine be perfectly matured, clean, and of a generous character, it will require a gallon of milk and half a pound of concrete. Now, if it should be convenient to first mix the concrete and milk in two or three quarts of sweet Lisbon, it will be found to have a very good effect, inasmuch as with the concrete it tends in

a great measure, when mixed with the milk, to prevent its curding, and to counteract the coagulation which is a very desirable point. First, mix the concrete and milk together, then add the sweet wine, making the whole, together with the other wine, to about three gallons, keeping it well stirred up as you pour the wine to the milk, then pour half into the cask, and rummage the wine; after which pour in the remainder and rummage it again, by which means you catch the fining before it sinks too deep into the body of the wine. As soon as you find the wine tolerably bright, rack it carefully with a bottling-cock, after which fine it, and your own judgment will enable you to decide from the condition of the wine, whether or not it is needful to submit it to any farther operation of racking.

The principal things that we have to observe in reducing the colour of a wine, is the standard colour it possesses, its quality and state of maturity. If it is a pure and light character of wine, and the object is only to remove a portion of the colour, put two quarts of milk and a quarter of a pound of concrete to a pipe or butt of wine; and if it should be a young wine, we should need three quarts of milk and half a pound of concrete; if the object is to reduce the colour to a light straw colour, we must increase the quantity

of milk from three quarts to a gallon accordingly ; and in wines, particularly high-coloured, we require six quarts to attain our object, namely a pale wine.

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#### PREPARATION OF MILK.

I strongly recommend to those who have the requisite convenience, the following plan, from which it is impossible that the most delicate wine can become in any degree injured, but, on the contrary, I have known some instances of extraordinary advantages accruing to the merchant from the process. When you have obtained the milk, put it into an earthen vessel that nicely contains the quantity required ; then place the vessel in a kettle nearly filled with cold water, put it on the fire, and let the water boil gently until you find the milk come to the same point, then remove it and put it aside to cool. When cold you will be enabled to abstract the entire greasy matter, then add the concrete to it, and mix both well together. I have generally mixed a pint of milk first with the concrete with the hand, and then added the remainder by degrees. Thus we produce a preparation for reducing the colour of wines

that, for purity and efficiency, I am sure is not to be surpassed. After having completed this operation, I have generally adopted the plan, in cellars that have been free from vapours, of folding a clean piece of bung cloth three or four times thick, and tacking it over the bung-hole, instead of driving the shive in, and so have allowed it to remain until the wine was racked. But this plan must not be adopted with Rhenish or French wines; to all other wines it will be advantageous. It will be unnecessary for me here to give the proportions for a hogshead or quarter-cask, as they may be easily calculated from the quantity given to the pipe or butt. The object of mixing concrete with the milk is, that together they form a condensity which renders the preparation complete in its action, and it prevents the coagulation of the milk when first administered to the wine, while it materially accelerates the separation of the peculiar matter intended to be extracted and deposited. It unites the subsident substances falling into deposit; it perfects the coalescence of the sediment, and counteracts the influence of the extracted substances on the milk when formed into lee, thereby obviating the dulness frequently perceived in wines when milk alone has been applied. In fact, milk and the marine concrete are admirably applicable for reducing the colour of

all kinds of white wines. The application of the preparation is simple, its purity and wholesomeness indisputable, while it has not the slightest ill flavour.

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#### ON BLENDING WHITE WINES.

Many good reasons may be assigned for blending wines, but it will not be possible for me to point out any uniform rule; the mode must be regulated by the particular advantage desired in the operation. The improvement of one quality of wine may be contemplated by mixing with it a certain portion of another, or it may be desired to produce a certain quality of wine suited to some particular purpose. However, in these operations, when it is convenient, we ought, prior to mixing together different qualities of wines, to get them into as bright and good condition as possible, in order that the good quality of the one may have its full influence in supplying the absence of it in the other. We will say, for instance, that we have a butt of sherry which is wanting in both body and character, and that the object is to amend and improve that wine; the first step is to apply an appropriate fining, in order to rack it bright at

the time of its being blended; thus we get rid of all that quality of lee which would be opposed to the favourable influence of the richer wine. Whenever it is intended to amend and improve the character of an ordinary description of white wine, the first object should be to get that wine into as clean a condition as possible, so that the richer wine may speedily contribute the benefit desired.

The following method will generally be found beneficial, when it is desired to amend or enrich any ordinary white wines, or wines wanting richness. As I have just observed, the first thing to be done is to get them as bright and as clean as it is possible; we may then effect an improvement by adding to a pipe or butt of such wine ten, twelve, or fourteen gallons of sweet Lisbon. This mode may be pursued with much advantage in all instances with an ordinary Sherry that wants body and richness. Supposing we have a pipe or butt of wine that is somewhat worn, and become a little harsh, and which we are desirous to improve, in order to bring that wine into use. Then, in fining that wine, give it one pound of the concrete and rack it, after allowing it to rest a week or so for the subsidence of lee; then add such a portion of sweet Lisbon as may be deemed necessary to produce the degree of richness desired,

after which use a moderate fining. The adoption of this mode cannot fail in every instance of producing the best results in thin and worn wines.

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#### TO REMEDY THE ACCIDENTAL MALADIES IN WINES.

The accidental maladies in wines generally arise from the cask, or from negligence in respect of the vessels made use of in racking. But whatever be the cause, the remedy is usually a troublesome matter. A woody taste is very difficult oftentimes to get rid of, and a musty one is much more so. Innumerable recipes are given for the cure of these evils, as well known to the reader, I presume, as to myself; but I question if the best have been found effectual in practice. I have occasionally succeeded in remedying these defects by pursuing the following method:—For a butt or pipe of white wine, get your baker to well bake one pound of flour; put it into an earthen dish, so that it may lie about an inch thick in it; provide two quarts of milk, and when the flour is baked, mix it completely with the milk, so as to form one perfect consistence; then add half a pound of marine concrete: mix

the whole well together and fine the wine with it. For a hogshead or quarter cask, you have only to reduce the proportions accordingly. When the wine is bright, rack it and fine it with the ordinary finings. Now this system is perfectly wholesome, and during my experience I have found nothing more efficient. It may be proper to observe, that, in dealing with these maladies, it is necessary to discharge a portion of the colour; indeed it is scarcely possible to effect much good without doing so; for this purpose we use the milk, the flour and concrete act as absorbents, the wine losing a portion of its colour at the same instant that it gets rid of the defect.

In red wines we have greater difficulty, for this reason—we cannot prudently reduce the colour; and without removing that we cannot well remedy the defect. However, the mode to be pursued is, to use a pound and a half of flour, and half a pound of concrete to a pipe of port or other red wine, and then fine the wine with eight or ten eggs. If this has not the desired effect, apply a second dose, by using a pound of flour and a quarter of a pound of concrete, and then again fine the wine with the same quantity of the whites of eggs, and rack the wine when bright.

## GENERAL REMARKS.

I am aware that there are some who make little or no distinction in the treatment of the different kinds of white wines. Wines widely differing from each other in quality, the products of different soils and climates, of different ages, and of different states of maturity, one and all have the same attention paid to them,—the mode of treatment and proportion of finings adapted for the one are deemed equally applicable to the others. But it is a rough and very injudicious practice, and often operates unfavourably. I have known many suffer for their obstinacy, although the majority of merchants well know that it is indispensable to the healthiness of many qualities of wine, that they should each have that attention which its particular nature requires. There are many great errors committed in the application of finings, not unfrequently arising from prejudices and want of experience, and I will venture to assert, that even in one sort and shipment of wines, necessities exist for variation of treatment and finings. I have, in the course of my remarks, dwelt at some length on this subject, and, I hope, sufficiently to enable most persons to form a just idea of the principle upon which it is permanently advantageous to act.

Some persons, with a view to hasten the brilliancy of white wines, in cases of pressing necessity, apply a heavy fining, as it is termed, that is, they employ a larger quantity of finings than is usual, in order, as they imagine, speedily to attain the desired object; but the practice is generally found to be deceptive, and it very frequently brings on a flatness in the wine from which it takes some time to recover, especially if it should be a wine of a light character. Now, in the event of any urgent demand to expedite the brightness of any white wine, in order that you may bottle a portion of it, say, for instance, in three or four days, the following method will be found successful.

For a pipe or butt of wine, dissolve half a pound of white candy in a pint of Rhenish stum, first breaking the candy as small as possible, which can be done with the face of the adze; then put it with the Rhenish stum\* into a can or some other vessel which will admit of its being stirred about while it is dissolving, which it will do in about four or five hours. Stir it about at intervals with your rousing stick, so as to complete the dissolution; this done, add to it three

\* The Rhenish stum is prepared by W. H. Rolfe and Co., Wine Fining Makers, No. 3, Great Tower Street, London.

pints of finings, and mix both up with a gallon of sweet Lisbon, or other sweet wine if convenient. You may then add to it about a gallon of the wine you intend fining, stir the whole together and proceed to fine the wine. When completed, leave the shive loose, in order to allow sufficient vent.

In cases of emergency I have often, from the adoption of this mode, succeeded in perfecting the brilliancy of wines in the time just specified. Nevertheless, I am no advocate for the system, unless it be in some pressing occasion, for reasons sufficiently obvious to every person familiar with the treatment of wines; all wines necessarily requiring a longer time for the gradual subsidence of the lees.

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#### IN FINING RHENISH AND FRENCH WHITE WINES.

I have frequently derived advantage, when fining the Rhenish and French white wines, by first mixing the finings with a bottle of sweet wine, such as Lunelle and Frontignac, letting it rest an hour or two before I fined the wine. The plan may seem frivolous to some, but those who

have not made the trial, will find it worthy of their notice. I have often perfected the brilliancy of a hogshead of wine by this very simple method, after it had been variously operated upon with finings without the desired effect; and the wines will generally show greater brilliancy after this operation, and rarely become flyery or foul in bottle. When it is not convenient to obtain a bottle of sweet French wine, a bottle of good clean sweet Lisbon can do no harm; indeed, in some instances, a much larger portion would be serviceable for the nutrition of many of these wines.

If the mode of treatment and the finings I prescribe be adopted, they will, I am convinced, wholly supersede the use of those doubtful ingredients of which I have disputed the applicability. Now, with respect to such wine as has become perfectly acid, it would be presumptuous to suppose that they are to be made marketable by the aid of any fining whatever; in fact, such an achievement I am sure is not desired by the merchants; it is impossible to restore such degenerated wines to a wholesome condition. I am not ignorant of the means adopted to correct, in a great degree, such degenerated wines; nevertheless, I must think those who adopt and carry the system into practice ought to drink the wine themselves. What I contend for is, the expediency of averting

such maladies, by applying at a seasonable period, a wholesome and efficient fining, adapted to the necessities of any ordinary or affected wine, whereby we may correct the threatened evil. I maintain that if complete control is not attainable, by skilful treatment and appropriate finings, over the defects frequently found to exist in the ordinary and inferior class of wines, much more may be done to remedy such defects than has hitherto been achieved, that the general amelioration of such wines may be greatly promoted by timely accelerating and perfecting the subsidence of the extraneous matter suspended in them.

Professor Liebeg and others insist that in the grapes poor in sugar there remains, according to circumstances, after the completion of the process of fermentation, a portion of nitrogenous constituents, retaining the same properties which were possessed by the grape previous to the fermentation. These assertions must, I presume, tend to confirm the truth of my observations with regard to the treatment of the ordinary and inferior classes of wines, and to show also the expediency of a fining specifically applicable for divesting such wines, in some degree, of their obnoxious qualities. Now for this purpose the *Concret Marin*\* is specifically designed. The principle is

\* *Smeed's Concret Marin* bears the name on the seal,

acknowledged by merchants generally to be perfectly clear, and yet, obvious as it is, there are some who cannot understand its value. I feel assured of its universal adaptation to the ordinary wines, to the defects of which it will be found advantageously applicable.

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#### RACKING.

In racking wine intended to be bottled, the first object is to procure a fresh cask, emptied of as good a wine as possible; then we ought to be particular in the cleanliness of the cans or vessels made use of in the operation; the shive should be loosened in order to allow the wine full and efficient vent while it is running off; and before we commence racking, we ought to bore a vent-hole in the bung stave of the empty cask, either before or behind the funnel, so that the confined air in the empty cask may escape as we pour in the wine. By this means we prevent the wine

encircled in that of W. H. Rolfe and Co., 3, Great Tower-street, London, who are the principal agents. The observance of this on the seal of the packages may be very necessary.

becoming impregnated with the air previously contained in the empty cask, which air we may plainly hear escape from the vent-hole as the cask fills, and we hereby also prevent any bubbling over from the funnel, thus precluding the possibility of the wine imbibing by contact any new element, which is a very essential precaution to be observed in racking operations, especially with delicate wines. Moreover, the wine, after being thus racked, immediately regains its quietude, and as soon as the bottoms are bagged, if you think proper to do so, the bright wine from the bag may be mixed with the finings, and the wine then fined and shived up. It must be borne in mind, that after racking wines from the deposited lee, a moderate fining only is required. In the adoption of this mode we can depend on wines retaining their perfect condition and brilliancy, so as to fit them for immediate bottling if desired, or if left to rest, their amelioration will be promoted by the operation.

Some imagine that wines lose both character and body from the operation of racking; that is altogether a mistaken notion. Whenever there is a necessity for racking wines, their pleasantness of flavour, delicacy, &c. are invariably much enhanced, provided the operation be properly performed. In fact, it is as I have before re-

marked on this subject, a sure mode of their preservation.

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### RHENISH AND FRENCH WINES.

The Rhenish and French wines require more attention and care on their coming into the hands of the merchant than any others. As their nature and delicacy will not admit of repeated rackings, or fortifying with brandy, whereby the nutrition of other wines is much more easily accomplished, a very pure and efficient fining in the first instance is an essential point. The chief care then required by these wines after being fined, consists in keeping the casks as free from ullage as possible, to prevent the atmospheric air resting on the surface of the wine, in order to secure it from that infection of mouldiness of which these wines are so susceptible, termed by some, the mother, by others the flower, &c. If, at the time of fining the wine, we take the precaution, provided the cask be not completely full, of burning a portion of a match by introducing it just within and round the shive hole, and immediately on withdrawing the match drive in the shive, it will, in ninety-nine cases out of a hundred, preserve the

wine against the disease of mouldiness on its surface.

Many merchants dissolve the isinglas with Hock, and other Rhenish wines, when anxious to procure a very pure fining on a particular occasion, for some peculiarly delicate and probably expensive wine. It is well known to all conversant with the trade, that the Rhenish wines are more effectual than any other in dissolving isinglas; yet men of general experience agree, that however great the properties of those wines may be singly applied, in dissolving isinglas for finings, the result is not wholly to be depended upon for securing the absolute compactness and stability of lee. Now, a fining more pure it is impossible to prepare; but the frequent occurrence of flyers in wines so fined sufficiently shows the deficiency of the needful basis in the preparation to complete the stability of the matter deposited; it is therefore very evident that we need an addition of some ingredient, as the basis of the fining, to render it complete; it is of great importance to those who make their own finings to bear this in mind; the method of preparation must be based upon this principle to render the fining permanently effective.

DIFFERENCE OF TREATMENT NECESSARY  
FOR WINES.

I have before observed that different wines require different treatment, as they differ from one another in their natural qualities. For instance, if you house a butt of very fine clean delicate Sherry, you need only apply to such a wine an ordinary fining, and then proceed in the further treatment of it as has been already recommended. But, on the other hand, allowing that you take into stock a wine of ordinary character, and that some slight defect, one, probably, of the many I have alluded to, is found to exist in it, it becomes prudent to resort to the marine concrete. When there is very little defect, a small portion only of the marine concrete is required, say half or three quarters of a pound to a pipe or butt of wine, as may be judged necessary. This ought to be well mixed up in five or six quarts of the wine, then poured into the cask, and well rumbled up with a rousing stick; the ordinary finings may then be used without the least regard whatever to the concrete. When the wine is bright, rack it, and fine it again with about two-thirds of the ordinary finings you previously used. Now, supposing that after this operation the wine,

on attaining its brilliancy, is not quite so clean as was expected, or not to your perfect satisfaction : then do not hesitate to rack it again, and again reduce the quantity of ordinary finings ; by these means, and only by these means, can you ever effect a permanent improvement in the ordinary or inferior class of wines.

As regards the generality of ordinary wines, we know the variety of quality to be very great ; the cause of which, whether natural or incidental, I have already commented upon, and I hope sufficiently, to enable both the merchant and cellarman to discern and judge of the necessity for variation in finings and treatment, and to pursue a course adapted to the wants of whatever description of wine may come into their hands. However, in order to render this particular duty in the cellar more clear to those who are wanting in experience, we will be supposed to have housed a butt or pipe or two of ordinary wine, and that we previously knew their precise quality, or we find it out when tasting them in the cellar, which ought always to be done before they are fined. Now, we will allow the first to be a good clean ordinary wine and perfectly matured ; satisfied of this, we have only to administer an ordinary fining. But the second butt or pipe we find rather inferior ; there is a coarseness and some-

thing objectionable in flavour hanging about it. Then, if it be a butt, use a pound of concrete, if a pipe, three quarters of a pound, and afterwards fine it with the ordinary finings in the manner repeatedly adverted to. Now bear in mind, that when the concrete is used, the wine generally falls bright very soon, therefore you may always calculate that it will be in order for racking in a week after such a fining. Thus you have complete control over the brilliancy and condition of the wine, after having once racked it from the original lees. After the wine is racked and fined, and again bright, which will be sure to be the result in a few days, your own judgment will best guide you, whether or not it is necessary to rack the wine a second time ; if you have so far effected an improvement as to be satisfied with the wine, then there will be no need of further operations. If, however, it should not be so clean or satisfactory as you anticipated, and there is still something objectionable about it, it becomes advisable to rack it a second time, and give it a lighter fining than you used in the last operation.

Again, you may have a butt or a pipe of wine which may be both harsh and coarse, yet, perhaps, possessing tolerable body, and it may also happen that you have a wine harsh without coarseness, and with few other defects to complain of. Now,

in either of these cases, you ought invariably to use from a pound to a pound and a half of concrete to a butt, and a pound or a pound and a quarter to a pipe of wine, bearing in mind that it will, at all times, be necessary to rack this description of wines twice at least, because, whether you intend to bottle them or to blend them, the cleaner you get them the better they become qualified for the purpose. And here it may be remarked, that, in nine instances out of ten, the ordinary wines have been blended, brought into use, and bottled, before they have been properly cleaned. Now it must be very obvious that all wines possessing any defect require to be submitted to a prudent mode of treatment, in order to divest them of the objectionable quality present. In these instances, we are enabled, by the addition of the concrete, to effect the subsidence of all extraneous substances so present and suspended; the same being secured in deposit. We are also enabled by racking the wine, and repeating the operation of racking as necessity requires, to entirely divest the wine of all obnoxious particles, thus developing its desirable qualities. Madeira of ordinary quality, Teneriffe, and, indeed, most of the Azores, the Italian and Sicilian wines, are more susceptible of harshness than Sherries and the generality of Spanish and Portuguese wines.

Many of these wines may be found in the bonded cellars in a complete state of degeneracy. Now if, at the time these wines were first housed, or at a reasonable period afterwards, a pound of the concrete had been used to a pipe, with or without the assistance of any other fining, it would have been of the greatest benefit to them. That tartarous quality, so detrimental to the generous property of these wines, would become so far neutralized as to admit of their improvement and amelioration, instead of their becoming harsh and falling into decline, particularly if racked when bright from the subsidence of the lee; this affords the means, after having been fined with the concrete, of totally freeing the wine from the deteriorative quality to which the decay of these wines may be attributed. I am satisfied that it would abundantly repay the owner of this description of wines, if he were to adopt this system. If he do so, and deem it prudent to fortify the wine with a gallon of brandy, or any portion he thinks proper, it will secure the amelioration and preservation of the wine, and enable the safe shipment of it to any part of the world. The same rule of treatment is also applicable to Cape wines. The influence of the concrete is equally successful in divesting these wines of their objectionable flavour, and in effecting their general improvement.

## OF PORT WINES.

The treatment is very simple with pure and good ports, which are invariably fined in this country with the whites of eggs, as are also most other red wines. The finings we know to be unobjectionable, provided the eggs are perfectly good. However, a very simple and advantageous addition is practicable, which renders the fining more efficient for establishing the perfect brilliancy and condition of ports and other red wines. When you break the eggs drop the whites into a pint of Rhenish stum; let them stand aside for an hour, then whisk them gently up, adding by degrees three or four quarts of the wine, and then proceed to fine it in your usual way. I have no doubt this mode may be thought unimportant by many, but simple as it may appear, it has the effect of giving a peculiar solidity to the fining, whereby its action is rendered more powerful, and as it undergoes no change in its properties by the effects of the peculiar astringent qualities of ports, when brought to operate upon, and whilst in the act of combining with the lees, it insures, in the most complete manner, the permanent brilliancy of the wine.

Port wines that have become worn, and pro-

bably wanting in character and colour as well as body, require to be blended or brought up by the addition of more youthful wine; you need, in that case, such a quantity of young and rich wine as will bring up the one and ameliorate the other. By these means, when an old wine is perfectly clean and sound, you may often effect an improvement by properly blending with it a younger wine. It will be difficult here to point out any regular method for these performances; it must depend much upon the judgment of the holder, or person who has the management of them, and on the quality of the wines to be blended, as well as on the character of wine which it is your object to make up.

But, as regards the inferior quality of port wines, you must pursue a different course. If you happen to have a pipe of port that is either coarse, harsh, or unpleasant in its flavour, it becomes prudent to eradicate such defects as far as possible before you blend or make any use of such a wine. Now, to remedy these defects, you cannot possibly adopt any better mode than that of using the marine concrete, as recommended for white wines.

A coarse or harsh pipe of port will require a pound and a half of concrete; mix the concrete with about two gallons of the wine, and stir the

whole well together before you pour it into the cask ; then rummage it well about with your rousing stick, and afterwards you may fine the wine with the whites of fourteen or fifteen eggs, as you would have done had you not used the concrete. Or if it be convenient, it will be as well to fine the wine with eggs the day after using the concrete. For a hogshead or quarter cask, you will have of course to reduce the proportions accordingly. You may find the wine linger for a week or ten days in a dullish state, after being thus treated ; but soon after it is racked you will discover a material improvement. Another important advantage has been proved to be derivable from this system of treatment, namely, that the crust of port wines thus treated generally adheres firmly to the bottle. This arises from the influence of the concrete in the neutralization of the peculiar tartarous qualities of these wines, which are well known to differ from most other description of wines. It may happen that we want to enrich a pipe of port, and find it inconvenient to procure the quantity of richer port needful to the purpose ; in that case we can adopt the following method, which is to use eight or ten gallons of rich mountain, or half that quantity of Tent, either at the time you use the concrete, or after the wine has been racked from the influence of

that fining, as you may think proper. In ordinary ports it will tend to the attainment of your object.

With respect to the generality of other red wines, with the exception of Rhenish and French, the system of treatment varies so little, that it would be uselessly lengthening my remarks to dwell on them.

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#### RHENISH AND FRENCH RED WINES.

Of all red wines produced, there are none that require so much care and skill as the first rate Burgundys, Hermitage, and Clarets. These wines, from their great delicacy and nicety of flavour, will scarcely admit of the least portion of brandy or any other admixture, without immediately showing the impregnation and degree of contagion. Therefore those who may have the care and management of these wines will, it is presumed, see the necessity of administering the cleanest and most efficient fining it is possible to procure, and at the time of fining the wines to be careful not to expose them to the atmospheric influence, by allowing the shive to remain out any longer than is really necessary during any process

to which they may be submitted. The fining suitable to a hogshead of these wines is particularly simple, and from the abundant proofs I have experienced of its efficacy, I recommend its universal adoption. It consists of the whites of six or seven newly laid eggs added to a pint of Rhenish stum.

When you break the eggs to separate the whites, drop them into a bottle, or some vessel containing a pint of Rhenish stum, and put it aside for an hour or so, then if convenient fine the wine. I have generally used a magnum to shake the finings in, or a two or three quart jug. Never whisk up the finings in a wood can for these delicate wines; I have known many bad results to arise from that practice. When you fine these wines, either shake up the eggs briskly with the Rhenish stum in a magnum, or beat them up gently with it with the whisk in a jug. When the eggs are incorporated, mix the whole up with about two quarts of the wine. Be careful, before you pour the finings into the cask, that the rummaging stick is perfectly clean, and it will be well to bear in mind that it is very essential to first well incorporate the eggs with the Rhenish stum before the wine is added to it; by so doing we are better enabled to mix the eggs with the wine without causing over much froth, which is

necessary to be avoided in fining these wines. As soon as the wine is fined, we ought invariably to burn a small portion of sulphurated match within the shive-hole, or fold a bit of thick paper dipped in a little brandy, and burn it as far within the shive-hole as possible; then drive in the shive immediately the flame is exhausted; it will then be prudent to wet a little plaster of Paris, or some other cement, and cement the shive-hole over to prevent the possibility of ingress of air. If the mode I here recommend be strictly adhered to, it will be found effectual in completing the brilliancy of these wines, and serve as a preventive to the maladies to which they are at present exposed.

The method generally resorted to by the fabricator after the completion of fermentation, to check the excitors of harshness and acescency with a view to the preservation of wine, is the system of sulphuration. It is well known that this is effected by burning a piece of sulphur, or a sulphurated match, adapted to the purpose, in the cask destined to receive the wine racked. The vaporous influence of the sulphurous property diffused through the wine corrects, to an extent, the detrimental quality present, and withdraws all the oxygen the wine may have absorbed from the atmosphere. The applicability and

necessity of this principle have recently been most accurately described, and its efficacy as fully demonstrated by Professor Liebig in his lectures on vinous fermentation given at the university of Giessen. He contends, as indeed do all the great scientific men of the present day, that if we possess any means practically applicable for perfectly separating all those substances which are the cause of harshness and the acescent quality (either during or soon after the completion of fermentation), we should be able to preserve wine in a state of greater salubrity, and for a much longer period than has been generally effected.

It may be easily conceived, as is acknowledged by men of the greatest practice, that an absolutely perfect separation of all objectionable substances (which are rarely entirely absent in the fruit undergoing fermentation) is attained only in a few favourable instances, "when the exceeding favourable circumstances occur tending to augment these desired attainments." The wine we know thus obtained is invariably superior in quality to that which is produced from grapes that may in some slight degree be less favourably matured, or that have imbibed, to a certain extent, some quality foreign to the pure vinous properties. Thus it becomes indispensably necessary for the fabricator, factor, or merchant, to

exercise his best means and skill to decompose and extract to the utmost the foreign matter so present.

Now, before I conclude, I beg to invite the merchant's attention to this subject, which I conceive to be the most important to him. We know that wine progresses in maturity, and every other desirable quality proportionably to its intrinsic purity; therefore it must be very evident to a discerning mind, that to allow any separable substance to remain lingeringly suspended in wines is highly imprudent. If experimental art has discovered a simple and wholesome remedy applicable to this object, the propriety of its adoption is manifest, since it must prove invaluable whenever any degree of coarseness, unpleasantness of flavour, or harshness is perceptible in wines, arising from the causes referred to in my preceding remarks. A specific fining is indispensably requisite for the neutralization and abstraction of the exciting qualities that prevent the development of the vinous property. The fining I have recommended to be used in these instances, namely, the marine concrete, is one incomparably the most perfect known in practice; the exceedingly favourable influence which the concrete exercises upon the purification of wines can only be appreciated by those who have adopted it.

With respect to wine which is shipped in a youthful state, and before it has perfectly disengaged itself of all separable tartarous qualities, much may be done on these occasions, after their arrival in the bonded stores, to improve the general condition of such wines. If at the time of storing the wine away, a pound of concrete is used to a butt or a pipe, it will speedily avert and remedy the influence of any deteriorative matter which is commonly suspended in the wine at this period, and which by this process becomes combined with the perfect lee. By the adoption of this system, wines shortly attain the same maturity which, under ordinary circumstances, is the result of a long protracted period of storing. The same system is, of course, applicable equally to wines vatted; and when improvement is the object desired, the advantages afforded by this process of fining will prove to surpass any other mode of treatment.

It is upon this principle that the system of treatment must be based, to be permanently efficacious, whether adopted in wines in bond or in the merchant's cellar,—that is, with reference to any description of wine which we submit to a process of fining with a view to effect an improvement in its condition.

The method that has been employed by most

merchants has indisputably proceeded upon principles the very reverse of those advocated in this treatise. Much of the ordinary wine has been left too long unattended to, and when its degeneracy is suspected or perceived, the practice ordinarily adopted is to fortify it with brandy. But this method is not, by itself, in many instances, all-efficient. The fortifying certain kind of wines with brandy is unquestionably on some occasions very essential, singly applied; but I maintain that we cannot correct any ailment or defect to which wine is liable by the application of brandy alone. It is true, that we may, by its use, prevent and avert for a time certain incidental ailments; but we do not perfectly and permanently remedy them so as to promote the amelioration or preservation of wine. When improvement is sought for, first allow an appropriate fining to be employed to remove the cause of defect, or to perfect the condition of the wine; then, by the operation of racking, and the aid of such a portion of brandy as may be deemed necessary, we finally achieve every practicable advantage.

London :  
Printed by STEWART and MURRAY,  
Old Bailey.