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WINE
IN THE DIFFERENT FORMS OF ANÆMIA
AND
ATONIC GOUT.

PERHAPS there does not exist, amongst the resources of hygiene and materia medica, a substance which is more frequently made use of than wine, nor one used with more indifference or less care, especially when we reflect that the component parts of different wines are so various, and their action must be productive of such variable results. It is a common practice to say to a convalescent: "Drink good wine," without thinking that its effect cannot be the same upon different temperaments, and that one must, above all in dealing with a sensitive organism, rigorously observe the recommendation of Hippocrates, who said: "Wine is a substance wonderfully appropriate to man, in health as well as in sickness, if it be administered at the right time and in proper quantities, according to the individual constitution."

Liebig, the eminent chemist, also says: "Wine is not surpassed by any natural or factitious production

as a means of renovation when the energies of life are exhausted; it animates and revives the spirits in days of sadness; it corrects and counterbalances the effects of any disturbances in the economy of our nature, and even serves as a preservative against passing troubles, caused by inorganic nature."

But in the employment of wine as a means of restoring the system and defending its organisation against the effects of debility, it is necessary to know what wine to choose, and that it should be used with prudence.

It is a law of therapeutics that *tannin*, which is the basile element of Peruvian bark, is one of the sovereign agents of restoration, one of the surest elements in tonic action. Serving as an intimate basis to some of the agents of nutrition, and particularly to wine, tannin is not precisely a means of medication, but rather a means of hygiene, none the less precious when it is proved that hygiene is above all a restorer of health. Good wine is, therefore, not the same for all; but it is certain that wine which is the best for every one, is that in the composition of which there is the greatest proportion of tannin; that which, with tannin, contains a relatively proportioned dose of alcohol; not of additional alcohol produced by factitious means, but of alcohol in suspension, developed by the normal fermentation of the grape.

The wines of France are, in the opinion of consumers and hygienists of all countries, those which, in the whole world, best unite the equitable admixture of acids necessary for reviving the stomach, of natural alcohol from which this organ borrows its

energy, and in a large degree of tannin, which holds such a primary place in the coloration of the globules of the blood.

Here it is valuable and important to be able to quote the opinion of the eminent professor of hygiene at the Faculty of Medicine, Bouchardat (*Formulaire Magistral*, 19th edition, page 179) :

“For ordinary use, the full wines of France, properly diluted in water, are judiciously chosen ; but in therapeutic uses the preference should be given to a wine richer in tannin. For this purpose, none ought to supersede Bagnols Saint-Raphaël, which has been prescribed for the last thirty years in the hospitals of Paris. It is used in the most varied forms of anæmia, chlorosis, anæmia of chronic gout, insufficient or badly regulated alimentation, pregnancy, intermittent fevers, old age, etc., etc. ; above all, it is efficacious in restoring strength after illness, or laborious and difficult digestion.”

This agrees with the first principle laid down by Hippocrates, viz., that wine should be administered at the right time. And the results of a large experience and careful observation fully support his second principle, that it should be taken in proper quantities. Let us commence by giving a summary notion of the different qualities of wines, but, before all, let us show how large is the variety of useful material found therein. It will suffice, for this, to cite a passage from the remarkable lecture of Professor Bouchardat on the use and abuse of fermented drinks and strong liquors.*

* “De l'Eau-de-vie, ses Dangers.” Conférences populaires, par A. Bouchardat et H. Junod. One vol. 12mo., price 1 fr. 25 c.

“Average composition of red wine per 1000 parts.

Water		878
Alcohol of wine		100
Butyric alcohol	}	Traces.
Amylic alcohol, etc.		
Aldehydes, several	}	Bouquet.
Ethers, acetic, capric, caprylic, etc.		
Perfumes, essential oils		
Sugars, mannite, glycerine, mucilage, gums	}	22
Colouring matters (ænocyanine)		
Fatty matters		
Azoted matters (ferments)		
Tannin, carbonic acid		
Tartrate, acid of potash (6 grammes at the most).		
Tartrates, racemates		
Acetates, propionates		
Butyrates, lactates		
Citrates, malates		
Sulphates, azotates	}	with excess of acid,
Phosphates, silicates		
Chlorides, bromides		
Iodures, fluorine		
Succinates		
Potash, soda, lime, traces, magnesia, alumina, oxide of iron, ammonia, compound ammonia, etc.		

“What a number of immediate principles in the composition of wine! and my enumeration is far from complete. Perhaps some of the acids mentioned are free, but nearly all exist in the condition of salt with an excess of acid. It is evident that some of the bodies which I have named are wanting in some wines, and that several are only to be found in fractions of a milligramme per litre.

“The proportion of alcohol varies in natural wines from 5 to 15 per cent. The following table shows the proportion in the principal wines of France :

“Average per-centage of alcohol in the principal wines.

Nuits, red, 1846	13·50
Mont Rachat, white, 1846	14·00
Red Avallon, 1834	11·14

White Pineau Chablis, 1842	12:54
Red Cahors, 1811	12:08
White Cahors, 1811	12:33
Red Bordeaux, 1811	10:10
Saint-Raphaël	15:16
Hermitage	11:00
Sparkling Sillery	from 9 to 11:00

“There is no doubt that alcohol takes the first place in the physiological and hygienic action of wine, but its influence is modified by several other immediate ingredients. I shall say a few words about the chief of these.

“Tannin and coloring matters proceed from the pellicle of corn, grapes, and pips. Is tannin of wine the same as that of the gall-stone? This is not probable; but we must acknowledge that a severe study of this immediate principle of the grape is still to be made. Mr. Glénard describes two coloring matters in red wine, which appear to be immediate definite principles :

“Tannin, which exists in considerable proportion in certain wines, takes a very important place as a moderator.

“Acids always exist, either in a free state or in a saline condition, with a very decided acid reaction. In wines cream of tartar is found in the proportion of from 2 to 6 per 1000 (.002 to .006).

“Mr. Pasteur has made the important discovery, that Succinic acid, like alcohol, is a constant production of the division of sugars under the influence of alcoholic ferments, consequently this acid is always to be found in wines.

“It is the same with glycerine, the proportion of which is very large, and which was confounded,

before the researches of the learned Professor, with matters which were called extractive.

“Bases are almost as numerous in wines as acids, they are usually found in living organisms. I must mention Potash and Soda, which are met with in small proportion, in the condition of chloride, as in the blood and muscles of men.

“What a number of divers elements are united to make this production called *bouquet*!

“It is the result of several odoriferous matters; alcohols, ethers, aldehyde, essences, and matters similar to those principles which Mr. Millon has designated under the name of perfumes.” It can be understood how imperfect the efforts of those must be who try to imitate this precious production.

ACTION OF WINE IN NUTRITION.—“In endeavouring to give an account of the part taken by wine in nutrition, we recognise at first the importance of the association of alcohol with a liquid of great acidity; the two savours, that of acids and that of alcohol, happily agree, and from this agreement it results that the acid moderates the power of destruction of alcohol in the economy of our nature, and thus diminishes its action upon the nervous system.

“Tannin and coloring matters exercise an action upon the stomach which must be regarded as very favourable, because it re-animates the energy of the digestive functions. Bouquet, which charms the senses of taste and smell, must also have its hygienic use, for it is known from the observation of many other facts, that very small quantities of sapid sub-

stances exercise a healthy influence upon nutrition.

“Wine, the density of which is about equal to that of water, is not so rapidly absorbed as brandy; another favourable point, the effect of which is, that the absorption and utilisation of the alcohol being spread over a longer period, its danger is mitigated. Having an equal dose of alcohol, red wine containing tannin inebriates less and does not affect the nervous system so much as white wine, and especially brandy.

“The wine is absorbed without any other modification than that which results from its mixture with gastric juice; thus there is no need for the intervention of digestive ferments in order to facilitate its absorption and subsequent use in nutrition. The above clearly explains the use of wine in apyretic complaints.

“The complexity of organic matters in the composition of wine, which in some respects resemble those of the human organism, fully account for the restorative action of wine upon persons who have been thoroughly exhausted by loss of blood or insufficient alimentation.”

In order to show in what degree wines contain different properties, we shall again quote the same authority:

“It is not an easy matter,” says Dr. Bouchardat, “to arrange in an irreproachable classification the large number of wines produced in the various countries where the vine is cultivated. For a long time back I have been occupied with this problem. My classification of wines has been published in

several standard works, but in an inaccurate manner; the following is the one I have adopted as the best help in hygienic studies :

CLASSIFICATION OF RED AND WHITE WINES.

1. *Wines in which essential principles are dominant.*

A. Alcoholic	{	Dry wines . . .	Madeira, Marsala
		Sweet wines.	Malaga, Lunel
		Pale wines . . .	Arbois, Hermitage
B. Astringent	{	With sugar and alcohol . . .	Saint-Raphaël
		Not sweetened . . .	Cahors
Tannic	{	With bouquet . . .	Rhenish wine
C. Acid	{	Without bouquet . . .	Gouais wine, Argenteuil
D. Sparkling			Champagne

2. *Mixed Wines.*

A. With bouquet	{	Burgundy . . .	Clos Vougeot, Mont-Rachet
		Médoc . . .	Château-Larose, Sauterne
		Côtes du Rhône . . .	Hermitage
		Midi	Langlade, Saint-Georges
B. Without bouquet			Ordinary Burgundy and Bordeaux

“I do not admit the division of red and white wines any more than I believe in the natural separation of the vines bearing black and white grapes.

“I consider the first division I have made important, as proving either the harmony of the immediate principles or the predominance of one of these principles.

“The first division of alcoholic wines includes those of which Madeira and Marsala are the type. These wines, as they are sold by the trade, are nearly always overcharged with alcohol; in fact, they contain up to 25 per cent. of alcohol, whilst fermentation only develops 15 !!”

Astringent and sweet tannic wines, such as Saint

Raphaël, far surpass, in a hygienic point of view, those which are simply alcoholic or alcoholic and sweet, because they agree better with the digestive organs when they are taken in moderate doses.

Forms of anæmia are so varied, their causes so different, and often in appearance so opposed to each other, that a tendency daily arises to excite the energies of the nutritive functions by means as powerful as they are imperceptible. This anæmia may arise from insufficient alimentation; it is also developed in persons too well nourished, whose alimentation is imperfect and too abundant, considering their amount of bodily exercise. Moral influence upon the constitution is often revealed by these manifestations of anæmia. Serious pre-occupation, deep sorrow, the bustle of business, a nervous or unhealthy over-excitement with young girls during the period of menstruation, and with women during pregnancy and change of life, are a number of moral conditions which produce anæmia, and consequently arise from languor of the digestive functions.

A number of chronic affections, such as albuminuria, scrofula, intermittent fevers, various forms of intoxication, etc., lead to special anæmic conditions. Hygiene, a proper regimen, and pure air are all-powerful remedies, when nature has not been exhausted by empiricism, and when it has not lost all strength.

A few adjuvants, amongst natural reserves, suffice to co-operate, by degrees, and by small uninterrupted doses, with the efforts of nature, which, always powerful and ingenious, reinstates and repairs

what man has destroyed and squandered with such guilty recklessness.

Amongst the number of adjuvants, it is customary to place *mineral water*, which is the only vehicle by whose help those most precious agents of human reconstitution, iron and sulphur, are easily assimilable, without provoking either danger or repugnance.

But we must reserve a place in the first rank for tannin, the action of which is most efficacious in cases of enfeebled natures, and upon all those temperaments which require renovating. Tannin is the expression of vegetable medication, in the same degree as iron and sulphur are the expression of mineral medication. When the bark of quinquina was imported into Europe, being at the same time a febrifuge by quinine, and a reconstrictor by the tannin, which it possesses in larger quantities than any of our indigenous plants, people at once used Bordeaux wine as the most appropriate vehicle for tannic preparation made with quinquina.

Later on, in order to flatter the taste, to please the susceptibilities of invalids, and to better disguise the bitterness of this preparation, the sweet wines of Spain were employed as a vehicle for quinquina.

But, considering what little security these wines offer, they being frequently the result of fabrications and unknown practices, besides the serious fact that the medical man cannot safely calculate their action, we must also bear in mind that quinquina wines cannot be prepared without the help of alcohol, which macerates the tannic bark, and consequently without modification more or less considerable, which must always be taken into account. This inevitable

intervention of alcohol, however small the doses, is often prejudicial to the temperaments for which the preparation is intended. There is also another inconvenience in these chemical preparations, namely, that the substance employed is not so closely united with the vehicle, it loses less of its bad qualities, and is not so easily introduced into our system; in one word, it is less assimilable.

Now, the action of certain natural mineral waters keeps their component substances in absolute suspension, and nearly always without diminution. On the contrary, artificially prepared mineral waters deteriorate in a short time, and especially on contact with the air. This is the reason why these fabrications have fallen in public estimation, and no doctor puts any confidence in them.

Thus, between quinquina wine prepared in a laboratory and wine naturally possessing those elements which constitute the efficacy of quinquina wine, there exists the same difference as between a natural mineral water and a fabricated water.

Nature possesses means of preparation and secrets of the alembic which it is impossible for science to attain, and which furnish the healing art with agents much more efficacious than those prepared by chemistry. It is thus with iron, which in the different forms in which it is tried is not easily assimilable; it either escapes digestive action, or it produces such irritating and exciting effects in the organism that its use cannot be long employed. The same with iodine and other bodies, the action of which may be great, and their direct use produce many inconveniences and often dangers.

If, on the contrary, you appeal to nature and not to chemistry, iron and iodine are met with in perfectly assimilable forms, and in such a condition that they agree with the economy of our nature, without fear of accident, repulsion or elimination.

Consequently, in the use of preparations of quinquina, it is of great interest to know which amongst our natural productions contains in the largest proportion, the principle of this substance, and in the best state this agent of nutrition.

For these reasons, we must give the first place amongst natural adjuvants to the tannic wine of *Bagnols Saint-Raphaël*, the excellence of which Dr. Bouchardat has particularly pointed out.

“For the last thirty years,” said this eminent Professor, *“this sweet wine, which is extremely agreeable to the palate, has been exclusively prescribed, as a tonic and retractor for invalids, to the convalescents in the hospitals and hospices of Paris.”*

It was by the advice of the celebrated chemist Soubeiran that the Council of the Paris Hospitals adopted this wine, which is daily prescribed. Observation and a long experience prove that a better agent could not have been used. There is no other which contains more tannin and tonic coloring matters, none that has so much natural iron, for the richer the wine is in colour, the more this metal abounds therein.

Thus all the principles necessary for restoring losses in the economy of our nature are united in this precious aliment.

Tonic wine, characterised by science under the denomination “corroborant,” that in which tannin dominates

is most suitable to invalids with whom alimentation must be frequent and often assisted ; it is suitable for delicate persons, under the influence of nervous over-excitement or morbid imagination ; it is also suitable for all people when reaction, insufficiently promoted by exercise and muscular action, requires help of a cordial. We must repeat, there is no more genial cordial, nor one worthier of this name, than the wine of Saint-Raphaël.

It ought to be taken in small doses, in the proportion of half a claret glass, either before or after a meal.

USE OF WINE IN GOUT.—The following is an old adage cited by Sydenham in his remarkable work on gout : “ If you drink wine, you will have the gout ; if you do not drink it, the gout will have you.”

The opinion of the celebrated English doctor has all the more weight, because he himself was afflicted with gout, and verifies the good and evil effects of wine in the various conditions of health of gouty people.

We shall now show, by the aid of the most learned doctors, how the use of wine, badly understood, may be counted as one of the most powerful causes of gout, and also how, judiciously used, it may not only effectually combat the most formidable forms of this disease, but even ward off its attacks.

It is easily understood that these varied results depend upon the differences in the qualities of wines, in their quantity and mode of ingestion.

We shall again allude to the hygienic properties

of some of the classes of wines which we have previously mentioned, whilst appreciating the influence of their principal varieties in the production and treatment of gout.

Before doing so, let us say a few words respecting the causes which bring on this disease :

To eat more than you ought, more than you can digest by exercise, with an irregular elimination and insufficiency of uric acid—this is the manner of life which, long continued, brings on gout. This being admitted, the useful or destructible action of different wines will be easily appreciated. Let us commence by stating the evil effects.

EVIL EFFECTS OF ALCOHOLIC LIQUORS.—Garrod says : * “ There is no truth in medicine better established than the fact that the use of fermented liquors is the most powerful of all the predisposing causes of gout ; nay, so powerful that it may be a question whether gout would ever have been known to mankind had such beverages not been indulged in. A considerable difference, however, exists between the various fermented liquors in their power of inducing gout ; and many interesting observations and facts can be elicited in relation to this point.

“ On the first consideration of the question, it would be natural to suppose that, as the chief peculiarity of all fermented liquors consists in the alcohol they contain, their power of causing gout would be in proportion to the quantity of spirit in their composition, but a more careful investigation

* “ A Treatise on Gout and Rheumatic Gout.” By Dr. Garrod. London : third edition, 1876.

of the subject fails to establish this supposition. Distilled spirits, when exclusively taken, appear to exert little or no power in inducing gout, whereas wines, strong ales, and porter, are potent agents, a fact which is forcibly impressed on the mind on taking a review of the prevalence of the disease in different countries and among different classes of individuals."

"The remark made by Garrod," says Dr. Bouchardat, "that distilled spirits exert little or no power in producing gout, may also be applicable to many other facts.

"What class, as a rule, make an abuse of brandy? Workmen, accustomed to bodily toil, which is the best preservative against gout; besides, these workmen may well satisfy their alcoholic tendencies, because as regards all other aliments, necessity imposes moderation upon them; they are often condemned to dyspepsia, which is brought on by the abuse of strong liquors. In order to produce gout, we must have the union of several conditions, amongst which I must mention excess of azoted aliments, excess of fermented drinks, and insufficient bodily exercise.

"I am far from disregarding the importance of the distinction made by Garrod, which is corroborated by the fact that all authors—take Magnus Hus as an example—have traced the seat of misery to alcoholism, and very rarely speak of gouty complications.

"Nevertheless, if I do not absolutely banish strong liquors from the regimen of gouty people, I always recommend them to be used in proper quantities, with a due reserve, and carefully to

watch their effects, in order to give them up if adverse symptoms arise from their use."

In order to point out the unhealthy influence of certain wines, let us again quote the celebrated English observer: "My own experience of the relative power of alcoholic liquors in inducing gout may be thus stated: Port, sherry, and other strong varieties of wines ordinarily drunk in this country, are most potent in their operation."

But he judiciously adds, "The fact must not be lost sight of, that those who are in the habit of drinking wine, are at the same time able to procure other luxuries of the table which greatly favour the development of the disease."

The question now is, to ascertain what are the causes which increase the evil effects of wines commonly drunk in England, Spain, Portugal, Sicily, etc., etc.? Wines sent to England usually undergo preparation for the market; nearly as much alcohol is added to them as fermentation naturally develops. This addition offers two inconveniences: firstly, an overcharge of alcohol, which is certainly injurious; and secondly, a precipitation of bitartrate of potash, which facilitates the elimination of uric acid, whilst it is changed in the economy of our nature into bicarbonate and urate of potash. Let us add, that wine without additional alcohol, but with all its bitartrate of potash, bears dilution with water better, on account of its acidulated savour, than wines overcharged with alcohol and meant to be drunk neat.

Strong beers are not to be less feared than over-

alcoholised wine. We cannot better prove this than by quoting English physicians: "I am disposed to think," says Scudamore, "that in England, and especially in London, gout has become of much more frequent occurrence amongst the lower classes since the general and abundant use of porter. This is a very nutritive liquor, and when taken with spirits, and even with a moderate quantity of solid aliment, may be regarded as very likely to produce inflammatory plethora, which leads to gout."—"Treatise on the Nature and Treatment of Gout.")

Respecting this question, Dr. Todd is not less explicit: "All persons," says he, "who make an abuse of porter, suffer sooner or later from gout;" and a little further on: "Beer is, above all, the aliment for gout."—"Clinical Lectures: Urinary Organs," 1857, page 400.)

In many of his articles, Sir T. Watson bears out the same fact. (See the *Lancet*, 1843, p. 308.—"Lectures on the Principles of Physic," vol. ii. p. 759, London, 1857).

Garrod, on the other hand, expresses himself as follows: "Stout and porter rank next to wine in their power of inducing gout, and some of the most severe and inveterate cases I have ever met with in hospital practice have been in patients who had drunk heavily of these beverages; as happens, for example, among the men connected with the great London breweries, who not unfrequently drink an almost fabulous quantity of porter. I have notes of the case of a man, twenty-eight years of age, suffering from severe gout and a deep-seated abscess in one foot, who assured me that when at work he

seldom took less than three gallons of porter during the day.

Strong ales, and even the ordinary bitter beers so commonly used at the present day, exert a similar influence, although there are many who think they can drink bitter ale with impunity. This is exemplified in the following case. A man only thirty years of age, connected with a pale ale brewery, consulted me under the following circumstances: "He had had his first attack of gout four years previously at the age of twenty-six; it was slight, and confined to the ball of the right great toe. Three years afterwards he suffered from a severe fit, implicating not only the toe but the ankle, heel, and knee. During the year previous to my seeing him the attacks had been more frequent, at intervals of about three months, and were assuming a chronic form."

The reason strong beers, containing an equal dose of alcohol, are more injurious than wine, is because the salts found in beer are almost entirely composed of phosphates, whilst in light wines they consist chiefly of bitartrate of potash, the action of which is beneficial.

THE USE OF WINE IN GOUT.—In order to settle the question of the use of wine in gout, the first information is furnished us by the statistics of this disease in different lands and wine-producing countries. Let us commence by mentioning that this disease is not by any means so frequent in France as in England, at least in its most acute forms. The wines of Burgundy, Bordelais, and Côtes du Rhône, consumed by persons in easy circumstances who do not take sufficient bodily exer-

cise, may become the sure cause of gout. When consumed without the addition of water, or when they have grown old, and thus lost the greater quantity of the bitartrate of potash, which they contained, they are just as frequently a cause of gravel and stones in which uric acid predominates, as of gout, whilst the strong beers and alcoholised wines consumed in England and France favour in a greater degree the development of gout. This is easily explained: tartaric acid, which exists in these wines, destroys the blood; salt of potash, acting as a diuretic, is then partly eliminated in the condition of urate of potash; this does not take place in beers and over-alcoholised wines, in which nearly the whole of the cream of tartar is precipitated.

THE CONDITIONS OF THEIR UTILITY IN GOUT.—
The conditions of the use of wines in gout can be divided as follows: 1. In the habits of the person; 2. In the different forms of gout, the nature of the wine, and the quantities in which they ought to be administered. We shall turn to these conditions in succession.

The Habits of the Person.—To order a person, who has been accustomed to take a large quantity of wine, a regimen of water, would be exposing him to serious inconveniences on account of the abrupt mode of living. Boerhaave often told, in his historical lessons, of a gentleman of distinction, tormented by an acute illness, for whom the doctors had ordered a very strict diet and refreshing drinks. This regimen carried the invalid to the brink of the grave, when his own physician returning after a long absence,

during which this treatment had been prescribed, thought fit to give him again his wine and some soup. This regimen soon brought about a complete cure.

Chomel successfully prescribed a moderate quantity of wine to invalids who had previously taken it in excess. Brière de Boismont shows that certain common dropsies could be traced to deprivation of wine with persons who were previously accustomed to drink it in moderate quantities.

The Employment of Wine in Different Forms of Gout.—As a general rule, you may say wine is useful in all atonic forms of gout, when the functions are languid, and when that special condition of the economy exists which may be justly designated under the term gouty anæmia. These conditions are revealed in chronic and anomalous gout.

Let us first speak of chronic gout. It may arise after several attacks of acute gout, the intensity and frequency of which are lessened, either by a better regulated hygiene or by the use of those medicines usually given to resist gout, especially colchicum and alkaline. Chronic gout may also slowly establish itself in our system without any acute manifestation; there may be an anomalous production of uric acid, with an insufficient elimination. Then urate of soda predominates in the blood, and deposits are imperceptibly made in the articulations. The joints tumefy; often this tumefaction is hardly apparent, but it is always painful. It takes place in consequence of discharges which are produced in the serous sacs and joints. Movement becomes much slower, irregular, and more difficult. Redness,

augmentation of heat, and the pains which usually accompany gouty manifestations, may not occur during the day-time, but at night the pain is sharpened, accompanied by a slight febrile motion.

This pain is seated chiefly in the muscles or along the passage of the nerves; it is frequently accompanied by cramp, and is usually termed rheumatic pain.

As regards the digestive organs, invalids generally have dyspepsia with all its varieties. Most frequently this dyspepsia is accompanied by the acute eructation of pyrosis, flatulence, an oppressive feeling after meals, insufficiency and deterioration of biliary secretion, and constipation.

Turning to the circulatory system, we notice the irregularity of the pulse and palpitation of the heart. Urine, which during the attacks of gout is usually coloured, and leaves, on cooling, an amount of urate sediment, in chronic gout turns pale, is more abundant, remains limpid, or, if it becomes disturbed in cooling, it is after an exacerbation of the disease. Passing traces of albumen are found in it when inflammation of the joints sets in, and when fever exists.

To these symptoms others may be added, which prove irregularity of the nutritive and assimilable functions, such as pallor of the features, prostration, swelling, and emaciation. And in course of time a progressive diminution, often rapid, of strength sets in.

In these cases we have in passing shown that wine is of great utility, but on the condition that we judiciously choose the proper quality and take it in moderate quantity, sufficient to animate the

energies of our functions, but insufficient to cause disorder in nutrition and the nervous system.

All the great observers have acknowledged that wines which agree best when the digestive functions are impaired, are those rich in tannin and containing the best proportion of alcohol; not of additional alcohol, but that naturally developed by alcoholic fermentation. It is when it fulfils this good mission that well-prepared quinquina wine is appreciated in various forms of anæmia. But a learned chemist of Strasbourg, Mr. Schlagdenhauffen, has proved by very careful observation that quinquina only yields a fifth, or at most a fourth, of the alkaloids of the bark; nearly the whole remains in the residue, which is thrown away—that is to say, wine only contains, physiologically considered, insignificant traces of the alkaloids of quinquina, without any therapeutic action; that which takes the place of quinquina is tannin! Therefore a wine, naturally rich in tannin, is preferable to a quinquina wine. “If wine,” says Professor Bouchardat, “is prescribed as a remedy before or after a meal, the preference ought to be given to sweet and alcoholic wines. Then nothing is better than Bagnols Saint-Raphaël. Every hospital physician, amongst whom I will mention my masters and friends, Chomel, Rostan, Requin, Grisolles, Trousseau, etc., prescribes this wine, and obtains from it the best results.” At the commencement or end of each meal half a claret glass of this tannic wine should be taken, at the same time moderating the use of ordinary wine.

THE USE OF THE WINE OF SAINT RAPHAËL IN IRREGULAR FORMS OF GOUT.—“That there are irregular forms of gout,” says Garrod, “must be conceded by all who have turned their attention to the study of the disease, and daily experience confirms the concession.”

The anomalous symptoms which characterise irregular gout are often found, especially in France, in patients who have never suffered from gout in its recognised form.

The long continued existence of chronic gout often leads to a depraved condition of the general nutrition of the body, and the slow production of organic disease.

When the stomach is attacked, the symptoms indicating the transference of the gout are an intense feeling of oppression and anxiety, often accompanied with spasms, pain, and vomiting. When the heart is seized with retrocedent gout, there is usually a feeling of constriction of the chest, violent palpitation, intense anxiety, difficulty of breathing, accompanied by a very small thready pulse and other signs of syncope. When it attacks the head apoplexy is commonly induced, but maniacal symptoms occasionally arise.

We must acknowledge that numerous difficulties arise in determining the real value of the symptoms we have just mentioned, especially when the characteristic manifestations of gout have never clearly shown themselves during any period of the invalid's life. But in the special condition with which we have now to deal, doubt ought not to cause any prejudice with reference to the invalid, nor oppose itself to the indication upon which we insist.

It is only in atonic forms that the tannic wine of Saint-Raphaël can be usefully prescribed.

It is evidently not against the cause of gout that its influence is beneficial; if so, it can only be by regenerating the vital powers.

Now, in the anomalous affections upon which we have just insisted, it is only when there exists a state of general chronic feebleness, only in the varied forms of anæmia amongst persons enjoying life too freely, and not taking sufficient exercise, that Saint Raphaël wine renders signal service.

It is to such a case as this that Sydenham alluded when he gave his approbation to the second part of the popular adage: "*If you do not drink wine, gout will have you.*"

Let us recapitulate. A genial "corroborant" wine, richer in tannin than in alcohol, is the best restorer of organisations enfeebled by nervous over-excitement, morbid imagination, febrile predisposition, lymphatic disorders, or an anæmic or chlorotic condition; and it is certain that the wine of Saint Raphaël is the most precious for such cases, on account of the excess of tannin which it contains, and supersedes the most celebrated quinquina wines, and has also above that product of the laboratory the great advantage of being agreeable to the palate.

THE END.