

An answer to the letter addressed by Francis Riollay, physician of Newbury, to Dr. Hardy, on the hints given concerning the origin of the gout, in his publication on the colic of Devon : in which the several objections made by Dr. Riollay are considered, and the probability that the gout originates from the action of mineral substances, especially those conveyed into the human system by the medium of adulterated wines, is more fully insisted on / by James Hardy.

Contributors

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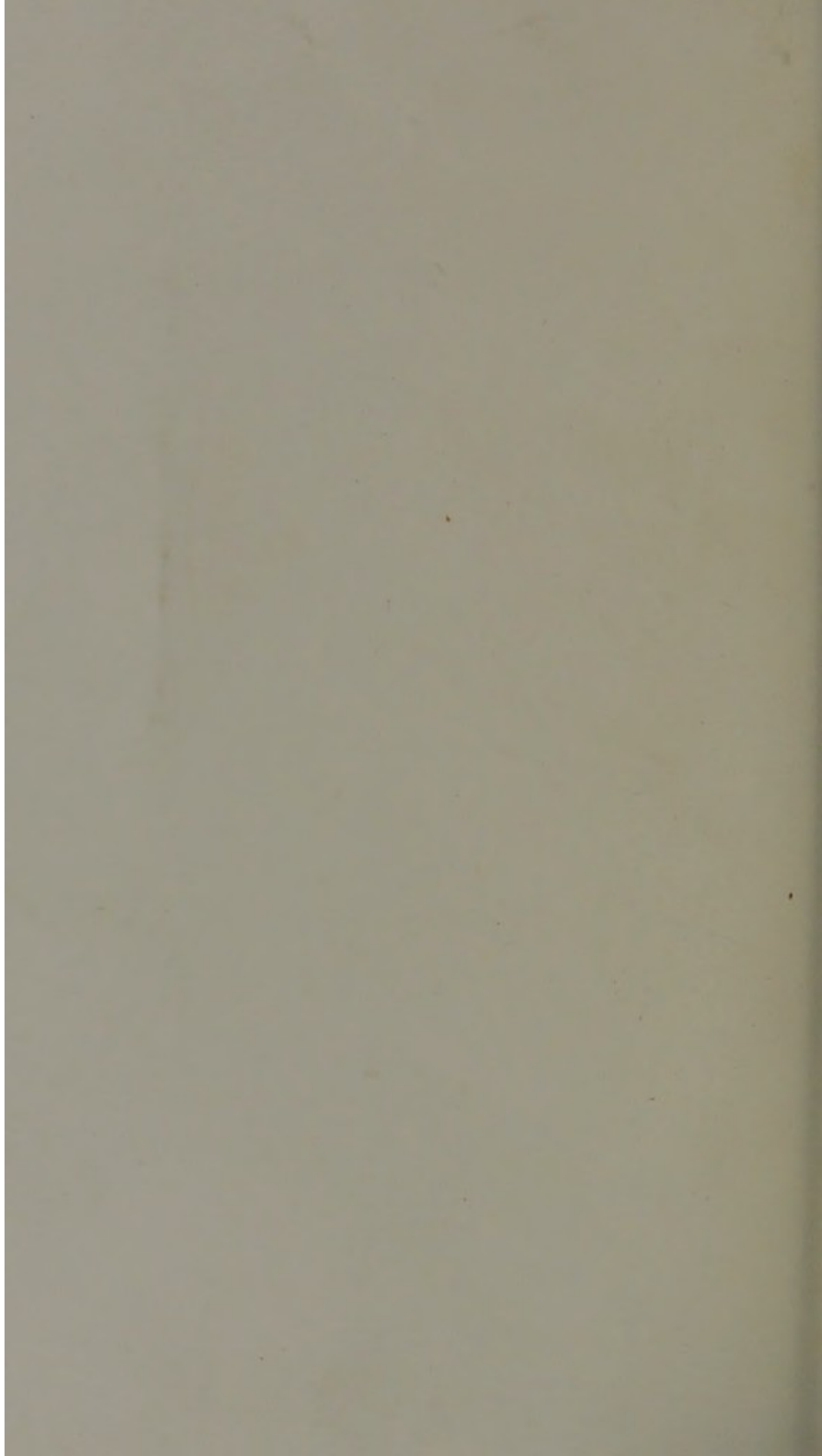
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AN
ANSWER
TO THE
LETTER

ADDRESSED BY

FRANCIS RIOLLAY, Physician of *Newbury*,

TO

JAMES HARDY, Physician of *Barnstaple*.

(Price One Shilling.)

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TO THE

L E T T E R

ADDRESSED BY

FRANCIS RIOLLAY,
PHYSICIAN of NEWBURY,

TO

Dr. HARDY, on the Hints given concerning
the Origin of the GOUT, in his Publication
on the COLIC of DEVON;

IN WHICH

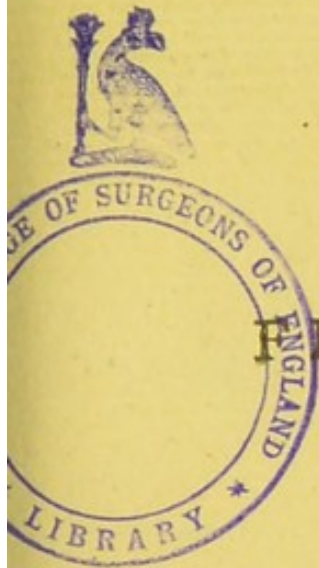
The several OBJECTIONS made by Dr. RIOLLAY are
considered; and the Probability that the GOUT
originates from the Action of Mineral Substances,
especially those conveyed into the Human System by the
Medium of adulterated Wines, is more fully insisted on,

By JAMES HARDY, M.D.

See the Original Work of Dr. Hardy Book 111

L O N D O N :

Printed for T. CADELL, in the Strand; and
RICHARDSON and URQUHART, at the Royal
Exchange. MDCCLXXX.



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A N
A N S W E R
T O
Dr. RIOLLAY'S LETTER.

S I R,

I HAVE perused the letter you was pleased to address me, “ on the hints given concerning the origin of the gout in the Colic of Devon;” and consider myself obliged by the opinion you express, that so much as relates to the origin of the colic of Poitou, Devon, &c. &c. appears in your judgment satisfactory and worthy of notice. —I have the pleasure to think that the causes there assigned are strictly true; and,

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that in future those diseases may, in consequence, become less prevalent. But no immediate general good effect can be expected from this, since it is not an easy matter to convince persons, that customs they have been long habituated to, and prejudiced in favour of, are in reality hurtful: however clear and strong the proof may be, it yet requires time to operate, and to enforce conviction, especially with that class of people, who in this county are most liable to the disease.

The more immediate purport of your letter is to apprise me of “ the difficulties
 “ with which you conceive my undertaking
 “ abounds;” and to express your doubts, if those which I have suggested as the primary causes of the gout can be “ supported either
 “ by reasoning or facts.”—You are strongly of opinion they cannot; and even “ wonder that I did not reject the idea as soon
 “ as it presented itself to my imagination;

“ and that reason, in her turn, did not
 “ dissipate the work of fancy.”

It was by no means my wish to enter into any altercation; and I intimated a resolution, not to dispute on this subject: yet, as you, Sir, agree with me, in the principal object I had in view; and as the objections you raise to the hypothesis advanced respecting the gout, seem to be grounded on some want of perspicuity in my manner of expression, or in the misapprehension of what I have said; I will endeavour to be more explicit; hoping that, when you perfectly comprehend my meaning, you may as readily join in opinion with me, concerning the primary causes of the gout, as you have done regarding the colic of Poitou, Devon, &c. &c.

After supposing that the gout arises from some debility of the nervous system, at page 9, you say, “ The remote causes (of the gout)
 “ may be innumerable. Whereas you have

“ confined the subject to one only, viz. the
 “ introduction of some noxious mineral
 “ into the constitution.” This, Sir, I
 acknowledge is my meaning, nor should I
 desire to state it more guardedly. But, at
 page 39, you have inadvertently narrowed
 this position; when your words are, “ What
 “ has been already said is, I presume, more
 “ than sufficient for the purpose of this
 “ address, which was to shew, that adul-
 “ terated liquors can in no sense be reckoned
 “ the only exclusive origin of the gout.”
 This is a very material deviation.

The position I would be understood to
 have intimated, and from which I wish not
 to recede, is this, *That the primary causes
 of the gout, so far as they can at present be
 ascertained with any degree of precision, arise
 from the action of mineral substances admitted
 into the human system.*—There are several
 ways by which they may gain admission*.

* Vide Colic of Devon, p. 132.

and therefore I by no means consent to be confined to that of adulterated liquors only; though I should readily admit that 17 or 18 out of every 20 gouty cases, have been originally produced by means of such liquors: and though I have expressly said, that mineral substances are to be considered as the *primary* causes; yet I have not advanced, that, after the nervous system has been once injured by the action of mineral substances, other causes may not excite a similar spasmodic affection, and bring on a new fit of the gout. Consequently, in order to support this hypothesis, that mineral substances are capable of producing the gout, it only remains for me to prove, that they have actually done so in numberless instances; and to shew, how they generally gain admittance into the human body, so as to be equal to the prevalence of the disease.

—Whatever cases are brought to invalidate this position, must be instances of the gout,

free from all suspicion of the operation of any mineral.

Having premised thus much, I shall proceed to state the principal objections you have raised against the doctrine advanced, and make a few remarks upon them.

O B J E C T I O N I.

“ Most people of any condition make a
 “ daily moderate use of wines, the greatest
 “ part of which are undoubtedly adulterated
 “ with mineral substances. Yet many among
 “ those people attain to old age, without
 “ ever knowing the gout; some have it late
 “ and slight; others, more early and severe.

“ Again, a great number of young men
 “ at universities, and other places of gene-
 “ ral resort, drink wine for years so very
 “ liberally, that it must be confessed they
 “ give it a fair opportunity of displaying its
 “ arthritic power, while at the same time,
 “ the unwariness of their age is no small

“ temptation for traders to practise all the
 “ mischievous arts of their profession, and
 “ yet their imprudence is not punished, at
 “ least immediately, if ever; for it is very
 “ uncommon to see one gouty person among
 “ them *.”

These may be facts, though I have some doubts if there are not more young people of the present age, who suffer at an early period from gouty affections, than you seem to apprehend: yet, as you allow the admittance of mineral substances, they at once lose all weight in objection to what I have advanced.—The effects of mineral substances on the animal body are numerous and various; and I am not able to say why, in some instances, they do not manifest themselves more immediately: but perhaps the following observations may throw some light on the subject.

* Letter to Dr. Hardy, &c. by Dr. Riollay, p. 10, 11.

1st. It must be admitted as a fact, that every one is not affected in the like degree with the same quantity of a mineral poison. Dr. Heberden observes, “ That all persons
 “ are not equally affected with equal doses
 “ of sugar of lead, and that this property
 “ belongs to it in common with all the
 “ nervous poisons ; every one of which, as is
 “ daily experienced in *opium*, affects different persons very differently*.” “ Indeed,” says Dr. Percival, “ there seem to
 “ be certain constitutions very little disposed
 “ to be affected by this mineral poison (lead)
 “ either externally or internally applied †.”
 And Mr. White, though he differs in opinion with the last cited ingenious author, regarding the effects of lead externally used, yet concurs with him, as to the effects produced when taken internally ; “ Certain it
 “ is, some are much less liable to suffer from

* Med. Transact. vol. i. p. 303.

† Essay on the Poison of Lead, p. 38.

“ it than others ; proceeding from some
 “ peculiarity of habit, general or topical :
 “ by the latter I mean some peculiar state
 “ of the nerves of the bowels, by which
 “ they are less apt to be disturbed or affected
 “ by such medicines †.”

2dly, There is an almost infinite variety
 in the symptoms produced from the action
 of mineral substances, conveyed into the
 human body, by the same medium, though
 they mostly belong to the nervous tribe.
 Thus Zeller, who was well acquainted with
 the effects resulting from wines adulterated,
 says, “ by the most execrable means of
 “ litharge, or sugar of lead, (the Germans)
 “ render sour, unripe wines, palatable and
 “ sweet; and they even make those wines
 “ higher flavoured by the fraudulent sweet-
 “ nefs : the most usual symptoms produced
 “ from these wines were, a spasmodic colic,

† Med. Commentaries, N^o. ix. p. 77.

“ cough, asthma, a stercoraceous breath,
 “ constipation of the belly, palsy, gout,
 “ &c. *”

3dly, It is a melancholy but just observation, that diseases which may with propriety be referred to this class, gain ground upon us. Dr. Charleton, whose situation renders him the most competent judge of this fact, says, he was urged to communicate his remarks on the efficacy of bathing in the Bath waters in palsies, “ by the notoriety that
 “ nervous diseases are continually advancing; the palsy, which formerly used to
 “ be, for the most part, the attendant of
 “ worn out nature, being, in our days,
 “ become but too frequently the miserable
 “ companion of youth †.”

In the course of the last fifty years, this nation has made the most rapid progress in

* Joh. Zeller et Imm. Weismann. *Docimasia signa causæ et noxa vini Lythargyrio mangonifati*, Tubing. 1707.

† Inquiry, &c. p. 5.

luxury: there are many, of opulent families, now living, who might join in a remark, similar to that made by Lucullus, and C. Sentius*, on the introduction of Greek wines into Italy, and say, that when they were young, they rarely saw wine brought out at their father's tables, except on a most particular occasion, or when used as a medicine.—How universally different from the simplicity and frugality of former times, the present style of living is, needs not to be insisted on.

The increase and prevalence of any particular disease, must have some general cause, adequate to the effects produced, let it be ever so remote or obscure; and I submit, with great deference, how far these hints convey any information on the subject.

* Caii Plinii, lib. xiv. cap. 14.

OBJECTION II.

“ In England especially, where so many
 “ strong liquors are made from malt parti-
 “ cularly, there is not, I will venture to say,
 “ an hundredth part, even of those of mid-
 “ dling condition, that can be said to make
 “ a common use of wine. Do you really
 “ believe, on the one hand, that those who
 “ drink it every day are visited by the
 “ gout; or, on the other hand, that none
 “ among the rest are ever admitted to that
 “ honour? It would be much nearer the
 “ mark, I believe, to say, that in proportion
 “ to their numbers, the favours of this
 “ disease are indiscriminately bestowed *.”

It is my firm opinion, in which I am sup-
 ported by the express words of a gentle-
 man †, whose theory you seem to coincide

* Letter, &c. p. 13.

† But because wine undoubtedly produces nine in ten
of all the gouts in the world, wine must be avoided, or
taken very sparingly. Cadogan on the Gout, p. 88, 89.
2d Ed. London, 1771.

with, that the *generality* of those persons in England and elsewhere, who abstain from wine, and make use of malt liquor only, are exempted from the gout in the full proportion of 17 or 18 to 20, as before stated. I say *generality*, because it may not hold good as to this county, where the occasional use of the glazed earthen ware seems the principal cause, that some of those who seldom drink any other than malt liquor are liable to receive a solution of the mineral, and its consequent effects. Nor should it be extended to what Sennertus intimates, that in Germany the gout has been observed as endemic from the use of beer *; because we are assured, that litharge †, lead ‡, and gypsum §, have been repeatedly used in

* Sennerti Opera, &c. p. 941, 942.

† Miscell. Curios. Decur. iii. Ann. iv. Ob. 100, Vicarius.

‡ Rudolph. Glauber. Prosperit. German. p. 50. Ed. Amsterd. 1656. 8vo.

§ Columel de Re Rustica. lib. xii. cap. 26. Notæ Variorum, a M. Gesner. Ed. Lipsiæ, 1735. 4°.

Germany, for the purposes of correcting and improving malt liquors.

In England we are more cautious; and, in proof that these frauds are not often practised, or that the most liberal use of malt liquors ^{does} ~~do~~ not occasion gouty affections, I would wish you to consider the state of the coal-heavers on the river Thames, who are a numerous body of people. No set of men drink a larger quantity of malt liquor than these; yet I never understood they were in particular subject to gouty affections; if they had been so, I think it could not have escaped public notice; and, if you have any doubts, the enquiry is easily made.

OBJECTION III.

“ One might desire you to account for
 “ the constant appearance of the gout in
 “ different persons at certain different times;
 “ viz. for the *winter gout*, so well described
 “ by Sydenham, which, during the whole

“ year, except the three months of summer,
 “ does not leave some pituitous old men.
 “ Then for the summer gout, which regu-
 “ larly had afflicted *Sauvages* in that season
 “ during ten years, while he was writing his
 “ *Nofology*, and which as constantly left
 “ him at the approach of winter. He
 “ thought it partly hereditary, partly ac-
 “ quired by immoderate application, and
 “ did not dare to abstain altogether from
 “ wine, for fear of its assuming a more
 “ dangerous form. One might again de-
 “ fire you to reconcile your system with
 “ the observations of authors on the causes
 “ that accelerate the paroxysms, and to shew
 “ how those causes can have any influence
 “ on the action of an heterogeneous matter.
 “ Van Swieten mentions an instance of that
 “ kind, which is worth relating. A famous
 “ mathematician of his acquaintance who
 “ in every respect had always lived with great
 “ sobriety, and who nevertheless used to have

“ attacks of the gout twice a year, at certain
 “ and almost fixed times; one day brought
 “ on the fit by applying with too much
 “ intenseness to the solution of a difficult
 “ problem.—There is also a remarkable pas-
 “ sage to the same purpose, in the beginning
 “ of Sydenham’s Dedication of his Trea-
 “ tise on the Gout to Dr. Short. Accept
 “ this small tract, saith our English Hip-
 “ pocrates, instead of a more considerable
 “ one, which it was my intention to present
 “ you with. The intenseness of thought
 “ which its composition required, having
 “ brought on the severest fit of the gout I
 “ ever experienced, I was at last obliged,
 “ though very reluctantly, to desist from
 “ my undertaking; the cruel disorder never
 “ failing to return as often as I tried to
 “ proceed with my work *.”

All these are cases of those persons, who
 had been long visited with gouty complaints,

* Letter, &c. p. 21, 22, 23, 24.

severely so, and consequently do not come within the description of such as seem necessary to invalidate my hypothesis. I only contend for the *primary*, and by no means offer to exclude *subsequent* causes.—Sydenham has positively declared, “ that notwithstanding
 “ the proverb, drink wine, and you will
 “ have the gout; drink no wine, you will
 “ not be exempted; yet it was a fact, be-
 “ yond all doubt, verified in many instances,
 “ that wine was hurtful in this disease *.”

The just reason why wine was prejudicial seems to have been (comparatively speaking) rarely suspected; and I design not to cast the most distant reflection on the memory of Dr. Sydenham when I remark, that he himself made use of, and recommended to his patients, Canary †; a wine which an illustrious contemporary of his has proved to have been noxious, because it was corrected

* Tractatus de Podagrâ, p. 428.

† Ibid. p. 441, &c.

or improved by a substance peculiarly adapted to produce gouty complaints †.

Nothing but the most diligent attention to symptoms will ever enable us to say, with any degree of precision, whether, after the nervous system has been once injured by the action of minerals, and a perfect cessation of the gouty affections has taken place, the disease can be excited again, without the admission of new mineral particles; and, supposing it cannot (which I am very far from asserting) it will perhaps be more difficult to

† The uses of gesso (as the Spaniards and Italians call it) or gypsum, are numerous enough in the shops of stone-cutters, moulders in plaister or wax, and divers other artificers; but one would scarce suspect that, besides the various uses these tradesmen put it to, it should have one so very different from them, as to be an excellent medicine, if I may so call it, for wine; and yet that they use great store of it about those choice ones that come to us from the *Canaries*, is a noted tradition among those that deal in that sort of liquor, and has been confirmed to me, by an eminent wine-merchant that lived several years in those islands: And that, about Malaga, they put up a good proportion of it, into the juice of their grapes, when they tun it up, is affirmed to me by a curious eye-witness, who was there in the vintage-time, and of whom I purposely enquired about it. Hon. Mr. Boyle's Works, vol. iii. p. 481. Ed. London, 1772. 4to.

determine how infinitely small the quantity may be which shall excite another fit.

Provided the primary causes of the gout are once clearly established, then we may rationally expect, that every day's observation will assist us in rendering the thus long inexplicable phenomena attending it, less intricate.

OBJECTION IV.

“ Arsenic introduced into the system pro-
 “ duces almost immediate violent sickness,
 “ reachings, vomitings, torturing pains in
 “ the stomach and bowels, with cold sweats,
 “ syncope, and death. The action of lead
 “ taken internally, is chiefly determined
 “ upon the intestines, where it occasions
 “ such spasms, that paralytic affections soon
 “ supervene. Is it to be supposed that sub-
 “ stances so very powerful can, during so
 “ long a time, divest themselves of their
 “ acrimony, and reassume it afterwards, in
 “ the form of a chronic disorder?—I say,

“ phænomena of this kind are quite irre-
 “ concileable to my ideas of the animal
 “ œconomy; and appear more difficult to
 “ be understood than the disorder they are
 “ intended to explain*.”

The effects of these minerals, when admitted in a given quantity, are undoubtedly such as you have described them: but it does not necessarily follow, that they are therefore innocent when taken in a much smaller quantity; this would indeed be adopting an opinion which neither facts or reasoning support; yet such is the position you must maintain to establish your argument.

I the less expected this objection to be urged against me, as, at page 177, I have purposely desired the attention of the Reader, to the power of mineral bodies in the most minute doses. Is it not well known, that large doses of mercurials, antimonial, and

* Letter, &c. p. 18, 19, 20.

chalybeates, occasion very inconvenient and even fatal symptoms? Yet, when cautiously divided into small quantities, are they not rendered the most salutary medicines? One ounce and a half of the antimonial wine is sometimes administered as an emetic; and twenty drops, one thirty-sixth part of that quantity, is given as an alterative. Now, would it not be strange reasoning to say, that, because the greater quantity acts violently by irritating the stomach and intestinal tube, the less quantity, producing no sensible operation, has therefore no effect on the human system? Yet such is the conclusion which must naturally follow from your doctrine.

If the 30th part of a grain of that wholesome mineral iron, diffused or dissolved in one pint of water, and taken daily for a few weeks, can produce the most salutary effects, by its insensible operation on the human body; does it seem absurd or even

difficult to believe, that one half of the same quantity of a noxious mineral (either arsenic or lead) suspended or dissolved in wine, and taken occasionally for a number of years, should ultimately prove injurious? —We cannot demonstrate by what means the inconceivably minute portions of the first mentioned mineral bring about their salutary effects; yet no one doubts the fact, because repeated observation has confirmed the truth: why then should we not extend the like mode of reasoning to the action of noxious minerals, with which you admit wines have been frequently loaded for two thousand years past?

I might pursue this train of reasoning farther, and even shew how mineral substances have been and may be so administered, as to produce fatal effects, by the most gradual unsuspected means, and, as some affirm, at a stated period of time. It is not for want of ample and satisfactory proof that

I do not proceed ; but, as this subject is too dangerous to be thus publickly handled, I forbear ; and, if the *primary causes* of the gout cannot be sufficiently comprehended, from what has already been suggested on the general nature and power of minerals, without revealing how they have been fatally managed and applied to effect the most secret and infernal purposes, I shall hold it a superior duty to be silent.

OBJECTION V.

“ In France, where the nature of the
 “ soil encourages the culture of the vine,
 “ there is a very considerable number of
 “ gentlemen, whose affluent circumstances
 “ inducing and enabling them to make the
 “ enjoyments of life their chief occupa-
 “ tion, pique themselves upon producing
 “ at their table the most excellent and the
 “ most genuine Burgundy. Any stranger
 “ would wonder at the mighty importance

“ of that article of luxury with them. They
 “ make a most serious point of going them-
 “ selves to their vineyards, and seeing the
 “ grapes gathered, the juice expressed, the
 “ wine made, put into casks, and conveyed
 “ under their own eyes. Now nobody
 “ can, I presume, suspect in this case the
 “ admixture of any noxious substance;
 “ these men ought therefore to live, accord-
 “ ing to your doctrine, in perfect security
 “ from all attacks of the gout:—but they
 “ do not in reality enjoy so great a pri-
 “ vilege: on the contrary, the ΜΙΣΟΠΤΩΧΟΣ
 “ Θεοῦ, in general, shews them a particular
 “ affection, by visiting them early, often
 “ and long*.”

* Letter, &c. p. 11, 12.

When two gentlemen of equal veracity and alike
 well informed, affirm contraries, we may with propriety
 exercise our own judgment to determine in whose favour
 the truth preponderates.—Professor Liger, in order to
 support his theory, has declared, that we “ *hardly see one*
 “ *gouty person in Champagne or Burgundy;—that no*
 “ *one ever contracted the gout by the use of Champagne,*
 “ *Burgundy, or Spanish wines.*”——On reading these

This specious argument, which appears to be advanced on your own personal knowledge, would have great weight, and would effectually overturn the position I have advanced, provided it could be properly maintained. Every one will readily agree that wittingly and intentionally no noxious mineral substances will be mixed with wines prepared by gentlemen for their immediate and proper use: and I am willing, Sir, to believe that you apprehend none are introduced by any means. I shall therefore endeavour to shew that noxious methods of preparing and managing French wines are nevertheless practised; and I think, that, in all fair argument, they must be admitted, when we consider the authorities they flow from, as

passages, it struck me, that a zealous partiality for his own hypothesis had certainly deceived the Professor into these suspicious assertions; what you now urge, fully confirms me in this opinion. Yet I rather wonder, when you quoted his authority against me, you did not at the same time advert to, and correct, these little errors, which stared you so full in the face.

the *universal custom* ; unless it can be proved, that these means have been rejected, and stigmatized by the gentlemen in the province you allude to.

The greatest inconvenience French wines labour under is, that, for want of sufficient body, they are very subject to run into a new fermentation, and become sour ; so that Monsieur Beguilet “ laments that the
 “ wines of Beaune, Pommard, and Vollenay,
 “ which are without exception the produce
 “ of the first vineyards in Burgundy, can-
 “ not be preserved in casks more than a
 “ year*.”

To prevent this accident, several improper methods have been advised. Three of them, which have been highly recommended, are as follow :

By lead.

By impregnating the cask or wine with sulphur ; which has been called *matching* or

* Œnologie, p. 268. A Dijon, 1770. 8vo.

scenting the cask, and *sulphurating* or *fumi-
gating* the wine.

And by boiling all or part of the mustum.

How many subsequent editions the *Maison Rustique* has gone through, I cannot learn : that before me is the Fifth, with the Royal imprimatur, printed in the palace at *Paris*, 1740, 2 tom. 4° ; to which is prefixed the approbation of Dr. Andry, Lecturer and Professor Royal, Doctor Regent of the Faculty of Physic at Paris, and Inspector Royal of Books, who testifies, “ that he has read the
“ work by order of the Chancellor, and finds
“ nothing in it, but what is useful to the
“ public *.”—Yet in this very popular book, thus authorized and inspected, there are several objectionable directions concerning wines.—I shall only quote, from the chapter

* J'ay examiné par l'ordre de Monseigneur le Chancelier, cette *Nouvelle Maison Rustique*, &c. : Et je n'y ai rien trouvé qui ne soit utile au public, &c. Andry.

which treats on the management of Burgundy, the directions given to prevent that wine from turning sour. “ Put into each
 “ cask a ball of lead, weighing three or
 “ four pounds, which being passed through
 “ the bung-hole, may be suspended by means
 “ of a packthread in the middle of the
 “ cask †.”

To the second, Macquer, in his Elements of Chymistry, says, “ that the fermentation
 “ is restrained by mixing with the wine a
 “ large quantity of some mineral acid: but
 “ this practice likewise alters the property;
 “ for these acids, which are fixed, remain
 “ always blended with the wine, and never
 “ separate.

“ The best method then, which has yet
 “ been discovered to stop the fermentation,

† Vendange de Bourgogne
 Pour empêcher le vin de tourner.

Il faut mettre dans chaque tonneau une bille de plomb pesant trois ou quatre livres, qui puisse passer par le bondon, et la suspendre au milieu du tonneau avec une ficelle. Tom. ii. p. 3. liv. vi. chap. iii.

“ without vitiating the fermenting liquor,
 “ is to impregnate it with the vapour of
 “ burning sulphur.—Therefore, when you
 “ chuse to have a wine which shall not be
 “ more than half fermented, and which pre-
 “ serves in part the sweet flavour, which it
 “ had when in the state of must, you put it
 “ into the vessels in which sulphur has been
 “ burned, and the vapour retained. These
 “ wines are called *Sulphurated Wines*: and,
 “ if the same process is used with the must,
 “ you prevent the fermentation. It preserves
 “ all its sweetness, and is called *Muted Wine*.
 “ But, as the sulphurous acid dissipates itself
 “ at the end of a certain time, you are
 “ obliged, if you wish to hinder the fer-
 “ mentation from being renewed in these
 “ sulphurated or muted wines, during a
 “ length of time, to resulphurate them from
 “ time to time *.”

* Elemens de Chymie Pratique, tom. ii. p. 241, 242.
 Ed. A Paris, 1751. 8°.

Mess. Beguilet † and Rozier ‡ strongly enforce this practice, which there is much reason to believe has been, and still remains, a general and dangerous abuse.

There are in authors different proportions for preparing these *telæ*, or *matches*. Some order native sulphur; others, roll-brimstone; and some, both these mixed with cloves, cinnamon, &c. though Monf. Rozier thinks this addition superfluous §.—To you, Sir, I need not quote authorities to prove, that, as the arsenic, with which this fossil confessedly abounds, cannot be separated from it without sublimation, a process which sulphur in these states has not undergone, wines thus managed must be rendered noxious, and to all intents and purposes come within the meaning of being impregnated or adulterated with arsenic.

† Œnologie, p. 266.

‡ Memoire sur les Vins, p. 110, &c. Ed. A Paris, 1772. 8°.

§ Ibid. p. 117.

Hence we learn with how much justice it has been said,

Qui bibit ingrato foedatum sulphure Bacchum,
Præparat ad diri se Phlegethontis aquam*.

Boiling all or part of the mustum as its state may require, has been recommended from a very early period; and I have great reason to believe has alone been productive of more fatal consequences than every other method of adulteration. As Mess. Beguilet and Rozier are the most modern French writers I have seen on the subject, their authority will be quite sufficient for me: they both recommend it as a safe and prudent method of giving the wine a stronger body †.——Save iron and unglazed earthen vessels, I know of none commonly made that can be used for this purpose with safety. Brass, copper, tin,

* Petri Andreæ Canonherii, de admirandis vini virtutibus, p. 415. Ed. Antwerpiaë, 1627. 8°.

† Œnologie, p. 244, 247, 255, 265. Memoire, &c. p. 47, 57, 143, 144.

tinned and lead vessels have been advised; but that boiling a vegetable acid in any of them would dissolve a portion of the mineral, is beyond a doubt.

These customs seem to me clearly established and convictive. If more evidence were necessary, I might observe to you, that a noxious *sapa* has been unwarily recommended as innocent by a late writer *, to whose publication the official approbation was annexed in 1769. And I might give, from the most approved authors, a long catalogue of the dangerous forms of adulteration that have been, for ages, used in France; and then desire you to point out, when, and by what writers, these several pernicious practices have been properly noticed and corrected †, so as to give satisfactory proof

* *Œnologie*, p. 230.

† In 1770, Monf. Beguilet intimated his intention to undertake this work, which I most sincerely hope he has performed. Vide *Œnologie*, p. 229.

that these destructive customs no longer prevail.

As we are upon the subject of French wine, you will excuse a small digression, in order to bring in a singular remark made on it, by one of the most distinguished physicians of the present age. Speaking of wines adulterated with several preparations of lead, having confessedly produced the colic of Poitou, palsy, gout, &c. the learned Dr. Tronchin thus proceeds: “ Quere, If the colic
 “ of Poitou, which is at this very time
 “ (1757) endemic at the Dutch settlement
 “ of Surinam, visiting the Europeans only,
 “ sparing the natives, arises from adulterated wines?—What strongly supports
 “ this conjecture is, the enormous consumption of French wine there, within
 “ the course of forty years past, and of
 “ which the Europeans alone drink. The
 “ Bourdeaux wine being very much disposed
 “ to turn sour under the equinoctial line,

“ (which wine the colonists make use
 “ of) is restrained by some dangerous
 “ method*.”

The fraud being stated here as practised on wines intended for exportation alone, can have no fair weight in this argument; and I am induced to mention it only by way of caution, as it is more than probable, the directions given in the *Maison Rustique*, and approved by Professor Andry, being general and unrestricted, that the same means may at times be used with wines, *which are never designed to cross the Line.*

I shall be really concerned, Sir, if you suppose I intend any partial invidious reflection on your countrymen; or that I endeavour to represent them as more culpable in these respects than others: nothing is farther from my meaning: the like practice has been universal: we stand in the same predicament; and several dangerous directions,

* De Colica Pictonum, p. 70, 71. Ed. Genevæ, 1757. 8°.

relative to the preparation and management of cyder, extant in tracts composed by English gentlemen in high esteem, which received the most respectable patronage, to our great misfortune, keep the *Maison Rustique*, &c. &c. in countenance.

OBJECTION VI.

“ According to these remarks, which are
 “ grounded on facts that fall under every
 “ one’s observation, neither the unguarded
 “ use of wines, in all probability adulte-
 “ rated, seems to accelerate much the gouty
 “ disposition, nor the genuineness of the
 “ most excellent sort to retard its coming.
 “ Even the almost total abstinence from all
 “ kinds whatever, does not entitle one to
 “ security. Consequently, if wines unfairly
 “ corrected or clarified should be supposed
 “ to bring on the gout, it must also be
 “ granted, that they are uncertain in their
 “ effects, and not more efficacious than

“ genuine burgundy, malt, or other fermented liquors, that are acknowledged to be unadulterated *.”

It has been before observed that all persons are not affected in an equal degree by the *operation* of minerals; and therefore they may, in some measure, be admitted as uncertain in their effects: but this by no means warrants the inference, that adulterated liquors are not more efficacious to bring on the gout, than genuine burgundy, malt, or other fermented liquors which are not adulterated: such conclusion flies in the face of positive facts, supported by the very best authorities. So many epidemic colics, attended with palsies, gout, &c. might be instanced, obviously arising from the action of mineral substances conveyed into the human body by the medium of vinous liquors, that it appears needless to quote them

* Letter, &c. p. 14, 15.

here; and the utter impossibility of ad-
 ducing one single instance where the like
 spasmodic colic has clearly originated from
 any other source, appears quite sufficient to
 overturn the inference proposed.

OBJECTION VII.

“ Wine, it must be acknowledged, even
 “ when originally impregnated with noxious
 “ minerals, may sometimes be drank with
 “ safety: but that must be owing to the
 “ deposition of the minerals to the sides or
 “ bottom of the vessels containing those
 “ wines.—As long then as our liquors pro-
 “ duce no complaints in the stomach and
 “ bowels, we may account ourselves per-
 “ fectly safe from every effect of adulte-
 “ ration*.”

Had you said, *may sometimes be drank,*
to all immediate appearance, with safety, I

* Letter, &c. p. 21, 41.

should have joined with you.—The true reasons are, the smallness of the quantity with which it is impregnated, and the peculiarity of constitution in different persons, as just mentioned; not the deposition of the minerals to the sides or bottom of the vessels, as you represent. With equal propriety you might assert, that the antimonial wine will in time become inactive: for lead is soluble in wine, and therefore remains ever blended with it: even the grand process of fermentation (as far as I can perceive) does not separate any of the particles.

—I have now by me a part of the three half pints of grape juice stated to be evaporated to one pint in a leaden bowl (Exp. ix, p. 52,) which, after that process, being fermented, became an ordinary white wine, in taste somewhat like the very inferior Rhenish, sold in and about Bremen. This wine, being now essayed by the test, at the distance of twenty months, appears to be as much

loaded with the lead, as it was previous to its being fermented.—Arsenic is, in a flower degree, soluble by acids; consequently a permanent impregnation must take place, when it is used to fine wine. This argument then, Sir, which you bring to confute my position, seems to make directly for it; especially, if we take into consideration what you advanced at page 10, “ that the greatest part
 “ of wines commonly used, are undoubt-
 “ edly adulterated with mineral substances;” which is asserting rather more than I have ventured to do, or can by any means assent to, till such time as it be accompanied with satisfactory proof.—But I must confess myself much surpris'd and alarmed at what you advance in page 41, “ That, as long as
 “ our liquors produce no complaints in the
 “ stomach and bowels, we may account
 “ ourselves perfectly safe from every effect
 “ of adulteration.”——This is dangerous doctrine indeed, of the most pernicious ten-

dency ; and I am sorry to think any knavish vintner may now plead, in justification of his frauds, that he has your testimony to his innocence.

Thousands of instances might be set forth, which prove, that, though minerals, when admitted into the human system, either by themselves, or by the medium of water or wine, have produced no immediate complaints in the stomach or bowels ; yet they have, nevertheless, ultimately proved dangerous or fatal.—Fernelius *, Massuet †, Dr. Fothergill ‡, Baron Dimsdale **, Dr. Percival ††, &c. &c. have cases in point to the clandestine yet pernicious action of minerals when admitted *per se*. The epidemic colic of Amsterdam †††, and the history of a large

* De Luis Vener. Curat. cap. vii. p. 257. J. Fernel: Univers. Medicina.

† Bib. Raisonee, tom. ix. p. 309, 310.

‡ Med. Observat. vol. v. p. 394.

** Med. Observat. vol. v. p. 401.

†† On the Poison of Lead, p. 31, 32.

††† Bib. Raisonee, tom. viii. p. 64.

family in Worcester, communicated by the late Dr. Wall *, which suffered severely from the vitriolic acid in the spring-water gradually corroding the leaden pump, are sufficient evidence that this mineral, when suspended in water, may occasion fatal consequences, without causing any immediate sensible effects. —What havoc they have made with the human species, when wine has been the pleasing unsuspected vehicle, has already been largely insisted on, and will yet be spoke to again.

If mineral substances gave such instantaneous notice of their admission, and actually brought so severe a warning along with them, mankind would have been alarmed for ages since, and placed effectually on their guard; millions of our fellow-creatures, who, after enduring the most excruciating pain, have paid the great debt of nature (to all appearance at a very imma-

* Med. Transact. vol. ii. p. 420.

ture period) might have been spared for a time. But the Supreme Being has, for reasons infinitely beyond human investigation, otherwise ordained.

O B J E C T I O N VIII.

“ If the savages in different parts of the
 “ world are unacquainted with the gout;
 “ if the barbarous Laplanders do not so
 “ much as dream that it is a painful disorder,
 “ it is not because wine is unknown to
 “ them.—Should they ever become ac-
 “ quainted with the disappointments of
 “ ambition or love, with the anxieties of
 “ hope and fear, with the mortifications of
 “ neglected, sometimes insulted merit;
 “ should their rough organs ever be softened
 “ by the luxurious arts of civilised nations,
 “ you will pardon me for thinking that
 “ their abstinence from wine would then be
 “ but an uncertain preservative from the
 “ visits of the *gout* *.”

* Letter, &c. p. 42, 43.

Dr. Cadogan informs us, “ he was assured, by a physician who had practised upwards of thirty years in Turkey, that, from the banks of the Danube to the Euphrates, he had never seen a gouty Turk * :”—To concur then in your opinion, either this weighty evidence must be totally disregarded, and set at nought ; or we must believe that millions of people live in a state of apathy—that the Mahometan inhabitants of this vast tract, are not subject to the various passions, of hope or fear, of love or hatred, of grief or joy, in common with their fellow creatures ! that they are not moved by the like passions as ourselves ! —It is not easy to conceive how these palpable objections escaped your attention, or why you chose to pass unnoticed the principal cause Dr. Cadogan assigns, that the true Mussalmen and the Gentoos are exempted from the gout.—They, indeed,

* Cadogan on the Gout, p. 89.

differ in some particulars regarding their diet; the latter being represented as refraining from all animal food; which the Turks do not scruple to eat: yet they both agree in this one material point;— they alike abstain from wine. I am clear of opinion, that, if these nations made a common use of adulterated vinous liquors, they would be afflicted with the disease.— If you, Sir, by any satisfactory reasoning, can shew the contrary, I will confess my error, and sign a recantation with humility.

OBJECTION IX.

After having expressed your assent that the causes of several epidemic colics, similar to that of Poitou and Devon, which have at times prevailed, are fairly ascribable to the action of lead and arsenic, you proceed:—
 “ But the analogy you are desirous to
 “ establish between the causes of that colic
 “ and of the gout, is a matter not so likely

“ to meet, I presume to say, with the con-
 “ currence of the public.—There must be
 “ so few arguments, if any, in support of
 “ your hypothesis; there are so many, I
 “ may say insuperable reasons against it,
 “ that I cannot entertain the least hope of
 “ ever seeing the gout successfully treated
 “ by any method derived from such a
 “ theory*.”

Before me is a table, wherein I have en-
 deavoured to deduce the history of that spas-
 modic colic, the frequent crisis of which, has
 been a palsy or some other affection of the
 nervous system, from the time of Hippo-
 crates to the present instant. It contains the
 names of upwards of one hundred authors,
 who appear to describe or allude to one and
 the same disease, though they differ mate-
 rially respecting the productive cause. Above
 a third of these mention the gout either as in-

* Letter, &c. p. 5, 6.

timately blended with the paralytic affections, or as being the separate and distinct crisis of the disorder; so obvious and forcible is this truth, that a very eminent writer having related a case, where these three diseases were thus complicated, adds, “from these
 “ observations it is most evident the bilious
 “ matter of the colic, being its immediate
 “ and proximate cause, is thrown upon the
 “ joints, and from them is carried to the
 “ nerves; and therefore, in some constitu-
 “ tions, the matter which occasions the
 “ colic, gout, and palsy, is of the same
 “ nature *.”

Now, as we are both agreed and persuaded, that the causes of this colic, and the paralytic consequence, are sufficiently demonstrated to have risen from lead, *gypsum*, and arsenic exclusively; have you not, Sir, been rather hasty, in thus peremptorily

* Musgrave De Arthritide Anomala, p. 446. Exoniæ, 1707. 8°.

passing censure on me, for extending my views to the other disease, whose origin has hitherto been equally inexplicable, and which appears, from the writings of the most esteemed authors, thus closely connected with them? I submit to your calm reconsideration, if there be not the most rational ground for such an opinion;—and, since the gout is not observed to be the crisis of any disease in nature, except of this particular species of colic, is it not a matter worthy our most deliberate enquiry, to ascertain by what means it has been thus frequently produced, for a series of ages, in different climates, in these several instances? Does not such an investigation promise fair, that it will ultimately guide us, by disclosing the cause, to the most rational mode of palliation or cure?

Let me add a few instances where the gout has been confessedly generated, and rendered epidemic from mineral substances, suspended or dissolved in wine.

Alexander Benedictus observes, “ that the
 “ gout was in general the disease of persons
 “ advanced in life. But in Crete, (the
 “ present Candia) he himself had seen even
 “ young people afflicted with it.” And he
 adds, “ The liberal use of wine in that island,
 “ within the space of two years, because
 “ they fine or prepare their wines with gyp-
 “ sum and lime, renders the very stoutest
 “ persons, who are strangers, subject to
 “ the gout; and, in consequence of this,
 “ their hands and feet are so crippled and
 “ loaded with callosities, that they are not
 “ able to put on their shoes, or make use
 “ of their hands*.”

His testimony, so far as it relates to the
 use of gypsum with the Cretic wines, is
 supported by several authors; in particular
 by Grattarolus †, and Andreas Baccius §,

* Alex. Benedict. De re Medica Opus insigne, lib.
 xxix. in proæmio. Ed. Basil, 1529. fol.

† De Vini natura, &c. p. 209. Argent. 1565. 8°.

§ Natur. vinor. Histor. cap. ix. p. 14. Romæ 1596, fol.

where the different modes of preparation may be seen.

About the middle of last century, an epidemic colic, frequently attended with palsy and gout, again broke out in Germany, and continued, with more or less severity, upwards of sixty years*. Many authors wrote upon the subject, and several of them agreed that the cause originated from wines adulterated with litharge or sugar of lead; and they stated the different proportions and preparations of this mineral which were practised by the wine-dealers: but I have some doubts if, after all their investigation, they did not overlook the most general means, by which the im-

* Here likewise, as well as in Crete, young people were compleat cripples.

Et a multis accepi qui per Germaniam itinera fecerunt, se Arthritidem endemice grassantem, inter eos, qui juxta Rhenum Flumen habitabant, observasse; adeoque non raro sævientem, ut concreciones tophaceæ in articulis se palam facerent, antequam podagricus annos triginta numerasset. Wintringham De podagra, p. 13. Ed. Eboraci. 1714, 8°.

pregnation took place.—However this be, the disease confessedly arose from the admixture of minerals with wine. Eberhardus Gockelius, first physician to the duke of Wurtenburgh, seems to have carried his researches as far as any of his contemporaries, and to have established the fact in the clearest and most satisfactory manner*.

These authorities, which might be strengthened by many other, appear perfectly decisive to the position incumbent on me to maintain, that *mineral substances are the primary causes of the gout*, since we perceive that, when wines have been largely impregnated with them, the disease has been rendered epidemic. How universally these fatal customs have at times prevailed, requires no farther proof here; it having already been rather tediously insisted on.

The idea that this disease arises from the action of mineral particles, is by no means

* Miscell. Curios. Decad. iii. Ann. iv. Ob. xxx.

novel; several authors have mentioned it. Sennertus in particular repeatedly assigns this amongst other causes*: he contends, that wines are more or less productive of the gout; as the earth which nourished the vine, contained a greater or less quantity of minerals. He even insists that those particles are extracted from the soil, and carried into the circulation during the vegetation of the plant, and ultimately form a part of its generous fruit †. It seems most wonderful that this eminent physician should extend his ideas thus far, and not recollect that it was very customary to add the minerals after the wine was made. Be this as it may, he certainly countenances the position ad-

* *Nam vina quod attinet lib. ii. Infit. dictum, quæ in terra calcaria, vel lapide calcario, sulphureo, vel simili aliqua materiâ minerali abundante crescunt, cum partes tales multas in se contineant, quæ ad corpus alendum ineptæ sunt, tandem in corpore cumulatae, variorum morborum, et inter eos etiam colicæ causæ sunt—et paralyfin arthritidem, aliosque dolores vagos procreant.* Sennerti Opera, p. 435. Ed. Lugdun. 1650, fol.

† Sennerti Opera, p. 943, 944.

vanced, and saves me from the unpleasing situation of standing single in opinion.— Besides, I think that a late writer, from whose sentiments you will, I am persuaded, make no appeal, coincides fully with me. This gentleman concludes the gout to originate from some debility of the nervous system: but the primary causes which effect this debility may be innumerable;—heat or cold, grief or joy, exercise or indolence, intense study or thoughtless dissipation: in short, it may arise from any cause, except from mineral substances, or adulterated wines: this cause he endeavours to exclude, as it would be granting what he professedly sat down to invalidate.—Thus he reasons:

“ Adulterated liquors have undoubtedly
 “ a very debilitating influence over the
 “ nervous system, and therefore may, in a
 “ general view, be entitled to no inconsider-
 “ able rank among the other causes that
 “ have been mentioned. But it is to be

“ observed, that the debility they occasion
 “ is always in consequence of other dis-
 “ orders first excited by them, and which
 “ had previously torn the constitution to
 “ pieces ; and never is produced directly
 “ from any gradual insensible absorption
 “ and accumulation of their mineral con-
 “ tents.—If, then, adulterated liquors are
 “ to be reckoned among the causes produc-
 “ tive of the gout, it must be only in a
 “ *secondary light*, and in consequence of
 “ other diseases, not less excruciating, and
 “ much more dangerous than itself.”

Can any truth, Sir, be plainer than,
 that, from this author's state, the adulte-
 rated liquors, which he says must be con-
 sidered only in a secondary light, are, in
 reality, premised and admitted as the *pri-
 mary cause* ?

If mere debility of the nervous system,
 indiscriminate as to the efficient cause, could
 produce this disease, there are frequent in-

stances where it must occur. In profuse hæmorrhages, when the loss of the vital fluid, not only from the ruptured vessel, but also from the necessary use of the lancet, has reduced the patient to such a languid state, that hope scarce remains, we have had the pleasure of seeing the man restored, without a single arthritic symptom. In that species of fever properly called nervous, when the general powers of nature are so enfeebled and exhausted, that life resembles the expiring lamp, whose extinction is momentarily expected, yet have we known our friend to survive and enjoy perfect health and vigour again, unvisited by any gouty affections. Can we figure to our minds a number of objects in a more absolute state of debility, than the one hundred and eighty sailors afflicted with the scurvy, who were lifted over the Centurion's sides, in June, 1741, to be landed on the island of

Juan Fernandes *?—So extreme was the degree of debility they laboured under, that twelve or fourteen of them expired in the boats, on being exposed to the fresh air! But we have no mention made in the history, of any gouty symptom displaying itself, either during the state of the disease, or amongst those who happily recovered.—These are only individual instances; let us take national; let us consider the indolent Mahometans, where religion and custom jointly conspire to produce universal debility. To the repeated ablutions in the enervating tepid bath, to the soft dissolving pleasures of the *Haram*, let us superadd, the habitual indulgence in the use of opium, the acknowledged property of which is, to induce great relaxation and debility †.—Here then, if such theory were found,—the gout should prevail as endemic; yet, that it does not

* Anson's Voyage, p. 113.

† Vide Lewis's Materia Medica, p. 419, Ed. London, 1768, 4°.

now *, we have the most positive evidence : nay, so far to the contrary, that instances of this disease are rare with them ; and, when they do happen, it is with those who, in violation of Mahomet's politic injunction, dare to drink of the forbidden liquor wine.

That the extremes of heat or cold, of joy or grief, of exercise or indolence, of study or dissipation, however debilitating, are not equal to produce an original gout, would be waste of time to prove. It remains then, that we join with the only adequate efficient cause, which has been

* Constantinople was taken by Mahomet the Second in 1453. Previous to this memorable event, the inhabitants of that imperial city were remarkably subject to the gout, as testified to us by Nicephorus Callistus †, who wrote in the preceding century.—The christians made no scruple of drinking wine, and, it may be proved, were liberally supplied from the several islands in the Archipelago and Mediterranean, of which Crete was the most eminent for its abundant produce.—Behold then this city possessed by a people whose religion prohibits the use of wine, and the disease in great measure banished !—A circumstance, perhaps, unparalleled in history, which demands our most particular attention, since it seems to furnish a truth of no less importance than, that, in proportion as the *suggested* cause has been taken away, the effect has actually ceased.

† Nicephori Callisti Historiæ Ecclesiasticæ, tom. ii. lib. xviii. cap. 40. Ed. Parisii, 1630, fol.

instanced by this gentleman,—the effects of mineral substances, or adulterated wines.

I am very sensible how general the position I have advanced must appear; what an almost infinity of cases it comprehends; and, that these considerations will have great weight against the theory insisted on.—To lessen the force of them, I beg to observe, if we are once fully convinced that liquors, thus adulterated, have produced the disease in question, there is proof enough to satisfy even the most scrupulous, that these customs have been practised for upwards of 2000 years, in a degree equal to what they are charged with.—To adopt the alternative, and to suppose, that, though they have thus universally obtained, such liquors have been drank without detriment to the human body, would be to set aside the express testimony of several writers; which seems far more irrational. For, if gypsated wines caused the disease to be en-

demic with the Cretans, can we believe such wines were harmless when used by other nations*? And if drinking water impregnated with a solution of lead, occasioned an epidemic gout in Holland,—what consequences may be naturally expected to result from vinous liquors boiled in leaden vessels, or in those lined with a mixture of tin and lead? Who can consider them as innocent? Yet, if they are admitted not to be so, my argument remains sound, and in full force; for the like reasoning may, with equal propriety, be extended to other mineral adulterations;—and then we have an adequate cause, which has, in all ages, gone hand in hand with the disease, sufficient to the various symptoms and effects produced.

The sentiments of an experienced and extensive practitioner, may I conceive with

* Such was the abundant produce of wine in Crete, before the Turks conquered the island, that upwards of two hundred thousand casks were annually exported from thence to different parts of Europe. Vide Andreas Baccius *Histor. vinor.* lib. vii. et Sach's *αμπελογραφια*, p. 424.

a small alteration be quoted as full to the point I wish to establish. — “ Nor are the
 “ tippling Germans, (says Dr. Huxham)
 “ that inhabit the banks of the Rhine and
 “ Moselle, more severely afflicted with gout,
 “ than our countrymen, who are continu-
 “ ally swilling large quantities of cyder;
 “ for both there and here the gout is ende-
 “ mic and exceeding common, nor are there
 “ any where so many, even amongst the
 “ common people, as in the county of
 “ Devon, most famous for cyder, that are
 “ afflicted with the gout.—And it is rea-
 “ sonable to believe that the frequency of
 “ the disease, in both countries, is owing to
 “ the large and long continued use of
 “ vinous liquors, that very greatly abound
 “ with *Tartar*; such as the Moselle and
 “ French wines, and our cyder; for, since
 “ the use of them hath much prevailed,
 “ the gout hath been far more frequent
 “ than heretofore:—Claret, the favourite

“ drink of the present age, was not in
 “ much esteem about a century ago : And
 “ there is ten times as much cyder now
 “ made and drank, as there was about
 “ thirty or forty years since *.”——Instead
 of *Tartar*, which the Doctor assigns as the
 productive cause—permit me to substitute
Minerals—they may to a demonstration be
 traced into those liquors—can we then hesi-
 tate to determine, whether the disease has
 been produced and rendered familiar with
 the Germans and inhabitants of Devon,
 from the *Tartar*, or from the *Minerals*?—
 The first of these substances, is harmless,
 and even wholesome : — innumerable facts
 clearly evince, the baneful properties of the
 latter.

Upon the whole therefore, as the gout,
 when endemic at Constantinople, and epi-
 demic with the Germans and inhabitants of
 Amsterdam, has been almost totally removed

* De Morb. colico, P. 14.

or considerably diminished — at the first place by the abstinence from wine — with the second in consequence of an edict passed 1696, making the adulteration of that liquor by minerals a capital offence — and, with the latter, by the judicious advice of Dr. Tronchin to guard the water against receiving an impregnation from lead; — I am yet disposed to think, there is a well grounded hope, when these facts are properly considered and attended to, this formidable disease may be almost annihilated.

Thus, Sir, I have endeavoured to obviate the several objections you make. If in any part I have strained your sense, or omitted to state your argument in its fair light and full force, I beg your pardon, and assure you it is not done intentionally. I will readily and respectfully attend to a private letter, if any point appears to you unanswer-

ed—But I will hope what has been said may prove satisfactory.

It was my intention to have published some observations on the methods of cure in the colic of Devon, and the gout.—For more than twelve months since I thought myself prepared; yet I must confess, that, though the study has constantly employed my thoughts, I now feel myself more diffident than at that time; the great difficulty of pointing out even the general means, which are most rational in every case, deters me from the attempt—The chronic palsy and gout are so often complicated with other diseases, that almost every patient requires a peculiar mode of treatment, of which his attendant physician must alone be the most competent judge. I sincerely agree with you, Sir, that there are no *nostrums*, no *specifics* yet discovered that can cure this latter disease; and I firmly believe there never will. But we may with reason hope a more success-

ful mode of treatment will take place, when the primary cause of a disease is clearly understood, than while it is involved in perpetual uncertainty.—Which of us entertains the most adequate and just idea of this cause, remains to be determined.—You have intimated a design of pursuing the curative part in a distinct treatise; should you do so, I most heartily wish you success, and am, with all due respect, &c. &c. &c.

Barnstaple,

1779.

The first of these is the fact that the
 the primary cause of a disease is
 the result of a combination of factors
 which are not always the same. It is
 therefore necessary to consider the
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A P P E N D I X.

THE following extract of a letter I was favoured with from the Reverend Mr. Julian, who resides near Plymouth, seems to place the danger arising from the ordinary glazed earthen vessels, when used to contain cyder, in the clearest light, and fully confirms every suspicion that was entertained against them :—With his permission I embrace this opportunity of making it public.

—————“ About six years since, a
 “ labouring man and his son engaged to mow
 “ some acres of grass for me, with the com-
 “ mon allowance of one gallon of cyder to an
 “ acre. They had their cyder, the first day,
 “ in a two gallon keg or firkin, which was

“ returned in the evening, in order to be filled
 “ for the next day, in the forenoon of which
 “ they called for their cyder; when my ser-
 “ vant had filled *their* keg, and sent it to some
 “ workmen at another part of the farm;
 “ there not being then another keg at
 “ hand that would hold their allowance, she
 “ drew the cyder into a new earthen glazed
 “ pitcher. They did not drink all of it
 “ that afternoon in the meadow, but re-
 “ served some, and carried it to their cot-
 “ tage, and drank it with their supper.—
 “ The next day, the son (about eighteen
 “ years of age) was very sick, and vomited,
 “ complaining of griping pains in his bow-
 “ els;—the father also had violent colical
 “ pains, insomuch that neither of them
 “ could work that day. They observed that
 “ the cyder, after having stood a few hours
 “ in the pitcher, became sweeter than that
 “ which they drank the first day from the
 “ keg, though it was drawn from the same

“ hoghead.—This cyder was not meagre
 “ and harsh, but good, sound, common
 “ cyder.

“ A gentleman farmer of this parish had
 “ a cyder-cellar at another farm, some little
 “ distance from his dwelling-house: the
 “ cyder at home being drank out, and the
 “ servants not immediately at leisure to
 “ remove a hoghead,—— a large earthen
 “ glazed pitcher, containing about three
 “ gallons, was filled with cyder, and brought
 “ home for the present use of the family.
 “ Some of the cyder remained in the
 “ pitcher all night, which being emptied in
 “ the morning, was filled again from the
 “ cellar at the other farm. After drinking
 “ the cyder drawn into this glazed earthen
 “ pitcher three days, the whole family,
 “ about eight persons, complained of vio-
 “ lent colical pains.—A man servant and an
 “ apprentice, who had drank more freely of
 “ the cyder than the others, suffered more

“ severely : the first, by a violent paralytic
 “ seizure, so that he could scarcely lift either
 “ hand for many weeks.—The apprentice
 “ was afflicted in a very unusual and alarm-
 “ ing manner, being for some days deli-
 “ rious, and often seized with convulsive
 “ fits, &c. &c.

“ N. B. This cyder was thin and harsh
 “ when first drawn : the longer it stood in
 “ the pitcher, the smoother and sweeter
 “ taste it acquired, and was the more
 “ greedily drank, particularly by the ap-
 “ prentice, who was observed to drink
 “ from the pitcher, as soon as he came
 “ down stairs in the morning.

“ Speaking of these cases, which fell
 “ under my own observation, to a neigh-
 “ bouring gentleman, he mentioned a case
 “ to me, much to the purpose.

“ Two farmers took an estate to rent, as
 “ partners or joint-tenants, and each of
 “ them sent two husbandmen to work on

“ this estate. They bought an hogshhead of
 “ cyder, to be given in equal quantities to
 “ their respective workmen.—One of the
 “ farmers sent the daily allowance to his
 “ two men, in a keg or firkin; the other,
 “ to his,—in a glazed earthen pitcher. In
 “ two or three days, those workmen, who
 “ had their daily allowance in the pitcher,
 “ were seized with violent colical pains—
 “ whereas the other two were quite well,
 “ and had no such complaints,

Egg-Buckland,
 Feb. 22, 1779.

Yours, &c. &c.

JOHN JULIAN.”

I must just add, it was properly objected
 to me, that I had neglected to state, in the
 publication on the Colic of Devon, whether
 the glazed earthen vessels were commonly
 used in the other cyder counties of Here-
 ford, Gloucester, and Worcester*.—This

* Monthly Review, Art. 12. July, 1778.

was an omission.—I had then, and have since, made particular enquiries on this head, and am assured, that such ordinary glazed earthen vessels are not in common use in those counties.

F I N I S.

ERRATA.

Page 14, line 6, for *do*, read *does*.

Page 20, line 4, for *disorders*, read *disorder*.

ERRATA

Page 100. Line 1. For "the" read "a".
Page 101. Line 2. For "and" read "or".

