

**LETTRE ECRITE A M. MOREAU ... PAR G. LAMY ... CONTRE LES  
PRÉTENDUËS UTILITÉS DE LA TRANSFUSION DU SANG POUR LA  
GUERISON DES MALADIES, AVEC LA RÉPONSE AUX RAISONS ET  
EXPÉRIENCES DE M. DENYS**

**A TRANSLATION BY PHIL LEAROYD**

The full title of this letter, written by 'G. Lamy' (i.e. Guillaume Lamy) to Mr. Moreau is: 'Lettre écrite a Monsieur Moreau Docteur en Medicine de la Faculté de Paris, Conseiller, Medicin, Lecteur & Professeur ordinaire du Roy, par G. Lamy, Master aux Arts en l'Université de Paris; contre les pretendues utilités de la transfusion du sang pout la guerison des maladies, avec la réponse aux raisons & expériences de Monsieur Denys.' [i.e. Letter written to Mr. Moreau, Doctor of Medicine at the Faculty of Paris, Advisor, Physician, Reader and Ordinary Professor of the King, by G. Lamy, Master of Arts at the University of Paris; Against the alleged usefulness of blood transfusion for the healing of diseases, with the answer to the reasons and experiences of Mr. Denys.]. This letter was written on the 8<sup>th</sup> July 1667. A copy of the letter is available to read or download from:

<https://gallica.bnf.fr/ark:/12148/bpt6k1269952x.r=G.%20Lamy?rk=85837;2#>

This letter by Lamy is believed to have been written in response to the letter written by Jean Denis (i.e. 'M. Denys') to Herbert de Montmor on the 25<sup>th</sup> June 1667, titled: 'Lettre écrite à Monsieur de Montmor, Conseiller du Roy en ses Conseils, et premier Maistre des Requests par J. Denis, Professeur de Philosophie et de Mathématique. Touchant une nouvelle manière de guarir plusieurs maladies, par la transfusion du sang, confirmée par deux experiences faites sur des homes.' [i.e.: A letter written to Mr. Montmor, Advisor to the King in his Councils and First Master of Requests by J. Denis, Professor of Philosophy and Mathematics concerning a new way of curing several diseases, by transfusion of blood, confirmed by two experiments carried out on men.] A copy of this letter can be viewed or downloaded from the following websites:

<https://gallica.bnf.fr/ark:/12148/bpt6k326277d/f2.item>

[https://books.google.co.uk/books/about/Copie\\_d\\_vne\\_lettre\\_écrite\\_%C3%A0\\_Monsieur\\_d.html?id=XcRjAAAACAAJ&redir\\_esc=y](https://books.google.co.uk/books/about/Copie_d_vne_lettre_écrite_%C3%A0_Monsieur_d.html?id=XcRjAAAACAAJ&redir_esc=y)

NOTE: A translated version of this letter by Denis was also published in the 23<sup>rd</sup> September 1667 edition of the *Philosophical Transactions of the Royal Society* (Vol. 2, Issue 27, p. 489-504), titled 'A letter concerning a new way of curing sundry diseases by transfusion of blood, written to Monsieur de Montmor, Councillor to the French King, and Master of Requests.' A copy of this letter can be viewed or downloaded from the following websites:

<https://royalsocietypublishing.org/toc/rstl/1667/2/27>

<https://babel.hathitrust.org/cgi/pt?id=ucm.5324351302&view=1up&seq=99>

In this letter, Denis describes some of the animal transfusion experiments performed by himself and the surgeon Emmerez but more importantly also outlines (rather than describes) the transfusions performed on the first two human recipients, i.e. on a 15-

16 year old boy on the 15<sup>th</sup> June 1667 and a healthy man, the date of which is not stated but must have obviously been before the 25<sup>th</sup> June 1667, the date of Denis's letter to Montmor.

Guillaume Lamy replies seriously to the somewhat valueless un-medical arguments that Denis made in his letter of comparing blood and wine, as well as others that are based on the vague knowledge of the roles of blood within the body that were accepted as fact at that time, and which still included the Galenic concepts of vapours, spirits and humors. He applies theoretical arguments to the possible beneficial effects of blood transfusion on curing the different diseases that Denis put forward in his letter, for example on its role in curing rabies: 'how can new blood help when such a small amount of saliva poisons the whole mass of blood'. Lamy also uses somewhat cynical and occasionally mocking comments; for example when discussing the effects of blood transfusion in curing madness he states 'if it is never cured except by transfusion, it is very likely that I will never be wise'. He suggests that the apparent cure brought about on the a 15-16 year old boy on the 15<sup>th</sup> June 1667 who was suffering from drowsiness following a violent fever, to be due to fear rather than the transfusion, as his apprehension regarding the procedure Lamy believes 'released humors that had previously been inhibited by embarrassment'! Based on philosophical rather than medical ideas Lamy also touches on the 'nourishing' role of blood, which due to the apparent presence of 'particles' in the blood could result in producing species specific long-term effects, such as people growing horns, wool, etc., as a result of them receiving a transfusion of animal blood.

The content of this letter was subsequently commented on by Claude Gadroys in his letter to Mr Bourdelot that was written on the 8<sup>th</sup> August 1667, titled: 'Lettre escrite a Monsieur l'Abbé Bourdelot Docteur en Medecine de la Faculte de Paris, & Premier Medecin de la Reine De Suede, par C.G. pour servir de réponse au Sr Lamy, & confirmer en mesme temps la transfusion du sang par de nouvelles experiences.' A copy of this letter is available to read or download from:

<https://gallica.bnf.fr/ark:/12148/bpt6k1268937x/f1.item>

Lamy reaffirmed some of his arguments against transfusion in a second letter written on the 26<sup>th</sup> August 1667 titled: Lettre escrite a M. Moreau, Docteur en Medecine de la Faculté de Paris, Conseiller, Medecin Lecteur & Professeur ordinaire du Roy, par G. Lamy, dans laquelle il confirme les raisons qu'il avoit apportées dans sa premiere lettre, contre la transfusion du sang, en répondant aux objections qu'on luy a faites. A copy of this letter can be viewed or downloaded from:

<https://gallica.bnf.fr/ark:/12148/bpt6k1269787f.r=G.%20Lamy?rk=107296;4>

At the time that he wrote these letters, Guillaume Lamy (c.1644 – c.1682) was a young Master of Arts graduate from the University of Paris and therefore was qualified in (and subsequently published material on) philosophy and humanities. These interests led him to also study medicine and he is known to have acquired his doctorate in medicine in 1672. Since the medical course normally took between 5 to 7 years to complete, he must have commenced his medical studies no later than 1667, the year that these letters were written. At that time he would have been a student of Mr. Moreau, Doctor of Medicine at the Faculty of Paris. It is highly possible therefore that these letters formed part of his required thesis for this course.

This letter by Lamy is one of a number that were published regarding the potential usefulness or otherwise of the then 'new treatment of blood transfusion', performed on humans for the first time in June 1667, and presents important information regarding the attitudes, arguments and medical knowledge prevalent at the time. As such I have provided an English translation of this letter in the hope that it will allow its actual content to be read by a larger audience. Whilst I am obviously aware that instantaneous computer-generated translation is possible, this process struggles with specialist terminology and also produces a 'colloquial style' not always representative of the original text. I have tried to produce as accurate a translation as possible given that the printed text includes a variable trans-positional use of the letter u for the letter v, and the use of the long-form version of the lower case letter s. The paragraph structure and use of italics in the translation is reproduced from the original publication. Although I have taken great care not to knowingly misrepresent the author's original meaning I cannot guarantee that this work does not contain 'translational errors' and the reader is recommended to check specific details against the original French text.

Letter written to Mr. Moreau, Doctor of Medicine at the Faculty of Paris, Advisor, Physician, Reader and Ordinary Professor of the King, by G. Lamy, Master of Arts at the University of Paris; Against the alleged usefulness of blood transfusion for the healing of diseases, with the answer to the reasons and experiences of Mr. Denys.

Sir,

The ease with which you have always listened to my sentiments in various encounters obliges me to believe that my reasonings do not displease you, and although time has not yet been able to make them die well, I have not, however, noticed until now that they have brought you disgust. This is why I will freely comply with the desire you have expressed to me to know my opinions on blood transfusion, and to tell you what I can oppose to the letter that Mr. Denys, a very skilful Cartesian philosopher, wrote on this matter. But as the great occupations which your merit gives you in your profession, deprive you of the leisure of hearing them from my mouth, I will write them in this letter, so that you can read them in a few spare moments. The fear of disturbing the little rest that your employee leaves you would divert me from this design, if you had not inspired me yourself, and if I did not know that my imaginations are agreeable to you, you will find in this letter some opportunity to entertain yourself.

I confess that the transfusion of blood would be a very advantageous invention, if one could derive from it conveniences as great as one imagines, and our century would be very happy to have found such an easy and prompt means to deliver us from these annoying evils which disturb our rest and which prevent us from tasting the sweetness of life. But I fear for our misfortune, that when with good eyes we have looked more closely at the benefits that this novelty can bring, we do not recognize that this is very little, and that if we put blood transfusion into practice, one does not discover afterwards that it is rather a new way of tormenting the sick than of helping them.

As a basis for all that I will propose next, it should be noted that when the blood of an animal is passed through a man, a very small quantity is mixed with that of man, when it disgorges in the heart, which is a place where it must have its main effect: for supposing that it is made to enter through the jugular vein, as soon as it has descended into the trunk of the superior vena cava, it will find it mixed with all the

blood which is brought back from the head by the jugular and cervical veins; arms, by the veins which I meet in these same parts; or to put it in a word, it will be mixed with all the blood that is brought from half the body; namely of all the parts, both internal and external, which are from the diaphragm exclusively, to the head inclusively; because all the veins of these parts discharge into the superior trunk of the vena cava. Consider then a little the size of the jugular vein which brings this foreign blood, and the size and the multitude of the other veins which bring back the man's own blood, which all discharge into a common channel before entering the heart, and you will judge without fear of being mistaken, that there is in this channel a very small quantity of foreign blood with a very large quantity of that of man: and if you reflect that when the superior trunk pours blood into the right ventricle of the heart, the inferior brings it back from the other half of the body in the same way, and who has no drop of foreign blood, throws a similar quantity into the same place, you will have no difficulty in believing that the foreign blood which enters the heart compared with that of man, is not in any considerable quantity.

I prove that one can answer that one must not only look at the size of the vein through which one insinuates this foreign blood, to judge how much of it is in the large canal of the vena cava; but that it must be considered that it flows with much more speed, entering almost immediately from a middle artery into the vein, which I believe to be very similar: but all this speed, if we judge without concern, will perhaps oblige us to grant that as much blood passes through this single vein as flows through two others of similar size; which will not prevent me from using this argument with all the advantage that I can desire.

Suppose then, as I believe I have probably demonstrated that a very small quantity of the transmitted blood meets in the heart with a very large quantity of the proper blood of man; let us see if it is possible that this new invention frees us from disease and keeps us away from death. If I intended to write a book, I would take each disease in particular, the nature and causes of which I would examine, in order then to show quite easily that the transfusion of blood would be a useless means for its cure, but as I only want to give you a letter, I will speak generally without descending into the particular, if not to examine some illnesses that Mr. Denys reported in his letter, for which he conjectures that transfusion could be a remedy.

All the diseases whose cause is internal, generally proceed either from the abundance of the blood, or from its impurity; for the first, everyone, it seems to me, will agree that it would be ridiculous to propose the transfusion of blood to cure them, then that it suffices to remove what is too much, what is happily accomplished by bloodletting, and that the transfusion would greatly increase the evil by increasing the cause.

Under the illnesses which arise from the impurity of the blood, I include those which arise from its intemperance and from some particular malignancy. The first derive their origin for the most part, from an excessive heat which is met there, which cannot be extinguished by the blood which one will pass from a healthy animal into a sick one, because it will be drawn from the artery or the vein: if it is taken from the artery, far from cooling the blood in which it mixes, I claim that it must warm it up more, especially since the blood which passes immediately from a medium artery into a medium vein, is much warmer than that which will have passed through the capillary arteries and veins: for it is in these straits that losing the speed of its movement, it also loses its heat in proportion: which the experiments of Mr. Denys sufficiently confirm, since the two men to whom he gave blood felt an extraordinary heat in the places where he passed; an effect which shows us very certainly that the foreign blood, which made itself felt by its heat, was much more heated than the own blood of these men, which did not give them such a feeling. That if we pass the blood from the vein of the animal into the vein of man, I say either it will coagulate, or if it continues on its way without coagulating, it will be almost as hot as that of the man himself, and thus he will not be able to cool it: but let us say that it is a little less

hot. Is it really similar that such a small portion of blood, to have a little less heat, can cool a very large quantity of another with which it is mixed in the heart, and also reduce the heat of the very heart itself which is its focus, and which needs the greatest cooling: which would nevertheless be necessary, in order to obtain from the transfusion the usefulness that are claimed. Is it not much more probable that this great quantity of own blood joined with the excessive heat which is met with in the heart, will heat this foreign blood to such an extent? And even should we not necessarily conclude, since this newly received blood is capable of receiving as great heat as the own blood of man, and that the heart through which it passes has enough strength to communicate it.

One can gather from the letter of Mr. Denys some reasons to oppose what I say; to know that the blood could never be refreshed, neither by meats, nor by the beverages which are ordinarily used in medicine for this subject, especially since the chyle which is made of these foods is mixed immediately afterwards with the blood; & so it seems that one could conclude the same thing from chyle that I concluded from transmitted blood: and even Mr. Denys seems to give many benefits to foreign blood over the man's chyle, to correct the bad weather of his blood, let it be based on the fact that there is a long way to go before chyle can reach the heart, and thus it can easily be corrupted; which cannot happen to the blood one gives, which, praiseworthy as it is, descends into the heart.

If chyle were as suitable for being heated as blood, these reasons could oppose mine, but I intend to show that there is a very great difference between the one and the other. To conceive it, it is necessary to remark one thing with which Mr. Denys seems to remain in agreement in his letter, to know that chyle does not convert into blood except by passing several times through the heart by different circulations, by which little by little it is cooked and perfected, which is a sure mark that the chyle is much colder than blood can ever be, then that it passes several times through the heart before acquiring the degree of heat which the blood possesses, and to receive its nature. It will therefore be easy to conceive how with the aid of food one can refresh the blood and the heart if one considers that in diseases which proceed from an excess of heat, one uses to extinguish it with many beverages that are very often made to swallow, which because of their liquidity do not stop very little in the ventricle, and losing there the rawness that could be harmful to the patient, flow incessantly towards the heart, and as they are composed of refreshing herbs, much more circulation and return through the heart is needed to convert them into blood, than ordinary foods: and thus it is a gentle rain which falls continuously for the space of several days, finally extinguishes the immoderate heat, and makes us regain the health that we have lost. I allow that the chyle may be corrupted along the way, and I persuade myself quite easily that this prevents the success of these remedies from being as happy as it could be; but I also do not see that the transfusion of blood relieves us of these inconveniences, since it can in no way refresh, and that chyle such as it is, will always reduce the heat somewhat.

But perhaps the transfusion of blood will have a better effect in cold illnesses, and will be of great help to old people to arrest the course of their destinies, and defend them from death? In truth, I have great difficulty in persuading myself of this. In the first place, I do not believe that there are any cold illnesses, or at least they are very rare, which is why I do not speak of them. For old people the transfusion will be useless to them, because this new blood will never be able to restore their worn parts: and even perhaps it would hasten their death by bringing them some serious illness, which may arise from the fact that the blood of a young animal finding itself little in conformity with the temperament of the old man, would doubtless inconvenience him instead of relieving him.

Nor should we hope for succour from transfusion for diseases which proceed from any particular malignancy or corruption of the blood. For how can one be persuaded that a small portion of praiseworthy blood, such as I have shown entering

the heart, can correct a large quantity of blood with which it is mixed, which is entirely wasted and corrupted? Since when have we seen these miracles in nature, will they be done again to authorize the transfusion? Do we not usually notice sooner that a little of a wasted liquor will be able to corrupt a good quantity of another of a similar nature? Mr. Denys does not want us to be sure on this occasion of the comparison of good wine with vinegar, and let it be assured that as a little wine thrown into a mug of sour wine cannot make it become good, but rather than the good become sour: also good blood will spoil sooner among the corrupt than to correct it; especially since, as he assures us, the sour is the last degree through which the wine passes to destroy itself entirely, if the blood reached such a degree of corruption, it would be impossible to withdraw from it: which I am quite willing to grant him, because a thing entirely corrupted cannot immediately become the same again. But let us see the other comparisons drawn from wine which he uses to support his feelings, and let's try to use them to confirm ours with a little more accuracy.

*Like too hard a wine, he says, can be softened; the disorder can be clarified; the weak may become more vigorous; fat can be degreased; in a word, those who are wasted can be corrected by mixing certain liquors which are known to those who know their secrets and who practice them every day. Let us say likewise that too coarse blood could soften and become more subtle, too subtle could fix and thicken, too hot could be tempered, too cold could be overheated.* I agree with him so far; *and all this, he adds, by means of certain bloods, whose particular qualities will be perfectly known by the doctors who order them.* This I boldly deny. For wine that is too hard does not soften with a little sweet wine, cloudiness does not become clearer with light, weak wine does not become vigorous with a little strong wine, the fat does not lose this quality by mixing with that which opposes it; in a word, that which is waste is not corrected by that which is good, but by the mixture of certain liquors. Let us say the same, a coarse blood will not be made subtle by a little subtlety; something too subtle will not be fixed by a thicker one, something too hot will not be tempered by a cold that cannot be encountered, and a cold must not be heated by a hot; but by means of the remedies which are known to those who practice them every day, namely the good physicians, who by means of alternative and purgative medicines, restore the blood to a laudable temperature, and heat up its impurity.

Let us now examine some specific illnesses, which Mr. Denys reports in his letter, and which he conjectures can be cured by blood transfusion, most of which cannot be helped by ordinary remedies. He first proposes it for pleurisy, which is commonly produced by the blood boiling in the vessels, and being too heated, pours out on the pleura or in the intercostal muscles, or it occurs after an inflammation fomented by the abundance of blood and its heat; which causes cannot be destroyed by transfusion, as one can very well conclude from what I have said above, but rather by the bloodletting and the refreshing beverages that are ordered on such an occasion. For the extravasated blood, it must either suppurate, or dissipate, either by perspiration, or in some other way; whence it is manifest that one will attempt in vain to cure pleurisy by transfusion.

It would also be giving oneself useless trouble, and tormenting the sick without reason, to make use of transfusion in smallpox and leprosy, since these are contagious diseases which are very easily communicated, and which proceed from the universal corruption of the mass of blood. For how can we conceive that the foreign blood which is passed into the body of a man afflicted with one of these diseases, is not spoiled by the mixture of the man's own blood, since we see that the whole mass of the blood of a man who is well, can be infected and corrupted by the mixture of some vapours, which come out by sweating from the wasted blood of a man sick with pox or leprosy, is this not a sure mark that the ferments of these diseases are very powerful, and that a very small quantity of this corrupted blood is capable of spoiling a whole mass of pure and praiseworthy blood.

Erysipelas, ulcers and cancers cannot also, it seems to me, be cured by transfusion; especially since these diseases do not arise in my opinion from the mass of blood which is universally corrupted, otherwise they would have to be found in all parts of the body; but only of some bad leaven which is found in the parts afflicted with these evils, and which corrupts all the blood which is discharged there. This being supposed, it is evident that the transfusion would be useless, since the blood, however praiseworthy it may be, would always become corrupted on reaching the gastric part.

I do not believe either that the Knight of Saint Hubert loses many of his luminaries and his offerings by this new invention, nor that I enrage them, who hitherto have been unable to find help among all the remedies of medicine, must now hope to be greatly relieved. To recognize the truth of what I say, one only has to consider how powerful the ferment of rage is, and that although it sometimes acts slowly, it nevertheless acts in very small quantities; then that a very small particle of saliva which will have passed into the blood, when one has been bitten by a rabid dog, is capable of fermenting the whole mass, and of poisoning it in such a way, that it is the worker of those frightful effects which we observe in the enrages? What means can we find to give new blood that does not corrupt, by the mixture that it will necessarily have with that of this unfortunate patient.

If madness, which is the last evil to which Mr. Denys claims to accommodate transfusion, could receive some help from this remedy, and if all patients wanted to be cured of it, surgeons would no doubt be very busy; when each of them had as many hands as Briareus, I do not believe that they could satisfy, nor that all the animals which are on the earth could supply them with blood. I will therefore not speak of it, not being able to relate here all the species; I will only tell you, sir, that if my madness is never cured except by transfusion, it is very likely that I will never be wise.

Perhaps Sir, you will blame me for reasoning against experience, and that you will accuse me of obstinacy, seeing that I deny the usefulness of transfusion which has made itself known. That, a young man of fifteen recovering by means of transfusion the memory which he had lost following a violent fever, reuniting his mind freed from the heaviness with which he was overwhelmed, his body regaining its former agility, seeing itself free from an importunate sleep which compelled it to sleep on the occasions when one should be most awake; finally finds relief from costal pain caused by a fall from the previous day: aren't these miracles great enough to overcome my incredulity, and cause transfusion to be placed not only among the remedies, but even to be elevated above all the most salutary, which until now have been influenced in medicine? Pardon me, sir, if I do not yield to the sight of so many surprising things, you know well that it is not my custom to believe miracles without examining them very seriously. The probity of Mr. Denys prevents me from doubting the truth of the fact, and thus I believe that these effects followed the transfusion; but I cannot persuade myself that they proceed from it; the reason being, that nine ounces of lamb's blood exactly mixed with all that remained in the body of this young man, cannot, in my opinion, have produced so many marvels, otherwise it would be necessary that this blood had contained a great quantity of spirits to spread them so quickly through the whole body, and that it would have been very subtle to be able in such a small quantity to steal all the rest of the blood of this young man who we are told to have been so thick; in order to be better sure of the experiment, it was necessary to draw it from it some time after the transfusion, and compare it with that which had been drawn from it beforehand. I persuade myself, sir, that you expect me to explain these effects, and that you want me to say to what cause I attribute them.

Fever ordinarily upsets all the humors which meet in our bodies, which means that the spirits quite often find themselves buried and embarrassed in the mass of these humors, from which they cannot easily extricate themselves; it is where they come from, in my opinion, those lethargies which we notice in fevers; because to

believe that these slumbers which are met with from the first days of the fever are born of the dissipation of the spirits, there is no appearance, not being able to cause them to be lost and consumed so quickly. They are therefore preserved, but like a fire hidden under the ashes which one does not see shining, and which does not make itself felt until it is collected and excited, which is usually done by the purgatives that it is customary to order at the end of fevers, which serve as hands to unleash the spirits, and get them out of jail. This being very likely supposed, I say that this young man was in a numbness of mind and body, not from a lack of spirits, but only because he was embarrassed as I said, they could not distribute themselves freely in the organs of the senses, and when he was given the blood of this lamb, the vivid apprehension he had of an unused remedy, and whose event could only appear to him highly doubtful, set his spirits in motion, and freed them from the embarrassments which prevented them from distributing it, from which release of spirits subsequently produced all the advantages which are attributed to the transfusion, except perhaps the chest pain, which is lessened sooner by the time and the blood which was drawn from him, than by the blood that was given to him. I do not stop here to explain how it can happen that the fear of some evil sets our minds in motion, for it is too delicate a question to be decided in a few words. I just want to prove that it's done; I could bring a thousand experiences, but only one will suffice which is known to everyone; there is not a man of whatever condition who has not sometimes had a matter of importance in his regard, the outcome of which has been doubtful to him; let each try to remember the time, and he will recognize that for that time the anxiety he had for the success of his business, and the fear of an unfortunate success banished sleep from his eyes, and forced him to watch, which cannot be done without the spirits being put into an extraordinary movement, which cannot be stopped by the causes which produce sleep in us.

It is not necessary to answer anything to the second experiment contained in the letter of Mr. Denys, since it shows us no adverse effect of the transfusion, but only that it can be made in a robust man, except that he doesn't feel any inconvenience from it, which I quite easily grant. It is only necessary to complete my plan and finish this letter, to show that the transfusion could have annoying leaks, and that it would cause several diseases hitherto unknown, the symptoms of which would astonish the doctors for not having yet been noticed.

When you want to put some new remedy into practice, you have to walk at full speed, and take great care that the medicine you use to cure a disease does not provide seeds that will one day produce many more dangerous ones. This is why prudent physicians do not often use emetic wine, although one sees fairly good effects from it, because this violent remedy leaves after itself unpleasant residues, especially if it is taken several times in the same disease; for it burns the entrails so much that it makes those who have taken it feel unbearably hot, and the ventricle receives such great weakness from it that it can hardly ever recover its former strength. Now, not only does transfusion seem to me unable to cure serious illnesses, but it can even give birth to many new ones, which will be all the more dangerous because they are unknown.

The first reason which makes me conclude that the transfusion of blood will give rise to unfortunate and disastrous accidents to those who are credulous enough to suffer it, derives from the fact that blood is a food which must immediately convert into our substance, and that it is impossible that the foreign blood which one will have made enter the veins of the man, can be converted in this way, nor feed him: because as it is not possible that an animal engendered from the seed of another of a different species, yet though different animals may be found, the seeds of which will be similar in colour and consistency; also it does not seem that an animal can be nourished by the blood of another of different nature, although their blood appears externally similar to our senses, and that neither the colour nor the consistency could make them recognize any diversity in it. To conceive the force of this comparison,



which seems to me quite convincing, it is necessary to consider that generation is the first formation of the living, and that food is a necessary means of repairing the loss which is constantly being made of the particles from which it has been first formed: whence it evidently follows that the matter from which the living being is generated, is entirely similar to that with which it nourishes it; therefore by a necessary consequence, since the semen of an animal cannot be used to form a man, what is found in the blood entirely similar to this seed, cannot be used to nourish it.

To give a little more light to this matter, which is in itself very obscure, it is necessary to make a slight reflection on the way in which blood nourishes animals, and to consider that it currently contains very different particles, some of which are suitable for forming or nourishing the bones, others the nerves, others the veins, and so on, which are found in abundance in the blood, sift themselves in the testicles and make the seed, which is nothing more than a mass of these different particles, from which the various parts of our body feed and maintain it. Now it must be remarked that the particles which can nourish the flesh of a calf are not similar to those which nourish the flesh of a man; otherwise it would be necessary for these flesh to have the colour, the taste, and the other qualities perfectly similar, since according to the principles of the ancient philosophy, which Descartes and Gassendi brought to light in our century, and which is much more likely and better established than that followed in the Schools. Qualities are not beings different from the substance to which they are attributed, and all those which are called sensible are not found in things, but are rather sensations produced in us by the bodies to which it is said that they contain: so that colour is nothing but a movement caused in the optic nerves by the atoms of light which have been reflected towards our eyes, by the surface of the bodies which we call coloured, and the flavours are only tremors of the nerves of the tongue which are similar, when they are excited by particles which resemble each other in figure, and differ in the diversity of the figures of these small bodies which produce them. This being understood, it will be easy to judge that the bodies which produce different flavours in us are composed of corpuscles whose shape is different: and thus the flesh of a calf is composed and maintained of particles, the shape of which is not similar to those which compose and nourish the flesh of man, from which it must be inferred that the blood of a calf which can nourish his flesh, will have no corpuscles suitable for nourishing ours. What I have said of the flesh, it must be said of all the other parts in proportion, and to conclude that a foreign blood not being able to nourish man, it will be corrupted in the vessels, and will be the source of several diseases.

Let us add to this that there are found in animals certain parts which are not met with in men; like the feathers in the birds, the wool in the sheep, the hair in the oxen, and in several species; namely sheep, oxen, goats, stags, and others, a pair of horns: and thus there must necessarily be in their blood particles suitable for forming all those parts which are not found in the blood of the man; and consequently when the other corpuscles of the blood of the animal could be used to nourish man, these would nevertheless be harmful to him, and corrupt, or at least would produce similar parts in us. Gods! Isn't it enough to expose oneself by marrying to wear an indestructible wood without running the hazard of Actaeon, and not having like him the happiness of seeing the beauty of Diana all naked.

Let no one object that man can just as easily feed on the blood of an animal that is passed through his veins, as he feeds on its flesh; for it is obvious that it undergoes many changes before being fit for it; which cannot happen to the blood that is immediately made to flow in the veins of man, and that it is not answered that all these changes only serve to make it become blood, and that thus it is much shorter to take ready-made blood. For I well admit that they only succeed in converting it into blood, but into blood suitable for nourishing man, and which contains in itself particles of a suitable shape to fit the parts which they must to feed. Now the blood of this animal, as I have shown above, does not have these same

advantages. Let no one also produce for me the experience of this dog who received the blood of a calf, and which did not seem inconvenienced by it, especially since he can do it well that he has been so without anyone noticing it, then that he cannot say it, or that there is not yet enough time to let this foreign blood be corrupted in his veins.

The second reason which gives me evidence of unfortunate consequences of the transfusion, is that if it should once be introduced, the doctors will employ according to their whim the bloods of different animals, which mixed together in the same body, will produce very bad effects. For it should be noted that all the different bloods, as well as the different wines, and the other liquors capable of fermentation, ferment at a certain time of the year, some sooner, and others later; which can be noticed, in that different animals come into heat in different seasons, which only happens by the fermentation of blood and semen. Now, what can we reasonably predict from this diversity, if not that the man will have to fall ill when a portion of the blood which he has in his veins is ready to ferment, and the other will not?

The third reason is drawn from the fact that the animals, which we can rely on, do not live so long as man; and thus as the length of life infallibly depends on the goodness of the blood, it must be concluded that their blood is not so good as ours, especially as the principles, of which it is composed, are more easily formed, which disunion is necessarily followed by a prompt death: and therefore those to whom the sweetness of life inspires the care of preserving it for a long time, must avoid transfusion, or at least look for some animal which is long-lived.

The fourth is the difficulty of discovering the complexion and temperament of the animals from which one would like to draw blood, which cannot easily be overcome; seeing that for so many centuries that doctors have been busy looking for signs to recognize that of men, on whom they work every day, they have not yet made much progress. What appearance is there, then, of making considerable progress in one's knowledge of animals, since we have not yet begun to apply ourselves to them, and they cannot teach us the evils they feel, nor give us by their language signs of their weaknesses? Wouldn't it be walking through darkness, and exposing the lives of the sick to chance, to communicate to them the blood of an animal, the temperature of which we do not know?

Finally, care must be taken not to injure the mind by wanting to cure the illnesses of the body, and not to employ a remedy which can dull its point, and give it brutal inclinations, and not in conformity with its nature. Now, I claim that transfusion can produce all these evils, so stupefy a man's mind that he is no longer recognizable, and that he retains only the appearance of what he was before. For inclinations ordinarily follow the constitution of our blood, and the inequalities which are found between the minds of men can only arise from the diversity of their bloods, which provides them with more or less clean minds for clarity of conception and ease of knowledge. I do not wish to prove this, because I believe it incontestable; and thus I only conclude that a man who would have received the blood of an animal in his veins, would become heavy and dull in spirit, and would strip himself of his own inclinations, to resist those of this beast; and therefore the transfusion can cause a man to suffer the pain of Nebuchadnezzar, without ever having committed the sin.

I say that Mr. Denys claims that beasts are not so subject to the disorder of the passions as man, who was unfortunately subjected to these impetuous movements by the predicament of our first Father, if that is true, I beg the gentlemen of the French Academy to warn that a man is no longer called brutal when he lets go of his passions, and that it allows him to be carried away by their unruly movements; for surely if beasts are so moderate, he who first gave this name was uneasy and very unwise.

Here, Sir, are the reasons that prevent me from allowing blood transfusion, and from speaking to one's advantage. I would like, for the love of those who find life so pleasant, that this noble intention could make them immortal, and that in the course

of time I would be recognized as a false prophet. I would then enjoy the privileges which I can enjoy by the rights of my country, and would deviate from my opinions very easily, when experience would have shown me the contrary. You know that I am not one of those whimsical minds who do not approve of an opinion if its antiquity does not render it venerable, nor of those evaporated people who embrace a sentiment only because it is new, and thus its novelty will neither make me reject it nor make me follow it; but I will doubt it until its miracles have been proved to me. I believe that Mr. Denys will not be angry that a young man like me publishes his feelings, even though they do not agree with his, when he realizes that it is not out of desire to contradict him, but only from a desire to put them to the test of a knowing man like him, and to testify to you, by communicating them to you, that I am,

Sir,

Your affectionate servant,

Lamy

In Paris on 8 July 1667.