

**LETTRE ECRITE A MONSIEUR SORBIERE ... PAR JEAN DENIS ...
TOUCHANT L'ORIGINE DE LA TRANSFUSION DU SANG ET LA
MANIERE DE LA PRATIQUER SUR LES HOMMES.**

TRANSLATION BY PHIL LEAROYD

The full title of this letter, written by Jean Denis to Monsieur Sorbriere is: 'Lettre ecrite a Monsieur Sorbriere Docteur en Medicine, par Jean Denis ausi Docteur en Medicine, touchant l'origine de la transfusion du sang et la maniere de la pratiquer sur les hommes' [i.e. Letter written to Mr. Sorbriere Doctor of Medicine, by Jean Denis also Doctor of Medicine, touching on the origin of transfusion of blood and the way to practice it on men]. There is also a sub-title of 'Avec le recit d'une cure faite depuis peu sur une personne paralitique' [i.e. With the story of a recent cure for a paralytic person]. This letter was written on the 2nd March 1668. A copy of this letter is available to read or download from:

<https://gallica.bnf.fr/ark:/12148/bpt6k58280889/f4.item>

NOTE: Samuel Sorbriere (1615-1670) was a French physician, philosopher and translator, who had a reputation for being somewhat argumentative sceptic, being most noted for his views on ethics and the disclosure of medical mistakes. He was born in Saint-Ambroix on the 17th September 1615, and after his education he moved to the Netherlands where he published a number of French translations of different publications. On returning to Paris, he published a collection of letters and speeches 'on various curious subjects' in 1660. He visited England in 1663-1664 during which time he was made a member of the Royal Society; but he subsequently published a somewhat critical account of his visit, which resulted in Thomas Sprat publishing a response on behalf of the Society. He died in Paris on 9th April 1670.

This letter from Jean Denis [also known as Jean-Baptiste Denys] to Samuel Sorbriere is based around Sorbriere's connection with Paolo Manfredi who performed blood transfusion experiments on animals in Rome in 1667 and then performed one on a man in January 1668, using his own methodology. This letter identifies that Sorbriere had told Denis of Manfredi's work and that Denis was replying with information regarding the origins of blood transfusion and the methodology that by him in Paris. Denis uses this letter to further the priority claims of Robert Gabets who is stated to have given a detailed lecture in July 1658 on the method, benefits and uses of blood transfusion to the 'Compagnie des Sçavans that Monsieur de Montmort assembled at his house'. Although no original documentation exists regarding this lecture, Denis includes an extract within this letter to Sorbriere of a letter written by Gabets to Denis on the 18th July 1667 that includes details of the content of his lecture relating not only a specific method for performing a blood transfusion, but also information as to how 'it can be practiced without danger' and 'practiced with great benefit'. It is however noteworthy that in his introduction to this information Gabet explains to Denis that he did not pursue his ideas because some members of his audience 'treated this thought as ridiculous'. Denis then includes within the letter details of how the transfusion is performed in France compared with Italy, especially with regard to exposing the patient's vein and of inserting the transfusion pipes. Finally, Denis also includes details of the transfusion of lamb's blood (in February 1668) that apparently successfully cured a woman suffering from a paralysis to the whole of the right side of her body.

The contents of this letter therefore provide important information regarding the history of blood transfusion in France and Italy. As such, I have provided an English translation of this letter in the hope that it allows its content to be seen 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 the presence of some obvious misprints and/or spelling errors within the text, which also includes the transpositional use of the letter u and the use of the long-form letter s in the printed text. 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.



Jean Denis (1643-1704)
(Image credit: en.wikipedia.org)



Samuel Sorbier (1615-1670)
(Image credit: en.wikipedia.org)

Written letter to Monsieur Sorbriere Doctor of Medicine by Jean Denis also Doctor of Medicine, touching on the origin of the transfusion of blood and the way to practice it on men; with the story of a recent cure for a paralytic person

Sir,

I am very much obliged to you for your kindness in teaching me what was new in Italy concerning the sciences, and mainly in the way that they spoke of the transfusion of blood. I have had the Latin treatise you sent to Mr. de Montmor, where Mr. Manfredy Professor of Medicine in Rome claims to give an exact history of the origin and progress of this operation, and where after having exercised his mind so much in deducing the reasons which have persuaded him that one could expect great advantages from it, than to refute the objections of those who wanted to prove the contrary, he teaches a very particular method of practicing it on men, and even gives a fairly exact intaglio figure, in order to make it better understood by everyone. But as this author does not appear to be too well informed of the history he undertakes to write, and that he accuses us in several places of being too restricted on our manner of carrying out this operation, and of making a great mystery of what he gloats to discover very freely: I felt obliged to make some reflections on his work, and to send them to you; not to the truth in order to undermine his reasonings, which should not be, it seems to me, combated or confirmed except by experience alone; but to teach him the true origin of this operation from the French Nation, and let him know that if I have not yet explained the simple and easy method that we have of practicing it in France, it was not intended to make it a secret, or to hide it from anyone, as he seems to want to persuade those who read his treatise.

As to the origin of the transfusion, Mr. Manfredy maintains that it was first conceived in Germany, that England has since brought it to light, and that France finally gave it its last perfection. But as I have already put forward publicly that the first thought of doing this operation had been formed and proposed in Paris about ten years ago in the illustrious Compagnie des Sçavans that Mr. de Montmort assembled at his house. I believe that it will be very appropriate to report to you the particularities of it, and to remind you of several circumstances that you can confirm yourself, with a number of worthy people, who were present there.

It was in the year 1658 that Father Dom Robert Gabets, Religious Benedictine went very assiduously to these assemblies; and as he found himself obliged to speak in his turn, he resolved to propose to the company the idea of transfusion, in which he had been discussing for some years, without having been able to find strong enough reasons to make him leave it. And in order to give more space to thoroughly examine this thought in depth, he composed a little discourse, which he read to all who met there; and as the academy had chosen you at that time for its secretary, do not doubt that you have not retained some copy, which will easily be found among your papers. But since your remoteness does not allow you to do this research, you might be glad that I share the original with you, that Dom Robert sent to me to confirm what had been said to me before by Messrs Clersellier, Roh, and other people worthy of faith, and that I can remember you by the extract of a letter that he rewrote to me how everything happened in this meeting.

Extract of a letter from Dom Robert de Gabets written to Jean Denis on 28 July 1667.

Some business having obliged me to go to Paris ten years ago, and to stay there for about one month, I imagined that it was a favourable occasion to push the thought of transfusion further than I could have done in our Province. Indeed, the esteem for the philosophy of Mr. Descartes which led me to go out assiduously to the assemblies which were held at the home of Mr. de Montmor, where I had the honour

to speak in my turn, I wrote it down, of which I sent you the minute, to read it to the company in July 1658, but having noticed by a few small jokes that some treated this thought of ridiculous, I didn't push it any further. However, I have since talked to Messrs Roh and Clersellier in all meetings, and I remember that once in the presence of Mr. de Cordemoy, a surgeon who hired me to work on it at the first convenience. You have in Paris at Saint Martin des Champs and at Saint Denis de la Chartre des Religieux with whom I have lived in Cluny; and it was one of them named Dom Eloy Pichot who made me do at Mascon seven years ago the tubes with which I had asked him to perform the transfusion. Also the experiences that you have made of it recently, get me compliment on it by everyone. I am also very happy that the thing has finally fallen into better hands than mine, and I am slowly awaiting what your industry and time will produce for us on this subject, exhorting you as much as I can to work without being put off, especially since it seems to me that this operation can have admirable results. And this ...

Speech of the communication on transfusion of blood pronounced in Paris at
Monsieur de Montmor's by Dom Robert des Gabets in July 1658.

The recent discovery of the movement of blood, which Harvey and others have called circulation, gave rise to a thought which at first appeared to be extraordinary, and perhaps very absurd, affecting another movement of blood that I will call communication, of which I will present my feelings here in a few words, without worrying about exposing myself to the hazard of producing something, which will not merit the approval of anyone. By the communication of blood I mean an effective passage of the blood of a healthy man or of some other animal, through the veins of a weak or sick man: which seems to be able to be done by art without any bad follow-up, and with advantages which could become very considerable with time, if the thing is practiced with the care and with the reasonable precaution. What I will say in a few words. 1. That the thing is possible and how, 2. That it can be practiced without danger, 3. That it can be practiced with great benefit.

As to the first point, having assumed as constant the opinion of the circulation of the blood, it necessarily follows that if having tied the arm, for example, of a man, as if to bleed him, we open the vein above your ligature towards the shoulder, and insert a small tube into the opening of the vein, the foreign blood which would be pushed and received in this pipe, maintained in the vein, and would go to the heart by the ordinary way, and beyond it would pass in the arteries, and would be distributed by all the body.

The machine that I imagined for this operation is not very well composed, and only consists of two small silver pipes, one of which has one of the ends open like a trumpet, to be pressed gently against the vessel which must give the blood in order to receive it; and the other is of a size suitable for inserting conveniently into the opening of the vein. The other two ends of the pipes communicate with each other by means of a small leather purse, the size of a walnut or so, which is used: 1. to bend the pipes, which may be required for your convenience in the operation which would be too strained by means of a one-piece pipe. 2. It is used to make known the quantity of blood that is passed. 3. It can help the movement of the blood, being enlarged and pressed alternately with two fingers, the action of which will be that the blood will close a small valve attached to the inlet of the tube that gives blood, to prevent it from coming out after it has entered, and will open another valve enclosed in a small box at the exit of the other pipe, to prevent the blood from entering the purse.

The second thing that I have to deal with is that this operation can be done without endangering the person to whom new blood is given. What I prove. 1. That when this new blood is capable of causing a notable alteration in the person who

receives it, such an inconvenience would be easy to avoid by carrying out the operation several times, in several days, and per minimum, according to whether the person who receives the blood knows his disposition. 2. Because the blood passes without changing significantly and without becoming corrupted, especially since it passes without air and without complaint, and since the veins and the arteries have in fact no other faculty than to carry blood as well as the pipes carry it too. 3. Because the blood does not communicate with the outside air, it cannot cool down; and when it is poured out, it would be easily prevented with warm cloths, etc. 4. The diversity of complexions, that I have often objected to, cannot be detrimental to this operation, not only because there is a means of remedying this inconvenience by the choice of subjects whose blood is taken; but mainly because there is more blood to blood relation, than so many other things that we take by mouth, which go very quickly into the heart, and are mixed with the blood. Now as the chyle which mixes with blood is none other than any kind of food altered by heat and dissolved in liquor, and that these foods are infinite in number and of very different qualities, without their mixing with the blood producing a notably bad effect, and which puts a man in danger, if it does not take some poison or if it does not notably exceed in quantity; one must not fear that the blood of a very healthy man or of a well-chosen animal could harm the one who receives it, if it is given with the necessary precautions. I say the same of powders and other well-chosen and well-prepared liquors that could be mixed with the blood by this means, without them passing through the stomach and the intestines, where things change in infinite ways by the heat and by the ferments they encounter there before arriving in the vessels, that it is only after their mixing with the blood that they produce their effect, and that indeed they harm the stomach more than they benefit the heart and other parts.

For a third consideration, I have to show that we can promise great success from this operation, which will be all the more easy for me to prove, that everyone jointly agrees that almost everything that is good and bad in our bodies depends on the blood, which is laudable and well tempered, it is impossible that one does not enjoy perfect health, and on the contrary, being notably impaired, one cannot fail to lose health, and sometimes life. However, there are several cases in which this operation seems mainly to be used.

The first is when a man is lacking in strength, either through the loss of his blood, or through illness, or through old age, in which case he does not jump to doubt that what is owed him, if we judge it appropriate, a large part of his blood is bad or useless, and by giving something new which is well tempered, depending on the choice of the good subject to give it, that would be to restore nature, to delay old age, and to make life much longer and happier.

The other case is to cure several diseases which are caused by the badness of the blood or by its small quantity. For example, if before the viscera were wasted, or gave a Dropsical a commendable blood instead of that which he has in his veins, which has hardly any vital heat left; it seems that he would recover his strength and his health: what could be done, either by drawing the bad blood beforehand, or by contenting himself with giving new ones, because it is always lacking in sick and emaciate bodies.

There would also be many things to consider relating to the subject who should provide the blood. For example, it could happen that the blood of some animals would be very beneficial to humans, and even they could be made to eat more usefully, by feeding them certain meats. We could also practice doing the operation on animals, and even try to change them almost in nature by the communication of foreign blood, either of an animal of the same species, or of some other, or of several together, increasing or decreasing, constant or retarding according to what we consider appropriate: in which experience would point out infinite uses that cannot be predicted by reasoning. But what seems certain, is that the heart receiving a well-developed blood and spirits, there would be an admirable change in the whole habit

of the body, and with time one could derive from this operation inestimable advantages.

This speech took place in an assembly, where, as you know, curious people from various nations did not fail to meet, and where among others, some English gentlemen come back diligently enough to admire all the beautiful discoveries that one made there, and to even offer their feelings sometimes; so that it is not very difficult to see how this thought of transfusion could have passed from France to other countries that are far away, as well as several other great experiments which are now being carried out in various parts of the world, and which have been most often featured in this academy.

However, the English should not be disputed for the glory they deserve to have been able to take advantage of what the French initially neglected, and to have been the first to perform this operation on dogs with the success, of which we have heard everyone talk about. But we also have to agree that it is in France where we formed the first ideas, and where we brought the thing to perfection, to where it is now, since it is constant that we have made several tests on animals of different species, and that we have even experienced it in men long before other nations, as it appeared in the *Journals des Sçavans* both in France and in England, which spoke about it for a year.

This is what I have to say about the origin of the transfusion, and what I am very happy to make public, to serve from memory to those who want to write a fuller history. Allow me now to speak to you of the method that they have in Italy of practicing it on men, and to compare it with that, of which we have used here several times publicly.

Mr. Manfredy complains that I have said in a letter that the transfusion is done in a different way on men than on animals, and that I have not, however, explained what this difference consists of, *Gallica rigiditas, says id communicare respuit*. But on reflection my letter was addressed to Mr. de Montmort, who had already seen some of these experiments, and who intended to see others, which we are on the verge of doing, he will agree that it was not necessary to explain all the circumstances to him, and to abuse his kindness by a detail which had seemed to him quite unnecessary. And since that time we have shown these experiences to so many people, that we cannot say that we intended to keep a secret from anyone. However, as Mr. Manfredy has not yet been able to learn them from anyone who has seen them, I am very happy to let him know by your means.

He says that to do the transfusion on men, they anchor the path of the vein on the skin, through which they want the blood to enter: then they remove this skin, and make with the razor an incision following the mark of about two inches long, in order to uncover the vein and separate it from the skins which cover it without opening it: then they pass a needle threaded under the vein to bind it by means of a waxed thread with the cannula which must be introduced into it to communicate the blood.

Here is in a few words the way of practicing it in Rome: and which surprised many people here, and gave them great aversion to this operation; for when we imagine that great cut which must be made on a man's arm with the razor, and the ligature which must be made by means of a threaded needle which is passed under the vein; most of them cannot be convinced that it does not cause much pain. One is apprehensive for the inflammation of the part; we fear the encounter of some tendon or the opening of some artery, or finally other more annoying accidents. This is why I believed that in order to put aside the subject of all these fears, and to support the good designs of Mr. Manfredy, I had to teach him the way in which we carry out this operation in Paris, in order to spare him the trouble of making several unnecessary preparations, and may the simplicity of the matter encourage him to experience it

more frequently, without giving horror and apprehension to those who will submit to it.

I won't stop talking to you about the way we have to do it on animals. It was sufficiently explained in the sixth Journal des Sçavans of last year. I will tell you only that to practice it on man, we have two fairly thin silver cannulas or pipes, each about two inches long, and the size of which has only one line* in diameter. These two tubes are curved at the ends which enter the veins or arteries, and are so proportioned by the other two ends, that one can enter the other very easily and yet with sufficient accuracy. (* A line is the twelfth part of an inch)

We first discover the crural artery or carotid of the animal, whose blood we want to communicate (because the veins are not so clean) we link it in two places distant from each other about a thumb's length, but as strong as the ligature which is made closer to the heart or with a slip knot, to be able to loosen easily when it is necessary. Between these two ligatures we open the artery with the lancet, and we insert one of the pipes in such a way that the curved end looks at the heart of the animal to collect the blood, when the noose is loosened. We even bind the artery on the end of the pipe, which has for this purpose a few small notches around its circumference, so that the wire can better stop it, and prevent it from slipping out.

The animal being thus prepared, one opens with a lance some vein in the arm of a man, without taking any other precautions than in an ordinary bloodletting. We let as much blood flow in a dish as we want to draw, and then to come to the transfusion, we remove the ligature that the surgeons use to put above the opening when they bleed, and we put it below, in order to stop the blood, which, as we know, is always carried in the veins of the extremities of the heart. The cut being very clean, and there being no more blood which presents itself to strengthen, we insert into the vein the curved end of a small pipe which is carved like the beak of a writing quill and which is extremely rounded, so that it can enter more easily, and that it cannot injure the vessel.

This being done, we join the pipe which is in the vein of the man with that which is in the artery of the animal, and at the same time we loosen the noose that we had made on the artery of the animal, so that the blood has the freedom to flow from this artery into the pipes, from the pipes in the veins of the man, and from the veins into the heart, to be distributed there through the whole body, and to be mixed by various circulations with all the substance of his blood.

This is how we have practiced transfusion on men up to now, and if I accidentally omit to mention some other circumstances, it is because they are not so considerable. I would prefer to finish by making the following observations which are undoubtedly of greater importance.

First of all, we are right to say that the transfusion does not cause more pain than an ordinary bleeding, because nothing more is done in this operation, except that a small pipe is introduced into the veins. But as the vessels have no feeling, and the surgeons quite often poke stylets into them, without the patients complaining; do not imagine that there is the slightest pain to suffer. In fact, it is very constant that we have sometimes inserted these little pipes in the veins of a few people who were looking another way, without their noticing it by any feeling.

2. Our pipes are so short, and the blood of the artery of the animal passes so thin, that it does not have time to clot there, as we have been told that it had arrived in England, because there is too much distance between the animal and the man. But although our two pipes joined together are not more than three inches, one can still obviate the coagulation of the blood, either by making a good fire in the room where the operation is taking place, or by slightly heating the pipe with the flame of a candle at the moment that one wishes to cause blood to flow there.

3. The most convenient situation for a man to perform this operation is to have him sit on a low seat, and have him rest his elbow on the table where the prepared

animal is; because by this means the blood entered more easily into his veins, and several people can observe at the same time everything that happens.

4. Small pipes are cleaner than large ones, because they communicate less blood at a time, and thus do not put the man in danger of suffocating, as could a too large a quantity which would suddenly go to the heart.

5. When the body is prepared beforehand by some medicines or enemas, and the patient has not eaten for two or three hours, the operation is done much better, and is not followed by no vomiting, or other violent discharges.

6. It is always better to draw more blood from the veins of a sick person than to give it back (unless it was a person who was already too exhausted) and it is even more advantageous not to give hardly any each time, and to repeat the operation as soon as possible, so as not to suddenly overload nature, and to give time to the blood that is being communicated to mingle very gently, and without violence, with that of the patient.

7. As it is important to know the quantity of blood that one imparts, it is good to be sure of it in several ways.

The first is to weigh the animal before and after the operation to see how many ounces it has lost.

The second is to know how much an animal of such size contains a little blood, and to take from it in a dish what is left after the operation, to judge by this how much of it may have entered the veins of the patient. But these two ways being rather imperfect, and only revealing the quantity of blood that is communicated after the operation, and when it is too late, here is a third one which seems more correct and more regular.

It is necessary to have a clock which marks the minutes and the seconds, and knowing how to combine the pipes, which one uses, can supply blood in a determined time. So those that we used the last times, provided in one minute, or sixty seconds, six ounces of blood, that is to say two pallets. And on this footing we could easily judge approximately how many would enter in two or three minutes.

I know well that this last way is not yet so exact that one can know at a glance how much blood passes through the pipes in a considerable time, but also there is no need for such great exactness in this encounter, and one must be content with knowing to an ounce or half an ounce the quantity that one communicates.

I could still send you other observations on this matter: but as Mr. Manfredy seems to me very industrious and very zealous for experiments, his wit easily supplemented in practice a few small peculiarities which I have passed over in silence, in order to have reason to include in this letter a faithful account of some surprising effects, which the transfusion has produced for a short time on a subject which passed for incurable in the eyes of everyone.

On the tenth of February, I was told of a paralytic woman, who had fallen into this disease after some apoplexy. The paralysis was so great in one half of her body that from the sole of the right foot to the top of the head there was neither movement nor feeling. The eye of the same side was very cloudy, and saw only confusedly, the tongue itself was so heavy that it was difficult to hear it speak.

I am told that she had been treated by a doctor, who had spared nothing from the ordinary remedies for her recovery, who had caused her to bleed five times from her feet and arms, who had made him take an infinity of medicines and enemas, and who finally got there after two doses of emissive wine, which turned out to be quite useless.

I did not undertake at first to remove this patient from the state in which I found her, I only asked that they show complete deference to observe, which I would order her to do; and on the promise that was given to me, I had her body prepared for the transfusion for some time, that I imagined myself having to bring her some relief, provided that one made choice of a blood which had enough warmth and subtlety. The body being disposed as I wished, I gave it twice twelve ounces or so of the

arterial blood of a lamb, and shortly after one did not fail to notice the change, of which here are particularized. Her tongue loosened first; the right eye clears up, and becomes as beautiful as the left. Sentiment and movement hardly needed to be strengthened; her mind seemed brighter than before; her body felt lighter; and in a word, instead of the impossibility of moving her right foot or arm, she no longer felt any difficulty in supporting herself on that foot, and even in raising her arm over her head.

It is a testimony that she gives to everyone, and which is sufficiently confirmed by a number of people of probity who have seen her in the height of her illness. And if you come back soon: from Italy to France, as we are led to hope, I will show her to you in person, and I assure you that you will learn even more from her mouth than I can tell you in this letter. While waiting for this happiness to possess you, I will stay with your permission,

Sir,

Your most humble and most affectionate servant
John Denis

From Paris this 2 March 1668