

# LA SCOPERTA DELLA TRASFUSIONE DEL SANGUE RIVENDICATA ALL'ITALIA

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The 15 page monograph 'The Discovery of Blood Transfusion claimed by Italy' by Professor Francesco Scalzi, published in 1871 in Rome can be viewed or downloaded from the following site:

[https://books.google.co.uk/books?id=4WCYM5rM6rsC&pg=PA1&source=gbs\\_selected\\_pages&cad=1#v=onepage&q&f=false](https://books.google.co.uk/books?id=4WCYM5rM6rsC&pg=PA1&source=gbs_selected_pages&cad=1#v=onepage&q&f=false)

I have translated this booklet from the original Italian into English in the hope that the content may be appreciated by a wider 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. As with any translation the wording may be purposely or inadvertently altered to 'make it read better' but in doing so there has to be an element of personal interpretation involving something on the lines of 'I believe that this is what the author is actually trying to say'. I wanted to avoid that as much as possible and try to present what the author actually wrote and as a result the reader may find that the English text does not 'flow' as well as it could. Although I have taken great care not to misrepresent the author's original wording I cannot guarantee that this work does not contain 'translational errors' and the reader is recommended to check specific details against the original Italian text.

I have reproduced the spelling of the names of people and places as they appear in the original text but where appropriate have added alternatives to these, within square brackets, directly after. I have maintained the original paragraph settings. The original references to the text are included at the bottom of each separate page; I have sequentially re-numbered these and reproduced them as written at the end of the translated text, together with English translations to some of the titles or where additional information is presented. These reference translations are in italics and placed within square brackets.

The text includes a number of Latin quotations. Given the relevance of some of these to the author's narrative I have also included English 'alternatives' to them, which are included directly after the Latin text, reproduced in italics and placed within square brackets. There are a couple of obvious typographical errors within the original text relating to names, dates and reference numbers. I have corrected these and identified them using bold text.

NOTE: Much of the first part of this monograph is taken from a paper titled 'Esperienze sulla trasfusione del sangue in roma, precedute da cenni critici sulla storia di detta operatione' [Experiments on blood transfusion in Rome, preceded by critical notes on the history of this operation] by Francesco Scalzi, published in 1866 in the journal *Giornale medico di Roma* [Vol. 2, pages 224-236], which can be read or downloaded from the following site:

[https://books.google.co.uk/books?id=53URAAAAYAAJ&dq=Scalzi+%2B+Esperienze+sulla+trasfusione+del+sangue,+precedute+da+cenni+critici+sulla+storia+di+detta+operatione&source=gbs\\_navlinks\\_s](https://books.google.co.uk/books?id=53URAAAAYAAJ&dq=Scalzi+%2B+Esperienze+sulla+trasfusione+del+sangue,+precedute+da+cenni+critici+sulla+storia+di+detta+operatione&source=gbs_navlinks_s)

## PROFESSOR FRANCESCO SCALZI

Francesco Scalzi was born in Rome in 1821, graduating as a Doctor of Medicine at the University of Rome in 1848 and where he was appointed Assistant Professor of Materia Medica in 1856. He was fluent in Latin – all lectures at that time in the University of Rome being delivered in Latin. In 1865 he founded the *Giornale di Medico Roma* and took an active part in the Roman Academy of Medicine. He was also Director of the San Spirito Hospital from 1877 to 1888, a member of the Supreme Sanitary Council for nine years and a Communal Councilor. For his services to science and to the community he was named a Knight of the Order of St. Gregory the Great (i.e. Cavaliere or Cav.). He is credited with having introduced the experimental method of studying the action of drugs into Italy, establishing the Institute of Experimental Pharmacology and Toxicology in 1876. He also founded a Pharmaceutical Museum, assembling and organizing an extensive collection of Roman antiquity medical instruments.

He was a prodigious author of published works on a great variety of subjects. In 1860 he published the *Synopsis Pharmacologiae Generalis* written in Latin and in 1870-71 his great work *Trattato di Materia Medica* that contains a history of pharmacology and is identified as being practically a history of medical treatment.

An obituary in 1890<sup>1</sup> states that ‘Scalzi was an ardent patriot and he carried this feeling into the realm of science, claiming for Italy a number of discoveries which the world persists in attributing to workers of other nations, for example identifying that Andreas Cesalpinus discovered the circulation of blood.’ The same could be said for his assertion that Francesco Folli discovered blood transfusion and that the work by others, especially Wren in England, resulted from comments ‘probably overheard by some Englishmen’ in the court of Grand Duke Ferdinand II that were then passed onto others. Such assertions form a large part of the content of his work ‘The Discovery of Blood Transfusion claimed to Italy’.

1. BMJ Obituary: <https://www.bmj.com/content/1/1535/1282.1>



Title page of 'La Scoperta della Trasfusione del Sangue rivendicata all' Italia' (1871)  
(Image credit: Google Books)

## THE DISCOVERY OF BLOOD TRANSFUSION CLAIMED TO ITALY Francesco Scalzi (1871)

Although blood transfusion has not brought many great advantages to the medical art, nor has it been able to arouse enthusiasm in us, yet today, as in other times, it has engaged eminent authorities to take it into account. Let us also speak briefly about its history, which the various authors did not seem to agree with, and about the experiences carried out by our fellow citizens, which in the many writings published so far were omitted or not sufficiently appreciated.

By turning our attention to this topic, we believed we could divide the history of transfusion into three distinct eras, which we would like to call mythological, rational and experimental; in each of which we found some traces of our work.

In the Latin myths the concept of reviving the declining age by instilling new life with more fervent blood was foreshadowed, and Ovid marks the image with expressive colors, when Medea suggests to Pelias' daughters that they empty their father's veins of the old blood, promising them that it would infuse them with new and youthful energy.

Quid nunc dubitatis inertes?  
Stringite, ait, gladios, veteremque haurite cruorem,  
Ut repleam vacuas iuvenili sanguine venas:  
In manibus vestris vita est aetasque parentis. (1)

*[Why are you now idle in doubt?  
Clasp your swords, says he, and draw the old blood  
To fill the empty veins with youthful blood:  
In your hands is the life and age of the parent.]*

Here is the first and most remote indication of transfusion, which, like a fleeting flash, flashed in the mind of our poet. Nor could we join those who reproach Ovid for having thereby delayed its discovery by placing the plan in the mouth of an evil woman, as if it were crazy and lying advice; indeed, since Medea was very learned in the medical art, we believe that he made her speak wisely, but with the intention of not keeping her promise, as she did by letting old Pelias perish.

However, while the attached passage is a sure criterion that the Sulmonese marked the discovery of the transfusion, we could not similarly recognize proof in the other text of the same poet reported by Esler. (2)

... Stricto Medea recludit.  
Ense senis iugulum, veteremque exire cruorem  
Passa, replet succis; quos postquam combibit Aeson.  
Aut ere exceptos aut vulnere, barba comaeque,  
Canitie posita, nigrum rapuere colorem.  
Pulsa fugit macies; abeunt pallorque situsque,  
Adiectoque cavae suppleantur corpore rugae,  
Membraque luxuriant. (3)

*[... Medea closes it tightly.  
The sword of the old man's throat, and the old blood to come out  
Raisins filled with juices; whom Aeson afterwards devoured.  
Either be spared, or with a wound, beard and hair,  
When the gray hair is placed, the color is black.  
The pulse runs away thinly; they go pale and pale,  
And by addition the hollows are supplied by the body of the wrinkles,  
And the members are luxuriant.]*

Instead, it appears that what is proposed here is the infusion or introduction of medicinal substances into the blood, a practice that then passed among the rational methods of therapy, without warning that it was taken away from the ancients.

And returning to the true concept of transfusion, we can conclude that it was already clearly pointed out in the fabulous era by a poet who belonged to us. Nor do we know from what documents it is claimed that he derived the idea from Homer or from another Greek singer.

However, we played little or no part in the era that we liked to call rational, which, moreover, was almost entirely Italian. At the turn of the 16th century, the idea still covered by the veil of fables entered the domain of philosophy, and from verisimilitude passed into the regions of solid reasoning. Whoever first with wisdom undertook the discussion and placed it in the field of experiments is variously asserted by different historians of Medicine, who indeed is sometimes referred to those who deservedly do not deserve it. The illustrious author of the Pragmatic History (4) attributes it to the famous Marsilio Ficino; in which he was imitated by Salvatore De-Renzi (5) and Giovanni Pozzi (6), both naively imitating each other. However, the Tuscan philosopher and doctor studied nothing else other than blood sucking, considering it suitable for prolonging life. "Cur (here are his words) non et nostri senes omni videlicet auxilio destituti, sanguinem adolescentis sugant volentis inquam adolescentis, sani, laeti, temperati, cui sanguis quidem sit optimus sed forte nimius. Sugant igitur more hirudinum ex brachii sinistri vena vix aperta unciam unam aut duas." (7) [*Why do not our old men, destitute of all support, suck the blood of the young, willingly, I say of the young, healthy, happy, and temperate, whose blood is indeed the best, but perhaps too much? They therefore suck, after the manner of a leech, from the vein of the left arm, barely open, an inch or two.*]

For these concepts, all referable to the introduction of blood through the digestive tract, Ficino not only cannot be considered the discoverer of transfusion, but he cannot even enter the list of promulgators of the same; just as Pliny cannot be considered as such when he speaks of the epileptics who drank the blood of the gladiators expiring on the arena; (8) not Celsus who recalls the same custom, (9) not Aretaeus who rebukes those who collected the blood of the decapitated to drink it, (10) not Bartholinus, (11) not Zacutus Lusitano (12) who also appears aware of it.

An idea of this operation can be seen among Girolamo Cardano's contemporaries, (13) accompanied by so little credibility that even though he was a lover and propagator of sensational novelties, he placed so little trust in them that he barely mentioned them in his works. "Sunt qui cum alio iuvene bonorum morum duplici fistula, alii unica, commutare sanguinem posse sperent; quod si fiat commutabuntur etiam mores." [*There are those who hope to be able to exchange blood with another young man of good character with a double pipe, others with a single one; and if this is done, their manners will also be changed.*] The simple or double fistula mentioned here shows the artifice to be used in practicing it, but leaves us unclear how and where to apply it.

It was also a serious mistake to have asserted that Peghelio Magno of Rostok proposed transfusion in his *thesaurus rerum selectarum* published in 1604, as Pozzi thinks by restricting his reasoning to obscure expressions that can be interpreted in multiple ways. Here are Peghelio's words: "Ratio chirurgica insignis et rara homini communicans externa quae ipsi bona et interna multa quae noxia avertens." [*A remarkable and rare surgical system, imparting to man external things which are good to him, and turning away many internal things which are harmful.*] Nothing else can be deduced from this other than that he recommended remedies for the surgical hand that were introduced and capable of amending various and serious morbidities. In the entire context of the work he does not add another motto that alludes to the passage of blood from individual to individual.

Until 1615 there is no work that shows signs of the art of transfusion. Then in that year Andreas Libavius of Halle (14) reports that an empiricist contemporary of his had the idea in good faith, without clearly demonstrating with what operation he considered it feasible. So much so that not even Libavius, as others think, was responsible for its discovery and

introduction, even appearing to be an opponent of it to the point of judging anyone who had attempted its practice worthy of hellebore. “Sed quomodo ille robustus qui sanguinem suum transfundendum exhibuerit non languescat? Danda sunt ei bona confortantia et cibi, medico vero hellebore.” [*But how can that strong man who has offered his blood to be shed not faint? He should be given good comfort and food, but the physician should be given hellebore.*] The name of the empiric is unknown; nor can it be believed that it was Peghelio, who, as has been said, only mentioned the infusion of medicines. And it is clear that it was this man, it would be difficult to judge him as the inventor, having left no argument that he had a distinct idea and the means to execute it. So that, as far as we can gather from Libavius, his contemporaries and those who shortly followed him remained in the same obscurity.

History is similarly offended by those who, on the authority of Sprengel, (15) want to attribute the credit for this invention to Giovanni Colle from Padova, finding in his work on the method of preparing medicines (16) the injection of the remedies into the veins rather than the real transfusion.

Here ends the series of theories, which remained obscure, little appreciated or derided, and would have remained in this state if, in the third or experimental era, meditated again and put to the test, given they had no hope of possible success.

Therefore we see it resurrected thanks to the industry of an eminent Tuscan genius, Francesco Folli from Poppi, who in 1652 in the court of Florence made a solemn demonstration of it before the Grand Duke Ferdinand II. We forgive Sprengel and Rochoz (17) that foreigners were not aware of these facts, but we cannot forgive certain Italians who, drawing the information not from their home archives, but from outsiders, ignored it. It is easy to demonstrate that the first experiences are not due to the Englishman Wren, as the German historian wrote, and as many of us have repeated the ineluctable arguments that Folli adduces in this regard in his *Stadera Medica*. (18) He recalls having suggested the transfusion in some of his works dated before 1657 when the Englishman instituted his experiments. «In the year 1652, he says, I read the English libretto of Guglielmo Arveo which deals with the motion of the heart and the blood, which reading with some information he had about grafting plants produced this third problem in my imagination, that is, given the circulation of the blood, transfusion was possible, with which one could not only cure some ailments, but rejuvenate and grow even bigger, as I mentioned in my booklet on the culture of the vine. (19) He adds that he secretly communicated it to his excellent Lord, so that, once proven true, the prince would have the glory of announcing it to the world. Here are his words: “Blood transfusion had been invented by me and since the year 1652 I had manifested it to the most serene Ferdinand II Grand Duke of Tuscany, of eternal memory, nor did I ever communicate this thought of mine to others, leading myself to believe that if this invention, if it came to a good end it would only be worthy of monarchs.” (20) That if he was prevented in the publication regarding the experiments by Wren in England, this was due to the work of some Englishmen who, present in the court of Tuscany at his attempts, communicated them to their compatriot, who did not hesitate to proclaim them as his own, without even mentioning the industrious Italian. Who, understanding the ungenerous action, passed on the memory with these words: “For having been here at the court of Florence some virtuous Englishmen and still present in many experiences, as Mr. Redi, among whom was Mr. Finchio who is currently ambassador to the Porte, could have understood it in that court and then transported it to the homeland.” (21) Nor do we know that a voice was raised in all of England to deny it. For all the evidence, add that he called Ferdinand himself, still reigning in Tuscany, as a de facto witness to his multiple experiences. “I revealed myself as the inventor of it by calling as witness the most serene preface Ferdinand II who was living at that time.” (22) Who will now be able to challenge him for the honor of being the first and true experimenter? He could therefore well say of this practice: “I can therefore rightly call it mine.” (23) It was not enough to assert this culminating feature of the history of transfusion, as the esteemed Copello does, (24) it was necessary to ascertain it by means of good documents.

But first Folli and then Wren and several of his fellow Englishmen limited themselves to experiments on brutes without attempting to try them on man. This last step gave the transfusion first between brutes and man, finally between man and man. The Roman doctors took all the advantage in this era; because their trials were contemporary with those of Denys [Denis] and Emmerez in France, they were celebrated with solemnity; they were conducted with better wisdom and had a happier outcome.

In the *Journal of Scientists* of Paris it is reported that Denys [Denis] experimented on man in the year 1667, (25) and from the *Miscellanies of the Curious* of Germany (26) we learn that Guglielmo Riva also carried out his tests in December of the same year. This did not escape Sprengel, who asserts: "At the same time similar experiments were also established in Italy. Guglielmo Riva, (27) a Piedmontese who practiced surgery in Rome performed a blood transfusion in a consumptive patient, and Paolo Manfredi, a professor in the said city, carried out the operation with happy success." (28) Manfredi also confirms this in one of his works, leaving us with the words: "As soon as I read some letters from France to the court of Rome I immediately began the experiments." (29) And it should be noted that in this he was preceded by Riva, who therefore had to act before news of it reached Rome.

It is also admirable how much solemnity Riva gave to his experiments by establishing them publicly and in the presence of the most conspicuous luminaries of medicine in our country, including Gio. Maria Costanti, Antonio Egidio Petraglia, Giovanni Trulli and Giacomo Sinibaldi, not excluding the foreign scientists who flocked to the novelty of the fact, and in the presence of the main authorities, who authenticated the results with a notarial deed. (30) Esler who was in Rome and present did not hesitate to deliver the story in the aforementioned miscellanies (31) with the following title: "Trium sanguinis transfusionum ex animalium trium viventium arteriis in trium laborantium morbis diversis venas celebratarum anno 1667 mense decembri Romae, non bestiali more sed feliciori et humana methodo prosperoque eventu a Ioanne Guillelmo Riva ac principalioribus comprofessoribus operationibus interfuere subscriptae ac testificatae." [*The three transfusions of blood from the arteries of three living animals into the veins of three patients suffering from different diseases, celebrated in December 1667 in Rome, not in a bestial fashion but in a more successful and humane method, with a successful outcome, signed and witnessed by John Guillermo Riva and the principle co-professors who participated in the operations.*] Among the three individuals subjected to the new method was Francesco Sinibaldi, Professor of Medicine in the Archiateneo Romano, suffering from very serious tuberculosis, son of Giacomo, another highly esteemed doctor present at the operation. (32) While Denys [Denis] was content to operate in private with only Emmerez as a witness without bothering to give greater publicity and a sure guarantee.

It is also comforting to assert that our experimenters took every effort to find the most suitable ways to ensure the lives of those operated on with regard to the instruments and ways of using them, which were judged to be more perfect than any others that had been proposed by the French. Esler bears witness to this when he called Riva's method not crude but easy and humane. And Manfredi wanted to deal with it so much that he found material for two treatises, one Italian, (33) the other Latin, (34) filling them with a complete doctrinal on this topic.

It was thanks to these studies and the most accurate and prudent operation that our transfusers reaped the best results from these operations. So if in France under the hands of Denys [Denis] and others who imitated him they had bad effects, generated common distrust and attracted the prohibition decree issued on 17 April 1668 by the Castelletto [Châtelet] court, in Rome they aroused the applause of many, the praiseworthy memory of foreigners, and the hope that if perfected they could one day be of some use.

Only one Roman doctor, Bartolomeo Santinelli, rose up against it with a violent diatribe (35) condemning transfusion in humans. He judges it barbaric "quaedam veluti barbaries" [*like some barbarism*] as if the work, although great and bloody, were not legitimate to convert into a means of salvation. The rest of the writing is full of futile and pedantic sophisms, useless to the solution of so much topic, indeed on page 16, contains the

contradiction of praising the experiments and the best conceptions on the way to carry them out of Ippolito Magni, his respected friend.

The fortunate successes obtained by Manfredi and sincerely recorded by the impartial foreigner, understood by the power of the facts seen and solemnly proven, will always remain a reminder of the goodness of the new method. The craftsman that Manfredi worked on was seen again with joy by Esler, after some time, alive and flourishing. “Feliciter autem isthanc operationem cessisse ipsemet ego fideliter contestari possum, qui hominem sanum et valentem post aliquot menses eiusdem anni Patavii offendi exercentem in publico operas suas scrinarias eumque aliis pluribus ostendi.” (36) [*But I myself can faithfully testify that this operation was fortunately discontinued, who, after several months of the same year, found a healthy and strong man in Patavium practicing his cabinet work in public, and showed him to several others.*] Yet the famous operator was forced to exclaim: “They were not ashamed to say that the person in whom the public experience was performed in my house after two days was already dead; and yet, by God's grace, today, 20 or more days after the experience, he is well and healthy, although when it was performed on him he was unhealthy as can be faithfully seen from the authentic faith attached to this sheet.” (37)

Therefore, Riva's first experiments carried out on subjects suffering from unstoppable illnesses were almost lost “Et cum pthysicus ipse (Sinibaldi) derelictae spei et destitutus et morituriens esset” [*And when the pthysic himself (Sinibaldi) was despondent and dying of despair*] yet maintained beyond that end which was already believed to be near “et Sinibaldum post menses non ratione doloris vulneris inflictis sive sanguinis infusi vel diffusi in transfusione, sed illius anno XIV interpolate per tracheam reiecti, catharro, febre, et ulcere pulmonum glaciali tempore consumptum obiisse,” (38) [*and that Sinibaldi died months later, not because of the pain of the wound inflicted, or of the blood infused or diffused in the transfusion, but in the 14th year of that interlude, rejected through the trachea, consumed by catarrh, fever, and ulceration of the lungs in the icy season*] did not have a good outcome, the other tests that Manfredi carried out on more suitable individuals gave reason for hope. It is therefore without foundation that the Court of Rome issued the prohibition decree as Merklin asserts (39) and repeats in good faith Sprengel (40) and Machenzie. (41) Where the illness grasped by Riva's patient, and given as the cause of this determination having been nothing other than the already foreseen effect of an indomitable and advanced illness could not elicit such a rigorous resolution. It was also false that Manfredi's craftsman from Udine was missing from the living, and in fact by returning to flourishing health he had to avoid any ill-conceived prevention. Nor did Santinelli's fanatical declamations have any power over the authorities having only failed operations or at least solid reasons as a basis. It is also a historical fact that Riva's operations were followed by others by Manfredi, Ippolito Magni, G.B. Pieri (42) and several others. Finally, in none of the surviving works of illustrious contemporary doctors of our city can we read words of distrust or opposition. So that neither Paolini, nor Coluzzi, nor Piacenti, nor Guidarelli, nor Gagliardi, nor Lancisi, who frequented the medical circles in Riva's house, have handed down to us a motto which hints at the alleged condemnation.

The zeal we have explained so far for the sole purpose of clarifying the Roman history of transfusion must now be protected from the reproach of fanaticism or excessive love of advocating an argument with almost universal consensus that has been forgotten. Even if, leaving aside, briefly, the role of simple historians, we were permitted to interpret why transfusion was abandoned in Rome from Riva and Manfredi onwards, we would find them outside of it and placed rather in the collection of objections than any great novelty either good or evil is usually encountered.

And no matter how foolish eminent men have judged this therapeutic practice, there has never been a lack of people among the most cultured nations who, in their wisdom, have not placed some hope in that; including Rosa in Italy, (43) Blonndell [Blundell] in England, (44) Prevost and Dumas in France, Dieffemback [Dieffenbach] in Germany. (45) We have meditated; we have tried for a long time, tirelessly to surround the fact, through wise advice and practical deductions, with all that certainty of which human prudence is capable. In our

century clear authors have dedicated all their speculation to it, and there are examples of good results. In 1818, Blonndell [Blundell] (46) brought it back to life; Waller and Doubladay [Doubleday] praised it in 1825. It was successfully performed in 1826 by Brigman and in 1833 by Banner. In 1850, Nélaton gave splendid proof of it, in 1851 Marmonier and Seristan used it to advantage. And, to speak of those closest, I will recall the experiments of Polli (47) and the pamphlet "Transfusion of human blood as a heroic remedy in idiopathic anemia" (48) by the highly deserving Doctor Giovanni Copello, a writer already known for his new zoology.

The last word of science on this subject would be that the transfusion carried out by infusing healthy, defibrinated and oxygen-rich blood, although not free from difficulties and dangers, can in exceptional cases and in cases of great danger arrest the irreparable rapid end that usually follows anemia due to copious and repeated bleeding. And if facts trump all reasoning, there is no shortage of facts. Impressive is that of Banner of Liverpool who on 26 April 1833 arrested the death of a woman suffering from long and repeated metrorrhagia refractory to any more effective means of art. (49) Nor was the other by Berg of Ingelfingen less memorable when he was employed to help another unfortunate woman who, due to overflowing menorrhagia, was assailed by syncope, hiccups, freezing cold, orthopnea, and barely sensitive pulses. A few minutes after the transfusion of two and a half ounces of blood taken from a healthy man, the sick woman regained consciousness, strength, freedom of circulation and breathing and after a month she reached perfect health. Two other similar cases were also published by the illustrious Klet in which the effectiveness of the method and the small quantity of blood transfused were sufficient to obtain such reported effects.

Today there would also be another hope that it could be of help in asphyxiation due to carbonic oxide or acid, and an example that occurred just now would make the probability less remote. On the morning of 12<sup>th</sup> March, an unconscious young man was found lying on the floor in his room in Neulle-Frederic Street in Berlin. Doctor Badt was called immediately and found that he was poisoned by carbonic acid gas, and made every possible attempt to bring him back from asphyxiation to life; never his efforts and those of the Prof. Sachs who arrived later had no other result than to make the patient breathe slightly, to make his pulses barely sensitive; but he could not restore consciousness, and the doctors found him two hours after midday *with symptoms of paralysis of the brain and heart*. Doctor Badt then proposed blood transfurification [*sic*] as a last attempt and Doctor Martin, consulted on this subject, offered himself for the operation with the assistance of Doctors Sachs, Badt and his son. The sick man's brother was bled and a clerk was bled, and the blood was infused into the dying man. The operation was very successful. Shortly afterwards the patient opened his eyes, his face turned red, and he was able to swallow a little water. In the meantime he remained in a drowsy state until 12 in the evening, but then he recovered the use of his senses, and is currently in a perfect state of health. (50)

It would therefore be a laudable work to institute new investigations, and once the facts are consistent and authoritative, to initiate and educate the young surgeons who practice in our hospitals to keep them prepared to help those unfortunates who are in grave danger to their lives, having previously fruitlessly exhausted every other attempt, claimed this daring operation as their last.

Extract from the Medical Journal of Rome. Year 1866

## REFERENCES

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2. Miscell. Acad. Natur. Cur. Paris, 1772 p. 293.
3. Metamor. L. VII ver. 285-388.
4. Curzio Sprengel; Storia prammatica della Medicina, Venezia 1814. Tom. VII pag. 78 § 31. [*Curzio Sprengel; Pragmatic History of Medicine, Venice 1814. Vol. VII page 78 § 31*]
5. Storia della Medicina Italiana. [*History of Italian Medicine*]
6. Dizionario Classico di Medicina Tom. XLV pag. 436. [*Classic Dictionary of Medicine Vol. XLV page 436*]
7. Marsilio Ficino de vita producenda. Basil. 1549 Cap. XI pag. 85. Il Ficino morì in Firenze nel 1499 in età di 66 anni in altissima fama di filosofo, teologo, letterato e medico. [*Marsilio Ficini of productive life. Basil. 1549 Chapter XI, page 85. Ficini died in Florence in 1499 at the age of 66 with a very high reputation as a philosopher, theologian, man of letters and doctor*]
8. Plin. L. 28 cap. 1.
9. De re medica L. 3, cap. 23.
10. Lib I. De Curat. Diut.
11. Disquisitio medica de sanguine vetito.
12. Pract. Med. Admir. L. 3 obs. 79.
13. Nacque in Milano nel 1501 e morì in Roma nel 1576. [*He was born in Milan in 1501 and died in Rome in 1576*]
14. Andreas Libavius. Appendix syntagmatis arcanorum chirurgicorum. Francof. 1615.
15. Op. cit. pag. 79.
16. Iohannes Colle. Methodus facile parandi iucunda tuta ac nova medicamenta, cap. 7. Ven. 1628. [*Johannes Colle. An easy method of preparing pleasant, safe and novel medicines. cap. 7. Ven 1628*]
17. Diz. Class. Med. T. 45 pag. 434.
18. Ha equivocato Giovanni Pozzi e dietro lui l'egregio Dott. Giovanni Copelli nel suo opuscolo sulla trasfusione del sangue umano, riferito negli Annali Universali e nell'Osservatore Siciliano fasc. genn. e febr. 1865, pagina 404, asserendo che la citata opera "Stadera Medica" appartenga a frate Paolo Sarpi. È men vero poi che il detto Sarpi potesse conoscere e parlare delle esperienze del Folli praticate nel 1652 e pubblicate nel 1660, mentre egli cessò di vivere nel 1623. [*Giovanni Pozzi and behind him the esteemed Dr. Giovanni Copelli misunderstood in his pamphlet on the transfusion of human blood, reported in the Annali Universali and in the Osservatore Siciliano fasc. Jan. and Feb. 1865, page 404, asserting that the aforementioned work "Stadera Medica" belongs to Brother Paolo Sarpi. It is less true that the said Sarpi could have known and spoken about Folli's experiences practiced in 1652 and published in 1660, since he died in 1623*]
19. Stadera Medica nella quale si bilanciano le ragioni favorevoli o contrarie alla trasfusione del sangue, già inventata da Francesco Folli ed ora dal medesimo descritta. Fir. 1680. [*Medical steelyard in which the reasons for or against blood transfusion are balanced, already invented by Francesco Folli and now described by the same. Fir. 1680*]
20. Op. cit.
21. Op. cit.
22. Op. cit.
23. Op. cit. Tale lo acclamò Pietro Francesco Tocci, suo contemporaneo, nell' epigramma laudatorio intitolandolo "ad Franciscum Follium transfusionis sanguinis inventorem". [*Op. cit. This is what Pietro Francesco Tocci, his contemporary, praised in his laudatory epigram entitled "to Franciscus Folli, the inventor of blood transfusion"*]
24. Osser. Sicil. Fasc. Genn. e Feb. 1865 pag. 404.
25. Journal des Savants 1667 pag. 87-94.
26. Op. cit. pag. 290.

27. Guglielmo Riva nacque in Piemonte nel 1627 e morì in Roma a dì 17 ottobre nell'anno 1677 in età circa di 50 anni. Il suo cadavere fu tumulato con solenne pompa nella chiesa di s. Marco presso la casa da lui abitata, che fu in via della Pedacchia n. 10, secondo che attesta il Dott. Cav. Andrea Belli nella sua operetta "delle case abitate in Roma da parecchi uomini illustri". Raccogliamo dal Fantoni che fu nell'intimità del famoso Stenone; ed il Bartolino gli dedicò la sua epistola. "De ovarii mulierum epistola anatomica ad D. Guillelmum Riva anatomicum Romae celebrem: Romae scripta die XII Ianuarii 1667". Marcello Malpighi lasciò scritto nelle sue opere postume: "Romae mihi datum est cum famigeratissimo Nicolao Stenone colloqui, cum quo et Domino Guillelmo Riva in Lodovisiana Villa coenavi." Uno degli scolari del Riva fu il Lancisi, il quale col nome di suo maestro lo chiamò nell'opera "De noxiis paludum effluviis." [*Guglielmo Riva was born in Piedmont in 1627 and died in Rome on 17 October 1677 at the age of approximately 50 years. His body was buried with solemn pomp in the church of St. Marco at the house he lived in, which was in via della Pedacchia n. 10, according to what Dr. Cav attests. Andrea Belli in his operetta "of the houses inhabited in Rome by several illustrious men." We gather from Fantoni that he was in the intimacy of the famous Steno; and Bartholinus dedicated his epistle to him. "De ovarii mulierum epistola anatomica ad D. Guillelmum Riva anatomicum Romae celebrem: Romae scripta die XII Ianuarii 1667." Marcello Malpighi wrote in his posthumous works: "Romae mihi datum est cum famigeratissimo Nicolao Stenone colloqui, cum quo et Domino Guillelmo Riva in Lodovisiana Villa coenavi." One of Riva's pupils was Lancisi, who called him by the name of his teacher in the work "De noxiis paludum effluviis"]*
28. Op. cit.
29. Raguaglio sugli esperimenti fatti sotto la direzione di Paolo Manfredi Medico Professore nello studio di Roma ecc. Roma 1668. [*Information on the experiments carried out under the direction of Paolo Manfredi, Doctor and Professor in the Rome office etc. Rome 1668*]
30. Ego Ioannes Baptista Rondinus Romanus civis et Cur-Causarum Cap. Not. praesens instrumentum subscripsi et publicavi. [*I, John the Baptist Rondinus, a Roman citizen, and of the causes of Cap. Not. I have signed and published the present instrument*]
31. Oper. cit. p. 289.
32. E il Manfredi dice delle sue operazioni "esperimenti praticati più volte in mia casa e nei bruti e negli uomini dal sig. Bartolomeo Simoncelli, chirurgo ed anatomico eccellente, regolato da miei ordini. Il 5 gen naio si fecero in presenza di molti principi e titolati col concorso de'virtuosi e con non poco applause." [*And Manfredi says of his operations "experiments practiced several times in my house and on brutes and men by Mr. Bartolomeo Simoncelli, excellent surgeon and anatomist, governed by my orders. On January 5th they took place in the presence of many princes and titled people with the help of the virtuous and with no small amount of applause"*]
33. Raguaglio degli esperimenti fatti sotto la direzione di Paolo Manfredi ecc. Roma 1668. [*Summary of the experiments carried out under the direction of Paolo Manfredi etc. Rome 1668*]
34. De nova et inaudita medico-chirurgica operatione sanguinem transfundente de individuo ad individuum. Romae 1668. [*On the new and unprecedented medical-surgical operation of transfusing blood from individual to individual. Rome 1668*]
35. Confusio transfusionis sanguinis. Romae 1668. - Opuscolo dedicato al card. Giovanni Rospigliosi. [*Confusion of blood transfusion. Rome 1668. Brochure dedicated to Card. Giovanni Rospigliosi*]
36. Op. cit. p. 295. - Questi fu tal'Angiolo da Udine. [*Op. cit. p.295 – This was Angiolo da Udine*]
37. Fu giudicato in istato di buona salute 20 giorni dopo l'operazione dai Dottori Baldassarre Coluzzi ed Ottaviano Paolini, Medici Romani. [*He was judged to be in good health 20 days after the operation by Doctors Baldassarre Coluzzi and Ottaviano Paolini, Roman doctors*]

38. Op. cit. p. 290.
39. De ortu et occasu transfusionis sang. Norimb. 1679 pag. 25 e 85. [*On the rising and setting of blood transfusion. Norimb. 1679 pag. 25 e 85*]
40. Op. cit. pag. 88.
41. Histoire de la santé Loin 1761 pag. 469.
42. Niuno scritto si trova di questi due sperimentatori nella Biblioteca Lancisiana. [*No writings by these two experimenters can be found in the Lancisiana Library*]
43. Michele Rosa tornò a sperimentarla sugli animali in presenza dello Scarpa (Ved. Lettere fisiologiche T. 1 p: 288). [*Michele Rosa returned to experiment on animals in the presence of Scarpa (See Physiological Letters T. 1 p: 288)*]
44. Annali Univ. di Medic. Omodei Vol. 12 - 26.
45. Idem. Volume 53 p. 572.
46. Annali Universali di Medicina. Omodei. Vol. XII-XXVI.
47. Annali di Chimica 1852.
48. Anuali Univ. - Osserv. Sicil.
49. Diz. Class. di Med. Vol. 45 p. 453.
50. La France. 27 Marzo 1866.