

INTRODUCTORY NOTES

The paper 'Claude Tardi (1607-1670) – Early Advocate of Direct Transfusion of Human Blood' by Gertrude L Annan, was originally published in the Bulletin of the New York Academy of Medicine in 1935 (Dec; 11(12); 700-707). It is reproduced here with permission.

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This paper provides an insight into the life and work of Claude Tardi, the 17th century Frenchman, who was frequently at odds with his contemporaries and as this work identifies was one of the first people to identify the concept of blood transfusion and whose own writings claim priority for performing a blood transfusion.

**CLAUDE TARDI
(1607-1670)**

EARLY ADVOCATE OF DIRECT TRANSFUSION OF HUMAN BLOOD

Gertrude L Annan

In turning the pages of history, we encounter among dry facts and dull details the charm of human qualities, the virtues, the foibles, the curious contradictions, which blend their varied colours in portraits of half forgotten men. Through these personal records many, prominent in the development of medicine, live for us today instead of seeming vague figures in a misty past. Claude Tardi, a French physician of the seventeenth century, emerges for a brief moment from obscurity, claiming achievements posterity has never accredited him; showering abuse on his contemporaries; offering devotion to many who came before; and giving a clear picture of himself as a braggart and controversialist, vainly struggling to win recognition.

Little is known of the early life of Tardi. According to a paragraph in *Annuaire de la Haute-Marne*, Chaumont, 1811, p. 161, he was born in Langres, the eighth of March, 1607, the son of George Tardi and Anne Monginot. Knowledge of his life from his birth until the time he was awarded his medical degree by the *Faculté* in 1645, is meagre indeed, but he has supplied some information in the long "Preface pour la Deffense de l'Autheur" which introduces his *Les Operations Chirurgiques esclairées des Experiences du Mouvement circulaire du Sang et des Esprits*, Paris, 1665. From this we learn that he spent several years of his youth studying in the "best Colleges of Paris," reading chiefly the Greek philosophers. Here he acquired a taste for the classics which is evident in most of his writings, and he undoubtedly planned to extend these pleasant years, but financial reverses at home put an end to them and forced him to turn his attention to earning a livelihood. Ignoring his family's desire for him to take religious orders, he clung to his old interests and began his career as a lecturer in philosophy. He must have been a thrifty youth, for it was not long before he was able to return to his studies and thus to realize an old dream, to practice medicine. In his own words, he "easily acquired first place among his companion scholars, took care to instruct them, dissected with his own hand the

bodies of men and women, gave a demonstration without the assistance of a doctor before the school and in the amphitheatre, worked on surgical operations, and displayed the technique of bandaging." He taught chemistry, the aphorisms in Greek, the doctrine of simples, their choice and mixture. It is difficult to see how he had time to attend lectures when he devoted himself so much to his less brilliant fellow students. He supplemented his class work by living for two years with an apothecary. Here he acquired more knowledge of drugs. He visited the hospitals daily, making rounds with the doctors and absorbing what he could from their diagnosis and treatment. Finally he was ready to engage upon the practice of his profession.

His "Deffense" goes on, "I never refused assistance to the poor; I did charity work for several hospitals, parishes and communities. During the plague the more timid doctors withdrew from the perils, but I exposed myself throughout the epidemic. I performed cures which brought me honor and the approbation of the world." About this time the trouble started which was to haunt his career. It was the custom for every young doctor to become a candidate for the "Baccalauréat." The examiners appointed by the *Faculté* recommended the most promising candidates to the members of the *Faculté*, who made the final decision by their votes. According to Tardi's story he was named by the examiners as the first of three, chosen out of eighteen candidates, but when his name was voted upon, his jealous enemies kept him from being elected. This was a bitter blow. Tardi spoke often of his enemies, but did not name any of them, and whether they were real or imaginary is an open question. At any rate it was a rather unusual procedure for the *Faculté* to ignore a highly recommended candidate. The *ancients*, whom Tardi felt were his friends, advised him to present to the *Parlement* a request for an explanation of the action taken by the *Faculté* and a demand for a further examination. It might not have been difficult for him to raise some commotion over the matter, as he was well acquainted with Nicolas Lejay, the first President of the *Parlement*. But Tardi for once displayed a shade of modesty and deference and decided to wait until he was voluntarily admitted.

The years spent in the study of Greek had made him familiar with the classical writers in medicine. His constant allusions to medical men of previous days showed a good background of the history of his subject. In his *Deffense* he touched on Egyptian medicine, Greek medicine and the parts played by Aesculapius, Hippocrates and Galen, and burst forth in a eulogy upon himself. "Coulon [Realdus Columbus] recognized the necessity of the circulation of the blood and spirits in the heart & lungs. Harvey discovered it in the large veins, and I, I have written of it & demonstrated it publicly in all parts: I have given an easy means of making the experiments; I have discovered all the causes of confinement, of crises, of the cure of unknown maladies. I have included the whole doctrine of Hippocrates in my theses, & yet my enemies have little to win for themselves against my great learning. They have rendered to me every imaginable injustice instead of honor. They have overlooked my words for phantoms, not being able to understand them nor the doctrine of Hippocrates which I explain: they wish to attribute to me their own weakness and to pretend that I do not know what they cannot comprehend."

It was not until 1645 at the age of thirty-eight that Tardi finally became a licensed physician. Not to be wondered at are his outbursts and vituperation addressed to the *Faculté*. "The *Faculté* has always treated me very rudely, depriving me of my employment and taking away from me opportunities to work. Men of honor allow others to practice their malignity. They do not dare to offer me any office, yet they are astonished that a man of my type lives without wealth." He raged about the malice and envy of his opponents and in glowing terms spoke of the excellence of his own work. He told of sacrificing his whole life to study. The treatment of a difficult disease was more enjoyable for him than a ball, a play, or a festival. He gave up all other pleasures for the public good. "Those who follow my orders are never sick, & I

myself, even though very delicate, have never needed any remedy for the last twenty two years, never having missed one day in making my visits."

He had been admitted to the *Faculté* twenty-two years before this *Deffense* appeared, but his bitterness had not been ameliorated with time. His anger toward the *Faculté* never lessened, and although on the title-pages of his works he described himself as "D. R. en la Faculté de Medecine A Paris," he showed that honorable organization little respect. The *Faculté* seems to have been surprisingly gentle with its member who roundly abused it and did not always accede to its orders. Tardi's devotion to the classics was responsible for another altercation with the *Faculté*. Tardi had published several commentaries on Hippocrates and Galen and in 1657 his French translation of Galen on the formation of the foetus appeared. Today a good translation from the ancient writers in Greek and Latin is greeted with enthusiasm by most of us who find it slow going when we have to read the originals. The scholarly gentlemen of the *Faculté* had quite a different point of view. They were horrified that one of the "princes" of medicine had been put into a "common tongue," and demanded that the indiscretion should not be repeated. Tardi still nursing bitter thoughts of these gentlemen paid no attention to their words. Having had previous experience with their wayward fellow member, the *Faculté* decided to pay him 300 livres annually with the stipulation that he refrain from publishing anything without their consent or approval. Tardi was as usual in financial difficulties, and he accepted the bribe, but this did not hinder him from publishing his translation of Hippocrates in 1667. More of an interpretation than an exact translation, it bears the title, *Les Oeuvres du grand Hippocrate, divisees en deux tomes, ou toutes les Causes de la Vie, de la Naissance & de la Conservation de la Santé; les Signes & les Symptomes de toutes les Maladies sont nettement expliquées, avec leur Guerison, par les Lumieres du Mouvement circulaire, et autres nouvelles Experiences*. To Tardi, Hippocrates was not merely one of the "princes" of medicine, but rather the divine master. Recent work, he felt, only served to clarify the words of Hippocrates. Even Harvey's demonstration of the circulation of the blood was no new discovery, but one described by Hippocrates centuries before.

Little value is now placed upon Tardi's translations which met with so much disapproval. His wonderful cures and "expériences" of which he boasted have long since sunk into complete oblivion. One definite claim only has survived, and this from no other pen than his own in his *Traitté des l'Ecoulement du Sang d'un Homme dans les Venes d'un Autre, & ses Vtilitez*, Paris, 1667. Here he stated that he was one of the "inventeurs" of blood transfusion and described the process minutely. The importance of his work is hard to determine, for we depend solely upon his word. His name is conspicuously absent in records of the history of blood transfusion, although he was apparently the first to publish an account of the process performed from one man to another. The experiments of Wren and Lower in 1666 are well known, but they were entirely confined to animals. In 1667 Denys was the first to accomplish transfusion on a human being, the blood having been supplied by a lamb. Tardi in a letter dated 30 Octobre of that same year (to Le Breton) spoke of his tract on blood transfusion as having been printed about seven months before, so his experiments must have been made at the same time as those of Denys. A translation of part of his paper follows.

The blood is the matter and aliment of the whole body, its principal use is to moisten, because man is the hottest of the animals, and has need of continual refreshing. That is why transfusion is useless to many people; it would be pernicious in all the hot maladies, in inflammations, to young people, to bilious men, and to those in general who have too much or enough blood. The aliments taken by the mouth refresh much better than the blood whoever is of a hot nature; they resist the action of the heat and refresh the entrails, by their extreme humidity. They conserve all the parts which serve the chyle and the preparation of the blood; for they [the parts] are destroyed, not performing their functions. Transfusion can be

practiced through the feet of man, because one can avoid the nerves there, the arteries and chance of convulsions; and one can plunge both of them together into hot water.

The hand which is suitable to take and give all sorts of things is also very easy to receive and give blood; it is better for transfusion than the foot. The two hands of the same man communicate with one another and intertwine through their own nature. The hands of two different persons assist each other very easily also, they are very suitable for the transfusion of blood from one to the other. The right hand unites itself and applies itself very usefully to the right hand [of the other], and the left to the left.

The transfusion from the arteries into the veins is the most natural and easy way, but it is more dangerous, as it is subject to the dangers of aneurysms, to convulsions and to sudden death. One can perform it on the arteries of the fingers and wrist of man, in the same manner as one can do it in the arteries of the leg of dogs.

The blood and the spirits can pass more surely from one vein into another by an operation very different and much more laborious. This kind of transfusion ought to be done after sleep and in the morning, the spirits being calm, and the strength better; it should be done promptly and by two able surgeons, since it is done at the same time on two different persons, in this manner.

Cut lengthwise on the same side, right or left, the skin of the arm of the two people on whom you are going to operate; cut it over the vena basilica or median without wounding it. Expose and tie with a noose each of the veins in two places, separate the nooses one from the other about a good inch. Open the veins between the ligatures, then introduce a bend-pipe in the end of the vein nearer the heart, which is to receive the blood, and tie it with a noose. The other end of this same vein ought to remain tied as before, if bleeding is not expedient. If it [bleeding] is necessary one can untie it, in due time and place, and draw the patient's blood, as much as he has received, more or less. Let the blood flow over the arm, without making him undergo the pain of a new ligature or of a pipe.

The cut end of the vein of the healthy man which is nearer the heart does not need so tight a ligature, as it happens always to exhaust itself by its own attraction; but it is very necessary on the cut end of the vein nearer the hand. One ought to introduce there a bend-pipe similar to that used on the patient and tie it strongly above, for it is through the other end of it that all the blood flows and passes. One ought also to tie the arm above the elbow, as one does in bleeding. There are then only two ligatures and two pipes which are absolutely necessary; one of the pipes fits into the hollow of the vein which is nearer the hand of the healthy man; the other fits into that which is nearer the heart of the patient.

Make both men sit down opposite each other, so that their left or right legs touch. Lift their hands and apply them reciprocally on their shoulders. Introduce then the pipe of the healthy man into that of the sick, without pulling it, because the vein shrinks and is weakened by lengthening it. Join exactly the two pipes, as well as you can; warm them, and put over them a small cloth, dampened with warm mucilage or dipped in spirits of wine.

Tie gently the two arms of the two men together, in two places, four fingers above and four fingers below the openings. Loosen then the ligature of the end of the vein which is nearer the hand of the healthy man; apply the cloth without ceasing, as much on the outside as on the inside up to the pipes.

Bathe also the arm of the patient, up to the arm-pit and the shoulder. Bathe them continually with sponges and with cloths dampened and moistened with hot water, or with an emollient decoction; and you will see, doubtless, that the blood will flow from one to the other in abundance. The blood which pours out and leaves the veins does not flow as well as that which carries itself to the heart of the patient, lacking one of the two necessary causes for all natural movements, which is attraction, movement or heat of the parts which receive it. Make the blood of the healthy man flow as much as the force will permit: let him eat and rest, he will be able to furnish blood a second time on the same day, by the same opening, tying and loosening the ligature of the vein. If the superfluous blood of one man does not suffice, one can receive that of two, of three and even of more, choosing always the most suitable.

Lacking a capable surgeon, I can myself perform the transfusion alone, having practiced all my life, not only at operations on the dead, but also on living bodies.

The flowing of blood from the body of a man into the veins of another is admirable and very useful to the conservation of health and to the cure of several maladies. Old men and all those whose vessels are full of bad humors and of tainted blood, can preserve themselves by receiving, at several and different times, the blood of a more healthy body & very good constitution, at the same time that their cacochylia evacuate. By this means the

vicious humors are exhausted, little by little, and the good remain; the constitution of the entrails can re-establish itself, or preserve itself better, in the natural constitution.

Strange and contrary blood is salutary and very useful to the body of a man, when it is suitable to correct its inclemency. The coarse blood of some apoplectics and weakened men can be blended and revived by the transfusion of fine blood, drawn from the heart and the arteries of a young impetuous man. Dropsy of the stomach, pituitous humors, and that which comes from exhaustion, can be cured in the same way. Blood transfusion is absolutely necessary in all the maladies where the stomach, the throat, the guts and the liver fail in digestion or the distribution of food. It gives time and strength for the cure of lienteric, coeliac and dysenteric symptoms.

The opposition raised by the less progressive doctors and the antagonism aroused by the fatal outcome of some of Denys's cases, was already sweeping through France. To Tardi's credit may it be said in spite of his longing for a prominent place in medicine, he did not espouse the popular and stronger cause. Nor did he allow his reverence and devotion to Hippocrates to blind him to the benefits of this new experiment. He is a wise man who can recognize the good of both old and new. Tardi did not abandon the one for the other. He continued to champion blood transfusion, and addressed a letter on the subject to Le Breton, fellow member of the *Faculté* and physician to one of the Royal family. His cause, however, was already lost. Blood transfusion was soon forbidden, and for over a century its practice was neglected.

Tardi's letter to Le Breton, Paris, 1667, seems to be his last appearance in print. He died on the twelfth of December, 1670. A life of disappointment, failure and poverty had turned the young student into a bitter man. His animosity toward his fellow physicians and his extravagant praises of his own work had not helped him to win the honors he coveted in his profession. A lonely figure he must have been, vainly boasting in the imprint of his letter to Le Breton that copies might be obtained, "At the home of the author, at the Image of Saint Anne, Ruë des Arsis, where he will explain the difficulties of those who visit him, give them advice and teach the true medicine."