XCIV. *Monſ.* Faget's *Remarks on the Uſe, &c. of the* Styptic, *purchaſed by His Moſt Chriſtian Majeſty; communicated by* James Theobald, *Eſq; F. R. S.*

Read Dec. 7, 1752.

ABOUT the end of the year ſeventeen hundred and fifty, Mr. Broſſard, a ſurgeon from Berry, came to Paris, to propoſe the uſe of a remedy, which he had diſcover'd for ſtopping the blood after amputations, and which he aſſerted to have found effectual in ſeveral amputations of the arms and legs. At his requeſt, ſome gentlemen of the Academy of ſurgery were deputed, in whoſe preſence he was to make ſome new experiments in ſtopping the blood upon different animals, and in all which he ſucceeded, by ſtopping it in the largeſt arteries after amputation. But the ſucceſs of this remedy might yet be conſider'd a little dubious, becauſe in many animals, as in dogs particularly, the great arteries ſtop of their own accord; and rarely any dog dies from an hæmorrhage, becauſe their blood is more diſpoſed to congeal, and by that means ſtop the diſcharge.

For this reaſon the experiments made on animals not being thought ſatisfactory, and yet being convinced, that no ill effect could follow the application of this remedy on human kind, Mr. Broſſard was permitted to uſe it at the hoſpital of the invalids, in an amputation of the leg, which ſucceeded perfectly well; and not the leaſt ill accident attended the cure thro' the whole time.

Some

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Some time after this two waggoners were run over by a waggon loaded with ſtone, and each of them had one leg broken in a miſerable manner. Theſe two men being brought to the Hoſpital of the Charity, I ſaw no other hopes of ſucceſs but in amputating the legs; and, for that reaſon, I requeſted Mr. Broſſard would be preſent, and give me a proof of this new application, which we applied in the following manner:

As ſoon as the leg was cut off, I ſlacken'd the tournequet, to diſcover the veſſels; and Mr. Broſſard applied, upon the orifices of the two arteries, two pieces of his aſtringent, faſten'd one upon the other with a riband, in the manner, which I have ſent to you, and as it is in the drawing. After the application was made, I ſtreighten'd the tournequet, and paſs'd the two ends of the riband, which was faſten'd to the upper piece of the aſtringent, upon the ſtump over the knee, and applied a linen bag, filled ſlightly with the ſame aſtringent in powder, upon the whole wound; and, over all, applied the common dreſſings in the like caſe. After the dreſſing was finiſh'd, I ſlacken'd the tournequet, and two hours after took it intirely away. Eight-and-forty hours after this, we took off the dreſſings, and not the leaſt drop of blood follow'd from the veſſels: and we again applied one ſingle piece of the aſtringent upon the two veſſels; and I dreſs'd the other parts of the wound with pledgets of lint, with common digeſtive, a ſtyrax plaſter, and the uſual bandage.

The third day the aſtringent fell off of itſelf in the time of dreſſing; and the patient, after that time, was

dreſs'd in the common manner. The ſame was done to the other patient, after the amputation, as to this.

The firſt of theſe men died on the fifth day, and the other on the ninth: but there did not appear, thro' the whole, the leaſt tendency to an hæmorrhage. Thus the remedy fairly produced its effects, as to the ſtopping the blood.

However, in order to determine the manner, in which this aſtringent produces its effect, I examined the blood-veſſels of thoſe two patients after their death, and I found them contracted and ſtraiten'd, as if they had been tied, and in the largeſt of them a conic coagulation of the blood, which was an inch and half long: and after having taken out this coagulation, it was with difficulty, that I could introduce the point of a very ſmall probe into the orifice of that veſſel.

The patient, who died on the ninth day, had the arteries contracted in the ſame manner; but with this difference, that the congelation was at leaſt four inches long.

Mr. Morand has employed this remedy with ſucceſs, in applying it to a wound, made by a ſword, in the bending of the arm: and I myſelf have made uſe of it, with great ſucceſs, on occaſions, where the temporal and intercoſtal arteries have been open'd.

In the laſt-mention'd caſes, I applied but one piece of the ſtyptic upon the opening of the artery; and this generally falls off at the firſt dreſſing, that is, forty-eight hours after the application, without the leaſt appearance of an hæmorrhage, or other ill ſymptoms, which can raiſe any objections to this ſtyptic; for thoſe patients are all recover'd.

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There have been lately made, at the hoſpital of the invalids, two experiments of this aſtringent in amputations; and in both the ſucceſs has been equal to all that can be deſired. The ſurgeon, in theſe caſes, uſed only the two pieces applied one upon the other, without uſing the powder in the bag, as before; and dreſs'd the whole wound with lint, and the common bandage.

Thus, then, at laſt there appears to be diſcovered a remedy beyond our hopes, and which art has never yet equall'd. The application of fire was the cruel reſource of the antients; and Paré believed himſelf inſpired, when he diſcovered the uſe of the ligature. But, alas! how many accidents are there, which ariſe from the uſe of thoſe two manners, and which too often terminate in the death of the patient! Happy for us, that thoſe accidents now appear to be no longer to be fear'd by the lucky diſcovery of this ſtyptic, the firſt experiments of which have ſo greatly promiſed ſucceſs!

It may be remarked, that, if this aſtringent ſucceeded only in coagulating the blood, it had produced nothing extraordinary; for theſe coagulations would not have been ſufficient to have ſtopp'd the hæmorrhage, directly after the operation in amputations: but its excellency lies in contracting the arteries ſo cloſely, that it hardly lets a little probe into the aperture of the artery, and by this means forms, as it were, a perfect ligature, much more certain than the uſual one; as this is not made in any one point of the cylinder of a veſſel. Thus this application exceeds every thing, which has hitherto been produced by the operation of our hands.

This ſingularity in the operation of this remedy ſuppoſes another in the veſſels, which is the great contractility of the fibres of the arteries. Theſe, indeed, do naturally contract of themſelves; but not to two thirds of their diameter; nor to that ſtate, in which they are ſtraiten'd by the effect of this aſtringent; becauſe, by that, the whole aperture is almoſt intirely taken off in the largeſt veſſels; and it is eaſy to imagine their effects in the ſmalleſt.

It may be obſerved, that it is not in the dead parts of bodies, that this contraction can be made: it requires the aſſiſtance of the vital principle, and operates on the fibres by certain articles contained in it, which diſpoſe the animal body, by its irritation, to ſhorten its fibres, and reduce the tiſſue, which they compoſe, into a leſſer volume.

This remedy, of which I have been ſpeaking, is nothing elſe but the agaric of the oak. The beſt kind of it is found on the parts of oak-trees, where the large limbs have been cut off; and it very often reſembles a horſe-ſhoe in its ſhape. This agaric is diſtinguiſhed into four parts; the rind; the ſecond part, which is preferable to the other; the third part ſerves for the ſtopping the blood in the ſmaller veſſels, as well as that part, which touches the tree. This laſt was what was powder'd, and applied in the little bag, as in the operations of the Charity.

The ſecond part is what I make uſe of in amputations, which is cut into pieces, of the ſize of that which I have ſent you. It muſt be beaten by a hammer till it is ſoft; and this is its whole preparation. Every part is prepared alike.

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The beſt time of collecting it Mr. Broſſard has found to be in the autumn, in fine weather, after great heats.

This, then, Sir, is all I can collect of the uſe, application, and preparation of this new remedy for ſtopping blood. If the Royal Society ſhall find any thing in it worthy their regard, I ſhall think myſelf happy in having communicated theſe obſervations. I am

Your moſt obedient ſervant,

Faget.

XCV. *A Letter of* Benjamin Franklin, *Eſq*; *to Mr.* Peter Collinſon, *F. R. S. concerning an* electrical Kite.

Philadelphia, Oct. 1, 1752.

Read Dec. 21 1752. AS frequent mention is made in the public papers from Europe of the ſucceſs of the Philadelphia experiment for drawing the electric fire from clouds by means of pointed rods of iron erected on high buildings, *&c.* it may be agreeable to the curious to be informed, that the ſame experiment has ſucceeded in Philadelphia, tho' made in a different and more eaſy manner, which any one may try, as follows:

Make a ſmall croſs, of two light ſtrips of cedar; the arms ſo long, as to reach to the four corners of a large thin ſilk handkerchief, when extended: tie the corners of the handkerchief to the extremities of the croſs; ſo you have the body of a kite; which being