tremity of those branches so distant, that Melons will grow; but they cannot be good, because they are so far from the place, which affords them their nourishment, and their juice is altered by the length of its passage through the branches, which the Sun spoileth; whereas the foot of the Melon being short and well trusted, there are always leaves covering the branches and even the Melons themselves, until they be near ripe.

Too great heat parches them too much to take nourishment well; and this you must take care of. He that is curious, must every day walk often in his Melon-garden, to cut off all the branches, which he shall observe to be useless, or hurtful. You'll find of them to shoot forth almost to the eye, and they are capable to alter all, if it be not remedied in time.

I must not forget to tell you, that from the midst betwixt the two ears and the two first leaves there shoots out yet one branch more, which ought to be kept, if vigorous, but cut, if weak.

In the Figure I have mark'd a leaf with S, shooting out from the midst of the fourth knot: I might have mark'd more, coming successively from one another, as you see the fourth come from the third, & c.

We may perhaps the next month impart to the Reader another letter from the same generous and intelligent person, upon the same subject.

An Account of two Books.

I. Renati Franc. Slusii MESOLABUM.

De media Proportionales inter extremas datas per Circulum & per Infinitas Hyperbolas vel Ellipses, & per quamlibet exhibite.

Ac Problematum omnium Solidorum effectio per easdem Curvas.

Accessit pars altera de Analyse & Miscellanea. Leodii Eburo-

num 1668, in thin 4o.

The argument the title declares to be the same with that in the Geometry of the famous Des-Cartes; viz. That Ancient Probleme of finding two Means, or Doubling the Cube,
which troubled all Greece. The Solution of which Probleme in Geometry may be compared to that with the giving of the Cube-root of any Number proposed in Arithmetick: For, in Arithmetick, the first of two continual Proportionals between an Unit and any Number proposed, is the Cube-root of that Number, and the Unit in Arithmetick is represented by a Line in Geometry, which is one of the Extreams.

Concerning this Probleme, the Author declares himself to be none of those, that search for that which cannot be found, to perform it by Right Lines and a Circle. 'Tis true indeed, it may be done, to wit, by tryals and proffers; as, who cannot in that manner divide an Arch into three Equal parts: But such Mechanisms are accounted geometrick; and such operations may be well resembled to the vulgar Rule of False Position in Arithmetick, which cannot give an absolute true Resolution of one of the meanest of Questions, when the thing sought is Multiplex of it self, or Involved; for instance, what Number is that, which multiplied in it self makes 9; who knoweth it not to be 3? But who can find it to be absolutely so by the aid of the ordinary rules of False Position, wherein the Extraction of a Square Root is not prescribed?

The Author observes, that amongst those, that solve this Probleme by the Conick Sections, they seem to have afforded fewer Effeotions thereof, than there have been Ages, since it was first proposed. Very few by ayd of a Circle and an Hyperbola or Parabola: by a Circle and Ellipsis none, that he could observe to have been published.

The which the Author considering, and studying how to supply, he found out not only one, but infinite such Effeotions, and that not in one Method, but many; following the guidance of which Methods, by the like felicity he hath constructed all solid Problems infinite ways, by a Circle and an Ellipsis or Hyperbola.

1. His general Methods for finding two Means, by a Circle and either an Hyperbola or Ellipsis, are laid down in Prop. 1, 2, 16, and in this 16 Prop. he sheweth to do it with any Ellipsis and a Circle.

2. Particular Effeotions for finding but one or both of the Means,
Means, and Doubling the Cube, in Prop. 3. to 6.

3. And albeit all Cubick Equations may be solved, either by the finding of two Means, or the Trisection of an Angle, yet he shews the Extent of his Method, in finding out other Infinite ways for the doing thereof, from Prop. 7. to 12.

4. The Trisection of an Angle by a Circle and Hyperbola, Prop. 13, and by a Parabola in stead thereof, Prop. 15. And the finding of two Means by a Circle and Parabola, Prop. 14.

In the Second part of his Book De Analyse, the Author first gives you the Analysis or Algebra, whereby all his General Methods of finding two Means were invented. And afterwards, for the advancement of Geometry, gives you the Analysis, that relates to his particular Methods, as in case you would find but one of those Means, and afterwards by an easy operation the other. After that, he comes to shew, how the Effections or Delineations for Cubick Equations were invented; And then, how those Constructions for the Trisection of an Angle were found out: the use whereof is, to give Lines in a known measure, equal to the quantity’s sought, whereby either to give aid in the easy obtaining the first and second figures of the root, or controul the fame.

Lastly, he comes to treat of General Constructions for the resoluing of all Solid Problems, without reduction of the Equations proposed; and sheweth a general Construction for all Cubick and Bi-quadratic Equations by ayd of a Circle and a Parabola, letting Ordinates fall from the points of Intersection on some Diameter of the Parabola (which is always parallel to the Axis,) whereas Des Chartes letting those Ordinates always fall upon the Axis, was forced to prepare and alter the Equations by driving out or taking away the second term (which is next the highest,) that the sum of the Negative roots might be equal to the sum of the Affirmative ones, as his Constructions always require.

But how to find out all the variety’s of solving all Solid Problems by the Conick Sections, hear the Author to the Reader: Methodum non adscrips, tum quod gratius ac utilius futurum arbitratus sum, sice ipsi privato Studio, ex hisce Specimini bus eliceres, tum etiam quod judicium tuum de tota re praefolarer, Decerevi enim.
We come next to speak of the last part of the Book, to wit, his Miscellanea, and because it falls in here somewhat properly, we therefore first mention his fourth Chap., De Maximis & Minimis, from which he derives this Proposition:

If any Magnitude (or Number, as the whole) be divided into such parts, that are to each other as a Number to a Number, the Product of those powers of the parts, that are of the same degree, as the parts themselves denominate, is the greatest of all Products of the like powers of the parts of the same magnitude when otherwise divided.

Concerning the Proposition the Author faith thus; Liceret hujus Propositionis Usum prolixius extendere ad determinandas nempe maximas & minimas applicatarum in Curvis, tangentes, & similia; verum cum hanc materiam nuper in Exercitatione sua Geometrica feliciter aggressus sit Vir Clarissimus Michael Angellus Riccius, doctrina & humanae singulari, orbi literato nostri- mus, & justioperis spem faciatis; frustra nunc pluribus insisterem, cum meliora & perfectiora ab ipso propediem expectari debeant.

That exercitation of Riccio hath been lately re-printed for Moses Pitts, Book-seller in Little-Britain, (and is annexed to Mercator's Logarithmotechnia) wherein the Author Riccio promising a new Rank of Conical Solids, which cut, do exhibit those Infinite Parabola's and Ellipses, whereby all Equations may be easily resolved and determined. But the Learned and Modestnus in a private Letter concerning these matters, and Riccio's before-mention'd Geometrical Exercitation, faith somewhat more. Divi est etiam ex quo tandem materiam aggressus fueram, qua Methodo, videbis in Miscellaneorum meorum Cap. 4. ubi Propositionem universalum demonstravi, ex qua omnia deducunt possunt, non tamens deduxi, ne viro amico, qui hanc materiam jam occupatat, & a quo multa ac praestat expectari possunt, occasionem bene merendi de Rep. literaria prapiperem.

Concerning the rest of the Miscellanies; Our Author in the 1. Chap. treats De Infinitis Spiralibus, & Spatiorum, ab ipsis 

Radio
Radio Circuli comprehensorum, mensura. Concerning which he tells you, that Archimedes squared that Spiral, which was made by an equal motion both in the Radius and Circumference of the Circle: that Stephano Angeli hath done the like, when the Motion in the Radius is equal, but in the Circumference according to any degree of Acceleration; which gave him occasion to render this Doctrine easy and Universal by reducing it to one Analysis, when the motion is accelerate according to any degree either in the Radius or Circumference; and hence resolves this Probleme; In Circulo describere Spiralem ex talibus motibus compositum, ut Circulus ad spatium Spirale habeat rationem datam numeri ad numerum. And applies the same Doctrine in Chap. 3, to another sort of Infinite Spirals.

Chap. 2. He treats De mensura spatiorum, curva & recta Contentorium, & corum Centri Aequilibrii; applying the former Analysis or Algebraick Calculation thereto.

Chap. 5. Treats De Puncto flexus contrarii in Conchoide Nicomedis prima: which Point he determines by the Intersection of a Parabola, whose Axis is situated in the same Line with that of the Conchoide; or by a Cubick Parabola, whose Axis is parallel to the Base of the Conchoide, and Vertex the same with the Pole of the Conchoide; and hence invents innumerable other Conchoids of like properties, and finds the Curve, passing through those points of flexure, that are made by Infinite Conchoids, described about the same common Pole and Base, which in the Common Conchoids he finds to be the Perimeter of the Cubick Parabola here mentioned: But in his own new Conchoids, it is the ancient Cisoid, extended beyond a Quadrant and running Asymptotic: And he finds also the round Solids made by the Rotation of these infinite Curves, and of the Cisoid Line, about their Base Lines or Asymptotes equal to finite Solids.

Chap. 6. The Author considering, that Vincenzo Viviani in his Book De Maximis & Minimis found, that if there were innumerable Parabola's described, having the same Axis and Vertex common, if from any point in that Axis, the shortest Lines were drawn to those Parabola's, all those points of Incidence would fall in an Ellipsis; and the Authors Analysis taught him, that the Prop. was Universal, wherefoever the point be assigned, from which
which the least lines are to be drawn; which he hath extended, and applied to those infinite sorts of other Parabola's.

Chap. 7. Treats De Figurarum dimensione ex dato Centro Aequilibrii: This he faith is accurately handled by the Learned already; Aliquot tamen modos adscibit, ut non difficiles, ut nec inutiles ad investiganda Aequilibrii Cenra: which may be applied to any Curve, for, in any Curve, if there be Ordinates enough given, standing erect at an equal parallel distance, you may approach the Area, and if by aly thereof, you find the Center of Gravity, then do you obtain the measure either of the Round Solid, or Spindle made by the Rotation of the given Figure, or of Hooves raised upon it as a Base.

Chap. 8. The Author sheweth an easie way of finding the Center of Gravity of an Hyperbolical Conoid, and that in order to the resolution of this Probleme, Locum invenire, ad quem sunt omnia Centra Conoidum Hyperbolicarum, qua sunt ab Hyperbolis in dato Cono recto sectis, & quarum Axes sunt Axi ejusdem Coni paralleli, which he finds to be an Hyperbole.

Chap. 9. He treats of the Center of Gravity of the Lunula of Hippocrates Chius, and sheweth, that if Hippocrates had given that, as he did the Quadrature of the Lunula, he had squared the Circle.

Chap. 10. Treats of Arithmetical Problems, wherein he afferts, that Diophantus was wont to solve Arithmetical Questions with great subtilty, but useth numbers only, whereas the same may often be more easely and universally solv'd by Algebra; and takes for examples, the third Question of the Fourth Book, which he reformes, and reduceth divers of the like kind, that Bachet hath added, to one Proposition and Resolution; the 44th of the Fourth Book of the same Diophantus, which being solv'd with much trouble, he sheweth to have a briefe Analysis; the 13th of the third Book, and the 36th of the fourth Book, by reason of the likenes of it's Operation with the former.

Thus we have given an account of the Author's Book. What Repurse he hath among the Learned, needs not to be insisted on.

The famous Paschal or Dettonville in a Letter to this Author, faith, (to give it in English;) I believe, that to make it known that 'tis You, who hath found (for Example) this Parabola, which is
the Place, that gives the Dimensions of the Surfaces of the Solids of the Cycloid about the Base, it must be I, that must tell the World so; as well as the other Wonders of your New Analyses, and so many other things, which you have done me the honor to impart unto me, with that goodness you are pleas'd to have for me, &c.


Concerning this Book, we find it to be the judgement here, (and doubtless it will have the same esteem elsewhere among the Learned) that in it there is the most excellent Advancement made in this kind of Geometry, since the famous Mathematician and Philosopher Des Cartes.

II. Tractatus de CORDE; item de motu & Colore SANQUINIS, &c.

A. Richardo Lower, M. D. Londini in 80, impensis Jacobi Allestry, 1669.

The Learned Author of this Treatise (a Member of the R. Society) considering with himself, how important it was, for the attaining a full knowledge of the Nature and Qualities of the Blood, to investigate, besides the Circular Motion thereof, the Origin and Celerity of that Motion, and the various Changes thereof, together with the Causes of them; as also, to make an estimate of the Quantity of that Liquor emitted at every Pulsation; thought it very well worth while, to give, from his own best Observations, a clear and particular account of that whole matter. And for as much as he conceives, that the Motion of the Blood depends on that of the Heart, he begins with a Discourse concerning the Situation and Structure of the Heart, to
shew, How exactly these two are calculated for its Motion, and how well adapted to distribute the Blood into the parts of the whole Body.

In the First Chapter then, he considers the Diversity of the Situation of the Heart in different Animals, and the Reason thereof; proceeding to discourse of the Pericardium and its Use, together with the Origin and Use of the Serum therein; and why in Man only that Case of the Heart grows to the Midriff, and what makes it to do so; as also, why the Cone in an Humane Heart bends much more to the Left side, than in Brutes: Then shewing, that Arteries have their rise from the Heart, but Veins terminate in it, and how and by what Vessels the Heart is nourished by the Alimentary Juice: treating also of the Vessels of the Heart, its Nerves, and the various Influx of the Animal Spirits through the Nerves into the Heart, according to the various shapes of Animals, together with the Cause thereof: Proving further, that the Substance of the Heart is perfectly Muscular, and in perfection surpassing all other Muscles of the Body (where he expatiates into un-common Observations concerning Muscles in general;) then descending to a Minute Explanation of the parts of the Heart, and there particularly shewing the Mechanical Contrivance of the Heart for its Systole and Diastole, together with an accurate description of the Foramen Ovale, and its Use in the Fetus, and the Closure of the same in Animals born.

In the Second Chapter he treats of the Motion and Office of the Heart, Where, as he admits not of any Ferment or Evullion of the Blood in the Heart (which he affirms would be an Obstacle to its Systole, as it is needless to the Diastole;) so he affirms, that the Motion of the Heart depends not from such an Evullion (which he proves by Experiments, and vindicates from Objections;) but that the genuine and immediate Instruments of the Heart's Motion are its Fibres, Nerves, and Spirits flowing through them, the action of the Heart being altogether conform to that of other Muscles: Where he takes occasion to make it out, that the Motion of Muscles is not caused by their being inflated, nor by any Explosion of the Spirits passing through them, but after the manner, as two men taking one another by their hands, draw themselves
felves close together into mutual embraces: Whence he goes on to shew, That the whole Motion of the Heart consists indeed in the Syphole, that of the Diafbole being only a Motion of Restitution. Further, that there is a necessary Commerce betwixt the Heart and Brain (the Cause of all Sense and Motion: ) but that both ultimately depend from the Stomack, as the constant Purveyor and Furnisher of Matter for Body and Spirits.

In the Third Chapt. he teacheth, with what Celerity all the Blood passeth through the Heart, and what difference there is between the Venal Blood and the Arterial. As to the former, he calculateth, that all the Blood passeth through the Body, thirteen times, (not Six, as 'tis misprinted in the Book it self) in one hour. And concerning the latter, he is of opinion, that the Purpureous and florid color of the Blood in the Arteries proceeds not from its Ascension in the Heart (if there be any such thing) but depends altogether from the Lungs, and the Admixture of the Air with the Blood there: which he proveth by considerable Experiments, refuting with the opinion of those that will derive it from the Communion of the Blood in the Lungs.

In the Fourth Chapt. he gives an Accompt of the Rise, Progress and Use of the Invention of Transfusing Blood out of one Animal into another: though in the History of this particular he commits (I know not by what over-fight) a mistake, in relating, that Monfort Denys (call'd by him Dionysius) arrogateth to himself that Invention, whereas he onely tells us that some of his Nation do so. Besides which, we must needs take notice of another mistake in this part of the Book, viz., that the Author taking occasion to speak of the Philos. Transactions, calls them the Transactions of the Society; which certainly he would not have done, if he had either, but taken notice of what is said in Numbe, of the same; or else consider'd, that so Illustrious and so Learned a Body would certainly, if they thought fit to publish any thing as theirs, entertain the knowing World both with Sublimer Matter, and with a suitable Eloquence: But this by the by.

In the Fifth Chapt. he treats of the Chyle, and its Change into Blood; where he observeth, that nothing passeth from the Spleen through the Vas breve into the Stomack; but that the Ferment.
of the stomach proceeds immediately from the Blood itself: Explaining further, How the Separation of the Chyle is perform'd in the Intestines, and how the same, to facilitate the more its passage, is diluted and refined by the Juice of the Pancreas, secreted into the Duodenum: Rending also the Cause, Why all the Glanduls in the Abdomen and in all the lower parts of the Body do deposite their Lympha or Juice into the Common great Receptacle of the Chyle, and Why that Receptacle is plac'd between the Tendons of the Daphragime; as also, Why those Channels, which convey the Chyle into the Subclavial Vein, are double. To which he adds, That all the Chyle is by the Ductus Thoracicus alone transmitted into the Blood and Heart, which he proveth by several considerable Experiments, with some reflexion on the Bilian Experiment allledged for the contrary. All which he concludes by shewing the degrees and ways of Change, whereby the Chyle is at last converted into Blood; and how it serveth for the Nourishment and the several parts of the Body.

The Whole receives a singular Elucidation and Ornament by the Accurate Figures, in 6. Tables annexed.

Many Curious and important Observations are occasionally interspersed, such as are: That the Capillary vessels (of the same sort) do open into one another in all the parts of the Body; That all the Muscles of the Body, are Biventer or double-belly'd: That as the Motion of the Heart and Blood is Circular, so the Fibres, as the Moving Engines of them, are about the Cone of the Heart brought into a Circle and Center: That the Motion in the Muscles is not like Shooting, but Fencing; and many more, for which we must refer to the Book itself.

FINIS.