tremity of thofe branches fo diftant, that Melons will grow; but they cannot be good, becaufe they are fo far from the place, which affords them their nou ifhment; and their Juyce is alter'd by the length of its paffage through the branches, which the Sun fpoileth; whereas the foot of the Melon being fhort and well trufs'd, there are always leaves covering the branches and even the Melons themfelves, until they be near ripe.

Too great heat parches them too much to take nourifhment well; and this you muft take care of. He that is curious, muft every day walk often in his Melon-garden, to cut off all the branches, which he fhall obferve to be ufelefs, or hurtful. You'l find of them to fhoot forth almoft to the Eye, and they are capable to alter all, if it be not remedied in time.

I muft not forget to tell you, that from the midft betwixt the two Ears and the two firft Leaves there fhoots 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 5, fhooting out from the midft of the fourth knot: I might have mark'd more, coming forth fucceffively from one another, as you fee the fourth come from the third, &c.

We may perhaps the next Moneth *impart to the Reader another* **Letter from the fame Generous and Intelligent perfon, upon the fame** *Subject.*

An Account of two Books.

I. *Renati Franc. Slufii* MESOLABUM.

S E U

Dua media Proportionales inter extremas datas per Circulum & per Infinitas Hyperbolas vel Ellipfes, & per quamlibet exhibita. Ac Problematum omnium Solidorum effectio per eafdem Curvas. Acceffit pars altera de Analyfi , & Mifcellanea. Leodii Eburonum 1668. in thin 4°.

THe *Argument* the Title declares to be the fame with that in the Geometry of the famous *Des-Cartes* ; *viz*. That Ancient Probleme of finding *two Means*, or *Doubling the Cube*,

which

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 wit, to perform it by *Right Lines* and a *Circle.* 'Tis true indeed, it may be so done, to wit, by tryals and profers; as, who cannot in that manner divide an Arch into three Equal parts ? But such *Mechanismes* are accounted *ageometrick;* 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 multiplyed 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 Effections 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 onely one, but infinite such Effections, 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 Effections for finding but one or both of the
Means,

Means, and Doubling the Cube, in Prop. 3, to 6.

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

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

In the Second part of his Book *De Analyfi*, the Author firft gives you the *Analyfis* or *Algebra*, whereby all his *General* Methods of finding *two Means* were invented. And afterwards, for the advancement of Geometry, gives you the *Analyfis*, that relates to his *particular* Methods, as in cafe you would find but one of thofe Means, and afterwards by an eafie operation the other. After that, he comes to fhew, how the Effections or Delineations for *Cubick Æquations* were invented ; And then, how thofe Conftructions for the *Trifection* of an *Angle* were found out: the ufe whereof is, to give Lines in a known meafure, equal to the quantity's fought, whereby either to give aid in the eafie obtaining the firft and fecond figures of the root, or controul the fame.

Laftly, he comes to treat of *General* Conftructions for the refolving of all *folid* Problems, without reduction of the Æquations propofed ; and fheweth a *general* Conftruction for all *Cubick* and *Bi-quadratick* Æquations by ayd of a *Circle* and a *Parabola*, letting *Ordinates* fall from the points of Interfection on fome Diameter of the *Parabola* (which is always parallel to the *Axis*,) whereas *Des Chartes* letting thofe *Ordinates* always fall upon the *Axis*, was forced to prepare and alter the Æquations by driving out or taking away the fecond term (which is next the higheft,) that the fum of the *Negative* roots might be equal to the fum of the *Affirmative* ones, as his Conftructions always require.

But how to find out all the variety's of folving all *Solid* Problems by the *Conick Sections*, hear the *Author* to the *Reader : Methodum non adfcripfi, tum quod gratius ac utilius futurum arbitratus fum, fi eam ipfe privato Studio, ex hifce Speciminibus eliceres, tum etiam quod judicium tuum de tota re præftolarer, Decrevi enim,*

fi

*fi favor tuus accedat , non ipfam methodum tantum , fed &
alia , quæ fimul obfervavi, brevi, Deo bene juvante, cenfuræ
tuæ fubmittere.*

We come next to fpeak of the laft part of the Book, to wit,
his *Mifcellanea*, and becaufe it falls in here fomewhat properly,
we therefore firft mention his fourth Chap. *De Maximis & Mi-
nimis*, from which he derives this Propofition ;

*If any Magnitude (or Number, as the whole) be divided into
fuch parts , that are to each other as a Number to a Number, the
Product of thofe powers of the parts, that are of the fame degree,
as the parts themfelves denominate, is the greateft of all Products
of the like powers of the parts of the fame magnitude when other-
wife divided.*

Concerning the Propofition the *Author* faith thus ; *Liceret
hujus Propofitionis Ufum prolixius extendere ad determinandas
nempe maximas & minimas applicatarum in Curvis, tangentes, &
fimilia ; verum cum hanc materiam nuper in Exercitatione fua
Geometrica feliciter aggreffus fit Vir Clarifsimus* Michael Ange-
lus Riccius, *doctrina & humanitate fingulari, orbi literato notißi-
mus, & jufti operis fpem faciat ; fruftra nunc pluribus infifterem ,
cum meliora & perfectiora ab ipfo propediem expectari debe-
ant.*

That exercitation of *Riccio* hath been lately re-printed for
Mofes Pitts, Book-feller in *Little-Britain*, (and is annexed to
Mercator's Logarithmotechnia) wherein the *Author Riccio* pro-
mifeth a new Rank of *Conical Solids*, which cut, do exhibit thofe
Infinite Parabola's and Ellipfes, whereby all Æquations may be
eafily refolved and determined. But the Learned and Modeft
Slufius in a *private* Letter concerning thefe matters, and *Riccio*'s
before-mention'd *Geometrical Exercitation* , faith fomewhat
more. *Diu eft etiam ex quo eandem materiam aggreffus fueram,
qua Methodo, videbis in* Mifcellaneorum meorum *Cap. 4. ubi Pro-
pofitionem univerfalem demonftarvi, ex qua omnia deduci poffunt ;
non tamen deduxi, ne viro amico, qui hanc materiam jam occuparat,
& a quo multa ac præclara expectari poßunt, occafionem bene me-
rendi de Rep. literaria præriperem.*

Concerning the reft of the *Mifcellanies* ; Our Author in the
1. Chapt. treates *De Infinitis Spiralibus, & fpatiorum, ab iis &*

Radio

Radio Circuli comprehenforum, menfura. Concerning which he tells you, that *Archimedes* fquared 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 occafion to render this Doctrine eafie and Univerfal by reducing it to one *Analyfis,* when the motion is accelerate according to any degree either in the Radius or Circumference ; and hence refolves this Probleme ; *In Circulo defcribere Spiralem ex talibus motibus compofitum, ut Circulus ad fpatium Spirale habeat rationem datam numeri ad numerum.* And applies the fame Doctrine in

Chap.3. to another fort of *Infinite Spirals.*

Chap. 2 He treats *De menfura fpatiorum, curva & recta Contentorum, & eorum Centri Æquilibrii* ; applying the former *Analyfis* or *Algebraick* Calculation thereto.

Chap. 5. Treats *De Puncto flexus contrarii in Conchoide Nicomedis prima :* which Point he determins by the Interfection of a *Parabola,* whofe *Axis* is fituated in the fame Line with that of the *Conchoid* ; or by a *Cubick Parabola,* whofe *Axis* is parallel to the *Bafe* of the *Conchoid,* and *Vertex* the fame with the *Pole* of the *Conchoid* ; and hence invents innumerable other *Conchoids* of like properties, and finds the Curve, pafing through thofe points of flexure, that are made by *Infinite Conchoids,* defcribed about the fame common *Pole* and *Bafe,* 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 antient *Cifsoid,* extended beyond a Quadrant and running *Afymptotick :* And he finds alfo the round Solids made by the Rotation of thefe infinite Curves, and of the *Cifsoid* Line, about their *Bafe* Lines or *Afymptotes* equal to finite Solids.

Chap. 6. The Author confidering ; that *Vincenzo Viviani* in his Book *De Maximis & Minimis* found, that if there were innumerable *Parabola*'s defcribed, having the fame *Axis* and *Vertex* common, if from any point in that *Axis,* the fhorteft Lines were drawn to thofe *Parabola's,* all thofe points of Incidence would fall in an *Ellipfis* ; and the Authors Analyfis taught him, that the *Prop.* was Univerfal, wherefoever the point be affigned, from which

which the leaft lines are to be drawn ; which he hath extended, and applyed to thofe infinite forts of other *Parabola's*.

Chap. 7. Treats *De Figurarum dimenfione ex dato Centro Æ-quilibrii:* This he faith is accurately handled by the Learned already ; *Aliquot tamen modos adfcribit, ut non difficiles, ita nec inutiles ad inveftiganda Æquilibrii Centra:* which may be applyed to good ufe; for, in any Curve, if there be *ordinates* e-nough given, ftanding erect at an equal parallel distance, you may approach the *Area,*and if by ayd thereof, you find the Center of Gravity , then do you obtain the meafure either of the *Round Solid,* or *Spindle* made by the Rotation of the given Figure, or of *Hoofes* raifed upon it as a Bafe.

Chap. 8. The Author fheweth an eafie way of finding the Center of Gravity of an *Hyperbolical Conoid,* and that in order to the refolution of this Probleme; *Locum invenire, ad quem funt omnia Centra Conoidum Hyperbolicarum, quæ fiunt ab Hyperbolis in dato Cono recto fectis , & quarum Axes fint Axi ejufdem 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 fheweth, that if *Hippocrates* had given that, as he did the *Quadrature* of the *Lunula,* he had fquared the *Circle.*

Chap. 10. Treats of Arithmetical Problems , wherein he af-ferts, that *Diophantus* was wont to folve *Arithmetical* Queftions with great fubtilty, but ufeth numbers only , whereas the fame may often be more eafily and univerfally folv'd by *Algebra*; and takes for examples, the third Queftion of the Fourth Book, which he reformes, and reduceth divers of the like kind, that *Bachet* hath added, to one Propofition and Refolution ; the 44th of the Fourth Book of the fame *Diophantus,* which being folved with much trouble, he fheweth to have a briefe *Analyfis*; the 13th of the third Book, and the 36th of the fourth Book, by reafon of the likenefs of it's Operation with the former.

Thus we have given an account of the Authors Book. What Repure he hath among the Learned, needs not to be infifted on. The famous *Pafchal* or *Dettonvile* in a Letter to this *Author,*faith, (to give it in *Englifh*;)I believe, that to make it known that 'tis *You,* who hath found (for Example) this *Parabola,* which is

<div align="right">the</div>

the Place, that gives the Dimenſions of the Surfaces of the So-
lids 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 Analyſis*,
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.*

The Book here commended is the Second Edition of the
Meſolabe of this Excellent Geometer, our Author; Concerning
whoſe *firſt* Edition thus ſaith *Stephano Angeli* pag. 217. *Acceſ-
ſionis ad Stereometriam & Mechanicen.* Quomodo autem *hujuſ-
modi Problemata Solida conſtruantur, edoctum fuit a quam pluri-
mis; ſed Herculeas metas in infinitum tranſcendit Nobiliſsimus
& Clariſsimus Geometra* Renatus Franciſcus Sluſius *Leodienſis, in
ſuo admirabili Meſolabo, in quo hæc infinitis enucleat modis.*

Concerning *this* Book, we find it to be the judgement here,
(and doubtleſs it will have the ſme 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 mo-
tu & Colore SANGVINIS*, &c.

A. Richardo Lower, *M. D. Londini in* 8o, *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 Qua-
lities 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 *Mo-
tion* of the *Blood* depends on that of the *Heart*, he begins with a
Diſcourſe concerning the *Situation* and *Structure* of the *Heart*, to

ſhew,

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* onely 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 nourisht by the Alimentary Juyce : 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 exspatiates into un-common Observations concerning *Muscles* in *general*;) then descending to a Minute Explication 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 *Fœtus,* and the Clausure 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 Ebullition of the Bloud in the Heart (which he affirms would be an Obstacle to its *Systole,* as 'tis needless to the *Diastole,*) so he assents, that the Motion of the Heart depends not from such an Ebullition (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 caus'd 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 clofe together into mutual embraces: Whence he goes on to fhew That the whole Motion of the H art confifts indeed in the *Syftole*, that of the *Diaftole* being onely a *Motion* of *Reftitution*. Further, that there is a neceffary Commerce betwixt the *Heart* and *Brain* (the Caufe of all Senfe and Motion:) but that both ultimately depend from the *Stomack*, as the conftant *Purveyor* and Furnifher of Matter for Bloud and Spirits.

In the *Third Chapt.* he teacheth, with what *Celerity* all the Bloud paffeth through the Heart, and what *difference* there is between the *Venal* Bloud and the *Arterial.* As to the *former,* he calculateth, that all the Bloud paffeth through the Body, thirteen times, (not *Six*, as 'tis mifprinted in the Book it felf) in *one* hour. And concerning the *latter*, he is of opinion, that the *Purpureous* and florid color of the Blood in the A teries proceeds not from its *Accenfion* in the Heart (if there be any fuch thing) but depends altogether from the *Lungs*, and the *Admixture* of the *Air* with the *Bloud* there: which he proveth by confiderable Experiments; refuting withal the opinion of thofe that will derive it from the *Comminution* of the Bloud in the Lungs.

In the *Fourth Chapt.* he gives an Accompt of the Rife, Progrefs and Ufe of the Invention of *Transfufing* Bloud out of one Animal into another: though in the Hiftory of this particular he commits (I know not by what over-fight) a miftake, in relating, that *Monfieur Denys* (call'd by him *Dionyfius*) arrogateth to *himfelf* that Invention, whereas he onely tells us that fome of his Nation do fo. Befides which, we muft needs take notice of another miftake in this part of the Book, *viz.* that the Author taking occafion to fpeak of the *Philof. Tranfactions,* calls them the Tranfactions of the *Society*; which certainly he would not have done, if he had either but taken notice of what is faid in *Numb* 11. of the fame; or elfe confider'd, that fo Illuftrious and fo Learn'd a Body would certainly, if they thought fit to publifh any thing as theirs, entertain the knowing World both with fublimer Matter, and with a futable Eloquence: But this *by the by.*

In the *Fifth Chapt.* he treats of the *Chyle,* and its Change into Bloud; where he obferveth, that nothing paffes from the *Spleen* through the *Vas breve* into the *ftomack*; but that the *Ferment*

of

of the ſtomack proceeds immediately from the Blood it ſelf: Explaining further, How the *Separation* of the *Chyle* is perform'd in the *Inteſtins*, and how the ſame , to facilitate the more its paſſage , is diluted and refined by the Iuyce of the *Pancreas*, ſecreted into the *Duodenum* : Rendring alſo the Cauſe , Why all the *Glanduls* in the *Abdomen* and in all the lower parts of the Body do depoſite their *Lympha* or Juyce 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 Bloud and Heart , which he proveth by ſeveral conſiderable Experiments, with ſome reflexion on the *Bilſian* Experiment alledged for the contrary. All which he concludes by ſhewing the degrees and ways of Change, whereby the Chyle is at laſt converted into Bloud ; 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 *Biventers* or doublebelly'd : That as the Motion of the Heart and Bloud 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 referr to the Book it ſelf.

F I N I S.