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Contributors

Wotton, William, 1666-1727
Bentley, Richard, 1662-1742

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WOTTON
ON ANCIENT
AND MODERN
LEARNING





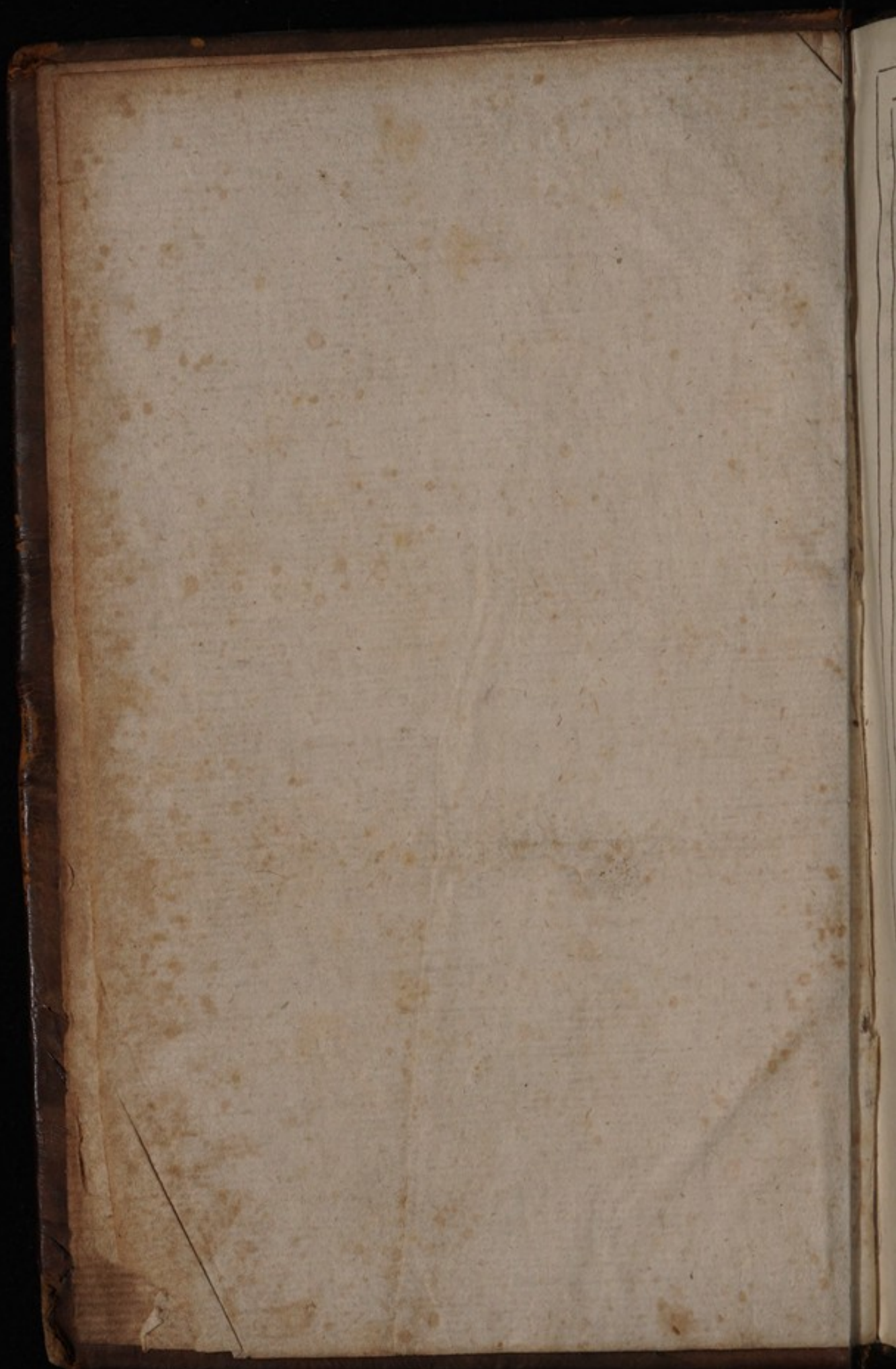


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REFLECTIONS
Upon UPON *Archbi*
Ancient and Modern
LEARNING.

BY
WILLIAM WOTTON, B. D.
Chaplain to the Right Honourable the
EARL of NOTTINGHAM.

The Second Edition, with Large Additions.

WITH A
DISSERTATION
UPON
The EPISTLES of
PHALARIS, } EURIPIDES; &c.
THEMISTOCLES, } AND
SOCRATES, } ÆSOP'S FABLES.

By Dr. BENTLEY.

LONDON, Printed by J. Leake, for Peter Buck,
at the Sign of the Temple, near the Inner-Temple-
Gate, in Fleet-Street, MDCXCVII.

REFLECTIONS
ON
THE
AMERICAN AND MODERN
LEARNING

BY
WILLIAM WOTTON, M.D.
FELLOW OF THE ROYAL SOCIETY
AND OF THE LONDON ACADEMY

IN TWO VOLUMES.

WITH A
DISSERTATION



ON THE
HISTORY OF THE
ARTS AND SCIENCES
IN AMERICA

IN TWO VOLUMES.

BY
WILLIAM WOTTON, M.D.
FELLOW OF THE ROYAL SOCIETY
AND OF THE LONDON ACADEMY

TO THE
Right Honourable
DANIEL

Earl of NOTTINGHAM,

Baron FINCH of DAVENTRY.

May it please Your Lordship,

Since I am, upon many
Accounts, obliged to
lay the Studies and
Labours of my Life at
Your Lordship's Feet, it will
not, I hope, be thought Pre-
sumption in me to make this
following Address, which, on
my Part, is an Act of Duty.

A 2

I could

The EPISTLE

I could not omit so fair an Opportunity of declaring how sensible I am of the Honour of being under Your Lordship's Patronage. The Pleasure of telling the World that one is raised by Men who are truly Great and Good, works too powerfully to be smothered in the Breast of him that feels it; especially since a Man is rarely censured for shewing it, but is rather commended for gratifying such an Inclination, when he thankfully publishes to whom he is indebted for all the Comforts and Felicities of his Life.

But Your Lordship has another Right to these Papers, which is equal to that of their being

DEDICATORY.

being mine : The Matter it self directs me to Your Lordship as the Proper Patron of the Cause, as well as of its Advocate. Those that enquire whether there is such a Spirit now in the World as animated the greatest Examples of Antiquity, must seek for living Instances, as well as abstracted Arguments ; and those they must take care to produce to the best Advantage, if they expect to convince the World that they have found what they sought for.

This therefore being the Subject of this following Enquiry, it seemed necessary to urge the strongest Arguments

THE EPISTLE

first, and to prepossess the World in favour of my Cause, by this Dedication. For those that consider that the Vertues which make up a Great Character, such as Magnanimity, Capacity for the Highest Employments, Depth of Judgment, Sagacity, Elocution, and Fidelity, are united in as eminent a Degree in Your Lordship, as they are found asunder in the true Characters of the Ancient Worthies; that all this is rendred yet more Illustrious by Your Exemplary Piety and Concern for the Church of England, and Your Zeal for the Rights and Honour of the English Monarchy; and last

DEDICATORY.

last of all, that these Vertues do so constantly descend from Father to Son in Your Lordship's Family, that its Collateral Branches are esteemed Public Blessings to their Age and Country; will readily confess that the World does still Improve, and will go no further than Your Lordship, to silence all that shall be so hardy as to dispute it.

Justice therefore, as well as Gratitude, oblige me to present these Papers to Your Lordship: Though, since I have taken the Freedom, in several Particulars, to dissent from a Gentleman, whose Writings have been very kindly received

The E P I S T L E, &c.
*in the World, I am bound to
declare, that the principal
Reason which induced me to
make this Address, was, not
to interest Your Lordship in my
small Disputes, but to let the
World see, that I have a Right
to subscribe my self,*

May it please Your Lordship,

Your Lordship's

Most Obliged,

And Most Dutiful

Servant and Chaplain,

WILLIAM WOTTON.

PREFACE.

THE Argument of these following Papers seems, in a great measure, to be so very remote from that Holy Profession, and from those Studies, to which I am, in a more particular manner, obliged to dedicate my self, that it may, perhaps, be expected I should give some Account of the Reasons which engaged me to set about it.

In the first place therefore, I imagined, that if the several Boundaries of *Ancient and Modern Learning* were once impartially stated, Men would better know what were still unfinished, and what were, in a manner, perfect; and consequently, what deserved the greatest Application, upon the score of its being imperfect: which might be a good Inducement to set
those

those Men, who, having a great Genius, find also in themselves an Inclination to promote Learning, upon Subjects wherein they might, probably, meet with Success answerable to their Endeavours: By which means, Knowledge, in all its Parts, might at last be compleated. I believed likewise, that this might insensibly lead Men to follow such, and only such, for their Guides, as they could confide in for the Ablest and Best in those several kinds of Learning to which they intended to apply their Thoughts. He that believes the Ancient *Greeks* and *Romans* to have been the greatest Masters of the *Art of Writing* that have ever yet appeared, will read them as his Instructors, will copy after them, will strive to imitate their Beauties, and form his Stile after their Models, if he purposes to be excellent in that Art himself: All which things will be neglected, and he will content himself

himself to read them in their Translations, to furnish his Mind with **Topics** of Discourse, and to have a general Notion of what these Ancient Authors say, if he thinks he may be equally Excellent a nearer Way. To read *Greek* and Latin with Ease, is a thing not soon learn'd ; those Languages are too much out of the common Road ; and the Turn which the *Greeks* and *Latins* gave to all their Thoughts, cannot be resembled by what we ordinarily meet with in Modern Languages ; which makes them tedious, till mastered by Use. So that constant Reading of the most perfect Modern Books, which does not go jointly on with the Ancients, in their Turns, will, by bringing the Ancients into Dis-use, cause the Learning of the Men of the next Generation to sink ; by reason that they, not drawing from those Springs from whence these excellent Moderns drew, whom they only propose

pose to follow, nor taking those Measures which these Men took, must, for want of that Foundation which these their Modern Guides first carefully laid, fail in no long Compass of Time.

Yet, on the other hand, if Men who are unacquainted with these things, should find every thing to be commended because it is *oldest*, not because it is *best* ; and afterwards should perceive that in many material and very curious Parts of Learning, the Ancients were, comparatively speaking, grossly ignorant, it would make them suspect that in all other things also they were equally deficient ; grounding their general Conclusion upon this common, tho' erroneous Principle, that because a Man is in an Error in those things whereof we can judge, therefore he must be equally mistaken in those things where we cannot. Now, this Extream can be no way more easily avoided,

P R E F A C E.

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avoided, than by stating the due Limits of *Ancient* and *Modern Learning*; and shewing, in every Particular, to which we ought to give the Pre-eminence.

But I had another, and a more powerful Reason, to move me to consider this Subject; and that was, that I did believe it might be very subservient to Religion it self. Among all the Hypotheses of those who would destroy our most Holy Faith, none is so plausible as that of the *Eternity of the World*. The fabulous Histories of the *Ægyptians*, *Chaldeans* and *Chineses* seem to countenance that Assertion. The seeming Easiness of solving all Difficulties that occur, by pretending that sweeping Floods, or general and successive Invasions of Barbarous Enemies, may have, by Turns, destroy'd all the Records of the World, till within these last Five or Six Thousand Years, makes it very desirable
to

to those whose Interest it is, that the *Christian Religion* should be but an empty Form of Words, and yet cannot swallow the *Epicurean* Whimfies of Chance and Accident. Now the Notion of the Eternity of Mankind, through infinite successive Generations of Men, cannot be at once more effectually and more popularly confuted, than by shewing how the World has gone on, from Age to Age, Improving; and consequently, that it is at present much more Knowing than it ever was since the earliest Times to which History can carry us.

But upon Examination of this Question, several Difficulties appeared, which were carefully to be removed. The greatest was, That some Sciences and Arts, of a very compounded Nature, seem really to have been more perfect anciently, than they are at present; which does, as it were, directly overthrow my Position.

Position. Therefore I was obliged, first, to enquire whether the Thing were true in Fact, or not : Next, If true, whether it proceeded from a particular Force of Genius, or from the Concurrence of some accidental Circumstances ; and also, whether, in case such Circumstances did concurr, in other Things, where those Accidents could have no place, the Moderns did not out-doe the Ancients so much, as, allowing the World to be no older than the *Mosaical* Account, it were reasonably to be expected they should. For then, if all these Questions could be satisfactorily resolved, the Objection would be no Objection at all ; and Mankind might still be supposed to improve, even though in some Particulars they should go back, and fall short of the Perfection which once they had.

There is no question but these Excellencies of the Ancients might
be

be accounted for, without hurting the *Mosaical* History, by resolving them into a particular Force of Genius, evidently discernible in former Ages, but extinct long since. But this seems to be of very ill Consequence, since it does, as it were, suppose that Nature were now worn out, and spent ; and so may tempt a *Libertine* to think that Men, as Mushrooms are said to do, sprung out of the Earth when it was fresh and vigorous, impregnated with proper Seminal Atoms, now, of many Ages, no longer seen.

When nothing therefore appeared to be so likely to take off the Force of the main Objection, as the finding of particular Circumstances which might suit with those Ages that did exceed ours, and with those things wherein they did exceed us, and with no other Age nor Thing besides ; I did at last please my self, that I had found these Circumstances ; and in
setting

setting them down, I took care, neither to be deceived my self, nor (as I hope) to deceive any Body else.

But what shall be said to those numerous Deluges, which, no Body knows how many Ages before that of *Noah*, are said to have carried away all Mankind, except here and there a Couple of ignorant Salvages, who got to some high Mountain, and from thence afterwards replenish'd the Earth? This Hypothesis (as these Men call it) is so very precarious, that there needs nothing to be replied to it, but only that it is as easily dis-proved by Denying, as defended by Asserting, since no Records nor Traditions of the Memory of the Facts are pretended; and something easier, because it may be demonstrably proved, that a general Flood cannot be effected without a Miracle, and if it could, that it must destroy the whole Race of Mankind, unless some few should be preserved,

as the Holy Scriptures assure us *Noah* was, who then would preserve the Memory of their own Deliverance, which destroys our *Libertines* Hypothesis. Now, partial Deluges are not sufficient : If one Country be destroyed, another is preserved ; and if the People of that Country have Learning among them, they will also have a Tradition, that it once was in the other Countries too, which are now dis-peopled.

Upwards, as far as the Age of *Hippocrates*, Knowledge may be traced to its several Sources : But of any Histories older than the *Mosaical*, there are no sort of Foot-steps remaining, which do not, by their Contradictions, betray their Falshood ; setting those aside which *Moses* himself has preserved. If any should pretend to solve the Difficulty, by supposing Invasions of Barbarous Enemies, which may have destroy'd the Memory of all past Knowledge, they

they will soon see new Difficulties arise, instead of having the old ones removed. There is Reason to suppose that Invasions of Barbarous Enemies were anciently of the same Nature, as they have been since ; that is, they might possibly make entire Conquests of the Countries which were so invaded ; but we cannot suppose that any of these pretended *Ante-Mosaical* Conquests, of which we are now speaking, made a greater Alteration than that which the *Goths* and *Vandals* made in the *Roman* Empire ; that which the *Saracens* first, and the *Turks* afterwards made in the *Greek* ; or that of the *Tartars* in *China*. The *Goths* and *Vandals* had scarce any Learning of their own ; and if we consider Politeness of Manners, and nothing else, they seem truly to have deserved the Name of *Barbarous* : They therefore took some of the *Roman* Learning, as much as they thought was for their Turn, the

Memory whereof can never be said to have been quite extinct during the whole Course of those ignorant Ages which succeeded, and were the Effects of their Conquests. The *Saxons* in *England*, being taught by the *British* Refugees, who planted themselves in *Ireland*, and from thence, by the Way of *Scotland*, came by degrees back again into their own Country, had as much, if not more Learning than any of their *European* Neighbours. The *Saracens* applied themselves to Learning in earnest, as soon as the Rage of their first Wars was over; and resolving to make theirs a compleat Conquest, robb'd the *Greeks* of their Knowledge, as soon as they had possessed themselves of the most valuable Parts of their Empire. The *Turks* have learnt enough, not to be thought illiterate, though less proportionably than any of the fore-mentioned Conquerors: They can Write and Read; they preserve some
rude

rude Annals of their own Exploits, and general Memorials, it matters not how imperfect of precedent Times: And they have lost none of the Mechanical Arts that they had occasion for, which they found in the Countries where they came, since they either work themselves, or employ others that shall; which, to the present Purpose, is all one. The *Tartars* have, since their Conquest, incorporated themselves with the *Chinese*, and are now become one People, only preserving the Authority still in their own Hands.

In all these Instances one may observe, that how barbarous soever these several Conquerors were when first they came into Civilized Countries, they, in time, learnt so much at least of the Arts and Sciences of the People whom they subdued, as served them for the necessary Uses of Life; and thought it not beneath them to be instructed by those to

whom they gave Laws. Wherefore there is Reason to believe, that since Mankind has always been of the same Make, former Conquests would have produced the same Effects, as we see later ones have done. In short, We cannot say that ever any one Invention of considerable Use has been laid aside, unless some other of greater and more general Use has come in the room of it, or the Conquerors took it away, for some Political Reason, either letting it totally die, or supplying it with something else, which to them seemed a valuable Equivalent. Have any of these Conquerors, since *Tubal-Cain's* Time, once suffered the Use of Metals, Iron for instance, or Gold, to be lost in the World? Hath the Use of Letters been ever intermitted since the Time of that *Cadmus*, whoever he was, that first found them out? Or, was Mankind ever put to the trouble of Inventing them a second time?

time ? Have the Arts of Planting, of Weaving, or of Building, been at any time, since their first Invention, laid aside ? Does any Man believe that the Use of the *Load-stone* will ever be forgotten ? Are the *Turks* so barbarous, or so spiteful to themselves, that they will not use Gunpowder, because it was taught them by *Christians* ? Does not *Garcilasso de la Vega* inform us, that the *Peruvians* would have worshipped the *Spaniards* as Gods, if their Cruelties had not soon led these harmless People to take them to be something else, because they taught them the Use of *Iron* and *Looking-Glasses* ? (Whence we may be sure that this innocent and honest Nation never had Learning amongst them before.) Do not we find, that they and the *Mexicans*, in the compass of Four or Five Hundred Years, which is the utmost Period of the Duration of either of their Empires, went on still

Improving? (As the whole *New World* would, probably, have done in not many Ages, if these two mighty Nations had extended their Conquests, or if new Empires had arisen, even though the *Spaniards* had never come among them; since those two Empires of *Mexico* and *Peru*, which were the only considerable Civilized Governments in *America*, got constant Ground of their Enemies; having the same Advantages over them, as formed Troops have over a loose Militia.) Or, can we think that they would again have relapsed to their old Barbarity of themselves, when once they had been weary of those Arts, and of that Learning (such as it was) which then they had? Men are not such stupid Creatures, but if an Invention is at any time found out, which may do them great and eminent Service, they will learn it, and make use of it, without enquiring who it is they learn

learn it of ; or taking a Prejudice at the Thing , because, perhaps, they may be indebted to an Enemy for it. *Barbarous* and *Polite* are Words which rather referr to Matters of *Breeding* and *Elegance*, than of *Sound Judgment*, or *Good Sense* ; which first shew themselves in making Provision for Things of Convenience, and evident Interest, wherein Men scarce ever commit palpable Mistakes. So that it is unaccountable that the History of Learning and Arts should be of so confessedly late a Date, if the Things themselves had been many Ages older ; much more if the World had been Eternal.

Besides these, I had a Third Reason to engage me to this Undertaking ; which was, the Pleasure and Usefulness of those Studies to which it necessarily led me : For Discoveries are most talked of in the Mechanical Philosophy, which has been but lately revived in the World.

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Its Professors have drawn into it the whole Knowledge of Nature, which, in an Age wherein Natural Religion is denied by many, and Revealed Religion by very many more, ought to be so far known at least, as that the Invisible Things of the Godhead may be clearly proved by the Things that are seen in the World. Wherefore I thought it might be Labour exceedingly well spent, if, whilst I enquired into what was anciently known, and what is a new Discovery, I should at the same time furnish my Mind with new Occasions of admiring the boundless Wisdom and Bounty of that Almighty and Beneficent Essence, in and by whom alone this whole Universe, with all its Parts, live, and move, and have their Being.

I had also a fresh Inducement to this Search, when I found to how excellent purpose my most Learned and Worthy Friend, Dr. *Bentley*, had, in his late incomparable Discourses

courses against *Atheism*, shewn what admirable Use may be made of an accurate Search into Nature, thereby to lead us directly up to its Author, so as to leave the unbelieving World without Excuse.

But, after all that I have alledged for my self, I must acknowledge, that I soon found that I did not enough consider *Quid valeant humeri, aut quid ferre recusent*. The Subject was too vast for any one Man, much more for me, to think to do it Justice; and therefore, as soon as I had drawn up a rude Scheme of the Work, I intended to have given it over, if the importunate Sollicitations of my very Ingenious Friend, *Anthony Hammond*, Esq; had not at last prevailed upon me to try what I could say upon it: And it was so difficult a Thing to me to refuse what was so earnestly pressed by a Person who was so very dear to me, and which in the present Case was a great deal more,

more, One, for whose Sence and Judgment, all that know him have so very particular a Regard, that I resolved at last, rather to hazard my own Reputation, than to deny his Request ; especially, since I hoped that it might, perhaps, give some Body else an Opportunity to compleat that, of which this Treatise is a very imperfect Essay.

I hope I need make no Apology, that a great Part of this Discourse may seem too Polemical for a Writing of this kind : For that could not be well avoided, because the Argument it self has been so much debated. The ablest Men of the two opposite Parties, are, Sir *William Temple*, and *Monsieur Perrault* : They are two great Men, and their Writings are too well known, and too much valued, to be over-looked. They cloath their Thoughts in so engaging a Dress, that a Man is tempted to receive all they say, without

without Examination ; and therefore I was afraid that I might have been accused of betraying my Cause, if, whilst I endeavoured throughout the whole Controversie to act the Part of a Mediator, and to give to every Side its just due, I had omitted what these two elegant Advocates had severally alledged for their respective Hypotheses.

What Censure the World will pass upon my Performance, I know not ; only I am willing to think, that those who shall not agree to what I say, will grant that I have represented the Opinions of other Men with Impartiality and Candour, and that I have not discovered any Bigottry or Inclination to any one particular Side ; which will be a good Step to make them believe, that I shall not obstinately defend any one Position, which may hereafter be proved to be erroneous.

June 11.
1694.

P O S T-

POSTSCRIPT.

SINCE the *Second Edition* of my Book was Printed off, we have had an Account in the *Journal des Sçavans*, that Monsieur Perrault has publish'd a *THIRD PART* of his *Parallel between the Ancients and the Moderns*; in which he undertakes to prove, that the Skill of the Moderns in *Geography, Philosophy, Medicine, Mathematics, Navigation, &c.* is preferable to that of the Ancients. The Book is not yet, that I know of, in *England*, and possibly may not be procurable in some time. I thought it necessary, however, to take notice, that I have had a bare Intimation of such a Book, and no more; that so if in any Material Things we should happen to Agree, (as writing upon the same Argument, tis very probable

bable we may,) I might not hereafter be thought a Plagiary. There was no danger hitherto ; since as far as he had gone before, I either openly dissented from him, or directly abridged his Words.

Pag. 220. I have, upon his own Authority, given *Columbus* the Credit of Discovering that little Bone in the Inner Cavity of the Ear, which, from its figure, is commonly call'd the *Stirrup* : And indeed, he being the first that ever mention'd it in Print, and pretending that it was his own Invention, seems to have the fairest Plea to the Honour of it. But *Philippus Ingrassias*, who wrote some time before *Columbus*, certainly knew it : For, in his Commentary upon *Galen de Ossibus*, he expressly mentions it ; and for that Reason, *Falloppius*, who could not want Opportunity of being truly inform'd, and was a right honest Man, and a judicious Anatomist,

Anatomist, and one to whom many Discoveries are owing, ascribes it to him in such Terms as put the Controversie beyond dispute. *Tertium*. (says Falloppius, speaking of the little Bones in the Inner Cavity of the Ear) *si nolumus debitâ laude quenquam defraudare, invenit & promulgavit primus Johannes Philippus ab Ingrassia Siculus Philosophus ac Medicus Doctissimus dum Neapolitano in Gymnasio publicè Anatomem doceret* : And a little after ; *Deus tamen gloriosus scit Ingrassiæ fuisse inventum ; atque cum Stapedis aut Staffæ nostrorum Patrum effigiem gestet, merito Stapedis nomine ab eodem fuisse donatum.* Had Ingrassias's Book been printed in his Lifetime, there had never been room for a Dispute ; though his Right was so well known, that Bartholomæus Eustachius, who wrote soon after Columbus, and put in his Claim to the Glory of the Discovery,

covery, mentions *Ingrassias's* Preferences, which *Columbus* does not.

Some, perhaps, will think this Enquiry into the Author of this Discovery, to be a needless Affectation of Exactness. But 'tis so much the Duty of all Writers, not to mis-lead their Readers in the smallest Particular, that they are obliged to rectifie their own Mistakes where-ever they find them, and not to be afraid of being accused of Negligence; since Truth, and not Glory, ought to be the ultimate End of all our Labours and Enquiries.

I am obliged also to take notice, that I have lately got a sight of *Servetus's Christianismi Restitutio*, out of which that famous Passage concerning the Circulation of the Blood, which I set down at length, p. 230. was copied long ago by that worthy Member of the Royal Society, Mr. *Abraham Hill*, from whom Mr. *Bernard*

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had it. My Lord Bishop of *Norwich*, whose incomparable Library contains every thing that is rare and excellent, did me the honour to show it me. His Manuscript Copy is a Transcript of that Printed one which is preserved in the *Landtgrave* of *Hesse's* Library at *Cassels*; the very Book that was perused by *Sandius*, who gives an Account of it in his *Bibliotheca Antitrinitariorum*. The Book it self was Printed (at *Basil*, says *Sandius*) in *MDLIII*. and is a Collection of all *Servetus's* Theological Tracts, though considerably enlarged: Some of which, and particularly his *Discourses concerning the Trinity*, had been published *XX* Years before. This I mention, because, if what *Servetus* says of the Passage of the Blood through the Lungs be in the former Edition, the Discovery has so much the greater Antiquity. The Passages now in question, are
in

in the *Fifth Book of the Trinity*,
where he treats of the *Holy Ghost* :

There he takes pains to

prove, (a) that the *Sub-*
stance of the Created Spi-
rit of Jesus Christ is Es-
entially joined to the Sub-

(a) He says he intro-
duces this Disputation,
ut inde intelligas ipsi Spi-
ritus Sancti Substantia esse
essentialiter adjunctam cre-
ati Spiritus Christi Sub-
stantiam.

stance of the Holy Ghost. To explain
this, he talks much of God's Breath-
ing the Soul into Man, which, by
his manner of Explication, it is plain,
he believed to be Material. The

Way he proceeds is this : ' He sup-

' poses Three Spirits in Man's Body,

' *Natural, Vital, and Animal* ; which

' (says he) are (b) really not Three,

' but Two distinct Spirits. The

' *Vital* is that which is communi-

' cated by *Anastomoses* from the

' Arteries to the Veins, in which

' it is called *Natural*. The *Blood*

' therefore is *First*, whose Seat is

(b) Qui
vere non
sunt tres,
sed duo Spi-
ritus di-
stincti. Vi-
talis est spi-
ritus qui
per Anasto-
moses ab
Arteriis
communi-
catur Ve-
nis, in qui-

bus dicitur Naturalis. Primus ergo est Sanguis, cujus sedes est in hepate
& Corporis Venis : Secundus est Spiritus vitalis, cujus sedes est in corde,
& corporis arteriis : Tertius est spiritus animalis, quasi lucis radius, cujus
sedes est in cerebro & corporis nervis.

‘ in the Liver and Veins : The
 ‘ *Vital Spirit* is *Second*, whose Seat
 ‘ is in the Heart and Arteries :
 ‘ The *Animal Spirit* is *Third*,
 ‘ which is like a Ray of Light,
 ‘ and has its Seat in the Brain and
 ‘ Nerves.’ So that he makes the
 beginning of the whole Operation
 to be in the Liver ; which, ac-
 cording to him, is the original
 Work-house of the Blood, which
 he calls the *Soul* or *Life*, as it is
 called in the Old Testament.

Now to understand how the
 Blood is the Life, he
 says, (c) ‘ We must first
 ‘ understand the substan-
 ‘ tial Generation of the Vi-
 ‘ tal Spirit, which is com-
 ‘ pounded of, and nou-
 ‘ rished by Inspired Air,
 ‘ and the subtlest part of
 ‘ the Blood : The *Vital*
 ‘ Spirit has its original
 ‘ in the left Ventricle of
 ‘ the

(c) *Ad quam rem est
 prius intelligenda substan-
 tialis Generatio ipsius Vi-
 talis Spiritus, qui ex Aëre
 inspirato & subtilissimo san-
 guine componitur & nutri-
 tur : Vitalis spiritus in
 sinistro cordis Ventriculo
 suam originem habet, ju-
 vantibus maxime pulmo-
 nibus ad ipsius generatio-
 nem. Est spiritus tenuis,
 caloris vi elaboratus, flavo
 colore, ignea potentia, ut sit
 quasi ex puriore sanguine
 lucens vapor, substantiam
 continens aque, aeris &*

' the Heart, by the as-
 ' sistance of the Lungs,
 ' which chiefly contri-
 ' bute to its generation.
 ' It is a *subtile* Spirit (so
 ' I render *tenuis* here)
 ' wrought by the force
 ' of Heat ; of a florid
 ' Colour, having the
 ' power of Fire : so
 ' that it is a sort of
 ' shining Vapour made
 ' of the purer part of
 ' the Blood, containing
 ' within it self the sub-
 ' stance of Water, Air
 ' and Fire. It is made
 ' in the Lungs, by the
 ' mixture of Inspired Air
 ' with that Elaborated
 ' Subtile Blood which
 ' the Right Ventricle of
 ' the Heart communi-

ignis : generatur ex factâ
 in pulmone mixtione in-
 spirati aëris cum elaborato
 subtili sanguine, quem dex-
 ter ventriculus sinistro
 communicat. Fit autem
 communicatio hæc non per
 parietem cordis medium,
 ut vulgo creditur, sed mag-
 no artificio à dextro cordis
 ventriculo, longo per pul-
 mones ductu, agitur san-
 guis subtilis : à pulmonibus
 præparatur, flavus efficitur,
 & à venâ arteriosâ in ar-
 teriam venosam transfun-
 ditur ; deinde in ipsâ ar-
 teriâ venosâ inspirato aëri
 miscetur, & expiratione
 à fuligine repurgatur :
 atque ita tandem à sini-
 stro cordis ventriculo totum
 mixtum per Diastolen at-
 trahitur, apta supellex ut
 fiat spiritus vitalis.

Quod ita per pulmones
 fiat communicatio & præ-
 paratio, docet conjunctio
 varia & communicatio
 venæ arteriosæ cum arteriâ
 venosâ in pulmonibus. Con-
 firmat hoc magnitudo insig-
 nis venæ arteriosæ, quæ
 nec talis nec tanta facta
 esset, nec tantam à corde
 ipso vim purissimi sanguinis
 in pulmones emitteret ob
 solum eorum nutrimentum,
 nec cor pulmonibus hac ra-
 tione serviret, cum præ-
 fertim antea in embryo-

solerent pulmones ipsi aliunde nutriri ob membranulas seu ——— Cordis
 usque ad horam natiuitatis nondum apertas, ut docet Galenus.

‘ cates to the Left. Now this Com-
‘ munication is not made through
‘ the *Septum* of the Heart, as is
‘ commonly believed, but the subtil
‘ Blood is very artificially agitated
‘ by a long passage through the
‘ Lungs from the right Ventricle of
‘ the Heart, and is prepared, made
‘ florid by the Lungs, and trans-
‘ fused out of the *Arterious Vein*
‘ into the *Venous Artery*, and at last
‘ in the *Venous Artery* it self it is
‘ mixed with the inspired Air, and
‘ by expiration purged from its
‘ Dregs. And thus at length the
‘ whole Mixture is attracted, by the
‘ *Diafbole* of the Heart, into the left
‘ Ventricle, being now a fit Sub-
‘ stance out of which to form the
‘ Vital Spirit.

‘ Now that this Communication
‘ and Preparation is made by the
‘ Lungs, is evident from the various
‘ Conjunction and Communication
‘ of the *Arterious Vein* with the
‘ *Venous*

‘*Venous Artery* in the Lungs ; the
 ‘ remarkable largeness of the *Arte-*
 ‘ *rious Vein* does likewise confirm
 ‘ it : since it would never have
 ‘ been made of that Form and Bulk,
 ‘ nor would it have emitted so
 ‘ great a quantity of very pure
 ‘ Blood out of the Heart into the
 ‘ Lungs, if it had been only for
 ‘ their Nourishment : nor would
 ‘ the Heart have been this way ser-
 ‘ viceable to the Lungs, since the
 ‘ *Fœtus* in the Womb are other-
 ‘ wise nourished, by reason of the
 ‘ closeness of the Membranes of the
 ‘ Heart, which are never opened
 ‘ till the Birth of the Child, as *Galen*
 ‘ teaches.’ So that the whole Mix-
 ‘ ture of Fire and Blood is made
 ‘ in the Lungs where there is a
 ‘ (d) ‘ Transfusion out of the *Ar-*
 ‘ *terious Vein* into the *Venous Artery*,
 ‘ which *Galen* took no notice of.

(d) Trans-
fusio à venâ

arteriosâ ad arteriam venosam propter spiritum, à Galeno non animad-
versa.

Afterwards he says, (e) ' That

(e) Ille itaque spiritus
vitalis à sinistro cordis ven-
triculo in arterias totius
corporis deinde transfun-
ditur, ita ut qui tenuior
est, superiora petat, ubi ma-
gis adhuc elaboratur, præ-
cipue in plexu retiformi sub
basi cerebri sito, ubi ex
vitali fieri incipit animalis
ad propriam rationalis a-
nimæ rationem accedens.

' this *Vital Spirit* is trans-
' mitted from the left
' Ventricle of the Heart
' into the Arteries of the
' whole Body, so that
' the more subtile Parts
' get upwards where they
' are yet more refined,
' especially in the *Plexus Retiformis*,
' which lies in the Base of the Brain,
' where, from *Vital*, it begins to
' become *Animal*, and approaches to
' the proper Nature of the Rational
' Soul.'

This he reasons long upon, to
prove, that the Blood is the Soul of
Man, and seems to allow no other
but what is thus made ; first elabo-
rated in the Liver, thence carried
by the Veins into the right Ven-
tricle of the Heart, and so into the
Lungs ; where being mix'd with
Air, it becomes *Vital* ; and after-
wards being carried by the Arteries
into

into the Brain, it is there further sublimed, till it receives its last Perfection, so as to be fit to perform the noblest Operations of the Animal Life.

If we compare now this Notion thus explained by *Serzetius*, with *Dr. Harvey's Theory of the Circulation of the Blood*, we shall plainly see that he had imperfect Glimmerings of that Light which afterwards *Dr. Harvey* communicated with so bright a Lustre to the learned World: Which Glimmerings, since they were so true, having nothing in them of a False Fire, I much wonder that he went no further; though at the same time I cannot but heartily congratulate the Felicity of my own Country, which produced the Man that first saw the Importance of these noble Hints which he improved into a Theory, and thereby made them truly useful to Mankind.

Before

Before I conclude this *Postscript*, it will be expected, perhaps, that I should say something concerning this New Edition. I have taken the liberty which all Men have ever allowed, to Alter and Add where I thought any thing was faulty or deficient, and now and then I omitted some few Passages that did not so immediately relate to the design of the Book.

By one of these Additions, that of *Surgery*, which Mr. *Bernard* put in at my request, it will be yet further seen, that I would have nothing allowed to the Moderns, where the Cause will not strictly bear it. I had conceded so much to them before, that it was generally thought I was bias'd on their behalf: It was not enough to tell the World I was of no Side, the contrary was taken for granted, since in so many Particulars I actually gave them the Pre-eminence, when Sir *W. T.* had given it them almost

almost in nothing. I must own, I was glad it could be proved that the World has not actually lost its Vigour, but that a gradual Improvement is plainly visible; which this Instance that Mr. *Bernard* has so incontestably made out, does by no means contradict. For *Surgery*, though it is the certainest, yet it is the simplest part of *Medicine*; There the Operator is more let into his Work, which does not depend so much upon Conjecture as *Physic*. The reproach therefore of its comparatively small Proficiency, is to be laid upon the *Men*, not the *Art*; it has been for these last Ages esteemed too Mechanical for Men of Liberal Education, and fine Parts, to busie themselves about: So that I question not but if as many learned Men had cultivated *Surgery* for these last CCC Years, as have employed themselves in some other
Parts

Parts of Natural and Mathematical Learning, it would have met with as proportionable an Encrease; unless we should say, that it is already come to its highest Perfection; which, whether it be or no, I cannot pretend to decide.

The entire Discourses which are added, are printed by themselves, for the Satisfaction of those who have bought the First Edition, and have no Curiosity to compare that with the Second. But I have not re-printed those lesser Additions which are interwoven into the Body of the Book, both because they would appear only like a parcel of loose Scraps, and because something was to be done in compliance to the Book-seller, who, (having once more, at a time when Printing labours under so great Discouragements, ventured
to

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to publish so large a Book which
so few People will care to read)
desired that this Second Edition
might be made as Valuable to him
as well it cou'd,

April 30.
1697.

CON-

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REFLE-

REFLECTIONS

UPON

Ancient and Modern

LEARNING.

CHAP. I.

General Reflections upon the State of the Question.

THE present State of the Designs and Studies of Mankind is so very different from what it was CL Years ago, that it is no Wonder if Men's Notions concerning them vary as much as the Things themselves. This great Difference has arisen from the Desire which every Man has, who believes that he can do greater Things than his Neighbours, of letting them see how much he does excel them: For that will necessarily oblige him to omit no Opportunity that offers it self to do it, and

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after-

afterwards to express his Satisfaction that he has done it. This is not only visible in particular Persons, but in the several Ages of Mankind, (which are only Communities of particular Persons, living at the same time,) as often as their Humours, or their Interests, lead them to pursue the same Methods. This Emulation equally shews it self, whatsoever the Subject be, about which it is employed; whether it be about Matters of Trade, or War, or Learning, it is all one: One Nation will strive to out-do another, and so will one Age too, when several Nations agree in the pursuit of the same Design; only the Jealousie is not so great in the Contest for Learning, as it is in that for Riches and Power; because these are Things which enable their Possessors to do their Neighbours greater mischief proportionably as they possess them, so that it is impossible for bordering Nations to suffer with any patience that their Neighbours should grow as great as they in either of them, to their own prejudice; though they will all agree in raising the Credit of the Age they live in upon the Account of these Advantages, that being the only Thing wherein their Interests do perfectly unite.

If this Way of Reasoning will hold, it may be asked how it comes to pass, that
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the Learned Men of the last Age did not so generally pretend that they out-did the Ancients, as our present Learned Men do now ? They would, without question, could they have had any Colour for it : It was the Work of one Age to remove the Rubbish, and to clear the Way for future Inventors. Men seldom strive for Mastery, where the Superiority is not in some sort disputable ; then it is that they begin to strive : Accordingly, as soon as there was a fair Pretence for such a Dispute, there were not wanting those who made the most of it, both by exalting their own Performances, and disparaging every Thing that had been done of that kind by their Predecessors. 'Till the New Philosophy had gotten ground in the World, this was done very sparingly ; which is but within the compass of XL or L Years. There were but few before, who would be thought to have exceeded the Ancients, unless it were some Physicians, who set up *Chymical* Methods of Practice, and Theories of Diseases, founded upon *Chymical* Notions, in opposition to the *Galenical* : But these Men, for want of conversing much out of their own Laboratories, were unable to maintain their Cause to the general Conviction of Mankind : The Credit of the Cures which

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they

they wrought, not supporting them enough against the Reasonings of their Adversaries.

Soon after the Restauration of King Charles II. upon the Institution of the *Royal Society*, the Comparative Excellency of the Old and New Philosophy was eagerly debated in *England*. But the Disputes then managed between *Stubbe* and *Glanville*, were rather Particular, relating to the *Royal Society*, than General, relating to Knowledge in its utmost extent. In *France* this Controversie has been taken up more at large: The *French* were not satisfied to argue the Point in Philosophy and Mathematicks, but even in Poetry and Oratory too; where the Ancients had the general Opinion of the Learned on their Side. Monsieur de Fontenelle, the celebrated Author of a Book concerning the *Plurality of Worlds*, begun the Dispute about six Years ago, in a little Discourse annexed to his *Pastorals*. He is something shy in declaring his Mind; at least, in arraigning the Ancients, whose Reputations were already established; though it is plain, he would be understood to give the Moderns the Preference in Poetry and Oratory, as well as in Philosophy and Mathematicks. His Book being received in *France* with great Applause, it was opposed

posed in *England* by Sir *William Temple*, who, in the *Second Part* of his *Miscellanea*, has printed an *Essay* upon the same Subject. Had Monsieur *de Fontenelle's* Discourse passed unquestion'd, it would have been very strange; since there never was a New Notion started in the World, but some were found who did as eagerly contradict it.

The Hypothesis which Sir *William Temple* appears for, is received by so great a Number of Learned Men, that those who oppose it, ought to bring much more than a positive Affirmation; otherwise, they cannot expect that the World should give Judgment in their Favour. The Question now to be asked, has formerly been enquired into by few, besides those who have chiefly valued Oratory, Poesie, and all that which the *French* call the *Belles Lettres*; that is to say, all those Arts of Eloquence, wherein the Ancients are of all hands agreed to have been truly excellent. So that Monsieur *de Fontenelle* took the wrong Course to have his Paradox be believed; for he asserts all, and proves little; he makes no Induction of Particulars, and rarely enters into the Merits of the Cause: He declares, that he thinks Love of Ease to be the reigning Principle amongst Mankind; for which Reason,

perhaps, he was loth to put himself to the trouble of being too minute. It was no wonder therefore if those to whom his Proposition appeared entirely New, condemned him of *Sufficiency, the worst Composition out of the Pride and Ignorance of Mankind.*

However, since his Reasonings are, in the main, very just, especially where he discourses of the Comparative Force of the Genius's of Men in the several Ages of the World, and of the Equal Force of Mens Understandings absolutely considered in all Times since Learning first began to be cultivated amongst Mankind, I resolved to make some Enquiry into the Particulars of those Things which are asserted by some to be Modern Discoveries, and vindicated to the Ancients by others.

The General Proposition which Sir *William Temple* endeavours to prove in his *Essay*, is this, "That if we reflect
 " upon the Advantages which the An-
 " cient *Greeks* and *Romans* had, to im-
 " prove themselves in Arts and Sciences,
 " above what the Moderns can pretend
 " to ; and upon that Natural Force of Ge-
 " nius, so discernible in the earliest Wri-
 " ters, whose Books are still extant, which
 " has not been equalled in any Persons
 " that

* that have set up for Promoters of Knowledge in these latter Ages ; and compare the Actual Performances of them both together, we ought in Justice to conclude, that the Learning of the present Age, is only a faint, imperfect Copy from the Knowledge of former Times, such as could be taken from those scatter'd Fragments which were saved out of the general Shipwreck.

The Question that arises from this Proposition will be fully understood, if we enquire, (1.) Into those Things which the Ancients may have been supposed to bring to Perfection, (in case they did so,) not because they excelled those that came after them in Understanding, but because they got the Start by being born first. (2.) Whether there are any Arts or Sciences which were more perfectly practised by the Ancients, though all imaginable Care hath been since used to equal them. (3.) Whether there may not be others wherein they are exceeded by the Moderns, though we may reasonably suppose that both Sides did as well as they could.

When such Enquiries have once been made, it will be no hard matter to draw such Inferences afterwards, as will enable us to do Justice to both Sides.

It must be owned, that these Enquiries do not immediately resolve the Question which Sir *William Temple* put, for he confounds two very different Things together; namely, *Who were the Greatest Men, the Ancients, or the Moderns?* and, *Who have carried their Enquiries farthest?* The first is a very proper Question for a Declamation, though not so proper for a Discourse, wherein Men are supposed to reason severely; because, for want of Mediums whereon to found an Argument, it cannot easily be decided: For, though there be no surer Way of judging of the Comparative Force of the Genius's of several Men, than by examining the respective Beauty or Subtilty of their Performances; yet the good Fortune of appearing first, added to the Misfortune of wanting a Guide, gives the first Comers so great an Advantage, that though, for instance, the *Fairy Queen*, or *Paradise Lost*, may be thought by some to be better Poems than the *Ilias*; yet the same Persons will not say but that *Homer* was at least as great a Genius as either *Spencer* or *Milton*. And besides, when Men judge of the Greatness of an Inventors Genius barely by the Subtilty and Curiosity of his Inventions, they may be very liable to Mistakes in their Judgments, unless they know and are able to judge of the Easiness

or

Ancient and Modern Learning.

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or Difficulty of those Methods, or Ratiocinations, by which he arrived at, and perfected these his Inventions; which, with due Allowances, is equally applicable to any Performances in Matters of Learning of any sort.

It will however be some Satisfaction to those who are concerned for the Glory of the Age in which they live, if, in the first place it should be proved, That as there are some parts of real and useful Knowledge, wherein not only great Strictness of Reasoning, but Force and Extent of Thought is required thoroughly to comprehend what is already invented, much more to make any considerable Improvements, so that there can be no Dispute of the Strength of such Men's Understandings, who are able to make such Improvements; so in those very Things, such, and so great Discoveries have been made, as will oblige impartial Judges to acknowledge, that there is no probability that the World decays in Vigour and Strength, if (according to Sir *William Temple's* Hypothesis) we take our Estimate from the Measure of those Men's Parts, who have made these Advancements in these later Years; especially, if it should be found that the Ancients took a great deal of Pains upon these very Subjects, and had able Masters
to

to instruct them at their first setting out :
 And, Secondly, If it should be proved,
 that there are other curious and useful
 Parts of Knowledge, wherein the An-
 cients had as great Opportunities of ad-
 vancing and pursuing their Enquiries, as
 the Moderns, which were either slightly
 passed over, or wholly neglected, if we
 set the Labours of some few Men aside :
 And, Lastly, If it should be proved, that
 by some great and happy Inventions,
 wholly unknown to former Ages, new
 and spacious Fields of Knowledge have
 been discovered, and, pursuant to those
 Discoveries, have been viewed, and search-
 ed into, with all the Care and Exactness
 which such noble Theories required. If
 these Three Things should be done, both
 Questions would be at once resolved, and
 Sir *William Temple* would see that the
 Moderns have done something more than
 Copy from their Teachers, and that there
 is no absolute necessity of making all those
 melancholy Reflections upon (a) the *Suffi-*
ciency and Ignorance of the present Age,
 which he, moved with a just Resentment
 and Indignation, has thought fit to be-
 stow upon it.

(a) Pag. 5.
 55, 56.

How far these Things *can* or *cannot* be pro-
 ved, shall be my Business in these follow-
 ing Papers to enquire. And in these Enqui-
 ries

ries I shall endeavour to act the part of a Mediator as nicely as I can, that so those who may not perhaps be satisfied with the Force of my Reasonings, yet may acknowledge the Impartiality of him that makes use of them. But First, Of those Things wherein, if the Ancients have so far excelled as to bring them to Perfection, it may be thought that they did it because they were born before us.

CHAP. II.

*Of the Moral and Political Knowledge
of the Ancients and Moderns.*

I Have often thought that there could not be a pleasanter Entertainment to an inquisitive Man, than to run over the first Reasonings which he had in his Infancy, whilst he was gathering his Collection of *Idea's*, and labouring to express those Sounds, by which he perceived his Mother and Nurse made themselves be understood. We should then see the true Gradations by which Knowledge is acquired: We should judge, perhaps, what is in it self hard, and what easie, and also what it is that makes them so; and thereby

by make a better Estimate of the Force of Men's Understandings, than can now be made. But this Reminiscence of our first Idea's it is in vain to lament for, since it can never be had. Yet it may in general be observed, that the first Thoughts of Infants are concerning Things immediately necessary for Life. That Necessity being in some measure satisfied, they spend their Childhood in Pleasure, if left to their own liberty, till they are grown up. Then they begin to reflect upon the Things that relate to Prudence and Discretion, and that more or less, according as their Circumstances oblige them to carry themselves more or less warily towards those with whom they converse. This is, and ever was, general to all Mankind; whereas they would not take so much pains to cultivate the Arts of Luxury and Magnificence, if they were not spurr'd on by Pride, and a Desire of not being behind other Men. So that it is reasonable to suppose, that, all those Things which relate to Moral Knowledge, taken in its largest Extent, were understood by the ancient *Agyptians, Greeks and Romans*, in as great Perfection as the Things themselves were capable of. The Arts of Governing of Kingdoms and Families; of Managing the Affections and Fears of
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the unconstant Multitude; of Ruling their Passions, and Discourſing concerning their ſeveral Ways of Working; of Making prudent Laws, and Laying down wiſe Methods by which they might be the more eaſily and effectually obeyed; of Converſing each with other; of Giving and Paying all that Reſpect which is due to Men's ſeveral Qualities: In ſhort, all that is commonly meant by knowing the World, and underſtanding Mankind; all Things neceſſary to make Men Wiſe in Counſel, Dexterous in Buſineſs, and Agreeable in Converſation, ſeem to have been in former Ages thoroughly underſtood, and ſucceſſfully practiſed.

There is, indeed, great Reaſon to fear, that in the Arts of Knavery and Deceit, the preſent Age may have refined upon the foregoing; but that is ſo little for its Honour, that common Decency does almoſt as much oblige me to throw a Veil over this Reproach, as common Inter-eſt does all Mankind to put an effectual Stop to its Encreaſe. But ſince we are enquiring into Excellencies, not Blemiſhes and Imperfections, there ſeems to be great Reaſon to affirm, that After-Ages had no need to invent Rules, which already were laid down to their Hands; but that their Buſineſs was chiefly to re-examine

examine them, and to see which were proper for their Circumstances, considering what Alterations Time sensibly introduces into the Customs of every Age ; and then to make a wise Choice of what they borrowed, that so their Judgment might not be question'd by those who should have the Curiosity to compare the Wisdom of several Ages together.

If we descend into Particulars, these Observations will, I believe, be found to be exactly true : The minutest Differences between Vertue and Vice of all sorts, are judiciously stated by *Aristotle*, in his *Ethicks* to *Nicomachus* ; and the Workings of our Passions are very critically described in his Books of *Rhetorick*. *Xenophon's* *Cyrus* shews that he had a right Notion of all those Things which will make a Prince truly Great and Wise. The Characters of all those Vices which are immediately taken notice of in common Conversation, are admirably drawn by *Theophrastus*. Nothing can give a clearer *Idea* of one that has lived in Difficult Times, than the Writings of *Tacitus* ; in whose Histories, almost every Thing is told in such a Way, as we find by our own Experience that Ill Usage and Disappointments lead Men to censure and report the Actions of their Governors. Great Skill
in

in all the Arts and Secrets of Persuasion appear every where in *Demosthenes* and *Tully's* Orations, in *Quintilian's* Institutions, and the Orations in *Thucydides*, *Sallust* and *Livy*. The Duties of Mankind in Civil Life, are excellently set forth in *Tully's* Offices. Not one Passion of the Soul of Man has been untouch'd, and that with Life too, by some or other of the Ancient Poets. It would require a Volume to state these Things in their full Light; and it has been frequently done by those who have given Characters and Censures of Ancient Authors. So that one may justly conclude, that there is no one Part of Moral Knowledge, strictly so called, which was not known by the Ancients, so well as by the Moderns.

But it would be a wrong Inference to conclude from thence, that the Ancients were greater Genius's than the Men of the present Age. For, by *Sir William Temple's* Confession (b), the *Chineses* and *Peruvians* were governed by excellent Laws: And *Confucius* and *Mango Capac* may well be reckoned amongst the Law-givers and Philosophers of those which are commonly called Learned Nations; though neither of them, especially the Latter, can justly be suspected of learning what they knew

(b) *Essay 3. upon Heroick Virtue, sect. 2, 3.*

knew by Communication from their Neighbours. From whence Sir *William Temple* rightly concludes, that Common Sense is of the Growth of every Country ; and that all People who unite into Societies, and form Governments, will in time make prudent Laws of all kinds ; since it is not Strength of Imagination, nor Subtilty of Reasoning, but Constancy in making Observations upon the several Ways of Working of Humane Nature, that first stored the World with Moral Truths, and put Mankind upon forming such Rules of Practice as best suited with these Observations. There is no Wonder therefore, that in a long Series of Ages, which preceded *Socrates* and *Plato*, these Matters were carried to a great Perfection ; for as the Necessity of any Thing is greater, so it will be more and more generally studied : And as the Subject of our Enquiries is nearer to us, or easier to be comprehended in it self ; so it will be more thoroughly examined, and what is to be known, will be more perfectly understood. Both these concur here : Necessity of Conversing with each other, put Men upon making numerous Observations upon the Tempers of Mankind : And their own Nature being the Thing enquired after, all Men could make their Experiments at home ;

home ; which, in Confort with those made with and by other People, enabled them to make certain Conclusions of Eternal Truth, since Mankind varies little, if any thing, any farther than as Customs alter it, from one Age to another. Since therefore this Necessity always lasts, and that all the Observations requisite to compleat this noble Science, as it takes in the Art of Governing Kingdoms, Families, and Men's private Persons, cannot be made by one or two Generations, there is a plain Reason why some Nations, which wanted Opportunities of diffused Conversation, were more barbarous than the rest ; and also, why others, which for many Ages met with no Foreign Enemies that could overturn their Constitutions, should be capable of improving this part of Knowledge as far as *unassisted Reason* was able to carry it.

For, after all, how weak the Knowledge of the ancient Heathens was, even here, will appear by comparing the Writings of the old Philosophers, with those Moral Rules which *Solomon* left us in the *Old Testament*, and which our Blessed Saviour and his Apostles laid down in the *New*. Rules so well suited to the Reason of Man, so well adapted to civilize the World, and to introduce that true Happiness

pineness which the old Philosophers so vainly strove to find, that the more they are considered, the more they will be valued; and accordingly they have extorted even from those who did not believe the Christian Religion, just Applauses, which were certainly unbiassed, because, not being led by the Rewards which it proposes, nor deterred by the Punishments which it threatens, they could have no Motive to commend them but their own native Excellency.

It is evident therefore, that though in some sense the Moderns may be said to have learned their *Politics* and *Ethics* from the Ancients, yet there is no convincing Argument that can be brought from those Sciences, singly considered, that the Ancients had a greater Force of Genius than the wise and prudent Men of these later Generations. If, indeed, in all other Sciences, Mankind has for MD Years been at a full Stop, the Perfection of the Ancient *Politics* and *Ethics* may be justly urged, amongst other Arguments, for the comparative Strength of their Parts; otherwise not.

But there are other Parts of Learning, that may seem capable of farther Improvement; of which, the Advocates for the Ancients do not only pretend that they

they were the Inventors, but that their Performances have never since been equalled, much less out-done; though within these last \overline{CC} Years all imaginable Pains have been taken to do it; and great Rewards have been given to those who have, *licet non passibus æquis*, laboured to come near the Copies which were already set them. From whence these Men think it probable, that all Modern Learning is but Imitation, and that faint and flat, like the Paintings of those who draw after Copies at a Third or Fourth Hand from the Life. Now, as this can only be known by an Induction of Particulars, so of these Particulars there are Two sorts: One, of those wherein the greatest part of those Learned Men who have compared Ancient and Modern Performances, either give up the Cause to the Ancients quite, or think, at least, that the Moderns have not gone beyond them. The other of those, where the Advocates for the Moderns think the Case so clear on their Side, that they wonder how any Man can dispute it with them. *Poesie*, *Oratory*, *Architecture*, *Painting*, and *Statuary*, are of the *First Sort*: *Natural History*, *Physiology*, and *Mathematics*, with all their Dependencies, are of the *Second*.

C H A P. III.

*Of Ancient and Modern Eloquence
and Poesie.*

IT is universally acknowledged, that he who has studied any Subject, is a better Judge of that Subject than another Man who did never purposely bend his Thoughts that way, provided they be both Men of equal Parts. Yet we see there are many Things, whereof Men will, at first sight, pass their Judgment, and obstinately adhere to it, though they not only know nothing of those Matters, but will confess that it requires Parts, and Skill, and Exercise, to be excellent in them. This is remarkably visible in the Censures which are passed upon Pieces of *Oratory* and *Poesie* every Day by those who have but little of that sort of Learning themselves; and to whom all that is said of critical Skill in those Things, and of a true Relish of what is really fine, is Jargon and Cant. And in the mean time, these Men do in other Things shew great Accuracy and Judgment, even in Subjects which require quick Apprehension, nice Observation, and

and frequent Meditation. If one should ask why such Men so frequently mistake and differ in those other Matters, the Answer, I think, is this : (1.) The Foundations of Eloquence of all sorts lying in Common Sense, of which every Man is in some degree a Master, most ingenious Men have, without any Study, a little Insight into these Things. This little Insight betrays them immediately to declare their Opinions, because they are afraid, if they should not, their Reputation would be in danger. On the contrary, where the Subject is such, that every Man finds he can frame no *Idea* of it in his own Mind, without a great number of Premises, which cannot be attained by common Conversation, all wise Men hold their Tongues, suspect their own Abilities, and are afraid that they cannot fathom the Depth of his Knowledge with whom they converse ; especially if he has a Name for Skill in those Matters. And therefore, talk with such Men of a Law-Case, or a Problem in Geometry, if they never studied those Things, they will frankly tell you so, and decline to give their Opinion. Whereas if you speak to them of a Poem, a Play, or a Moral Discourse upon a Subject capable of Rhetorical Ornaments, they will immediately

pass their Censure, right or wrong ; and Twenty Men, perhaps, shall give Twenty different Opinions ; whilst, in the other Cases, scarce Two of the Twenty shall disagree, if they are conscious to themselves that they have Skill enough to judge without another's help. (2.) In most of these Things our Passions are some way or other concerned ; at least, being accustomed to have them moved, we expect it, and think our selves disappointed when our Expectation is deceived. Now, when a Man is to judge in Matters of this kind, he generally before-hand is pre-possessed with such Passions as he would willingly have raised, or confirmed ; and so speaks as his Expectation is answered. But when our Passions do not move in these Matters, as they seldom do upon Subjects a great way off, then our Censures are more unanimous. For, as the Poet says,

*Securus licet Æneam Rutulumque ferocem
Committas ; nulli gravis est percussus Achil-
les.*

So that there is no great Wonder why Men should receive the Writings of the Ancients with so great Respect : For the Distance of Time takes off Envy ; and the
being

being accustomed from our Childhood to hear them commended, creates a Reverence. Yet though due Allowances ought to be made for these Pre-possessions, one has Reason to believe, that this Reverence for the ancient Orators and Poets is more than Prejudice. (By Orators, I understand all those Writers in Prose who have taken pains to beautifie and adorn their Stile.) Their Works give us a very solid Pleasure when we read them. The best in their kind among the Moderns have been those who have read the Ancients with greatest Care, and endeavoured to imitate them with the greatest Accuracy. The Masters of Writing in all these several Ways, to this Day, appeal to the Ancients, as their Guides; and still fetch Rules from them, for the Art of Writing. *Homer*, and *Aristotle*, and *Terence*, and *Virgil*, and *Horace*, and *Ovid*, are now studied as Teachers, not barely out of Curiosity, by Modern Poets. So likewise are *Demosthenes*, *Aristotle*, *Tully*, *Quintilian*, and *Longinus*, by those who would write finely in Prose. There is reason therefore to think that in these Arts the Ancients may have out-done the Moderns; though neither have they been neglected in these later Ages, in which we have seen extraordinary Productions,

which the Ancients themselves, had they been alive, would not have been ashamed of.

If this be so, as I verily believe it is, sure now (it will be objected) It is evident that the Ancients had a greater Force of Genius than the Moderns can pretend to. Will it be urged, that here also they had an Advantage by being born first? Have these Arts a fixed Foundation in Nature; or were they not attained to by Study? If they come by Nature, why have we heard of no Orators among the Inhabitants of the Bay of *Soldania*, or eminent Poets in *Peru*? If they are got by Study, why not now, as well as formerly, since Printing has made Learning cheap and easie? Can it be thought harder to Speak and Write like *Cicero* or *Virgil*, than to find out the Motions of the Heavens, and to calculate the Distances of the Stars? What can be the Reason of this Disparity?

The Reasons are several, and scarce one of them of such a Nature as can now be helped, and yet not conclusive against the Comparative Strength of Understanding, evidently discernible in the Productions of the Learned Men of the present, and immediately foregoing Ages; to which I would here be understood
strictly

strictly to confine my Notion of the word *Modern*. These Reasons I shall examine at large, because, if they are valid, they quite take away the Force of Sir *William Temple's* Hypothesis; and by removing the blind Admiration now paid to the Ancient Orators and Poets, set it upon such a Foot as will render the Reading of their Books more useful, because less superstitious. They are of several sorts; some relating to *Oratory*, some to *Poesie*, and some in common to both.

I shall first speak of those which relate more particularly to *Poetry*, because it was much the ancientest way of Writing in *Greece*; where their Orators owned, that they learned a great deal of what they knew, even in their own, as well as in other Parts of Learning, from their Poets. And here one may observe, that no Poetry can be Charming that has not a Language to support it. The *Greek* Tongue has a vast Variety of long Words, wherein long and short Syllables are agreeably intermixed together, with great Numbers of Vowels and Diphthongs in the Middle-Syllables, and those very seldom clogged by the joining of harsh-sounding Consonants in the same Syllable: All which Things give it a great Advantage above any other Language that
has

has ever yet been cultivated by Learned Men. By this Means all manner of Tunable Numbers may be formed in it with Ease ; as still appears in the remaining *Dramatic* and *Lyric* Composures of the *Greek* Poets. This seems to have been at first a lucky Accident, since it is as visible in *Homer*, who liv'd before the Grammarians had determined the Analogy of that Language by Rules ; which Rules were, in a very great measure, taken from his Poems, as the Standard ; as in those Poets that came after him. And that this peculiar Smoothness of the *Greek* Language was at first Accidental, farther appears, because the *Phœnician* or *Hebrew* Tongue, from whence it was formed, as most Learned Men agree, is a rough, unpolished Tongue, abounding with short Words, and harsh Consonants : So that if one allows for some small Agreement in the Numbers of Nouns, and Variations of Tenses in Verbs, the two Languages are wholly of a different Make. That a derived Language should be sweeter than its Mother-Tongue, will seem strange to none that compares the Modern *Tuscan* with the Ancient *Latin* ; where, though their Affinity is visible at first sight, in every Sentence, yet one sees that that derived Language actually has a Sweetness and

and Tunableness in its Composition, that could not be derived from its Parent; since nothing can impart that to another, which it has not it self: And it shews likewise, that a Barbarous People, as the *Italians* were when mingled with the *Goths* and *Lombards*, may, without knowing or minding Grammatical Analogy, form a Language so exceedingly Musical, that scarce any Art can mend it. For, in *Boccace's* Time, who liv'd above CCC Years ago, in the earliest Dawnings of Polite Learning in these Western Parts of the World, *Italian* was a formed Language, endued with that peculiar Smoothness which other *European* Languages wanted; and it has since suffered no fundamental Alterations; not any, one should think, for the better, since in the *Dictionary* of the Academy *della Crusca*, *Boccace's* Writings are constantly appealed to, as the Standards of the Tongue. Nay, it is still disputed among the Criticks of the *Italian Language*, whether (c) *Dante*, (c) *Boccace*, *Petrarch*, and *Villani*, who were all Contemporaries, are not the Valuablest as well as the Ancientest Authors they have.

(c) :
li Pen,
diversi
Tassoni
lib. in
cap. 1.

Now, when this Native Smoothness of the *Greek* Tongue was once discovered to common Ears, by the sweetness of their Verses, which depended upon a Regular Compo-

Composition of Long and Short Syllables, all Men paid great Respect to their Poets, who gave them so delightful an Entertainment. The wiser Sort took this Opportunity of Civilizing the rest, by putting all their Theological and Philosophical Instructions into Verse; which being learn'd with Pleasure, and remembred with Ease, help'd to heighten and preserve the Veneration already, upon other Scores, paid to their Poets. This encreased the Number of Rivals, and every one striving to out-doe his Neighbour; some by varying their Numbers, others by chusing Subjects likely to please, here and there some, one or two at least of a sort, proved excellent: And then those who were the most extraordinary in their several Ways, were esteemed as Standards by succeeding Ages; and Rules were framed by their Works, to examine other Poems of the same sort. Thus *Aristotle* framed Rules of *Epic* Poesie from *Homer*: Thus *Aristophanes*, *Menander*, *Sophocles* and *Euripides* were looked upon as Masters in *Dramatic* Poesie; and their Practice was sufficient Authority. Thus *Mimnermus*, *Philetas* and *Callimachus* were the Patterns to following Imitators for *Elegy* and *Epigram*. Now, Poetry being a limited Art, and these Men, after the often-repeated Trials of others, had proved
successless;

successless; finding the true Secret of pleasing their Country-men, partly by their Wit and Sence, and partly by the inimitable Sweetness of their Numbers, there is no wonder that their Successors, who were to write to a pre-possessed Audience, though otherwise Men of equal, perhaps greater Parts, failed of that Applause of which the great Masters were already in possession; for Copying nauseates more in Poetry, than any thing: So that *Sannazarius* and *Buchanan*, tho' admirable Poets, are not read with that Pleasure which Men find in *Lucretius* and *Virgil*, by any but their Country-men; because they wrote in a dead Language, and so were frequently obliged to use the same Turns of Thought, and always the same Words and Phrases, in the same Sence in which they were used before by the Original Authors; which forces their Readers too often to look back upon their Masters; and so abates of that Pleasure which Men take in *Milton*, *Cowley*, *Butler*, or *Dryden*, who wrote in their Mother-Tongue, and so were able to give that unconstrained Range and Turn to their Thoughts and Expressions that are truly necessary to make a compleat Poem.

It may therefore be reasonably believed, that the natural Softness, Expressiveness and Fulness of the *Greek Language* gave
great

great Encouragement to the *Greek* Poets to labour hard, when they had such manageable Matter to work upon, and when such Rewards constantly attended their Labours. This likewise was a great help to their Orators, as well as their Poets; who soon found the Beauties of a numerous Composition, and left nothing undone, that could bring it to its utmost Perfection. But this was not so important a Consideration, as alone to have encouraged the *Greeks* to cultivate their Eloquence, if the Constitution of their Governments had not made it necessary; and that Necessity had not obliged great Numbers of ingenious Men to take Pains about it.

Most part of *Greece*, properly so called, and of *Asia the Less*, the Coasts of *Thrace*, *Sicily*, the Islands in the *Mediterranean*, and a great part of *Italy*, were long divided into a very many Kingdoms and Commonwealths; and many of these small Kingdoms, taking Example by their Neighbouring Cities that had thrown off their imperious Masters, turned, in time, to Commonwealths, as well as they. These, as all little Governments that are contiguous, being well nigh an even Match for each other, continued for many Ages in that Condition. Many of the chiefest were Democracies; as, the Republics of *Athens*,
Syracuse,

Syracuse, Thebes and Corinth; where it was necessary to complement the People upon all Occasions: So that busie, factious Men had Opportunities enough to shew their Skill in Politics. Men of all Tempers, and all Designs, that would accuse or defend, that would advise or consult, were obliged to address themselves in set Harangues to the People. Interest therefore, and Vanity, Motives sometimes equally powerful, made the Study of Rhetoric necessary; and whilst every Man followed the several Biass of his own Genius, some few found out the true Secret of Pleasing, in all the several Ways of Speaking well, which are so admirably and so largely discoursed of by the ancient Rhetoricians. *Demosthenes* being esteem'd beyond all his Predecessors, for the Correctness of his Stile, the Justness of his Figures, the Easiness of his Narrations, and the Force of his Thoughts; his Oration were look'd upon as Standards of Eloquence by his Country-men: Which Notion of theirs effectually damp't future Endeavours of other Men, since here, as well as in Poetry and Painting, all Copiers will ever continue on this side of their Originals. And besides, the great End of Oratory being to persuade, wherein Regard must be had to the Audience, as well

as to the Subject, if there be but one Way of doing best at the same time in both, as there can be but one in all limited Arts or Sciences, they that either first find it out, or come the nearest to it, will unquestionably, and of Right, keep the first Station in Men's Esteem, though perhaps they dare not, for fear of disgusting the Age they live in, follow those Methods which they admire so much, and so justly, in those great Masters that went before them.

That these Accidents, and not a particular Force of Genius, raised the *Græcian* Poesie and Oratory, will farther appear, if we reflect upon the History of the Rise and Encrease of both those Arts amongst the *Romans*: Their Learning, as well as their Language, came originally from *Greece*; they saw what was done to their Hands, and *Greek* was a living Language; and so, by the help of Masters, they could judge of all its Beauties. Yet, with all their Care, and Skill, and Pains, they could not, of a long time, bring their Poetry to any Smoothness; they found their Language was not so ductile, they owned it, and complained of it. It had a Majestick Gravity, derived from the People themselves who spoke it; which made it proper for Philosophical and Epical Poems;
for

for which Reason, *Lucretius* and *Virgil* were able to do so great Things in their several Ways, their Language enabling them to give the most becoming Beauties to all their Thoughts. But there not being that Variety of Feet in the *Latin*, which Language, for the most part, abounds in *Dactyles*, *Spondees* and *Trochees*; nor that Sprightliness of Temper, and in-bred Gaiety in the *Romans*, which the *Greeks* are to this Day famous for, even to a Proverb, in many parts of Poetry they yielded, though not without Reluctancy, to a People whom they themselves had conquered. Which shews, that there are some Imperfections which cannot be overcome: And when these Imperfections are accidental, as the Language is which every Man speaks at first, though he has equal Parts, and perhaps greater Industry, yet he shall be thrown behind another Man who does not labour under those Inconveniences; and the Distance between them will be greater, or less, according to the Greatness or Quality of these Inconveniences.

If we look into the chiefest Modern Languages, we shall find them labouring under much greater: For, the Quantities of Syllables being in a great measure neglected in all Modern Languages, we can-

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not

not make use of that Variety of Feet which was anciently used by the *Greeks* and *Romans*, in Modern Poems. The Guide of Verses is not now Length of Syllable, but only Number of Feet, and Accent : Most of the *French* Accents are in the last Syllable ; Ours, and the *Italian*, in the fore-going. This fits *French* for some sorts of Poems, which *Italian* and *English* are not so proper for. Again, All Syllables, except the Accented one in each Word, being now common in Modern Languages, we Northern People often make a Syllable short that has two or three Consonants in it, because we abound in Consonants : This makes *English* more unfit for some Poems, than *French* and *Italian* ; which having fewer Consonants, have consequently a greater Smoothness and Flowingness of Feet, and Rapidity of Pronunciation.

I have brought these Instances out of Modern Languages, whereof Sir *William Temple* is so great a Master, to prove my first Assertion ; namely, That though a very great deal is to be given to the Genius and Judgment of the Poet, which are both absolutely necessary to make a good Poem, what Tongue soever the Poet writes in ; yet the Language it self has so great an Influence, that if *Homer* and
Virgil

Virgil had been *Polanders*, or *High-Dutchmen*, they would never, in all probability, have thought it worth their while to attempt the Writing of Heroick Poems; *Virgil* especially, (d) who began to write an Historical Poem of some great Actions of his Country-men; but was so gravell'd with the Roughness of the *Roman* Names, that he laid it aside.

(d) Cum res Romanas
inchoasset, offensus mate-
ria & nominum asperi-
tate, ad Bucolica transiit.
Donatus in Vir. Virgili.

Now, as the *Roman* Poetry arrived to that Perfection which it had, because it was supported by a Language, which, tho' in some Things inferiour to the *Greek*, had several noble and charming Beauties, not now to be found in Modern Languages; so the *Roman* Oratory was owing to their Government: Which makes the Parallel much more perfect: And all those Reasons alledged already for the Growth of the *Attic* Eloquence, are equally applicable to the History of the *Roman*; so that there is no necessity of Repeating them. To which we may add, That when the *Romans* once lost their Liberty, their Eloquence soon fell: And *Tacitus* (or *Quintilian*) needed not have gone so far about to search for Reasons of the Decay of the *Roman* Eloquence. *Tully* left his Country and Profession, after his Defence of *S. Roscius Amerinus*; resolving to give over Pleading,

if *Sylla's* Death had not restored that Freedom which only gave Life to his Oratory : And when the Civil Wars between *Pompey* and *Cæsar* came on, he retired, because his Profession was superseded by a rougher Rhetoric, which commands an Attentive Audience in all Countries where it pleads.

When Orators are no longer Constituent Parts of a Government, or, at least, when Eloquence is not an almost certain Step to arrive at the chiefest Honours in a State, the Necessity of the Art of Speaking, is, in a great measure, taken off ; and as the Authority of Orators lessens, which it will insensibly do, as Tyranny and Absolute Power prevail, their Art will dwindle into Declamation, and an Affectation of Sentences, and Forms of Wit. The Old Men, who out-live their former Splendour, will, perhaps, set their own Scholars and Auditors right, and give them a true Relish of what is Great and Noble ; but that will hardly continue above one or two Generations. Which may be super-added as another Reason why there were no more *Demosthenes's* or *Tully's*, after the *Macedonian* and *Roman* Emperors had taken away the Liberty of the *Græcian* and *Roman* Commonwealths. It is Liberty alone which inspires Men with Lofty Thoughts,

Thoughts, and elevates their Souls to a higher Pitch than Rules of Art can direct. Books of Rhetoric may make Men Copious and Methodical ; but they alone can never infuse that true Enthusiastic Rage which Liberty breaths into their Souls who enjoy it ; and which, guided by a Sedate Judgment, will carry Men farther than the greatest Industry, and the quickest Parts can go without it.

When Private Members of a Commonwealth can have Foreign Princes for their Clients, and plead their Causes before their Fellow-Citizens ; when Men have their Understandings enlarged, by a long Use of public Business, for many Years before they speak in publick ; and when they know that their Auditory are Men, not only of equal Parts, and Experience in Business ; but also many of them Men of equal, if not greater Skill in Rhetoric than themselves : Which was the Case of the Old *Romans*. These Men, inflamed with the mighty Honour of being Patrons to Crowned Heads, having Liberty to speak any Thing that may advantage their Cause, and being obliged to take so great Pains to get up to, or to keep above so many Rivals, must needs be much more excellent Orators, than other Ages, destitute of such concurrent Circumstances,

though every thing else be equal, can possibly produce.

Besides all this, the Humour of the Age in which we live is exceedingly altered : Men apprehend or suspect a Trick in every Thing that is said to move the Passions of the Auditory in *Courts of Judicature*, or in the *Parliament-House* : They think themselves affronted when such Methods are used in Speaking, as if the Orator could suppose within himself, that they were to be caught by such Baits. And therefore, when Men have spoken to the Point, in as few Words as the Matter will bear, it is expected they should hold their Tongues. Even in the Pulpit, the Pomp of Rhetoric is not always commended, especially here in *England* ; and very few meet with Applause, who do not confine themselves to speak with the Severity of a Philosopher, as well as with the Splendour of an Orator ; two Things, not always consistent. What a Difference in the Way of Thinking must this needs create in the World ? Anciently, Orators made their Employment the Work of their whole Lives ; and as such, they followed it : All their Studies, even in other Things, were, by a sort of Alchemy, turned into Eloquence. The Labour which they thought requisite, is evident to any Man that

that reads *Quintilian's Institutions*, and the Rhetorical Tracts of *Cicero*. This exceedingly takes off the Wonder : Eloquence may lie in common for Ancients and Moderns ; yet those only shall be most Excellent that cultivate it most, and give it the greatest Encouragement, who live in an Age that is accustomed to, and will bear nothing but Masculine, unaffected Sense ; which likewise must be cloathed with the most splendid Ornaments of Rhetoric.

Sir *William Temple* will certainly agree with me in this Conclusion, That former Ages produced greater *Orators*, and nobler *Poets*, than these later ones have done ; though perhaps he may disagree with me about the Way by which I came to my Conclusion ; since hence it will follow, that the present Age, with the same Advantages, under the same Circumstances, might produce a *Demosthenes*, a *Cicero*, a *Horace*, or a *Virgil* ; which, for any thing hitherto said to the contrary, seems to be very probable.

But, though the Art of Speaking, assisted by all these Advantages, seems to have been at a greater height amongst the *Greeks* and *Romans*, than it is at present ; yet it will not follow from thence, that every Thing which is capable of Rhetorica!

rical Ornaments, should, for that sole Reason, be more perfect anciently than now; especially if these be only Secondary Beauties, without which, that Discourse wherein they are found may be justly valuable, and that in a very high Degree. So that, though, for the purpose, one should allow the Ancient Historians to be better Orators than the Modern; yet these last may, for all that, be much better, at least, equally good Historians; those among them especially, who have taken fitting Care to please the Ears, as well as instruct the Understandings of their Readers. Of all the Ancient Historians before *Polybius*, none seems to have had a right Notion of writing History, except *Thucydides*: And therefore *Polybius*, whose first Aim was, to instruct his Reader, by leading him into every Place whither the Thread of his Narrative carried him, makes frequent Excuses for those Digressions, which were but just necessary to beget a thorough Understanding of the Matter of Fact of which he was then giving an Account. These Excuses shew that he took a new Method; and they answer an Objection, which might otherwise have been raised from the small Numbers of extant Histories that were written before his Time; as if we could make no Judgment of those that
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are lost, from those that are preserved. For, the Generality of those who wrote before him, made Rhetoric their chief Aim; and therefore all Niceties of Time, and Place, and Person, that might hurt the Flowingness of their Stile, were omitted; instead whereof, the Great Men of their *Drama's*, were introduced, making long Speeches; and such a Gloss was put upon every Thing that was told, as made it appear extraordinary; and whatsoever was wonderful and prodigious, was mentioned with a particular Emphasis.

This Censure will not appear unjust to any Man who has read Ancient Historians with ordinary Care; *Polybius* especially: Who, first of all the Ancient Historians, fixes the Time of every great Action that he mentions: Who assigns such Reasons for all Events, as seem, even at this distance, neither too great, nor too little: Who, in Military Matters, takes Care, not only to shew his own Skill, but to make his Reader a Judge, as well as himself: Who, in Civil Affairs, makes his Judgment of the Conduct of every People from the several Constitutions of their respective Governments, or from the Characters and Circumstances of the Actors themselves: And last of all, Who scrupulously avoids saying any Thing that might appear incredible

credible to Posterity; but represents Things in such a manner, as a wise Man may believe they were transacted: And yet he has neglected all that Artful Eloquence which was before so much in fashion.

If these therefore be the chiefest Perfections of a just History, and if they can only be the Effects of a great Genius, and great Study, or both; at least, not of the last, without the first, we are next to enquire whether any of the Moderns have been able to attain to them: And then, if several may be found, which in none of these Excellencies seem to yield to the noblest of all the Ancient Historians, it will not be difficult to give an Answer to Sir William Temple's Question;

(e) Pag. 57. *Whether (e) D'Avila's and Strada's Histories be beyond those of Herodotus and Livy? I shall name but two; The Memoirs of Philip Comines, and F. Paul's History of the Council of Trent.*

Philip Comines ought here to be mention'd, for many Reasons: For, besides that he particularly excells in those very Vertues which are so remarkable in *Polybius*, to whom *Lipsius* makes no scruple to compare him, he had nothing to help him but Strength of Genius, assisted by Observation and Experience: He owns himself, that he had no Learning; and indeed,

indeed, the thing it self is evident to any Man that reads his Writings. He flourished in a barbarous Age, and died just as Learning had crossed the *Alpes*, to get into *France* : So that he could not, by Conversation with Scholars, have those Defects which Learning cures, supplied. This is what cannot be said of the *Thucydides's*, *Polybius's*, *Sallusts*, *Livies*, and *Tacitus's* of Antiquity. Yet, with all these Disadvantages, (to which this great one ought also to be added, That by the Monkish Books then in vogue, he might sooner be led out of the Way, than if he had none at all to peruse,) his Stile is Masculine and significant; though diffuse, yet not tedious; even his Repetitions, which are not over-frequent, are diverting : His Digressions are wise, proper, and instructing : One sees a profound Knowledge of Mankind in every Observation that he makes ; and that without Ill Nature, Pride, or Passion. Not to mention that peculiar Air of Impartiality, which runs through the whole Work ; so that it is not easie to withdraw our Assent from every thing which he says. To all which I need not add, that his History never tires, though immediately read after *Livy* or *Tacitus*.

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In *F. Paul's* History one may also find the Excellencies before observed in *Polybius*; and it has been nicely examined by dexterous and skilful Adversaries, who have taken the Pains to weigh every Period, and rectifie every Date. So that, besides the Satisfaction which any other admirable History would have afforded us, we have the Pleasure of thinking that we may safely rely upon his Accounts of Things, without being mis-guided in any one leading Particular of great moment, since Adversaries, who had no Inclination to spare him, could not invalidate the Authority of a Book which they had so great a desire to lessen. I should have taken notice of no Modern Historians besides *D'Avila* and *Strada*, if there were as much Reason to believe their Narratives, as there is to commend their Skill in Writing. *D'Avila* must be acknowledged to be a most Entertaining Historian; one that wants neither Art, Genius, nor Eloquence, to render his History acceptable. *Strada* imitates the old *Romans* so happily, that those who can relish their Eloquence, will be always pleased with his.

Upon the whole Matter, one may positively say, That where any Thing in which Oratory can only claim a Share,
has

has been equally cultivated by the Moderns, as by the Ancients; they have equalled them at least, if not out-done them, setting aside any particular Graces, which might as well be owing to the Languages in which they wrote, as to the Writers themselves.

CHAP. IV.

Reflections upon Monsieur Perrault's Hypothesis, That Modern Orators and Poets are more Excellent than Ancient.

Whatever becomes of the Reasons given in the last Chapter, for the Excellency of Ancient Eloquence and Poetry, the Position it self is so generally held, that I do not fear any Opposition here at home. It is almost an Heresie in Wit, among our Poets, to set up any Modern Name against *Homer* or *Virgil*, *Horace* or *Terence*. So that though here and there one should in Discourse prefer the Writers of the present Age, yet scarce any Man among us, who sets a Value upon his own Reputation, will venture
to

to assert it in Print. Whether this is to be attributed to their Judgment or Modesty, or both, I will not determine; though I am apt to believe, to both, because in our Neighbour-Nation, (some of whose Writers are remarkable for a good deal of what Sir *William Temple* calls *Sufficiency*,) some late Authors have spoken much more openly.

For one of the Members of the *French Academy*, which, since the Cardinal *de Richelieu's* time, has taken so much Pains to make the *French Language* capable of all those Beauties which are so conspicuous in Ancient Authors, will not allow me to go so far as I have done. Monsieur *Perrault*, the famous Advocate of Modern Orators and Poets, in Oratory sets the Bishop of *Meaux* against *Pericles*, (or rather, *Thucydides*,) the Bishop of *Nismes* against *Isocrates*, *F. Bourdaloüe* against *Lysias*, Monsieur *Voiture* against *Pliny*, and Monsieur *Balzac* against *Cicero*. In Poetry likewise he sets Monsieur *Boileau* against *Horace*, Monsieur *Corneille* and Monsieur *Moliere* against the Ancient Dramatic Poets. In short, though he owns that some amongst the Ancients had very exalted Genius's, so that it may, perhaps, be very hard to find any Thing that comes near the Force of some of the
Ancient

Ancient Pieces, in either kind, amongst our Modern Writers ; yet he affirms, that Poetry and Oratory are now at a greater height than ever they were, because there have been many Rules found out since *Virgil's* and *Horace's* Time ; and the old Rules likewise have been more carefully scanned than ever they were before. This Hypothesis ought a little to be enquired into, and therefore I shall offer some few Considerations about this Notion. Sir *William Temple*, I am sure, will not think this a Digression ; because the Author of the Plurality of Worlds, (f) by censuring of the Old Poetry, and (f) Pag. 5. giving Preference to the New, raised his Indignation ; which no Quality among Men was so apt to raise in him as Sufficiency, the worst Composition out of the Pride and Ignorance of Mankind.

(1.) Monsieur *Perrault* takes it for granted, that *Cicero* was a better Orator than *Demosthenes* ; because, living after him, the World had gone on for above Two Hundred Years, constantly improving, and adding new Observations, necessary to compleat his Art : And so by Consequence, that the Gentlemen of the Academy must out-doe *Tully*, for the same Reasons. This Proposition, which is the Foundation of a great part of his Book,

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is not very easie to be proved ; because Mankind loves Variety in those Things wherein it may be had so much, that the best Things, constantly re-iterated, will certainly disgust. Sometimes the Age will not bear Subjects, upon which an Orator may display his full Force ; he may often be obliged to little, mean Exercises. A Thousand Accidents, not discoverable at a distance, may force Men to stretch their Inventions to spoil that Eloquence, which left to it self, would do admirable Things. And that there is such a Thing as a Decay of Eloquence in After-Ages, which have the Performances of those that went before constantly to recurr to, and which may be supposed to pretend to Skill and Fineness, is evident from the Writings of *Seneca*, and the Younger *Pliny*, compared with *Tully's* ; And from a Discourse written in *Tacitus's* Time, upon this very Subject, wherein the Author, taking it for granted that the *Roman* Eloquence was sunk, enquires, with a World of Wit and Spirit, into the Reasons of its Decay. One great Instance which *Monsieur Per-*
rault alledges of his supposed want of Art in the Ancients, is want of Method in setting down their Thoughts, even when one would think they should have taken the greatest Care. This Accusation is, in
my

my Opinion, very groundless. Let *Tully's Pleadings* and *Quintilian's Institutions* be examined, and then let the Controversie be decided by that Examination. And if Panegyricks and Funeral-Orations do not seem so regular, it is not because Method was little understood, but because in those Discourses it was not so necessary. Where Men were to reason feverely, Method was strictly observed: And the Vertues discoursed upon in *Tully's Offices* are as judiciously and clearly digested under their proper Heads, as the Subject-Matter of most Discourses written by any Modern Author, upon any Subject whatsoever. It does not seem possible to contrive any Poem, whose Parts can have a truer, or more artful Connexion, than *Virgil's Æneis*: And though it is now objected by Monsieur *Perrault*, as a Fault, that he did not carry on his Poem to the Marriage of *Æneas* and *Lavinia*, yet we may reasonably think, that he had very good Reasons for doing so; because in *Augustus's* Court, where those sort of Things were very well understood, it was received with as great Veneration as it has been since; and never needed the Recommendation of Antiquity, to add to its Authority. But we need not recurr to an Excuse, or to any thing that may look like one, in

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this

this Matter: It is a Fault in Heroic Poetry, to fetch Things from their first Originals: And to carry the Thread of the Narrative down to the last Event, is altogether as dull. As *Homer* begins not with the Rape of *Helen*, so he does not go so far as the Destruction of *Troy*. Men should rise from Table with some Appetite remaining: And a Poem should leave some View of something to follow, and not quite shut the Scenes; especially if the remaining part of the Story be not capable of much Ornament, nor will admit of Variety. The Passion of Love, with those that always follow upon its being disappointed, had been shewn already in the Story of *Dido*. But Monsieur *Perrault* seems to have had his Head possessed with the Idea of French Romances; which, to be sure, must never fail to end in a general Wedding.

(2.) Another of Monsieur *Perrault's* Arguments, to prove that the Ancients did not perfect their Oratory and Poësie, is this; That the Mind of Man, being an inexhaustible Fund of new Thoughts and Projects, every Age added Observations of its own to the former Store; so that they still encreased in Politeness, and by consequence, their Eloquence of all sorts, in Verse or Prose, must needs have been
more

more exact. And as a Proof of this Assertion, he instances in Matters of Love ; wherein the Writings of the best bred Gentlemen of all Antiquity, for want of Modern Gallantry, of which they had no Notion, were rude and unpolish'd, if compared with the Poems and Romances of the present Age. Here Monsieur *Per- rault's* Skill in Architecture seems to have deceiv'd him : For there is a wide Difference between an Art that, having no Antecedent Foundation in Nature, owes its first Original to some particular Invention, and all its future Improvements to Superstructures rais'd by other Men upon that first Ground-work ; and between such Operations of the Mind, as are Congenial with our Natures ; where Conversation will polish them, even without previous Intentions of doing so ; and where the Experience of a few Ages, if assisted by Books that may preserve particular Cases, will carry them to as great an Height as the Things themselves are capable of. And therefore, he that now examines the Writings of the Ancient Moral Philosophers, *Aristotle* for instance, or the *Stoics*, will find, that they made as nice Distinctions in all Matters relating to Vertue and Vice ; and that they understood Humane Nature, with all its Passions and

Appetites, as accurately as any Philosophers have done since. Besides, it may be justly question'd, whether what Monsieur *Perrault* calls *Politeness*, be not very often rather a vicious Aberration from, and Straining of Nature, than an Improvement of the Manners of the Age: If so, it may reasonably be supposed, that those that medled not with the Niceties of Ceremony and Breeding, before unpractised, rather contemned them as improper or unnatural, than omitted them through Ignorance occasioned by the Roughness of the Manners of the Ages in which they lived. *Ovid* and *Tibullus* knew what Love was, in its tenderest Motions; they describe its Anxieties and Disappointments in a manner that raises too too many Passions, even in unconcerned Hearts; they omit no probable Arts of Courtship and Address; and keeping the Mark they aim at still in view, they rather chuse to shew their Passion, than their Wit: And therefore they are not so formal as the Heroes in *Pharamond* or *Cassandra*; who, by pretending to Exactness in all their Methods, commit greater Improbabilities than *Amadis de Gaule* himself. In short, (g) *D'Urfe*, and (h) *Calprenede*, and the rest of the French Romancers, by over-straining the String, have

(g) The
Author of
Astræa.

(h) The
Author of
Cleopatra.

have broke it : And one can as soon believe that *Varillas* and *Maimbourg* wrote the Histories of great Actions just as they were done, as that Men ever made Love in such a way as these *Love-and-Honour Men* describe. That Simplicity therefore of the Ancients, which Monsieur *Perrault* undervalues, is so far from being a Mark of Rudeness, and Want of Complaisance, that their Fault lay in being too Natural, in making too lively Descriptions of Things, where Men want no Foreign Assistance to help them to form their *Idea's* ; and where Ignorance, could it be had, is more valuable than any, much more than a Critical Knowledge. But,

(3.) Since,

*By that loud Trumpet which our Courage
aids,*

*We learn, that Sound, as well as Sense,
persuades ;*

the Felicity of a manageable Language, when improv'd by Men of nice Ears, and true Judgments, is greater, and goes farther to make Men Orators and Poets, than Monsieur *Perrault* seems willing to allow ; though there is a plain Reason for his Unwillingness : The *French* Language wants Strength to temper and sup-

port its Smoothness for the nobler Parts of Poësie, and perhaps of Oratory too, though the *French* Nation wants no Accomplishments necessary to make a Poet, or an Orator. Therefore their late Critics are always setting Rules, and telling Men what must be done, and what omitted, if they would be Poets. What they find they cannot do themselves, shall be so clogg'd where they may have the Management, that others shall be afraid to attempt it. They are too fond of their Language, to acknowledge where the Fault lies; and therefore the chief Thing, they tell us, is, that Sence, Connexion and Method are the principal Things to be minded. Accordingly, they have translated most of the Ancient Poets, even the *Lyrics*, into *French* Prose; and from those Translations they pass their Judgments, and call upon others to do so too. So that when (to use Sir *J. Denham's* Comparison) by pouring the Spirits of the Ancient Poetry from one Bottle into another, they have lost the most Volatile Parts, and the rest loses all its relish; these Critics exclaim against the Ancients, as if they did not sufficiently understand Poetical Chymistry. This is so great a Truth, that even in Oratory it holds, though in a less degree. *Thucydides* therefore has

hard

hard Measure, to be compar'd with the Bishop of *Meaux*, when his Oration is turned into another Language, whilst Monsieur de *Meaux*'s stands unaltered; for, though Sense is Sense in every Tongue, yet all Languages have a peculiar Way of expressing the same Things; which is lost in Translations, and much more in Monsieur *D'Ablancourt*'s, who professed to mind two very different Things at once; to Translate his Author, and to Write elegant Books in his own Language; which last he has certainly done; and he knew that more Persons could find fault with his Stile, if it had been faulty, than find out Mistakes in his Rendering of *Thucydides*'s Greek. Besides, the Beauty of an Author's Composition, is, in all Translations, entirely lost; about which the Ancients were superstitiously exact, (i) and in their elegant Prose, as much almost as in their Verse. So that a Man can have but half an *Idea* of the ancient Eloquence, and that not always faithful, who judges of it without such a Skill in *Greek* and *Latin* as can enable him to read Histories, Orations and Poems in those Languages, with Ease and Pleasure; Especially if he is not so well acquainted with the History, Learning and Customs of the Ages in which the great Men of Antiquity wrote, as to

(i) Vid.
*Quintil.
Instit. Orat.
lib. ix. c. 4.
de Compositione.*

be able to discern the Force of the Allusions which they continually make, and which every Reader of their own Age easily understood, though their Beauty was soon lost, when once the Matters of Fact there tacitly referred to, were forgotten.

But these are Qualifications which Monsieur *Perrault* extremely wants, who has neither *Greek* nor *Latin* enough to undertake to make a Parallel between Ancient and Modern Orators and Poets. A particular Enquiry into whose Mistakes would lead me too far out of the way ; and besides, the World would think me very vain, to attempt any thing of this kind, after what the Famous Monsieur *Despreaux* has done already in his *Critical Reflections upon Longinus* : For there he has given so just a Vindication of those Great Men, whom he so well knows how to imitate, that whatsoever I can say after him, will appear flat and insipid. I shall therefore rather chuse to return to my Subject.

CHAP.

CHAP. V.

Of Ancient and Modern Grammar.

Grammar is one of the Sciences which Sir William Temple says, that *(k) no (k) Man ever disputed with the Ancients.*

As this Assertion is expressed, it is a little ambiguous: It may be understood of the Skill of the Moderns in the Grammatical Analogy of *Latin* and *Greek*, or of their Skill in the Grammar of their Mother-Tongues. Besides, Grammar may either be considered *Mechanically*, or *Philosophically*. Those consider it *Mechanically*, who only examine the Idiotisms and Proprieties of every particular Language, and lay down Rules to teach them to others. Those consider it as *Philosophers*, who consider Language, with the Nature of Grammatical Analogy in general, and then carry down their Speculations to those particular Languages of which they are to discourse; who run over the several Steps, by which every Language has altered its *Idiom*; who enquire into the several Perfections and Imperfections of those Tongues with which they are acquainted, and (if they are living Languages) propose

propose Methods how to remedy them, or, at least, remove those Obscurities which are thereby occasioned in such Discourses where Truth is only regarded, and not Eloquence.

Now, this *Mechanical Grammar* of Greek and *Latin* has been very carefully studied by Modern Critics. *Sanctius*, *Scioppius*, and *Gerhard Vossius*, besides a great number of others, who have occasionally shewn their Skill in their Illustrations of Ancient Authors, have given evident Proofs how well they understood the *Latin* Tongue : So have *Caninius*, *Clenard*, *Gerhard Vossius*, and abundance more, in *Greek* : Wherein they have gone upon sure Grounds, since, besides a great Number of Books in both Languages, upon other Subjects, abundance of Grammatical Treatises, such as *Scholia upon Difficult Authors*, *Glossaries*, *Onomasticons*, *Etymologicons*, *Rudiments of Grammar*, and the like, have been preserved, and published by skilful Men (most of them at least) with great Care and Accuracy. From all which there seems to be Reason to believe, that some Modern Critics may have understood the Grammatical Construction of *Latin*, as well as *Varro*, or *Cæsar* ; and of *Greek*, as well as *Aristarchus*, or *Herodian*. But this cannot be pretended to be

be a new Invention ; for the Grammar of dead Languages can be only learned by Books : And since their Analogy can neither be encreased nor diminished, it must be left as we find it.

So that when Sir *William Temple* says, *That no Man ever disputed Grammar with the Ancients* ; if he means, that we cannot make a new Grammar of a dead Language, whose Analogy has been determined almost $\overline{\text{MM}}$ Years, it is what can admit of no Dispute. But if he means, that Modern Languages have not been Grammatically examined, at least, not with that Care that some Ancient Tongues have been ; that is a Proposition which may, perhaps, be very justly questioned. And he, of all Men, ought not to have arraign'd the Modern Ignorance in Grammar, who puts *Delphos* for *Delphi*, every where in his *Essays*, tho' he knows that Proper Names borrow'd from *Latin* and *Greek* are always put in the Nominative-Case, in our Language. For those who find fault with others, ought to be critically exact in those Things at least themselves. But without making Personal Digressions, in the first place, it ought to be considered, that every Tongue has its own peculiar Form, as well as its proper Words ; not communicable to, nor to be regulated by

by the Analogy of another Language : Wherefore, he is the best *Grammatician*, who is the perfectest Master of the Analogy of the Language which he is about ; and gives the truest Rules, by which another Man may learn it. Next, To apply this to our own Tongue, it may be certainly affirmed, That the *Grammar* of *English* is so far our own, that Skill in the Learned Languages is not necessary to comprehend it. *Ben. Johnson* was the first Man, that I know of, that did any Thing considerable in it : but he seems to have been too much possessed with the Analogy of *Latin* and *Greek*, to write a perfect Grammar of a Language whose Construction is so vastly different ; tho' he falls into a contrary Fault, when he treats of the *English Syntax*, where he generally appeals to *Chaucer* and *Gower*, who lived before our Tongue had met with any of that Polishing, which, within these last \overline{CC} Years, has made it appear almost entirely New. After him, came *Dr. Wallis* ; who examined the *English* Tongue like a *Grammatician* and a *Philosopher* at once, and shewed great Skill in that Business : And of his *English Grammar*, one may venture to say, That it may be set against any Thing that is extant of the Ancients, of that kind : For, as *Sir William Temple* says

says upon another Occasion, there is a *Strain of Philosophy, and curious Thought*, in his previous *Essay of the Formation of the Sounds of Letters*; and of *Subtilty*, in his *Grammar*, in the reducing of our Language under Genuine Rules of Art, that one would not expect in a Book of that kind.

The Care which the *Modern Italians* have taken to cultivate and refine their Language, is hardly to be believed by a People who have been so careless of their own as the *English* have been, till within these last XXX or XL Years. Volumes have been written against some Letters, and in favour of others (l). Cardinal Bembo drew up such large and exact Rules for the *Italian*, that one would have imagined they could not have received any Additions; and yet *Castelvetro* made an Enlargement which was bigger than the *Cardinal's* Original Work, to which *Salviati* thought it necessary to add an *Appendix* (m). The Academy della *Crusca* have been above these ̄ Years sifting their Language; and with how great Accuracy and Pains they have examined it, their *Vocabulary*, which has had several Impressions, with vast Augmentations, from what it was at first, is a convincing Proof.

(l) H
and Z.

(m) Vid.
li *Pensieri*
diversi di
Tassoni, l. x.
c. 2.

In

In *France*, since the Institution of the *French Academy*, the *Grammar* of their own Language has been studied with great Care. *Isocrates* himself could not be more nice in the Numbers of his Periods, than these *Academicians* have been in settling the Phraseology, in fixing the Standard of Words, and in making their Sentences, as well as they could, numerous and flowing. Their *Dictionary*, which is come out at last; *Vaugelas's*, *Bouhours's* and *Menage's* *Remarks upon the French Tongue*, *Richeliet's* and *Furetiere's* *Dictionaries*, with abundance of other Books of that kind, which, though not all written by Members of the *Academy*, yet are all Imitations of the Patterns which they first set, are Evidences of this their Care. This *Sir William* somewhere owns: And though he there supposes, that these *Filers* and *Polishers* may have taken away a great part of the Strength of the Tongue, (which, in the main, is true enough,) yet that is no Objection against their Critical Skill in *Grammar*; upon which Account only their Labours are here taken notice of. So much for the *Mechanical* Part of *Grammar*.

Philosophical Grammar was never, that we know of, much minded by the *Antients*. So that any great Performances of

of this sort, are to be looked upon as Modern Additions to the Commonwealth of Learning. The most considerable Book of that kind, that I know of, is Bishop *Wilkin's Essay towards a Real Character, and Philosophical Language*: A Work, which those who have studied, think they can never commend enough. To this one ought to add, what may be found relating to the same Subject, in the Third Book of Mr. *Lock's Essay of Humane Understanding*.

CHAP. VI.

Of Ancient and Modern Architecture, Statuary, and Painting.

Hitherto the *Moderns* seem to have had very little Reason to boast of their Acquisitions and Improvements; Let us see now what they may have hereafter. In those Arts, sure, if in any, they may challenge the Preference, which depending upon great Numbers of Experiments and Observations, that do not every Day occur, cannot be supposed to be brought to Perfection in a few Ages. Among

Among such, doubtless, *Architecture*, *Sculpture* and *Painting* may and ought here to be reckoned; both because they were extremely valued by the *Ancients*, and do still keep up their just Price. They are likewise very properly taken notice of in this Place, because they have always been the Entertainments of Ingenious and Learned Men, whose Circumstances would give them Opportunity to lay out Money upon them, or to please themselves with other Men's Labours. In these Things, if we may take Men's Judgments in their own Professions, the *Ancients* have far out-done the *Moderns*. The *Italians*, whose Performances have been the most considerable in this kind, and who, as Genuine Successors of the Old *Romans*, are not apt to undervalue what they do themselves, have, for the most part, given the uncontested Pre-eminence to the Ancient *Greek* Architects, Painters and Sculptors. Whose Authority we ought the rather to acquiesce in, because *Michael-Angelo* and *Bernini*, two wonderful Masters, and not a little jealous of their Honour, did always ingenuously declare, that their best Pieces were exceeded by some of the ancient Statues still to be seen at *Rome*.

Here

Here therefore I at first intended to have left off; and I thought my self obliged to resign what I believed could not be maintained, when Monsieur Perrault's *Parallel of the Ancients and Moderns* came to my Hands. His Skill in *Architecture* and *Mechanicks*, may, in all probability, be relied upon; since the *French King*, who is not over-apt to conferr Employments upon Men that do not understand how to manage them, has made him (n) *Chief Surveyor of his Buildings*. And his long Conversation with the finest Pieces of Antiquity, and of these Later Ages, which his Employment necessarily led him to, fitted him for judging of these Matters better than other Men. So that, though there might be great Reason not to agree to his *Hypothesis of the State of Ancient and Modern Eloquence and Poesie*; yet in Things of this Nature, where the *Mediums* of Judging are quite different, and where Geometrical Rules of Proportion, which in their own Nature are unalterable, go very far to determine the Question, his Judgment seemed to be of great weight. I shall therefore chuse rather to give a short View of what he says upon these Subjects, than to pass any Censure upon them of my own.

(n) *Premier Commissaire de la Surintendance des Bâtimens de France.*

Pag. 88.

Of *Architecture*, he says; ' That though
 ' the Moderns have received the Know-
 ' ledge of the Five Orders from the An-
 ' cients, yet if they employ it to better
 ' Purposes, if their Buildings be more
 ' useful, and more beautiful, then they
 ' must be allowed to be the better Archi-
 ' tects: For it is in *Architecture*, as it is
 ' in *Oratory*; as he that lays down Rules,
 ' when and how to use *Metaphors*, *Hy-*
 ' *perbole's*, *Apostrophe's*, or any other Fi-
 ' gures of *Rhetoric*, may very often not
 ' be so good an Orator as he that uses
 ' them judiciously in his Discourses: So
 ' he that teaches what a *Pillar*, an *Archi-*
 ' *trave* or a *Cornice* is, and that instructs
 ' another in the Rules of Proportion, so
 ' as to adjust all the Parts of each of the
 ' several Orders aright, may not be so
 ' good an Architect as he that builds a
 ' magnificent Temple, or a noble Palace,
 ' that shall answer all those Ends for which
 ' such Structures are designed. That the
 ' chief Reason why the *Doric*, the *Ionic*, or the
 ' *Corinthian* Models have pleased so much,
 ' is, partly because the Eye has been long
 ' accustomed to them, and partly because
 ' they have been made use of by Men
 ' who understood and followed those other
 ' Rules which will eternally please, upon
 ' the score of real Usefulness; whereas the
 ' Five

‘Five Orders owe their Authority to
 ‘Custom, rather than to Nature. That
 ‘these Universal Rules are; To make those Pag. 95
 ‘Buildings which will bear it, lofty and
 ‘wide: In Stone-work, to use the largest,
 ‘the smoothest, and the evenest Stones:
 ‘To make the Joints almost imperceptible:
 ‘To place the Perpendicular Parts of the
 ‘Work exactly Perpendicular, and the
 ‘Horizontal Parts exactly Horizontal: To
 ‘support the weak Parts of the Work by
 ‘the strong: to cut Square Figures perfect-
 ‘ly Square, and Round Figures perfectly
 ‘Round: To hew the whole exactly true;
 ‘and to fix all the Corners of the Work
 ‘evenly, as they ought to be. That these
 ‘Rules, well observ’d, will always please
 ‘even those who never understood one
 ‘single Term of Art: Whereas the other
 ‘accidental Beauties, such as he supposes
 ‘Doric, Ionic, or Corinthian Work to be,
 ‘please, only because they are found to-
 ‘gether with these, though their being
 ‘the most conspicuous Parts of a Build-
 ‘ing, made them be first observ’d: From
 ‘whence Men began to fanſie Inherent
 ‘Beauties in that, which owes the greatest
 ‘part of its Charms to the good Company
 ‘in which it is taken notice of, and so in
 ‘time delighted, when it was ſeen alone.
 ‘That otherwise it would be impossible Pag. 97, 99

' that there should be so great a Variety in
 ' the Assigning of the Proportions of the
 ' several Orders; no two eminent Archi-
 ' tects ever keeping to the same Measure,
 ' though they have neither spoiled nor
 ' lessened the Beauty of their Works. That
 ' if we go to Particulars, we shall not find
 ' (for the purpose) in the *Pantheon* at *Rome*,
 ' which is the most regular, and the most
 ' magnificent ancient Building now ex-
 ' tant, two Pillars of a like thickness.
 ' That (o) the Girders of the arched
 ' Roof do not lie full upon the great
 ' Columns or Pilasters; but some quite
 ' over the Cavities of the Windows
 ' which are underneath; others half over
 ' the Windows, and half upon the Co-
 ' lumns or Pilasters. That the Modillions
 ' of the Cornice are not exactly over the
 ' Middle of the Chapters of the Pillars.
 ' That in the Fronts of the Piazza's, the
 ' Number of the Modillions in Sides of equal
 ' length is not alike. With several In-
 ' stances of Negligence, which would now
 ' be thought unpardonable. That, gene-
 ' rally speaking, in other Buildings, their
 ' Floors were twice as thick as their Walls;
 ' which loaded them exceedingly, to no
 ' purpose. That their Way of Laying
 ' Stones in Lozenges, was inconvenient,
 ' as well as troublesome; since every Stone
 ' so

(o) Ban-
 deaux de la
 route du
 Temple.

Pag. 111.

Pag. 113.

Pag. 114.

Pag. 115.

' so placed, was a Wedge to force those
 ' afunder on which it leaned. That they Pag. 117.
 ' did not understand the nicest Thing in
 ' Architecture, which is, the Art of Cut-
 ' ting Stones in such a manner, as that
 ' several Pieces might be jointed one into
 ' another; for want of which, they made
 ' their Vaults of Brick plaister'd over;
 ' and their Architraves of Wood, or of
 ' one single Stone; which obliged them
 ' to set their Pillars closer to one ano-
 ' ther than otherwise had been necessary:
 ' Whereas, by this Art of Cutting Stone,
 ' Arches have been made almost flat; Stair-
 ' Cases of a vast height have been raised,
 ' where the Spectator is at a loss to tell
 ' what supports them; whilst the Stones
 ' are jointed into each other in such a man-
 ' ner, that they mutually bear up them-
 ' selves, without any Rest but the Wall,
 ' into which the innermost Stones are
 ' fastened. That they had not Engines to Pag. 118.
 ' raise their Stones to any considerable
 ' height; but if the Work was low, they
 ' carried them upon their Shoulders; if
 ' high, they raised sloping Mounts of
 ' Earth level with their Work, by which
 ' they rolled up their Stones to what
 ' height they pleased: For, as for the
 ' Engines for Raising of Stones, in *Vitru-*
 ' *vius*, those who understand Mechanics,
 ' are

Fig. 119,
120.

are agreed, that they can never be very serviceable. That it is not the Largeness of a Building, but the well executing of a Noble Design, which commends an Architect; otherwise the *Ægyptian* Pyramids, as they are the greatest, would also be the finest structures in the World. And last of all; That the *French King's* Palace at *Versailles*, and the Frontispiece of the *Louvre*, discover more true Skill in Architecture of all sorts, than any thing which the Ancients ever performed, if we may judge of what is lost, by what remains.

What Monsieur *Perrault* says of the Ancients Way of Raising their Stone, may be confirmed by the Accounts which *Garçilasso de la Vega*, and others, give of the vast Buildings of massy Stone which the *Spaniards* found in *Peru*, upon their first Arrival. It is most certain, that the *Peruvians* knew not the Use of Iron; and by consequence, could make no Engines very serviceable for such a purpose. They ground their Stones one against another, to smooth them; and afterwards they raised them with Leavers: And thus, with Multitude of Hands they reared such Structures as appeared wonderful even to Men acquainted with Modern Architecture.

Of

Of *Sculpture*, he says; ' That we are
 ' to distinguish between entire Statues,
 ' and *Basso Relievo's*; and in entire Statues,
 ' between Naked and Cloathed Pieces.
 ' The Naked Images of the Ancients, as
 ' *Hercules, Apollo, Diana, the Gladiators,*
 ' *the Wrestlers, Bacchus, Laocoon*, and some
 ' few more, are truly admirable: They
 ' shew something extremely Noble, which Pag. 125.
 ' one wants Words for, that is not to be
 ' found in Modern Work: Though he
 ' cannot tell whether Age does not con-
 ' tribute to the Beauty. That if some of
 ' the most excellent of the Modern Pieces
 ' should be preserved MD or MM Years;
 ' or ting'd with some Chymical Water,
 ' that could in a short time make them
 ' appear Antique, it is probable they would
 ' be viewed with the same Veneration
 ' which is now payed to Ancient Statues.
 ' That the Naked Sculpture of single Pag. 129.
 ' Figures is a very noble Art indeed, but
 ' the simplest of any that has ever charmed
 ' Mankind; not being burthen'd with a
 ' Multiplicity of Rules, nor needing the
 ' Knowledge of any other Art to com-
 ' plet it; since a Man that has a Genius
 ' and Application, wants only a beautiful
 ' Model in a proper Posture, which he is
 ' faithfully to copy: And therefore, That
 ' in the Cloathed Statues of the Ancients, Pag. 126,

' the Drapery wants much of that Art
 ' which is discernible in some Modern
 ' Pieces ; they could never make the
 ' Cloaths fit loose to the Bodies, nor ma-
 ' nage the Folds so as to appear easie and
 ' flowing, like well-made Garments upon
 ' living Bodies. That the *Basso Relievo's*
 ' of the Ancients plainly shew, that the
 ' Statuaries in those Days did not under-
 ' stand all the Precepts that are necessary
 ' to compleat their Art ; because they
 ' never observed the Rules of Perspective,
 ' they did not lessen their Figures gradual-
 ' ly, to make them suitable to the Place
 ' where they stood, but set them almost
 ' all upon the same Line ; so that those
 ' behind were as large, and as distin-
 ' guishable, as those before ; as if they had
 ' been purposely mounted upon Steps, to
 ' be seen over one another's Heads. That
 ' this is visible in the *Columna Trajana*, at
 ' this Day, though that is the noblest an-
 ' cient Performance in *Basso Relievo* still
 ' remaining ; wherein, together with some
 ' very beautiful Aires of some of the Heads,
 ' and some very happy Postures, one may
 ' discern that there is scarce any Art in the
 ' Composition of the whole, no gradual
 ' lessening of the *Relievo* in any part,
 ' with great Ignorance in Perspective in
 ' the whole. That the ancient Works in
 ' *Basso*

‘ *Basso Relievo* did not truly deserve that
 ‘ Name, being properly entire Statues, ei-
 ‘ ther sawed down perpendicularly, from
 ‘ Head to Foot, with the fore-part fasten’d
 ‘ or glued to a flat Ground, or sunk half
 ‘ way in: Whereas the true Art con-
 ‘ sists in raising the Figures so from their
 ‘ Ground, which is of the same Piece,
 ‘ that with two or three Inches of *Re-*
 ‘ *lievo*, they may appear like distinct
 ‘ Images sunk into the Ground, some
 ‘ more, some less, according to the several
 ‘ Distances in which they ought to be
 ‘ placed.

Pag. 133.

Pag. 134.

Of *Painting*, he says; ‘ That Three
 ‘ Things are necessary to make a perfect
 ‘ Picture; *To represent the Figures truly;*
 ‘ *To express the Passions naturally;* and, *To*
 ‘ *put the whole judiciously together.* For
 ‘ the *First*, It is necessary that all the
 ‘ Out-Lines be justly Drawn, and that
 ‘ every Part be properly Coloured. For
 ‘ the *Second*, It is necessary that the Painter
 ‘ should hit the different Airs and Cha-
 ‘ racters of the Face, with all the Postures
 ‘ of the Figures, so as to express what
 ‘ they do, and what they think. *The*
 ‘ *whole is judiciously put together*, when
 ‘ every several Figure is set in the Place
 ‘ in which we see it, for a particular Pur-
 ‘ pose; and the Colouring gradually
 ‘ weakened,

Pag. 143.

weakened, so as to suit that part of the
 Plain in which every Figure appears.
 All which is as applicable to the several
 Parts of a Picture that has but one Fi-
 gure, as to the several Figures in a
 Picture that has more. That if we
 judge of Ancient and Modern Paintings
 by this Rule, we may divide them into
 Three Classes: The First takes in the
 Age of *Zeuxis*, *Apelles*, *Timanthes*, and
 the rest that are so much admired in An-
 tiquity. The Second takes in the Age
 of *Raphaël*, *Titian*, *Paul Veronese*, and
 those other great Masters that flourished
 in *Italy* in the last Age. The Third con-
 tains the Painters of our own Age, such
 as *Poussin*, *Le Brun*, and the like. That if
 we may judge of the Worth of the Painters
 of the First Classe, by the Commendations
 which have been given them, we have
 Reason to say, either that their Admirers
 did not understand Painting well, or
 that themselves were not so valuable,
 or both. That whereas *Zeuxis* is said to
 have painted a Bunch of Grapes so natu-
 rally, that the Birds peck'd at them;
 Cooks have, of late Years, reached at
 Partridges and Capons, painted in Kit-
 chins; which has made By-standers smile,
 without raising the Painter's Reputation
 to any great height. That the Contention
 between

Pag. 135.

Pag. 136.

Pag. 138.

‘ between *Protogenes* and *Apelles* shewed Pag. 139.
‘ the Infancy of their Art : *Apelles* was
‘ wonderfully applauded for Drawing a
‘ very fine Stroke upon a Cloth : *Proto-*
‘ *genes* drew a Second over that, in a dif-
‘ ferent Colour ; which *Apelles* split in-
‘ to two, by a Third. Yet this was not Pag. 141.
‘ so much as what *Giotto* did, who lived
‘ in the Beginning of the Restoration of
‘ Painting in *Italy*, who drew, without
‘ Compasses, with a single Stroke of a
‘ Pencil, upon a Sheet of Paper, an O,
‘ so exquisitely round, that it is still Pro-
‘ verbial among the *Italians*, when they
‘ would describe a Man that is egregiously
‘ stupid, to say, *That he is as round as*
‘ *the O of Giotto*. That when *Poussin’s* Pag. 142.
‘ Hand shook so much, that he could scarce
‘ manage his Pencil, he painted some Pieces
‘ of inestimable Value ; and yet very in-
‘ different Painters would have divided
‘ every Line that he drew, into nine or
‘ ten Parts. That the *Chineses*, who can-
‘ not yet express Life and Passion in their
‘ Pieces, will draw the Hairs of the Face and
‘ Beard so fine, that one may part them
‘ with the Eye from one another, and tell
‘ them. Though the Ancients went much Pag. 150.
‘ beyond all this ; for the Remains of the
‘ Ancient Painting discover great Skill in
‘ Designing, great Judgment in Ordering
‘ of

of the Postures, much Nobleness and Ma-
 jesty in the Airs of the Heads ; but little
 Design, at the same time, in the Mixing
 of their Colours, and none at all in the
 Perspective, or the Placing of the Fi-
 gures. That their Colouring is all equal-
 ly strong ; nothing comes forward, no-
 thing falls back in their Pictures ; the Fi-
 gures are almost all upon a Line : So that
 their Paintings appear like Pieces in *Basso-
 Relievo*, coloured ; all dry and unmoveable,
 without Union, without Connexion, and
 that living Softness which distinguishes
 Pictures from Statues in Marble or Cop-
 per. Wherefore, since the Paintings of
 these Ancient Masters were justly design'd,
 and the Passions of every several Figure
 naturally expressed, which are the Things
 that the generality of Judges most ad-
 mire, who cannot discern those Beauties
 that result from a judicious Composition
 of the whole, so well as they can the
 distinct Beauties of the several Parts,
 there is no wonder that *Zeuxis* and *A-
 pelles*, and the other Ancient Masters,
 were so famous, and so well rewarded.
 For, of the Three Things at first assigned,
 as necessary to a Perfect Painter, true
 Drawing, with proper Colouring, affect
 the Senses ; natural Expressing of the Mo-
 tions of the Soul, move the Passions ;
 whereas

whereas a Judicious Composition of the Pag. 146.

whole, which is discernible in an Artful
Distribution of Lights and Shades, in the
gradual Lessening of Figures, according
to their respective Places, in making e-
very Figure answer to that particular
Purpose which it is intended to repre-
sent, affects the Understanding only ;
and so, instead of Charming, will rather
disgust an unskillful Spectator. Pag. 147.

Such a Man, and under this Head almost all
Mankind may be comprehended, will
contentedly forgive the grossest Faults in
Perspective, if the Figures are but very
prominent, and the View not darkened
by too much Shade ; which, in their
Opinion, spoils all Faces, especially of
Friends, whose Images chiefly such Men
are desirous to see.

When he compares the Paintings of
Raphaël and *Le Brun* together, he observes,
That *Raphaël* seems to have had the Pag. 159.

greater Genius of the two ; that there is
something so Noble in his Postures, and
the Ains of his Heads ; something so just
in his Designs, so perfect in the Mixture
of his Colours, that his *St. Michael* will
always be thought the first Picture in
the World, unless his *H. Family* should
dispute Precedency with it. In short,
he says, That if we consider the Persons Pag. 160.

of

of *Raphaël* and *Le Brun*, *Raphaël* perhaps
 may be the greater Man : But if we con-
 sider the Art, as a Collection of Rules,
 all necessary to be observed to make it
 perfect, it appears much more compleat
 in Monsieur *Le Brun*'s Pieces : For *Ra-*
phaël understood so little of the gradual
 Lessening of Light, and Weakening of
 Colours, which is caused by the Inter-
 position of the Air, that the hindermost
 Figures in his Pieces appear almost as
 plain as the foremost ; and the Leaves of
 distant Trees, almost as visible as of those
 near at hand ; and the Windows of a
 Building four Leagues off, may all be
 counted as easily as of one that is within
 twenty Paces. Nay, he cannot tell whe-
 ther some part of that Beauty, now so
 peculiar to *Raphaël*'s Pieces, may not,
 in a great measure, be owing to Time,
 which adds a real Beauty to good Paint-
 ings. For, in the Works of this kind, as
 in New-kill'd Meat, or New-gather'd
 Fruit, there is a Rawness and Sharpness,
 which Time alone concocts and sweetens,
 by mortifying that which has too much
 Life, by weakening that which is too
 strong, and by mixing the Extremities
 of every Colour entirely into one ano-
 ther. So that no Man can tell what
 will be the Beauty of *Le Brun*'s Family
 of

of Darius, Alexander's Triumph, the De-
feat of Porus, and some other Pieces of
equal Force, when Time shall have done
her Work, and shall have added those
Graces which are now so remarkable in
the *St. Michael*, and the *H. Family*. One
may already observe, that Monsieur
Le Brun's Pieces begin to soften; and
that Time has, in part, added those
Graces which It alone can give, by
sweetning what was left on purpose,
by the judicious Painter, to amuse its
Activity, and to keep it from the Sub-
stance of the Work. Thus far Mon-
sieur *Perrault*.

Whether his Reasonings are just, I dare
not determine: Thus much may very
probably be inferred, That in these Things
also the World does not Decay so fast as
Sir William Temple believes; and that
Poussin, *Le Brun* and *Bernini* have made
it evident by their Performances in Paint-
ing and Statuary, (p) That we have had (p) Pag. 52.
Masters in both these Arts, who have de-
served a Rank with those that flourished in
the last Age, after they were again restored
to these Parts of the World.

C H A P. VII.

General Reflections relating to the following Chapters: With an Account of Sir William Temple's Hypothesis of the History of Learning.

IF the bold Claims of confident and numerous Pretenders, might, because of their Confidence and Numbers, be much relied on, it were an easie Thing to determine upon the remaining Parts of Learning, hereafter to be discoursed of. The generality of the Learned have given the *Ancients* the Preference in those Arts and Sciences which have hitherto been considered: But for the Precedency in those Parts of Learning which still remain to be enquired into, the *Moderns* have put in their Claim, with great Briskness. Among this sort, I reckon *Mathematical* and *Physical Sciences*, considered in their largest Extent. These are Things which have no Dependence upon the Opinions of Men for their Truth; they will admit of fixed and undisputed *Mediums* of Comparison and Judgment: So that, though it may be always debated, who have been
the

the best Orators, or who the best Poets ; yet it cannot always be a Matter of Controversie, who have been the greatest *Geometers*, *Arithmeticians*, *Astronomers*, *Musicians*, *Anatomists*, *Chymists*, *Botanists*, or the like ; because a fair Comparison between the Inventions, Observations, Experiments and Collections of the contending Parties, must certainly put an End to the Dispute, and give full Satisfaction to all Sides.

The Thing contended for, is, the *Knowledge of Nature* ; what the Appearances are which it exhibits, and how they are exhibited ; thereby to shew how they may be enlarged, and diversified, and Impediments of any sort removed. In order to this, it will be necessary, (1.) To find out all the several Affections and Properties of Quantity, abstractedly considered ; with the Proportions of its Parts and Kinds, either severally considered, or compared and compounded with one another ; either as they may be in Motion, or at Rest : This is properly the *Mathematician's* Business. (2.) To collect great Numbers of Observations, and to make a vast Variety of Experiments upon all sorts of Natural Bodies. And because this cannot be done without proper Tools, (3.) To contrive such Instruments, by which the

Constituent Parts of the Universe, and of all its Parts, even the most minute, or the most remote, may lie more open to our View ; and their Motions, or other Affections, be better calculated and examined, than could otherwise have been done by our unassisted Senses. (4.) To range all the several Species of Natural Things under proper Heads ; and assign fit Characteristicks, or Marks, whereby they may be readily found out, and distinguished from one another. (5.) To adapt all the Catholick Affections of Matter and Motion to all the known Appearances of Things, so as to be able to tell how Nature works ; and, in some particular Cases, to command her. This will take in *Astronomy*, *Mechanics*, *Optics*, *Musick*, with the other *Physico-Mathematical* and *Physico-Mechanical* Parts of Knowledge ; as also, *Anatomy*, *Chymistry*, with the whole Extent of *Natural History*. It will help us to make a just Comparison between the *Ancient* and *Modern Physics* ; that so we may certainly determine who Philosophized best, *Aristotle* and *Democritus*, or *M. Boyle* and *Mr. Newton*.

In these Things therefore the Comparison is to be made, wherein one can go no higher than the Age of *Hippocrates*, *Aristotle* and *Theophrastus* ; because the
Writings

Writings of the Philosophers before them are all lost. It may therefore be plausibly objected, That this is no fair Way of Proceeding, because the *Ægyptians* and *Chaldeans* were Famous for many Parts of real Learning long before; from whom *Pythagoras*, *Thales*, *Plato*, and all the other *Græcian* Philosophers, borrow'd what they knew. This *Sir William Temple* insists at large upon; so that it will be necessary to examine the Claims of these Nations to Universal Learning: In doing of which, I shall follow *Sir William Temple's* Method; first I shall give a short Abstract of his Hypothesis, and then enquire how far it may be relied on.

Sir William Temple tells us, That the chiefest Argument that is produced in behalf of the Moderns, is; (q) 'That (q) Pag. 5.
' they have the Advantage of the Ancients Discoveries to help their own: So
' that, like Dwarfs upon Giants Shoulders, they must needs see farther than
' the Giants themselves.' To weaken this, we are told, (r) 'That those whom we (r) Pag.
' call Ancients, are Moderns, if compared to 6--10.
' those who are ancients than they: And
' that there were vast Lakes of Learning in
' *Ægypt*, *Chaldæa*, *India* and *China*; where
' it stagnated for many Ages, till the *Greeks*
' brought Buckets, and drew it out.'

The Question therefore which is first to be asked here, is, *Where are the Books and Monuments wherein these Treasures were deposited for so many Ages?* And because they are not to be found, Sir William Temple makes a doubt, (s) *Whether Books advance any other Science, beyond the particular Records of Actions, or Registers of Time.* He may resolve it soon, if he enquires how far a Man can go in Astronomical Calculations, for which the *Chaldeans* are said to be so Famous, without the Use of Letters. The *Peruvian* Antiquities, which he there alledges, for Twelve or Thirteen Generations, from *Mango Capac*, to *Atahualpa*, were not of above $\overline{\text{D}}$ Years standing. The *Mexican* Accounts were not so old; and yet these, though very rude, needed Helps to be brought down to us. The *Peruvian* Conveyances of Knowledge, according to *Garçilasso de la Vega*, were not purely Traditionary, but were Fringes of Cotton, of several Colours, tied and woven with a vast Variety of Knots, which had all determinate Meanings; and so supplied the Use of Letters, in a tolerable degree: And the *Mexican* Antiquities were preserved, after a sort, by Pictures; of which we have a Specimen in *Purchas's Pilgrim*. So that when Sir William Temple urges the

the Traditions of these People, to prove that Knowledge may be conveyed to Posterity without Letters, he proves only what is not disputed, namely, That Knowledge can be imperfectly conveyed to Posterity without Letters; not that Tradition can preserve Learning as well as Books, or something equivalent.

But since Sir *William Temple* lays no great Weight upon this Evasion, I ought not to insist any longer upon it. He says therefore, (t) 'That it is a Question, (t) Pag. 6.
' whether the Invention of Printing has
' multiplied Books, or only the Copies of
' them; since, if we believe that there
' were Six Hundred Thousand Books in
' the *Ptolemæan* Library, we shall hardly
' pretend to equal it by any of ours, nor
' perhaps by all put together; that is, we
' shall scarce be able to produce so many
' *Originals* that have lived any Time, and
' thereby given Testimony of their having
' been thought *worth preserving*.' All this, as it is urged by Sir *William Temple*, is liable to great Exception. For, (1.) If we should allow that there is no Hyperbole in the Number of Books in the *Ptolemæan* Library, yet we are not to take our Estimate by the common Way of Reckoning. Every Oration of *Demosthenes* and *Isocrates*, every Play of *Æschylus* or

Aristophanes, every Discourse of *Plato* or *Aristotle*, was anciently called a Volume. This will lessen the Number to us, who take whole Collections of every Author's Works in one Lump ; and accordingly give Names to them in our Catalogues, if printed together, under one Title.

(2.) *Sir William Temple* seems to take it for granted, that all these Books were *Originals* ; that is to say, Books worth preserving ; which is more than any Man can now prove. I suppose he himself believes that there were Ancients of all Sorts and Sizes, as well as there are Moderns now. And he that raises a Library, takes in Books of all Values ; since bad Books have their Uses to Learned Men, as well as good ones. So that, for any Thing we know to the contrary, there might have been in this *Alexandrian* Library a great Number of (u) *Scribbles*, that, like *Mushrooms* or *Flies*, are born and die in small Circles of Time. (3.) The World can make a better Judgment of the Value of what is lost, at least, as far as it relates to the present Enquiry, than one at first View might perhaps imagine. The lost Books of the *Antiquities* of several Nations, of their *Civil History*, of the Limits of their several *Empires* and *Commonwealths*, of their *Superstitious Rites* and *Ceremonies*,

(u) *Ibid.*

remonies, of their *Laws and Manners*, or of any Thing immediately relating to any of these, are not here to be considered; because it cannot be pretended that the Moderns could know any of these Things, but as they were taught. So neither is what may have related to *Ethics, Politics, Poessie* and *Oratory* here to be urged, since in those Matters, the Worth of Ancient Knowledge has already been asserted. So that we are only to enquire what and how great the Loss is of all those Books upon *Natural* or *Mathematical Arguments*, which were preserved in the *Alexandrian, Asiatick* and *Roman* Libraries, or mentioned in the Writings of the Ancient Philosophers and Historians. By which Deduction, the former Number will be yet again considerably lessened.

Now, a very true Judgment of Ancient Skill in *Natural History* may be formed out of *Pliny*, whose Extracts of Books, still extant, are so particular for the present Purpose, that there is Reason to believe they were not carelessly made of those that are lost. *Galen* seems to have read whatever he could meet with relating to *Medicine*, in all its Parts: And the Opinions of Abundance of Authors, which are no where else preserved, may be discovered out of his Books; of the

famous ones especially ; whom, at every turn, he either contradicts, or produces to fortifie his own Assertions. *Ptolemee* gives an Account of the Old Astronomy, in his *Almagest*. Very many Particulars of the Inventions and Methods of Ancient Geometers are to be found in the *Mathematical Collections* of *Pappus*. The Opinions of the different Sects of Philosophers are well enough preserved in the entire Treatises of the several Philosophers who were of their Sects ; or in the Discourses of others, who occasionally or expressly confute what they say. So that I am apt to think, that the *Philosophical* and *Mathematical Learning* of the Ancients is better conveyed us than the *Civil* ; the Books which treated of those Subjects suiting better the Genius of several Men, and of several Nations too : For which Reason the *Arabs* translated the most considerable *Greek* Books of this kind ; as, *Euclid*, *Apollonius*, *Aristotle*, *Epictetus*, *Cebes*, and Abundance more, that had written of Philosophy or Mathematicks, into their own Language ; whilst they let Books of Antiquity and Civil History lie unregarded.

Sir *William Temple*'s next Enquiry, is From whence both the Ancients and Moderns have received their Knowledge ? His
Method

Method does not seem to be very natural, nor his Question very proper ; since, if Discoveries are once made, it is not so material to know who taught the several Inventors, as what these Inventors first taught others. But setting that aside, the Sum of what he says, in short, is this :

(w) ‘ The Moderns gather all their (w) Pag.
 ‘ Learning out of Books in Universities ; 11, 12.
 ‘ which are but dumb Guides, that can
 ‘ lead Men but one Way, without being
 ‘ able to set them right, if they should
 ‘ wander from it. These Books, besides,
 ‘ are very few ; the Remains of the Wri-
 ‘ tings of here and there an Author, that
 ‘ wrote from the Time of *Hippocrates*, to
 ‘ *M. Antoninus*, in the compass of Six or
 ‘ Seven Hundred Years : Whereas *Thales*
 ‘ and *Pythagoras* took another sort of a
 ‘ Method ; *Thales* acquired his Know-
 ‘ ledge in *Ægypt*, *Phœnicia*, *Delphos*, and
 ‘ *Crete* ; (x) *Pythagoras* spent Twenty- (x) Pag.
 ‘ Two Years in *Ægypt*, and Twelve Years 13, 14, 15.
 ‘ more in *Chaldæa*, and then returned,
 ‘ laden with all their Stores ; and not
 ‘ contented with that, went into *Æ-*
 ‘ *thiopia*, *Arabia*, *India* and *Crete* ; and
 ‘ visited *Delphos*, and all the renowned
 ‘ Oracles in the World.

‘ Left

(y) Pag.
16, 17.

(y) ' Lest we should wonder why *Pythagoras* went so far, we are told, that
' the *Indian Brachmans* were so careful to
' educate those who were intended for
' Scholars, that as soon as the Mothers
' found themselves with Child, much
' Thought and Diligence was employed
' about their Diet and Entertainment, to
' furnish them with pleasant Imaginations,
' to compose their Mind and their Sleeps
' with the best Temper, during the Time
' that they carry'd their Burthen. It is
' certain, that they must needs have been
' very Learned, since they were obliged
' to spend Thirty Seven Years in getting
' Instruction : Their Knowledge was all
' Traditional ; they thought the World
' was Round, and made by a Spirit ; they
' believed the Transmigration of Souls ;
' and they esteemed Sickness such a Mark
' of Intemperance, that when they found
' themselves indisposed, they died out of
' Shame and Sullenness, though some
' lived an Hundred and Fifty or Two Hun-
' dred Years. (z) These *Indians* had
' their Knowledge, in all probability,
' from *China*, a Country where Learning
' had been in request from the Time of
' *Fohius*, their first King. It is to be pre-
' sumed, that they communicated of their
' Store to other Nations, though they
' them-

(z) Pag.
22, 23.

‘ themselves have few Foot-steps of it remaining, besides the Writings of *Confucius*, which are chiefly Moral and Political ; because one of their Kings, who desired that the Memory of every Thing should begin with himself, caused Books of all sorts, not relating to Physic and Agriculture, to be destroyed.

(a) ‘ From *India*, Learning was carried into *Æthiopia* and *Arabia* ; thence, (a) Page 21.
‘ by the Way of the *Red Sea*, it came in-
‘ to *Phœnicia* ; and the *Ægyptians* learn’d
‘ it of the *Æthiopians*.

This is a short Account of the History of Learning, as Sir *William Temple* has deduced it from its most ancient Beginnings. The Exceptions which may be made against it are many, and yet more against the Conclusions which he draws from it. For, though it be certain that the *Ægyptians* had the Grounds and Elements of most parts of real Learning among them earlier than the *Greeks*, yet that is no Argument why the *Græcians* should not go beyond their Teachers, or why the Moderns might not out-doe them both.

Before I examine Sir *William Temple*’s Scheme, Step by Step, I shall offer, as the Geometers do, some few Things as *Postulata* ; which are so very plain, that they

they will be assented to as soon as they are proposed. (1.) That all Men who make a Mystery of Matters of Learning, and industriously oblige their Scholars to conceal their Dictates, give the World great Reason to suspect that their Knowledge is all Juggling and Trick. (2.) That he that has only a Moral Persuasion of the Truth of any Proposition, which is capable of Natural Evidence, cannot so properly be esteemed the Inventor, or the Discoverer rather, of that Proposition, as another Man, who, though he lived many Ages after, brings such Evidences of its Certainty, as are sufficient to convince all competent Judges; especially when his Reasonings are founded upon Observations and Experiments drawn from, and made upon the Things Themselves. (3.) That no Pretences to greater Measures of Knowledge, grounded upon Accounts of Long Successions of Learned Men in any Country, ought to gain Belief, when set against the Learning of other Nations, which make no such Pretences, unless Inventions and Discoveries answerable to those Advantages, be produced by their Advocates. (4.) That we cannot judge of Characters of Things and Persons at a great Distance, when given at Second-hand, unless we knew exactly
how

how capable those Persons, from whom such Characters were first taken, were to pass a right Judgment upon such subjects ; and also the particular Motives that biased them to pass such Censures. If *Archimedes* should, upon his own Knowledge, speak with Admiration of the *Ægyptian* Geometry, his Judgment would be very considerable : But if he should speak respectfully of it, only because *Pythagoras* did so before him, it might, perhaps, signify but very little. (5.) That excessive Commendations of any Art or Science whatsoever, as also of the Learning of any particular Men or Nations, only prove that the Persons who give such Characters never heard of any Thing or Person that was more excellent in that Way ; and therefore that Admiration may be as well supposed to proceed from their own Ignorance, as from the real Excellency of the Persons or Things ; unless their respective Abilities are otherwise known.

CHAP.

C H A P. VIII.

*Of the Learning of Pythagoras, and
the most Ancient Philosophers of
Greece.*

I N my Enquiries into the Progress of Learning, during its obscurer Ages, or those, at least, which are so to us at this Distance, I shall begin with the Accounts which are given of the Learning of *Pythagoras*, rather than those of the more Ancient *Græcian* Sages ; because his School made a much greater Figure in the World, than any of those which preceded *Plato* and *Aristotle*. In making a Judgment upon the Greatness of his Performances, from the Greatness of his Reputation, one ought to consider how near to his Time those lived, whose express Relations of his Life are the oldest we have.

Diogenes Laërtius is the ancientest Author extant, that has purposely written the Life of *Pythagoras* : According to *Menagius's* Calculations, he lived in *M. Antoninus's* Time : And all that we learn from *Diogenes*, is only, that we know very little certainly about *Pythagoras*. He cites, indeed, great Numbers of Books ; but those
so

so very disagreeing in their Relations, that a Man is confounded with their Variety. Besides, the *Græcians* magnified every Thing that they commended, so much, that it is hard to guess how far they may be believed, when they write of Men and Actions at any Distance from their own Time. *Græcia Mendax* was almost Proverbial amongst the *Romans*. But by what appears from the Accounts of the Life of *Pythagoras*, he is rather to be ranked among the Law-givers, with *Lycurgus* and *Solon*, and his own two Disciples, *Zaleucus* and *Charondas*, than amongst those who really carried Learning to any considerable height. Therefore, as some other Legislators had, or pretended to have, Super-natural Assistances, that they might create a Regard for their Laws in the People to whom they gave them; so *Pythagoras* found out several Equivalents, which did him as much Service. He is said, indeed, to have lived many Years in *Ægypt*, and to have conversed much with the Philosophers of the *East*; but if he invented the XLVIIth. Proposition in the First Book of *Euclid*, which is unanimously ascribed to him by all Antiquity, one can hardly have a profound Esteem for the Mathematical Skill of his Masters. It is, indeed, a very noble Proposition,

position, the Foundation of Trigonometry, of universal and various Use in those curious Speculations about Incommensurable Numbers ; which his Disciples from him, and from them the *Platonists*, so exceedingly admired. But this shews the Infancy of Geometry in his Days, in that very Country which claims the Glory of Inventing it to her self. It is probable, indeed, that the *Ægyptians* might find it out ; but then we ought also to take notice, that it is the only very considerable Instance of the real Learning of *Pythagoras* that is preserved. Which is the more observable, because the *Pythagoreans* paid the greatest Respect to their Master, of any Sect whatsoever ; and so we may be sure that we should have heard much more of his Learning, if much more could have been said : And though the Books of *Hermippus* and *Aristoxenus* (b) are lost, yet *Laërtius*, who had read them, and *Porphyry* and *Jamblichus*, Men of great Reading, and diffuse Knowledge, who, after *Diogenes*, wrote the Life of the same *Pythagoras*, would not have omitted any material Thing of that kind, if they had any where met with it.

(b) Two very considerable Writers of *Pythagoras* his Life.

Amongst his other Journeys, Sir *William Temple* mentions *Pythagoras*'s Journey (c) Pag. 15. to *Delphi* (c). What that Voyage of his is here remembred for, it is not easie to guess.

gues. *Apollo's* Priestesses are not famous for discovering Secrets in Natural or Mathematical Matters ; and as for Moral Truths, they might as well be known, without going to *Delphi* to fetch them. *Van Dalen*, in his Discourses of the Heathen Oracles, has endeavoured to prove, that they were only Artifices of the Priests, who gave such Answers to Enquirers as they desired, when they had either Power or Wealth to back their Requests. If *Van Dalen's* Hypothesis be admitted, it will strengthen my Notion of *Pythagoras* very much ; since, when he did not care to live any longer in *Samos*, because of *Polycrates's* Tyranny, and was desirous to establish to himself a lasting Reputation, for Wisdom and Learning, amongst the ignorant Inhabitants of *Magna Græcia*, where he settled upon his Retirement, he was willing to have them think that *Apollo* was of his Side. That made him establish the Doctrine of Transmigration of Souls, which he brought with him out of *India*, that so those *Italians* might think that he had a certain Reminiscence of Things past, since his first Stage of Life, and the Beginning of the World ; and upon that Account admire him the more : For *Laërtius* (d) says, that he pretended to remember every Thing that he had done
H formerly,

(d) *Vit. Pythag.*
 §. 4.

(e) Ibid.
§. 10.

(f) Pag.
53.

formerly, whilst he was in those other Bodies; and that he received this as an especial Favour from *Mercury*, who gave him his Choice of whatsoever he desired, except Immortality. (e) For these Reasons also he obliged his Scholars to go through a Trial of Five Years, to learn Obedience by Silence: And that afterwards it was granted to some few, as a particular Favour, to be admitted into his Presence. These Things tended very much to impress a Veneration of his Person upon his Scholars, but signified nothing to the Advancement of Learning; yea, rather hindred it. Those that live in the End of the World, (f) when every Thing, according to *Sir William Temple*, is in its Declension, know no Way so effectual to promote Learning, as much Conversation and Enquiry; and, which is more, they have no *Idea* how it can be promoted without them. The Learned Men of the present Age pretend to no Acquaintance with *Mercury* or *Apollo*, and can do as little in Natural Knowledge by such a Sham-Revelation, as they can by Reminiscence. If a Man should, for Five Years together, read Lectures, to one that was not allowed to make Pauses, or ask Questions; another Man, in the ordinary Road, by Books and Professors, would learn more,

at

at least to much better purpose, in Six Months, than he could in all that Time.

Pythagoras was, without question, a wise Man, well skill'd in the Arts of Civil Prudence; by which he appeased great Disturbances in those *Italian* Commonwealths: He had much more Knowledge than any Man of that Age in *Italy*, and knew how to make the most of it. He took great Delight in Arithmetical Speculations; which, as *Galileo* (g), not im-^{(g) System} probably, guesses, he involved in Myste-^{Cosmic.} ries, that so ignorant People might not despise him, for busying himself in such abstruse Matters, which they could not comprehend; and if they could have comprehended, did not know to what Use to put them. He took a sure Way to have all his Studies valued, by obliging his Scholars to resign up their Understandings to his Authority and Dictates. The great Simplicity of his Manners, with the Wisdom of his Axioms and Symbols, charmed an ignorant Age, which found real Advantages, by following his peaceful Measures; much above those that were formerly procured by Rapin and Violence. This seems to be a true Account of *Pythagoras*, in the History of whose Reputation, there is nothing extraordinary, since Civilizers of Nations

have always been as much magnify'd as the Inventors of the most useful Arts : But one can no more conclude from thence, That *Pythagorus* knew as much as *Aristotle* or *Democritus*, than that *Friar Bacon* was as great a Mathematician as *Dr. Barrow*, or *Mr. Newton*, because he knew enough to be thought a Conjuror in the Age in which he lived, and no despicable Person in any other.

But it may not be amiss to give a Taste of some of the *Pythagorean* Notions ; such, I mean, as they first started in *Europe*, and chiefly valued themselves upon. Of this sort, were their Arithmetical Speculations : By them they pretended to explain the Causes of Natural Things. The following Account of their Explication of Generation, is taken out of *Censorinus* and *Aristides* :

Perfect Animals are generated in two distinct Periods of Time ; some in Seven Months, some in Nine. Those Generations that are compleated in Seven Months, proceed in this Order : In the first Six Days after Conception, the Humour is Milky ; in the next Eight it is turned into Blood ; which Number 8 bears the Proportion of 1 to 6 ; in Nine Days more it becomes Flesh ; 9 is in a Sescuple Proportion to 6 ; in Twelve

‘ Twelve Days more the Embryo is form’d;
 ‘ 12 is double to 6: Here then are these
 ‘ Stages, 6, 8, 9, 12; 6 is the first per-
 ‘ fect Number, because it is the Summ
 ‘ of 1, 2, 3, the only Numbers by which
 ‘ it can be divided: Now, if we add
 ‘ these Four Numbers, 6, 8, 9, 12, toge-
 ‘ ther, the Summ is 35; which multi-
 ‘ ply’d by 6, makes 210, the Number of
 ‘ Days from the Conception to the Birth;
 ‘ which is just Seven Months, allowing
 ‘ 30 Days to a Month. A like Propor-
 ‘ tion must be observed in the larger Pe-
 ‘ riod of Nine Months; only 10, the
 ‘ Summ of 1, 2, 3, 4, added together,
 ‘ must be added to 35. which makes 45;
 ‘ that multiply’d by 6, gives 270, or
 ‘ Nine times 30, the Number of Days in
 ‘ larger Births.

If these fine Notions be compar’d with
 Dr. *Harvey’s* upon the same Subject, no
 doubt but we shall all be Converts to
 Sir *William Temple’s* Opinion, and make a
 vast Difference between the poor Obser-
 vations of these later Ages, and the sub-
 lime Flights of the Ancients.

Now, though abstracted Mathematical
 Theories, which cannot be relished by
 one that has not a tolerable Skill in Ma-
 thematicks before, might, perhaps, pru-
 dently be concealed from the Vulgar, by

the *Pythagorean* School ; and in their stead, such grave Jargon as this imposed upon them ; yet even that shews how little Knowledge of Nature they could pretend to. Men that aim at Glory, will omit no probable Methods to gain it, that lie in their Way ; and solid Discoveries of a real Insight into Nature, would not only have been eternally true, but have charm'd Mankind at another Rate, than such dry sapless Notions as seem at first View to have something of Subtilty ; but upon a Second Reflection, appear vain and ridiculous.

(b) Pag.
28.

From *Pythagoras*, I shall go on to the Ancient Sages (b), who were so learned in Natural Philosophy, that they Foretold not only Eclipses in the Heavens, but Earth-quakes at Land, and Storms at Sea, great Droughts, and great Plagues, much Plenty or much Scarcity of certain sorts of Fruits or Grain, not to mention the Magical Powers attributed to several of them, to allay Storms, to raise Gales, to appease Commotions of People, to make Plagues cease.

One of the ancientest of these was *Thales* : He was so deeply skill'd in Astronomy, that by the Sun's Annual Course he found out the Equinoxes and Solstices : He is said also first to have foretold Eclipses ; some Geometrical Proper-
ties

ties of Scalene Triangles are ascribed to him, and challenged by *Euphorbus*. Nice we are sure they were not, because the Theorem of *Pythagoras* was not then found out.

When Sir *William Temple* extolled the Skill of these *Ancient Sages*, in foretelling Changes of Weather, he seems to have forgotten that he was in *England*, and fancied that these Old Philosophers were there too. The Climates of *Asia Minor*, and *Greece*, are not so various as ours; and at some stated Times of the Year, of which the recurrent Winds give them constant Warning, they are often troubled with Earthquakes, and always with violent Tempests: So that by the Conjectures that we are here able to make of the Weather at some particular Seasons, though we labour under so great Disadvantages, we may easily guess how much certainer Predictions may be made by curious Men in serener and more regular Climates; which will take off from that Admiration that otherwise would be paid to those profound Philosophers, even though we should allow that all those Stories which are told of their Skill, are exactly true.

Besides, there is Reason to believe that we have the Result of all the Observa-

tions of these Weather-wise Sages in *Ara-
tus's Diofemia*, and *Virgil's Georgics*; such
as those upon the Snuffs of Candles, the
Croaking of Frogs, and many others quite
as notable as the English Farmer's *Living
Weather-Glass*, his *Red Cow that prick'd up
her Tail*, an Infallible Presage of a coming
Shower.

Sir *William Temple's* Method leads me
now to consider, what Estimate ought to
be made of the Learning of those Nations,
from which he derives all the Knowledge
of these *Ancient Greeks*: I shall only there-
fore give a short Specimen of those Dis-
coveries, with which these Ancient Sages
enriched the Ages in which they lived,
as I have already done of the *Pythagoreans*,
and then proceed.

(i) Vit.
*Empedo-
clis*, S. 60.

Diogenes Laërtius informs us of *Empe-
docles's* (i) Skill in Magic, by the In-
stance of his stopping those pestilential
Vapours that annoy'd his Town of *Agri-
gentum*. He took some Asses, and flea'd
them, and hung their Hides over those
Rocks that lay open to the *Etesian* Winds,
which hindred their Passage, and so freed
the Town. He tells another Story of *De-
mocritus* (k), That he was so nice in
his Observations, that he could tell whe-
ther a Young Woman were a Virgin, by
her Looks, and could find it out, though
the

(k) Vit.
Democriti,
S. 42.

she had been corrupted but the Day before; and he knew, by looking upon it, that some Goat's Milk that was brought him, was of a Black Goat that had had but one Kid.

These are Instances very seriously recorded by grave Authors of the *Magical Wisdom* of the Ancients; that is, as Sir *William Temple* defines it, of that (l) *excelling Knowledge of Nature, and the various Powers and Qualities in its several Productions, and the Application of certain Agents to certain Patients, which, by Force of some peculiar Qualities, produce Effects very different from what fall under Vulgar Observation and Comprehension.* (l)Pag.46.

CHAP. IX.

Of the History and Geometry of the Ancient Ægyptians.

From these *Ancient Sages*, Sir *William Temple* goes to the Nations from which they received their Knowledge, which are *Ægypt, Chaldæa, Arabia, India, and China*; only he seems to invert the Order, by pretending that *China* and *India* were

were the Original Fountains from which Learning still ran Westward. I shall speak of them in the Order in which I have named them; because the Claims of the *Ægyptians* and *Chaldæans* having a greater Foundation in Ancient History, deserve a more particular Examination.

It must be owned, That the Learning which was in the World before the *Græcian* Times was almost wholly confined to the *Ægyptians*, excepting what was amongst the *Israelites*: And whosoever does but consider how difficult it is to lay the First Foundations of any Science, be they never so small, will allow them great Commendation; which if their Advocates had been contented with, there had been an End of the Controversie. Instead of that, all that has since been added to their Foundations, has been equally challenged as originally due to them, or at least once known by them, by (m) *Olaus Borrichius*, and several others long before Sir *William Temple* wrote upon this Argument.

(m) In
Hermete
Ægyptio.

Before I enter upon this Question, I shall desire that one Thing may be taken Notice of; which is, That the *Ægyptians* anciently pretended to so great Exactness, that every Failure is more justly imputable to them, than to other Nations; not only

only their History was so carefully look'd after, that there was a College of Priests set up on purpose, whose chief Business it was successively to preserve the remarkable Matters of Fact that occurred in their own Ages, and transmit them undisputed to Posterity; but also, there was answerable Care taken to propagate and preserve all other Parts of useful Learning: All their Inventions in *Physic*, in *Geometry*, in *Agriculture*, in *Chymistry*, are said to have been inscribed on Pillars, which were preserved in their Temples; whereby not only the Memory of the Things themselves was less liable to be lost, but Men were farther encouraged to use their utmost Diligence in making Discoveries that might be of Publick Advantage, when they were certain of getting Immortality by these Inventions. This generous Custom was the more to be applauded, because every Man was confined to one particular Part of Learning, as his chief Business; that so nothing might escape them. One was Physician for the *Eyes*, another for the *Heart*, a third for the *Head* in general, a fourth for *Chirurgical Applications*, a fifth for *Womens Diseases*, and so forth. *Anatomy*, we are told, was so very much cultivated by the Kings of *Ægypt*, that they particularly ordered the Bodies of dead

dead Men to be opened, that so Physic might be equally perfect in all its parts. Where such Care has been used, proportionable Progresses may be expected; and the World has a Right to make a Judgment, not only according to what is now to be found, but according to what might have been found, if these Accounts had been strictly true.

In the first Place therefore, we may observe, That *the Civil History of Ægypt* is as lamely and as fabulously recorded, as of any Nation in the Universe: And yet the *Ægyptians* took more than ordinary Care to pay all possible Honours to the Dead, especially their Kings; by preserving their Bodies with Bitumen and resinous Drugs, and by building sumptuous Monuments to lay them in: This certainly was done to perpetuate their Memories, as well as to pay them Respect: It was at least as Ancient as *Joseph's* time ⁽ⁿ⁾; how much older we know not. The *Jews*, who for another and a more sacred Reason, took Care of their Dead, took equal Care to preserve their Genealogies, and to draw an Uniform Thread of their History from *Abraham*, down to the Destruction of the Second Temple. Herein they acted consistently, and their History is a standing Instance of this their Care; whereas the

Ægyptian

(n) Gen.
50. 2.

Ægyptian History is so very inconsistent a Business, that it is impossible to make a coherent Story out of it : Not for Want of Materials, but because their Materials neither agree with themselves, nor with the History of any other Nation in the World.

A more certain Proof of the Deficiency of the *Ægyptian* History cannot be produced, than that the *Time of the building of the Pyramids* was lost when *Herodotus* was in *Ægypt* ; as also the *Æra* of the only great Conqueror of that Nation, *Sesostris*. The first of these is not slightly to be passed over. Such vast Fabricks could not be raised without Numbers of Hands, and a great Expence of Time and Money, or something equivalent. The *Traditions* of their Erection are indeed minutely enough set down in *Herodotus*, but then they are set down as *Traditions* ; and, which is more, they are solely to be found in him, though he is not the only ancient Writer that mentions the Pyramids ; he only names *Cheops* and *Mycerinus*, who are differently named by other Historians ; and the Time when they lived, is as little agreed upon, as the Names by which they are called. The History of a Nation can sure be worth very little, that could not preserve the Memory of the Names

Names at least, if not the Time, of those Princes, who were at so much Pains to be remembred, in a Place where their Monuments were so visible, that no Person could sail up and down the *Nile*, to or from their Capital City *Memphis*, without taking notice of them; and every Man, upon his first seeing of them, would naturally ask, what they were, by whom, and for what Intent erected. To which we may add, That these very Buildings are more exactly described in Mr. *Greaves's Pyramidographia*, than in any ancient Author now extant.

(o) In Canon
none Chrono-
nico.

The Difficulty of determining the Age when *Sesostris* lived, is another Instance of the Carelessness of the *Ægyptian* Historians. Either he was the same with *Sheshak*, who Invaded *Judæa* in *Rehoboam's* Time, (as Sir *John Marsham* (o) asserts after *Josephus*) or not: If he was, his Time is known indeed; but then the Authority of *Manetho*, and of those Pillars from which *Manetho* pretended to transcribe the Tables of the several Dynasties of the *Ægyptian* Kings, is at an End: Besides, it contradicts all the *Greek* Writers that mention *Sesostris*, who place him in their fabulous Age, and generally affirm, that he lived before the Expedition of the *Argonauts*, which preceded the

the War of *Troy*. If he was not that *Sheshak*, then the Time when the only famous Conqueror of the *Ægyptian* Nation lived is uncertain, and all that they know of him is, that *once upon a time* there was a mighty King in *Ægypt*, who conquer'd *Æthiopia*, *Arabia*, *Assyria*, and up to *Colchis*, with *Asia the Less*, and the Islands of the *Ægean* Sea, where having left Marks of his Power, he returned home again to reap the Fruits of his Labours: A Tradition which might have been preserved without setting up a College at *Heliopolis* for that purpose.

The very Learned Mr. *Dodwell*, in his Discourse concerning the *Phœnician History of Sanchoniathon*, advances a Notion which may help to give a very probable Account of those vast Antiquities of the *Ægyptians* pretended to by *Manetho*. He thinks that after the History of *Moses* was translated into *Greek*, and so made common to the Learned Men of the neighbouring Nations, that they endeavoured to rival them by pretended Antiquities of their own, that so they might not seem to come behind a People, who till then had been so obscure. This, though particularly applied by that Excellent Person to *Sanchoniathon's* History, seems equally forcible in the present Controversie: For
Manetho

Manetho dedicated his History to *Ptolemee Philadelphus*, at whose Command it was written, and wrote it about the Time that the LXXII Interpreters translated the *Pentateuch*. The great Intercourse which the *Ægyptians* and *Israelites* formerly had each with other, made up a considerable part of that Book, and occasion'd its being the more taken notice of; so that this History being injurious to the vain Pretences of that People, might very probably provoke some that were jealous for the Honour of their Nation, and *Manetho* among the rest, to set up an Anti-History to that of *Moses*; and to dedicate it to the same Prince who employ'd the *Jews* to translate the *Pentateuch*, and who ordered *Manetho* himself to bring him in an Account of the *Ægyptian* Antiquities, that so any Prejudices which *Ptolemee*, who was of another Nation himself, might entertain against their Country, might be effectually removed.

This Notion is the more probable in our Case, because it equally holds, whether we follow Sir *John Marsham's* Accounts, who has made the *Ægyptian* Antiquities intelligible; or whether they are left in the same Confusion that they were in before. That most Learned Gentleman has reduced the wild Heap of *Ægyptian* Dynasties

Dynasties into as narrow a Compass as the History of *Moses*, according to the *Hebrew* Account, by the help of a Table of the *Theban* Kings, which he found under *Eratosthenes's* Name, in the Chronography of *Syncellus*. For, by that Table, he (1.) Distinguished the Fabulous and Mystical part of the *Ægyptian* History, from that which seems to look like Matter of Fact. (2.) He reduced the Dynasties into Collateral Families, reigning at the same time, in several Parts of the Countrey; which, as some Learned Men saw before, was the only Way to make those Antiquities consistent with themselves, which till then were confused and incoherent. But it seems evident, by the Remains that we have of *Manetho* in *Eusebius*, and by the Accounts which we have of the *Ægyptian* History in *Josephus's* Books against *Appion*, and in the Ancient *Christian* Writers, that the *Ægyptians* in *Ptolemee's* Time did not intend to confine themselves within the Limits set by *Moses*, but resolved to go many Thousand Years beyond them. If therefore *Eratosthenes's* Table be genuine, not only *Manetho's* Authority sinks, but the Pillars from whence he transcribed his Tables of the Kings of their several Dynasties are Impostures, since they pretend to give successive Ta-

I

bles

bles of vast Numbers of Kings reigning in several Families, for many Ages ; which ought to be contracted into a Period of Time, not much exceeding $\overline{\text{MM}}$ Years. If the Table of *Eratosthenes* be not the true Rule by which the *Ægyptian* Antiquities are to be squared, then the former Prejudices will return in full force ; and one cannot value *Tables*, and *Pillars*, and *Priests*, that could not fix the *Time of the Erection of the Pyramids*, and the *Age of Sesostris*, so certainly, as that when *Herodotus* was in the Country, they might have been able to inform him a little better than they did.

This long Enquiry into the *Ægyptian* History, will not, I hope, be thought altogether a Digression from my Subject, because it weakens the *Ægyptians* Credit in a most sensible Part : For, if their Civil History is proved to be egregiously fabulous, or inconsistent, there will be no great reason to value their mighty Boasts in any thing else ; at least, not to believe them upon their own Words, without other Evidence.

In *Geometry*, the *Ægyptians* are, of all hands, allowed to have laid the first Foundations : The Question therefore is, How far they went ? Before this can be answer'd satisfactorily, one ought to enquire
whether

whether *Pythagoras* and *Thales*, who went such long Voyages to get Knowledge, would not have learn'd all that the *Ægyptians* could teach them? Or, whether the *Ægyptians* would willingly impart all they knew? The former, I suppose, no body questions: For the latter, we are to distinguish between Things that are concealed out of Interest, and between other Things, which, for the same Interest, are usually made public. The *Secrets of the Egyptian Theology* were not proper to be discovered, because by those Mysteries they kept the People in awe: The *Philosopher's Stone* likewise, if they had been Masters of it, might, for Gain, have been concealed: And *Medicinal Arcana* are of Advantage often-times to the Possessors, chiefly because they are *Arcana*. But *Abstracted Mathematical Theories*, which bring Glory to the Inventors, when they are communicated to those that can relish them, and which bring no Profit when they are locked up, are never concealed from such as shew a Desire to learn them; provided that by such a Discovery the first Inventors are not deprived of the Glory of their Inventions; which is encreased by publishing, if they have before-hand taken care to secure their Right. So that since *Pythagoras* is commended for no

I 2 famous

famous Invention in Geometry, except the XLVIIth Proposition of the First Book of *Euclid*: And since, *Thales* is said to have sacrificed an Oxe, for finding out how to inscribe a Rectangled Triangle within a Circle, which implies, that he learn'd it not of the *Ægyptians*, we may reasonably conclude, that these two *Græcian* Philosophers brought nothing of more Moment, in that Way, with them, out of *Ægypt*; and therefore, either the farther Discoveries that were made in Geometry, were made by the *Ægyptians* afterwards; or, which is more probable, they were *Græcian* Superstructures upon *Ægyptian* Foundations. Besides, though a Man travelled into *Ægypt*, yet it does not follow from thence, that he learn'd all his Knowledge there. Though *Archimedes* and *Euclid* were in *Ægypt*, yet they might, for all that, have been Inventors themselves of those noble Theorems which are in their Writings. In *Archimedes's* Time, the *Greeks* were settled in *Alexandria*, under the *Ptolemee's*, who were then, and long before, Lords of *Ægypt*; and the Learning of *Ægypt*, at that Time, could no more be attributed to those Old *Ægyptians*, who lived before the *Græcian* Conquest, than the Learning of Archbishop *Usher*, Sir *James Ware*, and Mr. *Dodwell*,
can

can be attributed to a Succession of those Learned *Irish-men* who were so considerable in the *Saxon* Times.

This last Consideration is of very great Moment; for few of the *Greeks*, after *Plato*, went into *Ægypt* purely for Knowledge: And though *Plato* brought several of his Notions out of *Ægypt*, which he interwove into his Philosophy, yet the Philosophers of the *Alexandrian* School, who, for the most part, were *Platonists*, shew, by their Way of Writing, and by their frequent Citations out of *Plato's* Books, that they chose to take those Things from the *Græcians*, which, one would think, might have been had nearer Home, if they had been of the Original Growth of the Countrey. The most considerable Propositions in *Euclid's Elements* were attributed to the *Greeks*; and we have nothing confessedly *Ægyptian*, to oppose to the Writings of *Archimedes*, *Apollonius Pergæus*, or *Diophantus*: Whereas, had there been any Thing considerable, it would most certainly have been produced, or, at least, hinted at, by some of those very Learned *Ægyptians*, or rather later *Greeks* born in *Ægypt*, whose Writings that treat of the Extent of the *Ægyptian* Knowledge, are still extant.

Having now examined the *History* and *Geometry* of the *Ægyptians*, it will be much easier to go through their Pretences, (or rather the Pretences of their Advocates) to Superiority in other Parts of Learning. The *Ægyptians* seem to have verified the Proverb, *That he that has but one Eye, is a Prince among those that have none.* This was Glory enough; for it is always exceedingly Honourable to be the First, where the Strife is concerning Things which are worth contending for.

CHAP. X.

Of the Natural Philosophy, Medicine and Alchemy of the Ancient Ægyptians.

THE *Ægyptian Natural Philosophy* and *Physic* shall be joined together, because there is so great an Affinity between them, that true Notions in either Science assist the other. Their *Physic*, indeed, was very famous in *Homer's Time*; and wonderful Things are told of *Hermes*, the pretended Father of the Chymical Art. But one ought to distinguish between

tween Particular Medicines, how noble
foever, and General Theories founded
upon a due Examination of the Nature
of those Bodies from whence such Medi-
cines are drawn, and of the Constitution
and Fabrick of the Bodies of the Patients
to whom they are to be applied, and
of the incidental Circumstances of Time
and Place; which are necessary to be
taken in by a wise Physician. The Stories
of the *West-Indian* Medicines are many
of them very astonishing, and those
Salvages knew perfectly how to use
them before ever the *Europæans* came a-
mong them, and yet they were never
esteemed able Physicians. This Instance
is applicable to the present Question:
Galen often mentions *Ægyptian* Remedies,
in his Treatises of *Medicines*, which are
numerous and large, though he seldom
mentions any of their Hypotheses, from
which only a Man can judge whether
the *Ægyptians* were well-grounded Phy-
sicians, or Empiricks. This is the more
remarkable, because *Galen* had lived long
at *Alexandria*, and commends the Industry
of the *Alexandrians* in cultivating Ana-
tomy, which is so necessary a Part of a
Physician's Business.

In General therefore we may find, that
all the *Ægyptian* Notions of Physical Mat-

ters were built upon *Astrological and Magical Grounds*: Either the Influence of a Particular Planet, or of some Tutelar Dæmon, were still considered. These Foundations are precarious and impious, and they put a stop to any Encrease of real Knowledge, which might be made upon other Principles. He that minds the Position of the Stars, or invokes the Aid of a Dæmon, will rarely be solicitous to examine nicely into the Nature of his Remedies, or the Constitution of his Patients, without which, none of the ancient Rational Physicians believed that any Man could arrive at a perfect Knowledge of their Art. So that if *Hippocrates* learn'd his Skill in *Ægypt*, as it is pretended, the *Ægyptian* Physicians afterwards took a very stupid Method to run so far upon Imaginary Scents, as even to lose the Memory that they had ever pursued more Rational Methods. Those that would be further satisfy'd of the Truth of this Matter of Fact, may find it abundantly proved in *Conringius's* Discourse (p) of the Old *Ægyptian Medicine*.

(p) *De Hermetica Ægyptiorum veteris & Paracelsicorum nova Medicinâ.*

But we are told, that there was a particular sort of Physic, used only amongst the *Ægyptian Priests*, which was kept secret, not only from the *Greeks* that came into their Country for Knowledge, but from

from the Generality of the Natives themselves; wherein, by the help of the *Grand-Elixir*, they could do almost any thing but restore Life to the Dead. This *Elixir*, which was a Medicine made with the Philosophers-Stone, was a Chymical Preparation; and, if we may believe *Olaus Borrichius* (q), the Great and Learned Advocate of the Chymical and Adept Philosophers, was the Invention of *Hermes*, who was Contemporary with *Isis* and *Osiris*, whose Age none ever yet determined. If these Claims are true, there is no question but the *Ægyptians* understood Nature, at least that of Metals, in a very high degree. This is an Application of Agents, to Patients (r); which, if made good, will go farther than any Assertion commonly brought to prove the Extent of *Ægyptian* Knowledge: And therefore, I presume, I shall not be thought tedious, if I enlarge more particularly upon this Question, than I have done upon the rest; especially since there has not been, that I know of, any direct Answer ever printed to *Borrichius's* Book upon this Argument, which he wrote against the foremention'd Discourse of *Conringius*.

(q) De Ortu & Progressu
Chemiæ; as also *Hermetis*
Ægyptiorum & Chemicorum
sapientia ab Herm.
Conringii Animadversioni-
bus vindicata.

(r) Pag.

46.

One may justly wonder that there should have been so noble an Art as that of turning baser Metals into Gold and Silver so long in the World, and yet that there should be so very little, if any thing, said of it in the Writings of the Ancients. To remove this Prejudice therefore, all the fabulous Stories of the *Greeks*, have, by Men of fertile Inventions, been given out to be disguised Chymical *Arcana*. *Jason's Golden Fleece*, which he brought from *Colchis*, was only a Receipt to make the *Philosopher's-Stone*; and *Medea* restored her Father-in-Law, *Æson*, to his Youth again by the *Grand Elixir*. *Borrichius* is very confident that the *Ægyptian* Kings built the Pyramids with the Treasures that their Furnaces afforded them; since, if there were so many Thousand Talents expended in Leeks and Onions, as *Herodotus* tells us there were, which must needs have been an inconsiderable Summ, in comparison of the whole Expence of the Work, one cannot imagine how they could have raised Money enough to defray the Charge of the Work any other Way. And since *Borrichius*, *Jacobus Tollius* has set out a Book called *Fortuita*, wherein he makes most of the Mythology to be Chymical Secrets.

But

But though *Borrichius* may believe that he can find some obscure Hints of this *Great Work* in the Heathen Mythologists, and in some scatter'd Verses of the Ancient Poets, which, according to him, they themselves did not fully understand when they wrote them; yet this is certain, That the ancientest Chymical Writers now extant, cannot be proved to have been so old as the Age of *Augustus*. *Conringius* believes that *Zosimus Panopolita* is the oldest Chymical Author that we have, whom he sets lower than *Constantine the Great*. That perhaps may be a Mistake; for *Borrichius*, who had read them both in MS. in the *French King's Library*, brings very plausible Arguments to prove that *Olympiodorus*, who wrote Commentaries upon some of the Chymical Discourses of *Zosimus*, was \overline{CL} Years older than *Constantine*; because he mentions the *Alexandrian Library* in the Temple of *Serapis*, as actually in being, which, in *Ammianus Marcellinus's* Time, who was Contemporary with *Julian the Apostate*, was only talk'd of, as a thing destroyed long before. I don't mean that which was burnt in *Julius Cæsar's* Time, but one afterwards erected out of the scatter'd Remains that were saved from that great Conflagration, which is mentioned by
Tertullian,

Tertullian, under the Name of *Ptolemee's* Library at *Alexandria*. If this *Zosimus* is the same whom *Galen* mentions, for a Remedy for Sore Eyes, in his *IVth* Book of *Topical Medicines*, then both he and *Olympiodorus* might have been considerably older, and yet have lived since our Blessed Saviour's Time. However, be their Age what it will, they wrote to themselves, and their Art was as little known afterwards as it was before: *Julius Firmicus* is the First Author that has mention'd *Alchemy*, either by Name, or by an undisputed Circumlocution; and he dedicated his Book of *Astrology* to *Constantine the Great*. *Manilius* indeed (who is suppos'd to have liv'd in *Augustus's* Time) in the *IVth* Book of his *Astronomicon*, where he gives an Account of those that are born under *Capricorn*, has these words,

————— *scrutari cæca metalla,*
Depositas & opes, terræque exurere venas,
Materiemque manu certâ duplicarier arte :

which last Verse seems to be a Description of *Alchemy*: But, besides that the Verse is suspected to be spurious; even the Age of *Manilius* himself is not without Controversie; some making him Contemporary with the Younger *Theodosius*,
and

and consequently later than *Firmicus* himself. We may expect to have this Question determined, when my most Learned Friend, Dr. *Bentley*, shall oblige the World with his *Censures* and *Emendations* of that Elegant Poet.

But if these *Græcian* Chymists should have the utmost Antiquity allowed them that *Borrichius* desires, it would signify little to deduce their Art from *Hermes*; since Men might pretend that their Art was derived from him in *Zosimus's* Days, and yet come several Thousand Years short of it, if we follow the Accounts of *Manetho*. Wherefore, though this is but a Negative Argument, yet it seems to be unanswerable; because if there had been such an Art, some of the *Greeks* and *Romans*, who were successively Masters of *Ægypt*, would have mention'd it, at least, before *Zosimus's* Time. Such a Notice, whether with Approbation, or Contempt, had been sufficient to ascertain the Reality of such a Tradition. *Tacitus* (s) tells us, (s) *Annal.*
that *Nero* sent into *Africa* to find some Lib. XVI.
Gold, that was pretended to be hid under Ground: This would have been an excellent Opportunity for him to have examined into this Tradition, or to have punished those, who either falsely pretended to an Art which they had not, or
would

(t) Nat.
Hist. Lib.
XXXIII.
cap. 1, 2,
3, 4.

would not discover the true Secret ; which, in his Opinion, would have been equally criminal ; and had *Nero* done it, *Pliny* would have told us of it, who was very inquisitive to collect all the Stories he could find of every thing that he treats about, whereof Gold (t) is one that is not slightly passed over ; and besides, he never omits a Story because it appears strange and incredible, if we may judge of what he has left out, by what he has put in, but often ranges the wonderful Qualities of Natural Bodies under distinct Heads, that they might be the more observed.

(u) Herm.
Ægypt.

To evade the Force of this Argument, *Borrichius* (u) says that the *Ægyptians* were afraid of their Conquerors, and therefore industriously concealed their Art. But there is a wide Difference between concealing the Rules and Precepts of an Art, and concealing the Memory that ever there was such an Art. If it was ever known before the *Persian* Conquest, as by his Account of the Erection of the Pyramids, which were built many Ages before *Cambyse's* Time, it is plain he believes it was, though we should allow it to have been in few Hands, it is not credible that this Art of Making Gold should never have been pretended to

to before *Diocletian's* Time, who is reported by *Suidas* to have burnt great Numbers of Chymical Books, which gave an Account of the Process. Whereas afterwards, every now and then, Footsteps of cheating *Alchemists* are to be met with in the *Byzantine* Historians. It was not possible to pretend to greater Secrecy in the Manner of their Operations, than is now to be found in all the Writings of Modern *Adept Philosophers* (as they call themselves.) And yet these Men, who will not reveal their Process, would think themselves affronted, if any Man should question the real Existence of their Art.

But the Hypothesis of those who find Chymical Secrets in *Homer*, *Virgil*, and the rest of the ancient Poets, is liable to several Exceptions taken notice of neither by *Conringius* nor *Borrichius*.

(1.) They say, that when *Jason* heard that the King of *Colchis* had a Book written upon a Ram's-skin, wherein was the Process of the Philosophers-Stone, he went with the *Argonauts* to fetch it. Here it may be objected, (1.) That it is not likely that *Sesostris*, who conquer'd *Colchis*, would ever suffer the *Ægyptian* Priests to reveal such a Secret to that conquered People. *Diocletian*, according to them, burnt

burnt all the Chymical Books that he could find in *Ægypt*, that the *Ægyptians* might not rebel, when they were deprived of that Fund, which supported their Wars. And *Borrichius* supposes that the *Ægyptian* Priests used this Art chiefly to supply the Expences of their Kings. (2.) How came *Jason* and the *Argonauts* not to grow richer by this Fleece? It cannot be pretended that it was concealed from them, upon the Account of its being (like the Books of the Modern *Adepti*) written in so obscure a Stile, that it was unintelligible for want of a Master; since *Medea* was with *Jason*, who had the Secret, what or how great soever it was. (3.) Since the *Græcians* were not tied to Secrecy, how came their Traditions to be so obscure, that those Passages in *Apollonius Rhodius's Argonautics* which are supposed to be meant of the *Grand Elixir*, were never applied to a Chymical Sense, till the Writings of *Synesius*, *Zosimus*, and the other old *Græcian* Chymists appeared? Especially since, (4.) *Apollonius Rhodius* himself was an *Alexandrian Greek*, born in *Ægypt*, and so could easily acquaint himself with the Traditions of that Country, which he, originally of another Nation, was under no Obligation to conceal.

(2.) The

(2.) The Chymists, at least *Borrichius* for them, own *Democritus's* Books to be genuine, upon the Credit of *Zosimus* who quotes them: If they are, this pretended Secrecy falls to the ground: For *Democritus* affirms, That he learn'd his Art from *Ostanes* a *Mede*, who was sent by the Kings of *Persia* into *Aegypt*, as Governor of the *Aegyptian* Priests. Then the Secret was divulged to some of the Conquerors of their Countrey. If so, why no more Tradition of it? If not the Process it self, yet at least the Memory that once there was such a Process? Which would have been enough for this Purpose. The same Question may be asked of *Democritus*, to whom *Ostanes* revealed it. This will weaken *Zosimus's* Credit as an Antiquary, upon whose Assertion most of this pretended Antiquity is founded. Since at the same time that he objects the Secrecy of the Ancient *Aegyptian* Priests, as a Reason why the Memory of this Art was so little known, he owns himself obliged to a Greek, who had it from the *Aegyptians* at Second Hand.

But how will these Pretenders to remote Antiquity, who tell us, that *Moses*, by his Skill in Chymistry, ground the Golden Calf to Powder, reconcile a Pas-

(w) Lib.
de Lapi-
dis.

sage in *Theophrastus* to their *Pretensions*? He, speaking of Quick-silver (w), says, that the Art of Extracting it from *Cinnabar* was not known till $\overline{\text{XC}}$ Years before his Time, when it was first found out by *Callias* an *Athenian*. Can we think that the *Ægyptians* could hinder these inquisitive *Græcians*, who staid so long in their Country, from knowing that there was such a Metal as *Mercury*? Or could these *Ægyptians* make Gold without it? If they could, they might reasonably suppose that the *Israelites* could make Brick without Straw, since they could make Gold and Silver without that, which Modern *Adepti* affirm to be the Seed of all Metals. *Theophrastus's* Words are too general, to admit of an Objection, as if he believed that *Callias's* Invention ought to be limited to his own Country. This, join'd to the great Silence of the Ancients (especially *Herodotus* and *Diodorus Siculus*, who dwell so long upon the *Ægyptian* Arts and Learning) concerning most of the wonderful *Phænomena* of that extravagant Metal, plainly shews that there were no Traditions of such mighty things to be done by it, as the *Alchymist's* Books are full of. *Borrichius* therefore recurs to his old Subterfuge, *Ægyptian* Secrecy, and finds some doubtful at least, if not fabulous,

fabulous, Stories of *Dædalus* and *Icarus*, and the Poetical Age, which he opposes to the positive Testimony of *Theophrastus*. Perhaps my urging the late Discovery of *Mercury*, may be thought to be begging the Question, since some who have written of the Philosophers-Stone, have taught that their *Mercury* has no Affinity with common *Mercury*: Which has led many Persons to try several extravagant Processes to find it out. But *Eireneus Philalethes*, who is look'd upon as one of the clearest Writers that has ever written upon this Subject, says expressly, that (x) *Natural Mercury Philosophically prepared, is the Philosophical Menstruum, and the Dissolvent Mercury.*

(x) *Enarratio Methodica trium Gebri Medicinarum, p. 18.*

After so long an Enquiry into the Antiquity of this Art of Transmuting Metals, it will be asked perhaps, what may be thought of the Art it self. I must needs say, I cannot tell what Judgment to make of it: The Pretences to Inspiration, and that Enthusiastic Cant which run through the Writings of almost all the *Alchymists*, seem so like Imposture, that one would be tempted to think that it was only a Design carried on from Age to Age, to delude Mankind; and it is not easie to imagine why God should hear the Prayers of those that desire to be Rich. If, as

they pretend, it was Zeal for the Good of Mankind that made them take such Pains to find out such noble Medicines as should free Men from the most obstinate Diseases to which our Natures are subject, why do they not communicate them, and leave the Process in Writing plainly to Posterity, if they are afraid of Danger for themselves? Concern for the Welfare of Mankind, and affected Secrecy, seem here inconsistent Things: Men of such mortified Tempers, and public Spirits, ought not to be concerned, though Gold or Silver were made as common as Lead or Tin, provided that the *Elixir* which should remove all Diseases were once known.

Though these are reasonable Prejudices against the Belief of the Truth of this Operation, yet one can hardly tell how to contradict a Tradition so general, and so very well attested (y).

(y) Vid. Borrichium
de Ortu & Progressu
Chymia, & Morhofii
Epistolam de Transmu-
tatione Metallorum ad
Joelium Langelottum.

many Men, methinks, could not have cheated the World successfully for so many Ages, if some had not been sincere: And, to use a Proverb in their own way, *So much Smoak could scarce have lasted so long without some Fire.* Till the Seminal Principles from which Metals are compounded are perfectly known,
the

the Possibility of the Operation cannot be disproved : Which Principles, as all other Real Essences of Things, are concealed from us. But as a wise Man cannot, perhaps, without Rashness disbelieve what is so confidently asserted, so he ought not to spend much Time and Cost about Trying whether it will succeed, till some of the *Adepti* shall be so kind as to give him the Receipt.

By what has been said, it is evident, what Opinion one ought to have of the Chymical Skill of the Ancient *Ægyptians* : Though it is most probable that the Art owes its Original to them from whom it receives its Name : But this Original is much too late to do Sir *William Temple's* Hypothesis any Service.

But it is high time to leave the *Ægyptian Physic*, and therefore I shall only add One or Two Instances of their Skill in Anatomy, and so pass on. *Gellius* (2) and *Macrobius* (a) observe ; the one from *Appion*, who wrote of the *Ægyptians* ; the other from the *Ægyptian Priests* themselves, that there is a particular Nerve that goes from the Heart to the Little-Finger of the Left-Hand ; for which Reason they always wore Rings upon that Finger ; and the Priests dipped that Finger in their perfumed Ointments : This be-

(2) *Noct. Attic. Lib. X. cap. 10.*

(a) *Saturnal. l. 7. cap. 13.*

(b) *Herm.*
Ægypt.
Præfat.

(c) *Hist.*
Nat. lib. xi.
cap. 37.

(d) *De Die*
Natali. cap.
17.

ing ridiculed by *Conringius*, *Borrichius* (b) assures us, that he always found something to countenance this Observation, upon cutting of his Nails to the quick. *Pliny* (c) and *Censorinus* (d) give this following Reason from *Dioscorides* the Astrologer, why a Man cannot live above a Hundred Years, because the *Alexandrian* Embalmers observed a constant Encrease and Diminution of Weight of the Hearts of those found Persons whom they opened, whereby they judged of their Age. They found that the Hearts of Infants of a Year old weighed two Drachms, and this Weight encreased Annually by two Drachms every Year, till Men came to the Age of Fifty Years: At which time they as gradually decreased till they came to an Hundred, when, for want of a Heart, they must necessarily die.

To these Two Instances of the *Criticalness* of *Ægyptian Anatomy*, I shall add one of *their Curiosity in Natural Enquiries*; and that is, *their Knowledge of the Cause of the Annual Overflowing of the Nile*. This, which was the constant Wonder of the Old World, was a *Phænomenon* seldom over-looked by the *Greek Philosophers*: Seven of whose Opinions are reckoned up by *Plutarch*, in the First Chapter of the Fourth Book of his *Opinions of the Philosophers*.

losophers. If Curiosity generally attends a Desire of Knowledge, and grows along with it, then the *Ægyptian* Priests were inexcusably negligent, that they did not very early know that the Swelling of the *Nile* proceeded from the Rains that fell in *Æthiopia*, which raising the River at certain Seasons, made that Overflowing of the Flats of *Ægypt*. One would think that in *Sesostris's* Time the *Ægyptian* Priests had Access enough into *Æthiopia*; and whoever had once been in that Countrey, could have resolved that Problem, without any Philosophy. It was known indeed in *Plato's* Time, for then the Priests told it to *Eudoxus*; but *Thales*, *Democritus*, and *Herodotus*, who had all enquired of the *Ægyptians*, give such uncouth Reasons, as shew that they only spoke by guess. *Thales* thinks that the *Etesian* Winds blew at that Time of the Year against the Mouths of the River, so that the fresh Water finding no Vent, was beaten back upon the Land. *Democritus* supposes that the Northern Snows being melted by the Summer Heats, are drawn up in Vapours into the Air; which Vapours circulating towards the South, are, by the Coldness of the *Etesian* Winds, condensed into Rain, by which the *Nile* is raised. *Herodotus* thinks that an equal

Quantity of Water comes from the Fountains in Summer and Winter, only in Summer there are greater Quantities of Water drawn up by the Sun, and in Winter less, and so by consequence all that time it overflowed. *Democritus's* Opinion of the *Phænomenon* seems not amiss, though his Hypothesis of the Cause of it is wrong in all probability; yet it is plain, That *Plutarch* did not believe it to be the same with that which the *Ægyptian* Priests gave to *Eudoxus*, which is the only true one, because he sets them both down apart. The Cause of this wonderful *Phænomenon* could not be pretended to be a Secret; no Honour could be got by concealing a Thing, the pretended Ignorance whereof was rather a Disgrace. Those *Ægyptian* Priests, whose Business it was to gather Knowledge, must have had an extraordinary Love for a Sedentary Life, or have been averse to inform themselves from others, more than the rest of Mankind, who would not be at the Pains either to learn what *Sesostri's* Soldiers could have told them, or to go CC or CCC Miles Southward to search for that, which they must certainly have often reasoned about, if they were such Philosophers as they pretended to be.

Nay,

Nay, by the Curiosity of the *Greeks*, we are sure they did *reason about* it; they thought it as much a Wonder as we can do now; rather more, because they knew of no other Rivers that overflow at periodical Seasons like it, as some are now known to do in other Parts of *Africa*, and the *East-Indies*.

Upon the whole Matter, after a particular Search into the whole Extent of *Aegyptian* Learning, there seems to be no Reason to give the *Aegyptians* the Pre-eminence in point of Knowledge above all Mankind. However, considering the great Labour which is requisite to form the First Notions of any part of Learning, they deserve great Applause for what they discovered, and ought to have proportionable Grains of Allowance for what they left unfinished: Wherefore, when the Holy Scriptures (*e*) assure us, that (*e*) *Acts*
Moses was skill'd in all the Learning of *vii. 22.*
the *Aegyptians*, they give him the greatest Character for Humane Knowledge that could then be given to any Man. The *Aegyptian* Performances in Architecture were exceedingly wonderful, (*f*) and the (*f*) *via.*
Character which *Hadrian* the Emperor *Herodoti*
gives them, that they found Employ-*Euterpen.*
ments for all sorts of Persons, the Blind, the Lame, the Gouty, as well as the
Strong

(g) *Hero-*
dotus : Co-
tumella,
Lib. X.

(h) *Convin-*
gius in Me-
dicinâ Her-
meticâ.

Strong and Healthy, shews that it was natural to the *Ægyptians* to be always busied about something useful. The Art of Brewing Mault-Drinks was long ago ascribed (g) to the *Ægyptians* as the first Inventors, for which these Northern Nations are not a little beholding to them. Their Laws have, by those who have taken the greatest Pains (h) to destroy the Reputation of their Learning in other things, been acknowledged to be very wise, and worth going so far as *Pythagoras*, *Solon* and *Lycurgus* did to fetch them. So that if their Modern Advocates had extolled their Learning with any other Design than that of Disparaging the Knowledge of the present Age, there would have been no Reason to oppose their Assertions.

CHAP.

C H A P. XI.

Of the Learning of the Ancient Chaldeans and Arabians.

THE *Chaldeans* and the *Arabs* are the People that lie next in *Sir William Temple's* Road. Though it is not easie to separate what is Fabulous from what is Genuine in the Antiquities of these Nations, yet we may pronounce with some Certainty,

(1.) That the *Chaldean* Astronomy could not be very valuable, since, as we know from *Vitruvius*, and others, they had not discovered that the Moon is an Opake Body. For which Reasons, possibly, with several others, some of their Learnedest Champions have confessed, that they believed that the Ancient *Chaldean* Observations, were rather Registers of the *Phænomena* of Heavenly Bodies, after they had appeared, than Predictions of their future Appearance. Whether their Astronomical Observations were older than their Monarchy, is uncertain: If they were not, then in *Alexander the Great's* Time they could not challenge an Antiquity of above $\overline{\text{D}}$ or $\overline{\text{DC}}$ Years. I mention

mention *Alexander*, because he is said to have sent vast Numbers of Observations from *Babylon*, to his Master *Aristotle*. The *Assyrian* Monarchy, of which the *Chaldean* might not improperly be called a Branch, pretends, indeed, to great Antiquity : Mighty Things are told of *Ninus* and *Semiramis*, who is more than once mentioned by Sir *William Temple*, in these *Essays*, for her Victories, and her Skill in Gardening. But these Accounts are, very probably fabulous, for the following Reasons.

Till the Time of *Tiglath-Pileser* and *Pul*, we hear no News of any *Assyrian* Monarchs in the *Jewish* History. In *Amraphel's* Time, who was overthrown by *Abraham* and his Family, in the Vale of *Siddim*, the Kings of *Chaldæa* seem to have been no other than those of *Canaan*, Captains of *Hords*, or Heads of *Clans* : And *Amraphel* was Tributary to *Chedor-laomer* King of *Elam*, whose Kingdom lay to the East of *Babylon*, beyond the River *Tigris*. *Chusban Rishathaim*, King of *Mesopotamia*, who was overthrown some Ages after by *Othoniel* the *Israelitish* Judge, does not seem to have been a powerful Prince : It may be said, indeed, that he was General to some *Assyrian* Monarch ; but that is begging the Question,

tion, since there is nothing which can favour such an Assertion in the Book of Judges.

But when the *Assyrians* and *Babylonians* come once to be mentioned in the *Jewish History*, they occur in almost every Page of the *Old Testament*. There are frequent Accounts of *Pul*, *Tiglath-Pileser*, *Shalmanezzer*, *Sennacherib*, *Esar-haddon*, *Nebuchadnezzar*, *Evil-merodach*, *Belshazzar*; and who not? But these Kings lived within a narrow Compass of Time; the oldest of them but a few Ages before *Cyrus*. This would not suit with that prodigious Antiquity which they challenged to themselves. The Truth is, *Herodotus*, who knew nothing of the Matter, being silent, *Ctesias* draws up a new Scheme of History much more pompous; and from him, or rather, perhaps, from *Berosus*, who was Contemporary with *Manetho*, and seems to have carried on the same Design for *Chaldæa*, which *Manetho* undertook for *Ægypt*, *Diodorus Siculus*, *Pompeius Trogus*, *Eusebius*, *Synellus*, and all the Ancients that take notice of the *Assyrian History*, have afterwards copied.

Ctesias knew he should be straitned to find Employment for so many Kings for MCCC Years; and so he says, they did little

little memorable after *Semiramis's* Time. As if it were probable that a great Empire could lie still for above a $\overline{\text{M}}$ Years; or that no Popular Generals should wrest the Reins out of the Hands of such drowzy Masters in all that time. No History but this can give an Instance of a Family that lasted for above a $\overline{\text{M}}$ Years, without any Interruption: And of all its Kings, not one is said to Reign less than $\overline{\text{XIX}}$, but some $\overline{\text{LV}}$ Years. The Healthiest Race that ever was heard of; of whom, in $\overline{\text{MCCC}}$ Years, not one seems to have died an untimely Death. If any Thing can be shewed like this in any other History, Sacred or Profane, it will be easie to believe whatsoever is asserted upon this Subject.

If therefore the *Chaldaean* Learning was no older than their Monarchy, it was of no great standing, if compared with the *Egyptian*. The Account of *Nebuchadnezzar's* Dream, in the $\overline{\text{II}}$ ^d. Chapter of *Daniel*, shews the *Chaldaean* Magic to have been downright Knavery; since *Nebuchadnezzar* might reasonably expect that those should tell him what his Dream was, who pretended to interpret it when it was told them; both equally requiring a Super-natural Assistance: Yet there lay their chiefest Strength; or, at least, they

said

said so : Their other Learning is all lost. However, one can hardly believe that it was ever very great, that considers how little there remains of real Value, that was learn'd from the *Chaldaeans*. The History of Learning is not so lamely conveyed to us, but so much would, in all probability, have escaped the general Ship-wreck, as that, by what was saved, we might have been able to guess at what was lost.

(2.) That if the *Learning* of these *Ancient Chaldaeans* came as near that of the *Arabs* as their *Countries* did ; one may give as good a Judgment of the Extent of the *Arabian Learning*, as of the *Chaldaean*. Sir *William Temple* rightly observes, that *Countries* little exposed to *Invasions*, preserve Knowledge better than others that are perpetually harrassed by a Foreign Enemy ; and by consequence, whatsoever Learning the *Arabs* had, they kept ; unless we should suppose that they lost it through Carelessness. We never read of any Conquests that pierced into the Heart of *Arabia the Happy*, *Mahomet's Country*, before the Beginning of the *Saracen Empire*. It is very strange therefore, if, in its Passage through this noble Country, inhabited by a sprightly, ingenious People, Learning, like Quick-silver, should
run

run through, and leave so few of its Influences behind it. It is certain that the *Arabs* were not a learned People when they over-spread *Asia*: So that when afterwards they translated the *Græcian* Learning into their own Language, they had but little of their own, which was not taken from those Fountains. Their *Astronomy* and *Astrology* was taken from *Ptolemee*, their *Philosophy* from *Aristotle*, their *Medics* from *Galen*; and so on. *Aristotle* and *Euclid* were first translated into *Latin*, from *Arabic* Copies; and those Barbarous Translations were the only Elements upon which the *Western School-men* and *Mathematicians* built. If they learn'd any thing considerable elsewhere, it might be *Chymistry* and *Alchymy* from the *Ægyptians*; unless we should say that they translated *Synesius*, or *Zosimus*, or some other *Græcian Chymists*.

Hence it follows, that the *Arabs* borrowed the greatest part, at least, of their Knowledge from the *Greeks*, though they had much greater Advantages of Communicating with the more Eastern Parts of the World, than either *Greeks* or *Romans* ever had. They could have acquainted us with all that was rare and valuable amongst those Ancient Sages. The *Saracen*
Empire

Empire was under one Head in *Almanzor's* Time, and was then almost as far extended Eastward as ever afterwards. His Subjects had a free Passage, from the *Tagus* to the *Ganges*; and being united by the common Bond of the same Religion, the *Brachmans*, some of whom did, in all probability, embrace the *Mahometan* Faith, would not be shy of revealing what they knew, to their *Arabian* Masters. By this means, the Learning of the *Ægyptians*, *Chaldæans*, *Indians*, *Greeks* and *Arabs*, ran in one common Channel. For several Ages, Learning was so much in fashion amongst them, and they took such care to bring it all into their own Language, that some of the learnedest *Jews*, *Maimonides* in particular, wrote in *Arabic*, as much as in their own Tongue. We might reasonably therefore have expected to have found greater Treasures in the Writings of these learned *Mahometans*, than ever were discovered before: And yet those that have been conversant with their Books, say, that there is little to be found amongst them, which any body might not have understood as well as they, if he had carefully studied the Writings of their *Græcian* Masters. There have been so many Thousands of *Arabic* and *Persic* MSS. brought over into Eu-
L rope,

rope, that our learned Men can make as good, nay, perhaps, a better Judgment of the Extent of their Learning, than can be made, at this distance, of the *Greek*. There are vast Quantities of their Astronomical Observations in the *Bodleian Library*, and yet Mr. *Greaves* and Dr. *Edward Bernard*, two very able Judges, have given the World no Account of any Thing out of them, which those *Arabian* Astronomers did not, or might not have learn'd from *Ptolemee's Almagest*, if we set aside their Observations which their *Græcian* Masters taught them to make ; which, to give them their due, Dr. *Bernard* commends, as much more valuable than is commonly believed, in a Letter to Dr. *Huntingdon*, printed in the *Philosophical Transactions*, containing their Observations of the Latitudes of Twenty of the most eminent of the Fixed Stars. We owe, indeed, to them alone the Way of Counting by Ten Cyphers, ascending beyond Ten in a Decuple Proportion ; which is of unspeakable Use in *Astronomical* and *Algebraical* Calculations, and indeed, in all Parts of *Arithmetic*. The Use of *Chymistry* in *Physic*, together with some of the most considerable Chymical Preparations, which have led the Way to most of the late Discoveries that have been

been made in that Art, and in *Natural Philosophy* by its means, have been unanimously ascribed to the *Arabs* by those Physicians that have studied their Books (i). Though, in strictness, the whole *Arabian* Learning, with all their Inventions, what, and how great soever they were, may be reckoned as Modern, according to Sir *William Temple's* Computation. But I have in this whole Dispute confined my self to *Moderns*, in the strictest sence of the word, and have only argued from what has been done by the learned Men of these two last Ages, after the *Greeks* brought their Learning along with them into *Italy*, upon the Taking of *Constantinople* by the *Turks*. So that the *Arabs* are Ancients here; and what has been said already, evidently proves that the Old *Arabian* Learning could never be any one of those Fountains from whence the *Græcian* might have been drawn, and consequently can never be urged as such by those who give an Account of the History of Learning.

(i) Vid.
Morhofii
Epist. 2d
Langelör-
tum.

C H A P. XII.

Of the Learning of the Ancient Indians and Chineses.

WE are now arrived in our Passage Eastward as far as the *Indies*, where the first Springs of that Learning which afterwards flow'd always Westward, arose. Thither *Pythagoras* is said to have gone, and to have fetch'd from thence his celebrated Doctrine of the *Transmigration of Souls*, which he taught, and is now believed by the Modern *Bramines* as it was the Opinion of the *Brachmans* of old.

We have very little if any Account of these *Indian* Philosophers before *Alexander the Great*, who extended his Conquests as far as the River *Indus*. His Historians acquaint us with a Set of Philosophers in that Countrey, who practis'd great Austerities themselves, and taught others that Wisdom lay in living upon a little, in Abstaining from almost all sorts of Natural Pleasures, and Promoting the Prosperity and Welfare of the rest of Mankind. The Description that *Strabo* gives us of them, out of *Megasthenes*,
Onesi-

Onesicritus and *Aristobulus*, which is very well Abridged by Sir *W. T.* is the Fullest and most Authentic that we have. And that the Body of it may be True, is probable from the Accounts of their Successors the *Bramines*, which are given us by Monsieur *Bernier*, and *Abraham Roger*, who lived many Years among them, and made it their Business to collect their Opinions with all the Exactness they could.

The superstitious Care which these People take to follow the Customs, and propagate the Opinions of their Ancestors, be they never so absurd and senseless, plainly shews that they would have preserved their Learning with equal Care, had there been any of it to preserve. They keep a Collection of the wise Sayings of one *Barthrouherri*, which Monsieur *Roger* has given us a Taste of, but such miserable Stuff for the generality, that one cannot read them without smiling at the Simplicity of those that can admire them. They wou'd not shew Monsieur *Roger* their Book of the Law, which they pretend to be sent from God; but by the Account which his *Bramine* Doctor gave of it, it is only an absurd History of the fabulous Successions of their Deities, and as absurd a Collection of superstitious Ceremonies,

monies, by which they were to be worshipped. Their Doctrine of the *Transmigration of Souls*, which *Pythagoras* first taught in the West, is a precarious idle Notion, which these besotted *Indians* do so blindly believe, that they are afraid of killing a Flea or a Louse, for fear of disturbing the Soul of one of their Ancestors. Though at the same time they scruple not to force Multitudes of poor silly Women, and sometimes too, full fore against their Wills, to burn themselves alive with their deceased Husbands Bodies, under a Pretence of their being serviceable to them in another World, though they are far from having any Assurance that their Husbands will there stand in need of them. Can we believe that there is a generous Spirit residing in a People, who have now for $\overline{\text{MM}}$ or $\overline{\text{MMM}}$ Years placed the highest degrees of Sanctity and Prudence in half-starving themselves, and depriving themselves of the lawful Conveniencies of Life? Yet these were the chiefest Employments of the Ancient *Brachmans*, as they are still of the Modern *Bramines*.

So that there is Reason to fear that the Stories of the extraordinary Wisdom of the Ancient *Brachmans* are in a great measure fabulous, because in the idle and
bigotted

bigotted part of the Narrative they do so particularly agree with the Modern *Bramines*; and also, because if one consults what the Ancients have recorded of the *Brachman's* in *Alexander's* time, which is all gathered into a Body by Sir *Edward Byshe* (k), he will find that the Accounts which come the nearest to the Fountain, have less in them of the Romance, (l) and that their Historians have expatiated and flourish'd more, as they were at the greater distance.

(k) *Palladius de Gentibus Indiae, & Bragmanibus*, Edit. Biffesi, Lond. 1665.

(l) Let but any Man compare *Strabo* and *Palladius* together, and he will see the difference, though 'tis plain they relate to the same Time,

For, upon comparing what all those Authors there quoted have said, I am inclinable to believe, that all we know of the Ancient *Brachmans*, is due to the Accounts which *Alexander's* Companions have given us.

But let us enter into Particulars. Sir *W. T.* tells us, out of *Strabo*, (m) " That their (m) Lib.
" Opinions in Natural Philosophy, were, ¹⁵
" that the *World* was *Round*; that it had
" a Beginning, and wou'd have an End,
" but reckoned both by immense Periods
" of Time; that the Author of it was a
" Spirit, or a Mind that pervaded the
" whole Universe, and was diffused through
" all the Parts of it; and that they held
" the Transmigration of Souls, and some

(n) *Essay*, pag. 17. “used Discourses of Infernal Mansions, “in many things like those of *Plato*.” (n) Whether *Megasthenes*, from whom *Strabo* takes all this Account, has not made it a little more beautiful than he ought; I very much question, since Monsieur *Ber-*

(o) *Voyages*, Tom. 3. pag. 168. Edit. Eng. *nier* says, (n) That the *Bramines* believe, “That the *Earth* is *Flat*, and *Triangular*, “with several Stories, all differing in “Beauty, Perfection and Inhabitants, each “of which is encompassed, they say, by “its Sea; that one of these Seas is of “Milk, another of Sugar, the third of “Butter, the fourth of Wine, and so forth: “so that after one Earth there comes a “Sea, and after a Sea an Earth, and so

(p) An Imaginary Mountain, which they place in the midst of the Earth.

(q) The Semi-Gods of the *Bramines*.

“on to seven, beginning from “*Someire* (p), which is in “the midst of these Stories: “That the first Story, which “is at the foot of *Someire*, “hath *Deuta’s* (q) for its In- “habitants which are very “Perfect; that the second contains “likewise *Deuta’s*, but less perfect; and “so of the rest, still lessening the Per- “fection to the seventh, which, they say, “is ours, that is, of Men far less Per- “fect than all the *Deuta’s*: And, lastly, “That this whole Mass is sustained “upon the Heads of divers Elephants, “which

“ which when they stir, cause an Earth-
 “ quake.” Upon all this, and abundance
 more of the like nature in *Astronomy*,
Anatomy, *Medicine*, and *Physic's*, which
 seems to be the true Oriental Doctrine,
 consonant to those noble Discoveries
 which are in (r) Monsieur Roger's *History* (r) *Histoire*
of the Lives and Manners of the Bramines, de la Vie
 Monsieur Bernier makes this Remark; & des Mo-
 (s) “ All these strange Impertinencies, eurs des
 “ which I have had the patience to relate, Bramines.
 “ have often made me think, that if they (s) Pag.
 “ be those famous Sciences of the An- 169.
 “ cient *Brachmans* of the *Indies*, very
 “ many have been deceived in the great
 “ Opinion they entertained of them.
 “ For my part, I can hardly believe it,
 “ but that I find the Religion of the *In-*
 “ *dians* to be from immemorial Times;
 “ that 'tis written in the *Hanscrit* Lan-
 “ guage, which cannot but be very an-
 “ cient, since its Beginning is unknown,
 “ and 'tis a *dead* Language, not under-
 “ stood but by the Learned; that *all*
 “ their Books are only written in that
 “ Tongue: all which are as many Marks
 “ of a very great Antiquity.” This, by
 the way, confutes the Opinion of those (t) (t) Sir
 who make the *Indian* Learning to be all W. T. his
 Traditionary; for not only their Re- Essay, p.
 ligious, but their Profane Knowledge 17.
 too,

too, is all written in this *Hanscrit* Dialect.

Yet one Notion of these *Bramines* I cannot but take notice of, because it is a very Philosophical one, and has been with probability started and defended by some of the most curious Anatomists of the present Age, who built their Hypothesis upon the latest Discoveries which have been made in that admirable Art: I shall set it down in Monsieur *Bernier's* words; (u) "The Seeds of Plants and
 (u) Pag. 175, 176. "Animals are not formed anew, but were
 "contrived in the first Production of the
 "World, and dispensed abroad every
 "where, and mixed in all things; and that
 "they are not only potentially but actual-
 "ly the very and entire Plants, and Ani-
 "mals, though so small, that their Parts
 "cannot be distinguisht, but when put
 "into a convenient Womb, and there
 "nourisht, they extend themselves and
 "encrease: So that the Seeds of an Apple
 "and Pear-Tree, are a little, entire, and
 "perfect Apple and Pear-Tree, having all
 "its Essential Parts; And so the Seeds
 "of an Horse, an Elephant, a Man, &c.
 "are a little Horse, a little Elephant, a lit-
 "tle Man, in which there wants nothing
 "but the Soul and Nourishment to make
 "them appear what they are."

This

This Opinion seems rather to have been maintained by a *Leeuwenhoeck*, or a *Malpighius*, than by an *Indian*, who, as Monsieur *Bernier* assures us, (w) understands (w) Pag. 166. nothing at all of *Anatomy*, and can speak nothing upon that Subject but what is impertinent. Had it been the Result of Thought and Meditation, founded upon proper Premises, which must be the Effects of many and repeated Observations, one might justly have looked for, and would infallibly have found many other Notions of equal Subtilty among these *Bramines*; which though erroneous, (and so, perhaps, may this be,) yet could not have been made by any but Skilful Men. Such Discoveries likewise would have obliged us to have entertained a very honourable Notion of the Learning of the Ancient *Brachmans*; because, though they might have been Modern, in comparison of those Ancient Times, yet they might not also, for ought we knew, and consequently might have been challenged to those Ancient Philosophers by their Modern Champions. But when, amidst a vast variety of wild and phantastical Opinions, a Man meets with one or two which stand alone by themselves, without any thing that appears to have raised or confirmed them, he ought not presently to conclude, that the

the Philosophers who maintain them are Wise and Learned Men, though once, perhaps, or twice, *Quod nequit Ingenium, Casus fecit.*

By this time, I am afraid I shall be thought as Tedious as an *Irish Tale-teller*, fit only to lull my Reader asleep: But there is but one Stage more left; and though it is a great Way off, yet it may be easily reached upon Paper, and then will be as easily dispatched. For *China*, we are told, is a charming Countrey, and therefore most proper to be thought upon at the End of a tedious Discourse.

Sir *William Temple* knows very well, that the whole *Chinese* History depends upon the sole Authority of *Martinus*, and those Missionaries who published *Confucius* lately at *Paris*. *Martinus* (x) tells his Reader, that he was obliged to learn Sixty Thousand independent Characters before he could read the *Chinese* Authors with ease. This is, without all doubt, an excellent Method to propagate Learning, when Eight or Ten of the best Years of a Man's Life must be spent in learning to Read. The most considerable Specimen of *Chinese* Learning that we have, is in the Writings of *Confucius*; which, if *F. Couplet* and his Companions had printed under their own Names, (y) those Rules and

(x) Hist.
Sinc. Præ-
fat.

(y) Pag.
278.

and Instructions discoursed of with great Compass of Knowledge, Excellence of Sense, Reach of Wit, illustrated with Elegance of Stile, and Aptness of Similitudes and Examples, would soon have been called an incoherent Rhapsody of Moral Sayings, with which good Sense and tolerable Experience might have furnished any Man, as well as *Confucius*.

If the *Chineses* think every part of Knowledge, but their own *Confucian* Ethics, ignoble and mechanical, why are the *Europæan* Missionaries so much respected for their Skill in Medicine and Mathematics? So much Knowledge in Mathematics as will but just serve an Almanack-maker, will do their Business. *F. Verbiest* says, in a Letter printed some Years since in the *Philosophical Transactions*, That the Honours which were paid him in the Emperor's Court, were in a great measure owing to his Teaching the Emperor to find the Time of the Night by the Fixed Stars, and an Astrolabe: This shews that the *Chineses* were but meanly skilled in these Things; and it is probable, that those who are ignorant of such ordinary Matters, seldom carry their Speculations to a much greater Height.

Martinius and *Trigautius*, who lived long in *China*, were able fully to inform the

the World of the Extent of the *Chinese* Knowledge ; and the Pains which *Martinius* has taken to write the History, and to state the Geography of that mighty Empire, is a sufficient Indication of his great Willingness to advance its Reputation in *Europe*. The *Chineses* are certainly a sagacious and industrious People, and their Skill in many Mechanical Arts shew them to be so ; so that if they had ever applied themselves to Learning in good earnest, and that for near so long a Time, as their History pretends to, there is no Question but we should have heard much more of their Progress. And therefore, whatsoever can be said of *Chinese* Knowledge, can never be of any weight, as long as small Skill in *Physic* and *Mathematics* shall be enough to protect the *European* Missionaries in a Court where they themselves are esteemed the greatest Scholars, and honoured accordingly.

But the *Chinese Physic* is wonderfully commended by Dr. *Vossius* and Sir *William Temple* (2) : *The Physicians excel in the Knowledge of the Pulse, and of all simple Medicines, and go little further : Neither need they ; for in the first, they are so skilful, that they pretend not only to tell by it, how many Hours or Days a sick Man may last ; but how many Tears a Man*

(2) Pag.
179, 180.

in perfect seeming Health may live, in case of no Accident or Violence; and by Simples, they pretend to relieve all Diseases that Nature will allow to be cured. What this boasted Skill is, may be seen in the little Tracts of the Chinese Physic, published by Andrew Cleyer (a); but because few will, in all probability, have patience to go through with them, since they are not very pleasant to read, I shall give a short Specimen of them, by which one may judge of the rest.

(a) *Specimen Medicinæ Sini-
cæ. Francof. 1682.
Quarto.*

The most Ancient Chinese Discourse of Physic, entituled, *Nuy Kim* (b), gives this Account of the Production of our Bodies, and of the Relation of the several Parts, with the Five Elements:

(b) *Ibid. Pag. 85,
86, 87.*

‘ Out of the Eastern Region arises the
 ‘ Wind, out of the Wind Wood, or Plants,
 ‘ out of Wood Acidity, from thence the
 ‘ Liver, from the Liver the Nerves, from
 ‘ them the Heart: The Liver is gene-
 ‘ rated the Third in Order, and perfected
 ‘ the Eighth: The Spirits of the Liver,
 ‘ as they relate to the Heaven (the Air)
 ‘ are Wind; as Wood in the Earth, as the
 ‘ Nerves in our Bodies, so is the Liver in
 ‘ the Limbs: Its Colour is Blue, and its
 ‘ Use and Action is to move the Nerve:
 ‘ The Eyes are the Windows of the Liver;
 ‘ its Taft is acid, its Passion or Affection is
 ‘ Anger:

‘ Anger : Anger hurts the Liver, but Sor-
‘ row and Compassion conquer Anger,
‘ because Sorrow is the Passion of the
‘ Lungs, and the Lungs are Enemies to
‘ the Liver : Wind hurts the Nerves, but
‘ Drought, the Quality of the Lungs, con-
‘ quers Wind : Acidity hurts the Nerves,
‘ but Acrimony, or that sharp Taste which
‘ is proper to the Lungs, conquers Acidity,
‘ or Metal Conquers Wood.

‘ Out of the Southern Region arises
‘ Heat, out of Heat Fire, out of Fire Bit-
‘ terness : From it the Heart is generated,
‘ thence the Blood ; out of Blood comes
‘ the Spleen, or Earth out of Fire ; the
‘ Heart governs the Tongue ; that which
‘ is Heat in Heaven, Fire upon Earth,
‘ Pulsation in the Body, is the Heart in
‘ the Members : Its Colour is Red, has
‘ the Sound of Laughing ; its Vicissitudes
‘ are Joy and Sorrow ; the Tongue is its
‘ Window, its Taste Bitterness, its Passion
‘ Joy ; too much Joy hurts the Heart ;
‘ but Fear, the Passion of the Reins, which
‘ are Enemies to the Heart, conquers Joy :
‘ Heat hurts the Spirits, but Cold con-
‘ quers Heat : Bitterness hurts the Spirits,
‘ but Saltness of the Reins conquers Bitter-
‘ ness, or Water quenches Fire. The Heart
‘ is generated the Second in Order, and is
‘ perfected the Seventh.

‘ Out

‘ Out of the Middle Region ariseth
‘ Moisture ; out of that Earth ; out of
‘ Earth Sweetness ; from Sweetness com-
‘ eth the Spleen, Flesh from that, and the
‘ Lungs from Flesh : The Spleen governs
‘ the Mouth ; that which is Moisture in
‘ the Heaven, is Earth in Earth, Flesh in
‘ the Body, and the Spleen in the Mem-
‘ bers : Its Colour is Yellow ; it has the
‘ Sound of Singing ; its Window is the
‘ Mouth, its Taste is sweet, its Passion is
‘ much Thoughtfulness : Thoughtfulness
‘ hurts the Spleen, but Anger conquers
‘ Thoughtfulness : Moisture hurts Flesh,
‘ but Wind conquers Moisture : Sweetness
‘ hurts Flesh, but Acidity conquers Sweet-
‘ ness : In a word, Wood conquers Earth,
‘ or the Liver the Spleen. The Spleen is
‘ generated the Fifth in Order, and is per-
‘ fected the Tenth.

‘ Out of the Western Region arises
‘ Drought : Thence come Metals, from
‘ them comes Sharpness, out of that are
‘ the Lungs, out of the Lungs comes Skin
‘ and Hair, out of Skin and Hair come
‘ the Reins ; the Lungs govern the No-
‘ strils : That which is Drought in the
‘ Heaven (or Air) is Metal in the Earth,
‘ Hair and Skin in the Body, and Lungs
‘ in the Members : Its Colour is Whitish,
‘ has the Sound of Weeping ; its Win-
‘ dows

‘ dows are the Nostrils, its Taste is sharp,
 ‘ its Passion is Sorrow : Sorrow hurts the
 ‘ Lungs, but Joy conquers Sorrow : Heat
 ‘ hurts the Skin and Hair, but the Cold
 ‘ of the Reins conquers Heat : Sharpness
 ‘ hurts the Skin and Hair, but Bitterness
 ‘ conquers Sharpness. The Lungs are ge-
 ‘ nerated the Fourth in Order, and are
 ‘ perfected the Ninth.

‘ Out of the Northern Region arises
 ‘ Cold, out of Cold comes Water, thence
 ‘ Saltness, thence the Reins, thence the
 ‘ Marrow of the Bones, thence the Liver.
 ‘ The Reins govern the Ears ; that which
 ‘ is Cold in the Air, Water in the Earth,
 ‘ Bones in the Body, is Reins in the Mem-
 ‘ bers : Its Colour is Blackish, has the
 ‘ Sound of Sobbing ; its Windows are the
 ‘ Ears, its Taste is Saltness, its Passion is Fear :
 ‘ Fear hurts the Reins, but Thoughtful-
 ‘ ness conquers Fear : Cold hurts the Blood,
 ‘ but Drought conquers Cold : Saltness
 ‘ hurts the Blood, but Sweetness con-
 ‘ quers Saltness. The Reins are genera-
 ‘ ted the First in Order, and perfected the
 ‘ Sixth.

(c) *Risum
 forte plus
 movebit
 Europæo,
 quam plau-
 sum. ibid.
 pag. 87.*

The Missionary who sent this Account
 to Cleyer a Physician at *Batavia*, was a-
 fraid (c) that it would be thought ridi-
 culous by *Europæans* ; which Fear of his
 seems to have been well grounded. Ano-
 ther

ther who lived long in *China*, wrote also an Account of the *Chinese* Notions of the Nature and Difference of Pulses, which he (*d*) professes that he would not undertake to prove by *European* Principles. One may judge of their Worth by the following Specimen (*e*):

(*d*) *Hand-
quaquam
suscipiam
principia
ista princi-
piis nostra-
tibus pro-
banda. ibid.*

pag. 2.

(*e*) *Ibid.*

pag. 3, 4.

‘ The *Chineses* divide the Body into
‘ Three Regions: The First is from the
‘ Head to the Diaphragm: The Second
‘ from thence to the Navel, containing
‘ Stomach, Spleen, Liver and Gall, and
‘ the Third to the Feet, containing the
‘ Bladder, Ureters, Reins and Guts. To
‘ these Three Regions, they assign Three
‘ sorts of Pulses in each Hand. The up-
‘ permost Pulse is governed by the ra-
‘ dical Heat, and is therefore in its own
‘ Nature overflowing and great. The
‘ lowermost is governed by the Radical
‘ Moisture, which lies deeper than the
‘ rest, and is like a Root to the rest of
‘ the Branches: The middlemost lies be-
‘ tween them both, partakes equally of
‘ Radical Heat and Moisture, and answers
‘ to the middle Region of the Body, as
‘ the uppermost and lowermost do to
‘ the other two. By these Three sorts of
‘ Pulses, they pretend to examine all sorts
‘ of Acute Diseases, and these also are
‘ examined Three several Ways: Diseases

‘ in the Left-Side are shewn by the Pul-
‘ ses of the Left-Hand, and Diseases in
‘ the Right-Side by the Pulses of the
‘ Right.

It would be tedious to dwell any longer upon such Notions as these, which every Page in *Cleyer's* Book is full of: The Anatomical Figures annexed to the Tracts, which also were sent out of *China*, are so very whimsical, that a Man would almost believe the whole to be a Banter, if these Theories were not agreeable to the occasional Hints that may be found in the Travels of the Missionaries. This, however, does no Prejudice to their Simple Medicines, which may, perhaps, be very admirable, and which a long Experience may have taught the *Chineses* to apply with great success; and it is possible that they may sometimes give not unhappy Guesses in ordinary Cases, by feeling their Patients Pulses: Still this is little to Physic, as an Art; and however, the *Chineses* may be allowed to be excellent Empiricks, as many of the *West-Indian* Salvages are, yet it cannot be believed that they can be tolerable Philosophers; which, in an Enquiry into the Learning of any Nation, is the first Question that is to be considered.

Thus

Thus I have taken a short View of the Learning of the East. Sir *W. T.* is not the only Man who has asserted great things concerning it. Other Men, to strengthen their particular Hypotheses, have exalted it as much as he: Of all these, few have taken greater Pains than Dr. *Burnet* (*f*), who having given us a new Theory of the Creation and the Deluge, was obliged to examine into the Traditions of the oldest Nations, especially those which pretended most to ancient Monuments of their own Extraction, and the Origination of Mankind. If his Enquiries have not proved what he particularly designed they should, which was, the attesting to the Truth of his own Hypotheses; yet they have proved an almost universal Tradition of the World's being once made out of a Chaos, with many other Points, which do exceedingly strengthen our Belief of the *Mosaical* History. He ingenuously owns, that when once the Business came to downright Reasoning, to raising Principles, and drawing Conclusions from those Principles, the *Greeks* went very much beyond their Teachers; and he does as good as confess, that all the *Barbaric Philosophy* was either *Traditionary* or *Superstitious*. His Authority is of great Moment here, be-

(*f*) *Archæolog. Philosoph.*

cause his Design led him to make an Accurate Enquiry into these Things; which Design he has very carefully executed.

Now, if the Philosophy of the Eastern Nations was all *Traditional*, 'tis plain their other Learning could not be profound. For great Skill in *Geometry*, *Astronomy*, *Natural History*, the *Experimental part of Physic's*, or *Medicine*, will naturally lead Men into Enquiries into the Causes of the *Phænomena* which daily occur. Those Enquiries will necessarily produce Principles and Hypotheses; which Principles and Hypotheses, though for want of sufficient Light, they may be precarious and groundless, yea, sometimes, possibly, absurd and phantastical, yet will evidently shew, that the Philosophers who devised them, were Men of Search and Reasoning, of Knowledge and Experience.

The several Hypotheses of Ancient and Modern Philosophers, since Hypotheses have first been introduced to account for the *Phænomena* of Nature, do plainly prove this Matter. The *Aristotelians*, who solve all by a Mixture of the Four Elements, go upon Observations and Experiments, such as they are. The *Ancient Chymists*, who found Salt, Sulphur and Mercury in all Mix'd Bodies, prove (as they think) their
their

their Hypothesis by Matter of Fact. So the more Modern ones ; some of whom, compound every thing out of Acids and *Alkali's* ; others join with the Corpuscularians, who solve all by the various Motions of Minute Bodies. Still all these Sects pretend Observation and Experience : and the successive Alteration of their Hypotheses, shews that their Stock of Knowledge did proportionably encrease. Wherefore, since this has been the Constant, and is the Natural Method, we ought to conclude, that if the *Barbaric Philosophy* had been built upon such Foundations, it would have produced like Effects.

Whereas *Tradition*, the Fountain of all their Knowledge, is only the Effect of Memory : And as it shews, that there is no Inquisitive Genius (the Mother of all Knowledge) in the People who content themselves with it, so all Acquiescence in it is utterly inconsistent with great Progresses in Natural Learning, of any sort, unless, perhaps, we should except Abstracted Mathematics ; which too, whether they need be excepted, may be justly questioned.

If, indeed, the Traditions of the East had comprehended a System of Natural Knowledge, had given an Account of the leading *Phænomena* of the Universe, had,

in short, been any thing else but bare Memorials, and those short, imperfect and obscure, of what the World once was, and what it should hereafter be, they would be much more valuable for the present Purpose, than any Conclusions made by the exactest Reasoning possible. They would then, as they ought, be esteemed as Revelations made by Him that made the World, and consequently, could best tell in what Manner, and for what Ends and Purposes he has created, and does preserve this Planetary System in which we live. But since this is not pretended to, and if it were, could not be made good, I cannot possibly see how those who allow the *Greeks* to have been the chief Advancers of *Science* as opposed to *Tradition* amongst the Ancients, can deny that Natural Learning, in every Particular, was carried to a greater height by them, than by any of the Oriental Nations.

It is therefore now high time to leave those Countries, in some of which there seems never to have been any solid Learning originally, and in the rest but the Beginnings of it, to come to *Greece*, as it stood in the Age of *Aristotle*, *Theophrastus*, *Euclid*, and those other Great Men, who, about the Time of *Alexander the Great*,
and

and afterwards, made such mighty Progresses in almost all Parts of real Learning. If, upon Enquiry, it shall be found, that a Comparison may be made between these Ancients and the Moderns, upon any Heads wherein Learning is principally concerned, which will not be to the Disadvantage of the latter, then there needs not any thing to be said further. Whether it can or no, is now to be enquired.

CHAP. XIII.

Of Ancient and Modern Logic and Metaphysics.

SINCE all that has been said in the Second and Third Chapters, concerning the *Ethics, Politics, Eloquence* and *Poesie* of the Ancient *Græcians*, belongs to them in their most flourishing Ages, a great Part of the Subject Matter of this Enquiry has already been dispatched. The remaining Parts of their Knowledge may be reduced to these Four Heads: *Logic, Metaphysics, Mathematics* and *Physiology*. *Logic* is the *Art of Reasoning*; but by it Men commonly understand the Art of Disputing,

(g) Vid.
A. Gellii
Noct. At-
tic. lib. I.
cap. 2.

Disputing, and making Syllogisms ; of Answering an Adversary's Objections dexterously, and making such others as cannot easily be evaded : In short, of making a plausible Defence, or starting probable Objections, for or against any Thing. As this is taught in the Schools, it is certainly owing to the Ancients : *Aristotle's Organum* is the great Text by which Modern *Logicians* have framed their Systems ; and nothing, perhaps, can be devised more subtle in that captious Art (g), than the *Sophisms* of the Ancient *Stoics*. But as *Logic* is truly the Art of Reasoning justly, so as not only to be able to explain our own Notions, and prove our own Assertions, clearly and distinctly, but to carry our Speculations further than other Men have carried theirs, upon the same Arguments ; it has not only been much cultivated by Modern Philosophers, but as far pursued as ever it was by the Ancients : For hereby have the late Enquiries been made into *Physical*, *Metaphysical* and *Mathematical* Matters, the Extent whereof is hereafter to be examined. Hereby the Ancient *Mathematicians* made their Discoveries, and when they had done, they concealed their Art ; for, though we have many noble Propositions of theirs, yet we have few Hints how they found

found them out ; since the Knowledge of the fore-going Books in *Euclid's Elements* is necessary to explain the Subsequent, but is of little or no use to help us to find out any Propositions in the subsequent Books, (which are not immediate Corollaries from what went before) in case those Books had been lost. Whether the Moderns have been deficient in this noble Part of *Logic*, may be seen by those who will compare *Des Cartes's Discourse of Method*, *Mr. Lock's Essay of Humane Understanding*, and *Tschirnhaus's Medicina Mentis*, , with what we have of the Ancients concerning the *Art of Thinking*. Such a Comparison would not be to the Disadvantage of those Modern Authors ; for, though it may be pretended, that their Thoughts and Discoveries are not entirely new in themselves, yet to us, at least, they are so, since they are not immediately owing to ancient Assistances, but to their own Strength of Thinking, and Force of Genius. And since this Art is, indeed, the Foundation of all Knowledge, I ought to take notice, that my Lord *Bacon* and *Des Cartes* were the two Great Men, who both found fault with the *Logic* of the Schools, as insufficient of it self for the great Design of *Logic*, which is the Advancement of real Learning ; and
got

got Authority enough to persuade the World, in a very great degree, that other Methods must be taken, besides making Syllogisms, and ranking the Sorts of Things under Predicaments and Predicables, by those who would go much farther than their Predecessors went before them. The true Use of the common *Logic*, being rather to explain what we know already, and to detect the Fallacies of our Adversaries, than to find that out, of which we before were ignorant. So that the Moderns have enlarged its Bottom ; and by adding that *Desideratum* which the Ancients either did not perfectly know, or, which is worse, did invidiously conceal, namely, *the Method of Discovering Unknown Truths*, as Monsieur *Tschirnhaus* calls it, have, if not made it perfect, yet put it into such a Posture, as that future Industry may very happily compleat it.

Metaphysics is properly that Science which teaches us those Things that are out of the Sphere of Matter and Motion, and is conversant about God, and Spirits, and Incorporeal Substances. Of these Things *Plato* and his Disciples wrote a great deal : They plainly saw, that something beyond Matter was requisite to create and preserve the August Frame of
the

the World. If we abstract from Revelation, the *Cartesians* discourse more intelligibly concerning them, than any of the Ancients. So that tho' very many of their particular Notions, as also of F. *Mallebranche's*, M. *Poyret's*, and other Modern *Metaphysicians*, are justly liable to Exception, yet the main Foundations upon which they reason, are, for the most part, real; and so, by consequence, the Superstructures are not entirely fantastical: And therefore they afford a vast Number of Hints to those who love to apply their Thoughts that way, which are useful to enlarge Men's Understandings, and to guide their Manners. This, which is strictly true of the Modern *Metaphysics*, is as much as can be said of the Ancient: And because a Comparison cannot be made without reading their several Writings, the surest way to try the Truth of this Proposition, will be to read *Plato* and his Commentators; and along with them, *Des Cartes's Meditations*, *Velthuy-sius de Initiis primæ Philosophiæ*, *Mallebranche's Recherche de la Verité*, *Poyret's Cogitationes de Deo*, and Mr. *Lock's Essay of Humane Understanding*, already mentioned. This may be done, without undervaluing what the Ancients wrote upon these noble Subjects: And the Question is

is not, *Whether they were Great Men ?*
 But, *Whether the Moderns have said any
 thing upon these Matters, without Copying out
 of other Men's Writings ?* Which, unless
 we will do them Wrong, we are bound
 to say they have.

CHAP. XIV.

Of Ancient and Modern Geometry and Arithmetic.

IN the Method which I set to my self
 in these *Reflections*, I chose to begin
 with an Enquiry into those Sciences whose
 Extent is more liable to be contested, and
 so onwards, to those in which the Contro-
 versie may more easily be determined.
 Monsieur *Perrault*, who has not finished
 his *Parallel*, that I know of, took it for
 granted, that if the Prize were allowed
 to the Moderns in *Eloquence*, in *Poesie*, in
Architecture, in *Painting*, and in *Statuary*,
 the Cause would be given up in every
 thing else ; and he, as the declared Advo-
 cate for the Moderns, might go on trium-
 phantly with all the rest. Wherein, pos-
 sibly, he was not, in the main, much mi-
 staken.

staken. How he intends to manage the remaining Part of his *Parallel*, I know not. I shall begin with *Abstracted Mathematics*; both because all its Propositions are of Eternal Truth, and besides, are the Genuine Foundations upon which all real *Physiology* must be built.

The Method which I shall follow is this: (1.) I shall enquire into the State of Ancient and Modern *Mathematics*, without any particular Application of the Properties of the several Lines and Numbers, Surfaces and Solids, to Physical Things. (2.) I shall enquire what New Instruments have been invented, or Old ones improved, by which the Knowledge of Nature of any sort has been, or may be, further enlarged. (3.) I shall enquire whether any Improvements have been actually made of *Natural History*, and of any *Physico-Mathematical* or *Physical Sciences*, such as *Astronomy*, *Music*, *Optics*, *Medics*, and the like. (4.) From all this, I shall endeavour to pass a Judgment upon the Ancient and Modern Ways of *Philosophizing* concerning Nature in general, and its principal *Phænomena*, or *Appearances*.

I begin with *Geometry* and *Arithmetic*, because they are general Instruments whereby we come to the Knowledge of many of the abstrusest Things in Nature; since,

since, as *Plato* said of old, *God always Geometrizes in all his Works*. That this Comparison might be the more exact, I desired my Learned and Worthy Friend, *Mr. John Craig*, to give me his Thoughts upon this Matter: His own learned Writings upon the most difficult Parts of *Geometry*, for such are the *Quadratures of Curve Lines*, will be sufficient Vouchers for his Skill in these Things. I shall set down what he says, in his own Words:

‘ If we take a short View of the *Geometry* of the Ancients, it appears, that
 ‘ they considered no *Lines*, except *Streight*
 ‘ *Lines*, the *Circle*, and the *Conic Sections*:
 ‘ As for the *Spiral*, the *Quadratrix*, the
 ‘ the *Conchoid*, the *Cissoïd*, and a few o-
 ‘ thers, they made little or no Account
 ‘ of them. It is true, they have given us
 ‘ many excellent and useful Theorems con-
 ‘ cerning the Properties of these others,
 ‘ but far short of what has been discovered
 ‘ since. Thus, to instance in the *Quadra-*
 ‘ *ture* of the *Circle*, which did so much
 ‘ excercise and perplex the Thoughts of
 ‘ the Ancients; How imperfect is that of
 ‘ *Archimedes*, in comparison of that exhi-
 ‘ bited by *Van Ceulen*? And every body
 ‘ knows how this is exceeded by the later
 ‘ Performances of *Mr. Newton*, and *Mon-*
 ‘ *sieur Leibnitz*. *Archimedes*, with a great
 ‘ deal

deal of Labour, has given us the exact
Quadrature of the *Parabola*; but the Re-
ctification of the *Parabolic Line*, depen-
ding on the *Quadrature* of the *Hyperbola*,
is the Invention of this last Age. The
rare Properties of the *Conic Sections*, in
the *Reflexion* and *Refraction* of *Light*, are
the undoubted Discoveries of these later
Times. It were easie to give more In-
stances of this nature, but these are suf-
ficient to shew how far the Modern Ma-
thematicians have out-done the Ancients,
in discovering the noblest and usefulest
Theorems, even of those few Figures
which they chiefly considered.

But all this is nothing, in comparison
of that boundless Extent which the Mo-
dern Mathematicians have carried Geo-
metry on to: Which consists in their
receiving into it all the *Curve Lines* in
Nature, together with the *Area's* and
Solids that result from them; by distin-
guishing them into certain *Kinds* and
Orders; by giving general Methods of
describing them, of determining their
Tangents, their *Lengths*, their *Area's*, and
the *Solids* made by the Rotation of them
about their Axes. Add to all this, the
general Methods that have been invented
of late for finding the Properties of a
great Number of these *Curves*, for the
N Advance.

‘ Advancement of *Optics*, *Mechanics*, and
 ‘ other Parts of *Philosophy* : And let any
 ‘ Man of Sense give the Preference to the
 ‘ Ancient Geometry if he can.

‘ That the Ancients had general Me-
 ‘ thods of Constructing all plain Problems
 ‘ by a straight Line and a Circle, as also all
 ‘ Solid Problems by the help of a Conic
 ‘ Section, is most certain. But it is as
 ‘ certain that here they stopped, and could
 ‘ go no further, because they would not
 ‘ receive any Order of Curves beyond the
 ‘ Conic Sections, upon some nice Scrupu-
 ‘ losity in multiplying the Number of the
 ‘ *Postulata*, requisite to the describing of
 ‘ them : Whereas the Modern Geometers,
 ‘ particularly the Renowned *Des Cartes*,
 ‘ have given general Rules for Construct-
 ‘ ing all Problems of the Vth. or VIth. De-
 ‘ gree. Which Method, if rightly under-
 ‘ stood, is applicable to all Problems of
 ‘ any Superior Order.

‘ How deficient the Geometry of the
 ‘ Ancients was in that Part which related
 ‘ to the *Loca Geometrica*, is manifest from
 ‘ the Account that *Pappus* gives us of that
 ‘ Question, about which *Euclid* and *Apol-
 ‘ lonius* made so many ineffectual Attempts :
 ‘ The Solution whereof we owe entirely
 ‘ to Mr. *Isaac Newton* (h). For it is evi-
 ‘ dent, that *Des Cartes* mistook the true
 ‘ Intent

(h) *Philos.*
 P. 74, 75.

‘ Intent of the Ancients in this Matter.
 ‘ So that the *Loca Solida* is now one of
 ‘ the perfectest Parts of Geometry that
 ‘ we have, which before was one of the
 ‘ most confused and defective.

‘ From comparing the Ancient and
 ‘ Modern Geometry, I proceed to the
 ‘ Comparison of those Arts to which we
 ‘ owe the Improvements both of the one
 ‘ and the other. These are chiefly Two,
 ‘ *Algebra*, and the *Method of Indivisibles*.

‘ As to the latter of these, I shall not stand
 ‘ to enquire whether *Cavallerius* was the
 ‘ first Inventor, or only the Restorer of it.

‘ I know Dr. *Wallis* (i) is of Opinion, that
 ‘ it is nothing but the Ancients *Method of* (i) Hist.
of Algebra,
p. 285.

‘ *Exhaustions*, a little disguised. It is e-
 ‘ nough for your Purpose, that by the
 ‘ help of *Cavallerius*’s Method, Geometry
 ‘ has been more promoted in this last Age,
 ‘ than it was in all the Ages before. It
 ‘ not only affords us neat and short De-
 ‘ monstrations, but shews us how to find
 ‘ out the abstrusest Theorems in Geometry.

‘ So that there has hardly been any con-
 ‘ siderable Improvement of late, which
 ‘ does not owe its Rise to it; as any Man
 ‘ may see, that considers the Works of
 ‘ *Cartes*, *Fermat*, *Van Heuraet*, *Huygens*,
 ‘ *Neil*, *Wallis*, *Barrow*, *Mercator*, *Leibnitz*,
 ‘ and *Newton*. *Archimedes*’s Propositions

‘ of the Properties of a Sphere, and a Cy-
 ‘ linder, are some of the easiest Examples
 ‘ of this Method. How vastly more cu-
 ‘ rious and more useful Theorems have
 ‘ been since added to Geometry, is
 ‘ known to every one that is conversant
 ‘ in the afore-mentioned Authors; espe-
 ‘ cially Mr. *Newton*, *Leibnitz*, and *Huygens*:
 ‘ To instance in Particulars, were to
 ‘ transcribe their whole Books and Trea-
 ‘ tises.

‘ Let us, in the next place, compare
 ‘ the *Ancient* and *Modern Algebra*. That
 ‘ the Ancients had some kind of *Algebra*
 ‘ like unto ours, is the Opinion of several
 ‘ learned Writers of late: And it is evi-
 ‘ dent from the Seven remaining Books of
 ‘ *Diophantus*, that it was brought to a con-
 ‘ siderable Length in his Time. But how
 ‘ infinitely short this was of that *Algebra*
 ‘ which we now have, since *Vieta's* Time,
 ‘ will appear to any one that considers
 ‘ the different Process of both. For; tho’
 ‘ *Diophantus* has given us the Solution of
 ‘ a great many hard and knotty Arithme-
 ‘ tical Problems, yet the last Step of his
 ‘ Resolution serves only for one particular
 ‘ Example of each Problem: So that for
 ‘ every new Example of the same Que-
 ‘ stion, there must be a new Process made
 ‘ of the whole *Analysis*. Whereas, by our
 ‘ Modern

Modern *Algebra*, the *Analysis* of any one Case gives a general Canon for all the infinite Cases of each Problem ; whereby we discover many curious Theorems about the Properties of Numbers, not to be attained by *Diophantus's* Method ; this being the peculiar Advantage of *Specious Algebra*, first introduced by *Vieta*, and wonderfully promoted by several worthy Mathematicians since. Beside this intolerable Imperfection of the Ancient *Algebra*, used by *Diophantus*, which required as many different Operations as the Problem had different Examples, that is, infinite : all which are included in one general Solution by the Modern *Algebra* ; there is this great Defect in it, that in *Undetermined Questions*, which are capable of innumerable Solutions, *Diophantus's Algebra* can seldom find any more than one ; whereas, by the Modern *Algebra*, we can find innumerable, sometimes all in one Analysis ; tho' in many Problems we are obliged to re-iterate the Operation for every new Answer. This is sufficient to let you see, that (even in the Literal Sence) our *Algebra* does infinitely exceed that of the Ancients. Nor does the Excellency of our *Algebra* appear less in the great Improvements of

' Geometry. The reducing all Problems to
 ' Analytical Terms, has given Rise to those
 ' many excellent Methods whereby we
 ' have advanced Geometry infinitely be-
 ' yond the Limits assigned to it by the An-
 ' cients. To this we owe, (1.) The Expres-
 ' sing all Curves by Equations, whereby we
 ' have a View of their Order, proceeding
 ' gradually on *in infinitum*. (2.) The
 ' Method of Constructing all Problems
 ' of any Assignable Dimension; whereas
 ' the Ancients never exceeded the Third.
 ' Nay, from the Account which *Pappus*
 ' gives us of the afore-mentioned Que-
 ' stion, it is evident, that the Ancients
 ' could go no further than Cubic Equa-
 ' tions: For he says expressly, they knew
 ' not what to make of the continual Mul-
 ' tiplication of any Number of Lines more
 ' than Three; they had no Notion of it.
 ' (3.) The Method of Measuring the
 ' Area's of many Infinities of Curvilinear
 ' Spaces; whereas *Archimedes* laboured
 ' with great Difficulty, and wrote a par-
 ' ticular Treatise of the Quadrature of
 ' only one (*k*), which is the simplest and
 ' easiest in Nature. (4.) The Method of
 ' Determining the Tangents of all Geome-
 ' tric Curve Lines; whereas the Ancients
 ' went no further than in Determining
 ' the Tangents of the Circle and Conic
 ' Sections.

(k) The
 Parabola.

Sections. (5.) The Method of Determining the Lengths of an infinite Number of Curves; whereas the Ancients could never measure the Length of one. If I should descend to Particulars, the Time would fail me. As our *Algebra*, so also our *Common Arithmetic* is prodigiously more perfect than theirs; of which, *Decimal Arithmetic* and *Logarithms* are so evident a Proof, that I need say no more about it.

I would not be thought, however, to have any Design to sully the Reputation of those Great Men, *Conon*, *Archimedes*, *Euclid*, *Apollonius*, &c. who, if they had lived to enjoy our Assistance, as we now do some of theirs, would, questionless, have been the greatest Ornaments of this Age, as they were deservedly the greatest Glory of their own."

Thus far Mr. Craig.

Those that have the Curiosity to see some of these Things proved at large, which Mr. Craig has contracted into one View, may be amply satisfied in Dr. Wallis's *History of Algebra*, joined with Gerhard Vossius's *Discourses De Scientiis Mathematicis*.

It must not here be forgotten, that Abstracted Mathematical Sciences were exceedingly valued by the ancientest Philo-

sophers: None, that I know of, expressing a Contempt of them but *Epicurus*, though all did not study them alike. *Plato* is said to have written over the Door of his Academy, *Let no Man enter here, who does not understand Geometry*. None of all the learned Ancients has been more extolled by other learned Ancients, than *Archimedes*. So that, if in these Things the Moderns have made so great a Progress, this affords a convincing Argument, that it was not want of Genius which obliged them to stop at, or to come behind the Ancients in any thing else.

CHAP. XV.

Of several Instruments invented by the Moderns, which have helped to advance Learning.

HAVING now enquired into the State of *Mathematics*, as they relate to *Lines* and *Numbers* in general, I am next to go to those Sciences which consider them as they are applied to *Material Things*. But these being of several Sorts, and of a vast Extent, taking in no less than the whole

whole Material World, it ought to be observed, that they cannot be brought to any great Perfection, without Numbers of Tools, or Arts, which may be of the same Use as Tools, to make the Way plain to several Things, which otherwise, without their Help, would be inaccessible.

Of these Tools, or Instruments, some were anciently invented, and those Inventions were diligently pursued : Others are wholly new. According to their Uses, they may be ranged under these Two General Heads : (1.) Those which are useful to all Parts of Learning, though perhaps not to all alike. (2.) Those which are particularly subservient to a Natural Philosopher, and a Mathematician. Under the first Head one may place *Printing*, *Paper of Rags*, and *Engraving*. Under the latter come *Telescopes*, *Microscopes*, the *Thermometer*, the *Baroscope*, the *Air-Pump*, *Pendulum-Clocks*, *Chymistry*, and *Anatomy*. All these, but the two last, were absolutely unknown to the Ancient *Greeks* and *Romans*. *Chymistry* was known to the *Greeks*, and from them carried to the *Arabs*. *Anatomy* is, at least, as old as *Democritus* and *Hippocrates* ; and doubtless, among the *exact Ægyptians*, something older.

The

The Benefit of *Printing* has been so vast, that every thing else wherein the Moderns have pretended to excell the Ancients, is almost entirely owing to it : And withal, its general Uses are so obvious, that it would be Time lost to enlarge upon them ; but it must be taken notice of, because

(1) Pag. 6. Sir *William Temple* has question'd (1) whether *Printing has multiplied Books, or only the Copies of them* ; from whence he concludes, that we are not to suppose that the Ancients had not equal Advantages by the Writings of those that were ancient to them, as we have by the Writings of those that are ancient to us. But he may easily solve his own Doubt, if he does but reflect upon the Benefit to Learning which arises from the *multiplying Copies* of good Books : For though it should be allowed, that there were anciently as many Books as there are now, which is scarce credible ; yet still the Moderns have hereby a vast Advantage, because, (1.) Books are much cheaper, and so come into more Hands. (2.) They are much more easily read : and so there is no Time lost in poring upon bad Hands, which weary the Readers, and spoil their Eyes. (3.) They can be printed with Indexes, and other necessary Divisions, which, though they might be made in MSS. yet they would then

then make them so voluminous and cumbersome, that not one in forty who now mind Books, because they love Reading, would then apply themselves to it. (4.) The Notice of new and excellent Books is more easily dispersed. (5.) The Text is hereby better preserved entire, and is not so liable to be corrupted by the Ignorance or Malice of Transcribers; this is of great Moment in Mathematics, where the Alteration of a Letter, or a Cypher, may make a Demonstration unintelligible.

Paper made of *Linnen Rags*, may, in a larger sence, be reckoned also amongst Modern Inventions; the Improvement of which to the present Fineness and Cheapness, is almost of as great Advantage to Learning, as *Printing* it self: And if we were, with the Old *Greeks* and *Romans*, obliged to Write upon *Barks of Plants*, *smoothed Wood*, *Wax* or *Parchment*, we should soon think so; since Instruments easily got, even though they should in some things be inferior to others, do, by making Men's Labours easie and pleasant, exceedingly contribute to encrease their Industry, and excite their Emulation. But to say more upon these Subjects, would be to abuse Men's Patience, since these things are so plain, that they need no Proof.

Engraving

Engraving upon Wood, or Copper, is of great Use in all those Parts of Knowledge where the Imagination must be assisted by sensible Images. For want of this noble Art, the Ancient Books of Natural History, and Mechanical Arts, are almost every where obscure, in many places unintelligible. Mathematical Diagrams, which need only a Ruler and a Pair of Compasses, have been better preserved, and could with more Ease be drawn: But in Anatomy, in Mechanics, in Geography, in all Parts of Natural History, Engraving is so necessary, and has been so very advantageous, that without it, many of those Arts and Sciences would to this hour have received very little Encrease. For when the Images, the Proportions, and the Distances of those Things wherein a Writer intends to instruct his Reader, are fully and minutely engraven in Prints, it not only saves abundance of Words, by which all Descriptions must of necessity be obscured, but it makes those Words which are used, full and clear; so that a skilful Reader is thereby enabled to pass an exact Judgment, and can understand his Authors without a Master, which otherwise it would be impossible to do, so as to be able to discern all, even the minutest Mistakes and Oversights in their Writings,
which

which puts an end to Disputes, and en-
creases Knowledge.

These are general Instruments, and more
or less serviceable to all sorts of Learned
Men in their several Professions and Sci-
ences: Those that follow, are more par-
ticular: I shall begin with those that assist
the Eye, either to discern Objects that are
too far off, or too small.

The *Imperfections* of *Distance* are re-
medied in a great measure by *Telescopes*,
whose chief Use, that comes under our
Consideration, is to discern the Stars, and
other Celestial Bodies.

To find out the first Inventor of these
sorts of Glasses, it will be necessary to
learn who first found out the Properties
of Convex and Concave Glasses in the
Refraction of Light. Dr. *Plot* has collected
a great deal concerning F. *Bacon*, in his
Natural History of Oxfordshire; which
seems to put it out of doubt, that he knew
that great Objects might appear little,
and small Objects appear great; that di-
stant Objects would seem near, and near Ob-
jects seem afar off, by different Applications
of Convex and Concave Glasses; upon
the Credit of which Authorities, Mr. *Mo-
lineux* (m) attributes the Invention of
Spectacles to this learned Friar, the Time
to which their earliest Use may be traced,
agreeing

(m) *Diop-
tric*. p. 256,
257, 258.

(n) Borel.
de vero In-
ventore Te-
lescopii, p.
30.
(o) Ibid.
p. 35.
(p) Ibid.
p. 30.

(q) Diop-
tric.
(r) De Sci-
entiis Ma-
themat.
p. 70.

(s) Vide
Galilaei
Nuntium
sidereum
primo ni-
fallor, im-
pressum,
A. D.
MDCVIII.

agreeing very well with the Time in which he lived; but how far *F. Bacon* went, we know not: So that we must go into *Holland* for the first Inventors of these excellent Instruments, and there they were first found out by one *Zacharias Joannides* (n), a Spectacle-maker (o) of *Middleburgh*, in *Zeland*; in *MDXC* he (p) presented a Telescope of Two Glasses to Prince *Maurice*, and another to Arch-Duke *Albert*, the former of whom apprehending that they might be of great Use in War, desired him to conceal his Secret. For this Reason, his Name was so little known, that neither *Des Cartes* (q) nor *Gerhard Vossius* (r) had ever heard any thing of him, when they attributed the Invention of Telescopes to *Jacobus Metius* of *Alkmaer*. However, the Invention taking Air, *Galileo Galilei* pursued the Hint, and made several Telescopes, with which he made Observations upon Heavenly Bodies, that got him immortal Honour. Thereby (s) he discovered Four Planets moving constantly round *Jupiter*, from thence usually called his *Satellites*, which afterwards were observed to have a constant, regular, and periodical Motion. This Motion is now so exactly known, that Mr. *Flamsteed*, who is one of the most accurate Observers that ever was,

was, has been able to calculate Tables of the Eclipses of the several Satellits, according to which, Astronomers in different Quarters of the World, having Notice of the precise Time when to look for them, have found them to answer to his Predictions, and published their Observations accordingly. This is an effectual Answer to all that Rhapsody which *Stubbe* (t) has collected in his Brutal Answer to Mr. *Glanville's Plus Ultra*, about the Uncertainty of all Observations made by Telescopes; since it is impossible to calculate the Duration of any Motion justly by fallacious and uncertain Methods. By the Eclipses of *Jupiter's* Satellits, Longitudes would soon be exactly determined, if Tubes of any Length could be managed at Sea. (u) But *Jupiter* is not the only Planet about which Things anciently unknown have been revealed by this noble Instrument. The Moon has been discovered to be an Earth endued with a libratory Motion, of an uneven Surface, which has something analogous to Hills and Dales, Plains and Seas; and a New Geography, (if one may use that Word without a Blunder) with accurate Maps, has been Published by the Great *Hevelius* (w), and Improved by *Ricciolus* (x), by which Eclipses may be observed much more nicely

(t) *Plus Ultra* reduced to a Non plus, p. 28, 36.

(u) Vid. *Philosoph. Transact.* n. 177.

(w) *Sele-nograph.*
(x) *Almagest.*

nicely than could be done formerly : The Sun has been found to have Spots at some times ; the Planets to move round their Axes ; *Saturn* to have a Luminous Ring round about his Body, which in some Positions appears like two Handles, as they are commonly called, or large Prominencies on opposite Parts of his Limb, carried along with him, beside Five Planets moving periodically about him, as those others do about *Jupiter* : The milky Way, to be a Cluster of numberless Stars ; the other Parts of the Heaven, to be filled with an incredible Number of Fixed Stars, of which, if *Hevelius's* Globes are ever published, the World may hope to see a Catalogue. These are some of the remarkable Discoveries that have been made by *Telescopes* : And as New Things have been revealed, so Old ones have been much more nicely observed, than formerly it was possible to observe them.

But I need not enlarge upon particular Proofs of that, which every Astronomical Book, printed within these $\overline{\text{L}}$ Years, is full of ; if I should, it would be said, perhaps, that I had only copied from the *French Author of the Plurality of Worlds*, so often mentioned already.

As some Things are too far off, so others are too small to be seen without help.

help: This last Defect is admirably supplied by *Microscopes*, Invented by the same *Zacharias Joannides* (y); which have been made useful in *Anatomical* and *Physical* Enquiries by *Malpighius*, *Leeuwenhoek*, *Grew*, *Havers*, and several others. The first considerable Essay to shew what might be discovered in Nature, by the help of *Microscopes*, was made by Dr. *Hook*, in his *Micrographia*; wherein he made various Observations upon very different sorts of Bodies. One may easily imagine what Light they must needs give unto the nicer Mechanism of most kinds of Bodies, when Monsieur *Leeuwenhoek* has plainly proved, that he could, with his Glasses, discern Bodies several Millions of times less than a Grain of Sand. This Assertion of his, how incredible soever it may seem to those who are unacquainted with Physical Matters, may in all probability be believed, because Dr. *Hook*, who examined what *Leeuwenhoek* says of the little Animals which he discerned in Water, of which he tells the most wonderful Things, does, in his *Microscopium*, attest the Truth of *Leeuwenhoek's* Observations.

Besides these that are of more universal Use, several other *Instruments* have been invented, which have been very serviceable

(y) Borel-
lus, ubi su-
pra, p. 35.

viceable to find out the Properties of Natural Bodies ; and by which several Things of very great moment, utterly unknown to the Ancients, have been detected. As,

(z) Borel-
lus de Motu
Animalium,
Part II.
Propos.
clxxv.

(1.) The *Thermometer*, invented (z) by *Sanctorius*, an eminent Physician of *Padua*. Its immediate Use is, to determine the several Degrees of Heat and Cold ; of which our Senses can give us but uncertain Notices, because they do not so much inform us of the State of the Air in it self, as what its Operations are at that time upon our Bodies. But *Sanctorius* used only Vessels open at each end, which are of small Use, since Liquors may rise or fall in the Tubes, as well from the Encrease or Diminution of the Weight of the Air, as of Heat and Cold. That Defect was remedied by Mr. *Boyle* (a), who sealed up the Liquors in the Tubes, Hermetically, so that nothing but Heat and Cold could have any Operation upon them. The Uses to which they have been applied, may be seen at large in Mr. *Boyle's History of Cold*, and the *Experiments of the Academy del Cimento*.

(b) See his
*Thermo-
metrical
Thoughts*,
prefixed
to his *Hi-
story of
Cold*.

(2.) The *Baroscope*, or *Torricellian Experiment*, so called from its Inventor, *Evangelista Torricelli*, a *Florentine Mathematician*, who, about the Year *MDCXLIII*. found

found that Quick-silver would stand erect in a Tube, above XXVIII Inches from the Surface of other Quick-silver into which the Tube was immersed, if it was before well purged of Air. This noble Experiment soon convinced the World, that the Air is an actually heavy Body, and gravitates upon every Thing here below. This Gravitation being found unequal at several times, Mr. Boyle applied this Instrument to Mechanical Uses (b), and shewed how it might teach us to know the Differences and changes of Weather; when dry, and when wet; since, by a vast Number of Observations, he had learn'd, that in dry Weather the Air drove up the *Mercury*, and in wet Weather let it fall again; though never lower than XXVIII Inches, and scarce ever higher than XXXII.

(3.) These Observations, with other Collateral Experiments, induced him to believe that the Air was, in truth, a Springy Body, which expanded or contracted it self in a Reciprocal Proportion, to the Encrease or Lessening of the Compression of the Ambient Bodies. For which he invented an Instrument to draw the Air out of Vessels that were filled with it, by Suction. The first Essays of that kind seem to have been made some Years

(b) *Philos.
Transact.*
n. 9, 10,
11, ---55.

before his appeared, by *Otto Guericke* of *Magdebourg*: but as he applied them chiefly to the Gravitation of the Air, without taking any notice of its Spring; so they were very imperfect, when compared to *Mr. Boyle's*. By this *Air-Pump*, as it is usually called, he discovered abundance of Properties in the Air, before never suspected to be in it. What they are, either considered singly, or in their Operations upon all sorts of Bodies, may be seen at large in his *Physico-Mechanical Experiments concerning the Weight and Spring of the Air*, and in several of his other Discourses upon the same Argument, some of which are printed by themselves, and

(c) Numb. 62, 63, 122.
Vid. Catalogue of Mr.
Boyle's Works, at the end
of the First Part of the
Medicinal Experiments,
printed MDCXCII. in
Twelves.

others in the (c) *Philosophical Transactions*. How far they may be relied upon, appears from this; That though *Hobbes* and *Linus* have taken a great deal of Pains to destroy *Mr. Boyle's* Theory, yet they have had few or no Abettors: Whereas the Doctrine of the *Weight and Spring of the Air*, first made thoroughly intelligible by *Mr. Boyle*, has universally gained Assent from Philosophers of all Nations who have, for these last XXX Years, busied themselves about Natural Enquiries.

(4.) The

(4.) The Invention of *Pendulum-Clocks* ought here to be remembred, because, it being certain from Astronomical Principles, and Observations, that the Diurnal Motion of the Earth is not so exactly Periodical, as that a true Equation of Time can thereby be obtained: By this Instrument, the Measure of the Variation being once adjusted, the true Time of the Earth's Diurnal Motion, can, at all Seasons of the Year, be more exactly known. Its Usefulness in making Astronomical Observations is also very obvious; for they could not anciently be so minute as they are at present, for want of such nice Sub-Divisions of an equable Motion as it affords. The Invention of this noble Instrument is attributed, by the Publisher of the Experiments of the Academy *del Cimento*, to *Galileo Galilei*, who found out so many excellent Theorems of the Nature and Proportions of the Motions of Projected and Vibrating Bodies. He says that *Galileo* first applied the *Pendulum* to *Clock-work*; and that his Son *Vincenzio* put it in practice in the Year *MDCXLIX* (d). It was little taken notice of, however, in these Parts, till Monsieur *Huygens* revived or invented it a-new; to whom, for that Reason, the Glory of finding out this useful Instrument is commonly attributed.

(d) Experiments of the Academy del Cimento, p. 12. Eng. Edit.

Upon this Occasion, I ought not to omit, that great Improvement of Watches, by adding a Second Spring to balance the First, (as the *Pendulum* in a Clock does the Weights) which also is attributed to Monsieur *Huygens*, tho' he and Dr. *Hook* have both contended for the Honour of this useful Invention. It appears by the *Philosophical Transactions*, and by Dr. *Hook's Lectures*, that he had a right Notion of this Matter, and that he had made several Essays to reduce it to Practice, some Years before any of Monsieur *Huygens's* Watches were produced; but that Monsieur *Huygens* first made *Pendulum-Watches* (so they are commonly call'd) that proved thoroughly serviceable. These will not be disputed to be Modern Inventions, since the whole Business of Clocks and Watches was unknown to all,

(e) See Dr. *Edw. Bernard's* Letter to Dr. *Huntingdon*, about the Latitude of Twenty Fixed Stars, from *Arabian Observat. Philosoph. Transact.* n. 159.

even the (e) *Arabian Antiquity*: Their Astronomers measured their Time by Hour-Glasses of Water, or Vibrating Strings of several Lengths; which would, indeed, serve them, in most cases, to measure Time nicely by, whilst they were observing; though they were of no Use upon other Occasions, and even then were liable to great Hazards.

C H A P.

CHAP. XVI.

Of Ancient and Modern Chymistry.

Chymistry, or the Art of Dividing Bodies by Fire, comes next to be considered. So great Things have thereby been discovered in Nature, that would have been utterly unknown without it, that it may justly be esteemed as one of the chiefest Instruments whereby Real Knowledge has been advanced. It has been cultivated by three sorts of Men, for very different Reasons; by *Refiners*, *Alchymists*, and *Chymists* properly so called. The *Refiner's* Art, which is older than the Flood, is, in *Holy Scripture*, ascribed to *Tubal-Cain*, as its first Inventor (f). The early Use of (f) Gen. Gold and Silver, as Instruments of Ex-^{iv. 22.}change in Trade, and of Copper and Iron for Mechanical Uses, in the Eastern Parts, shews, that Men soon knew how to separate Metals from their Dross, to a great degree. And as frequent Purifications are necessary for that Work, so we find that the Necessity of them was long ago commonly known, since *David* compared a Righteous Man to Silver Seven times purified in the Fire (g). But though the (g) Psal. ^{xii. 6.}*Ancients* knew pretty well how to Refine

their Metals, and to Extract them from their Ore's, in common Cases, where but one sort of Metal lay in the same Lump, or where the different Metals were easily separable ; yet in nicer Cases, where many different Sorts were blended in the same Mass, and where the Metal was obstinately mixed in Stones, over which the Fire could have but small Power, both which Cases do not unfrequently occur, they were often at a loss ; and besides, being wholly ignorant of the Use of *Quick-silver* in separating Metals from their Ore's, and of *Aquæ-Fortes*, and the *Cupel*, by which all manner of Metals are with Ease parted from one another, their Work was laborious, bungling, and many times imperfect. Gold, indeed, which is generally found alone, might be thoroughly purified ; which Silver could not be, without great Difficulty and Loss : Whereas now, since the Property of Quick-silver's incorporating with all Metals but Copper and Iron is universally known, every Workman in the *Peruvian* Mines understands that whenonce his Ore is duly prepared, every Particle of the Silver will *amalgamate* (as the Chymists call it) with the Mercury, and so make a Past that gives him all his Metal without any trouble ; and if it is mixed with Gold,

Aqua-

Aqua-Regis, will part them ; if with Copper, *Aqua-Fortis* ; if with Lead, the *Cupel*. Nor ought we to forget that useful Invention of turning Copper into Brass with *Lapis Calaminaris*, by which its Weight is considerably augmented, its Lustre heightened, and its Usefulness for many Mechanical Purposes encreased.

It must be own'd, that Skill in *Fossils*, and particularly in *Metals*, has not been cultivated by the *Moderns* proportionably with other Parts of *Natural History*. Yet what a Difference there must arise between their Knowledge and that of the Ancients from these few Things alone, is evident to any Man who has the least insight into these Matters. The *Ancients* were so grossly ignorant of the commonest Properties of Mercury, that they only knew that it would incorporate with Gold. We know, from *Vitruvius* and *Pliny*, that this Property of Mercury was formerly observed ; and *Pliny* (*b*) adds, *That every thing swims upon Mercury but Gold ; that only it draws to it self*. And how well they were skill'd in the Specific Weight of Metals, appears from their believing (*i*) that *Lead was heavier, and more ductile than*

(*b*) *Omnia ei [Mercurio] innatant præter Aurum ; id unum ad se trahit. Plin. Nat. Hist. l. xxxiii. c. 6.*

(*i*) *Nec pondere aut facilitate materia prælatum est [Aurum] cæteris metallis, cum sedat per utrumque Plumbo. Plin. Nat. Hist. l. xxxiii. c. 3.*

(k) Borri-
chius de
Ortu &
Progressu
Chemia.

than Gold. The Use and Composition of *Aquæ-Fortes* is ascribed to the *Arabs*, by the Learned in these Matters; (k) and the *Cupel* is notoriously known to be a Modern Invention. So that I think we may boldly compare the Modern Writers of Metals with the best of the Ancients, of whose Skill in these Things *Pliny* gives us a good Account, whose Writings may be set against what *Georgius Agricola*, *Alonso Barba*, *Lazarus Erckern*, and our Countrey-man *Webster*, have said upon these Subjects; in whose Writings, Skill in Distinguishing, Purifying, Separating and Assaying Ore's and Metals, is what is chiefly to be regarded. These Things depend upon Observation and Experience, which is certain, and consequently will admit of comparison, since it may easily be decided, whose Trials and Observations of any sort have been the most Exact. It signifies nothing whose Hypotheses of the Nature, Texture, Growth, and Possibility of the Transmutation of Metals, be rightest, in the Dispute before us. Men may eternally, and will dispute *pro* and *con* about those Things which will, in all probability, lie undetermined, till either we know the Essences of Things, (which, perhaps, are not to be known in this Life,) or till Mankind be furnished with
a larger

a larger stock of Experiments and Observations than yet they are. So that though several of the Modern Writers of Metals that might be named, if Show and Ostentation were proper, give very poor Accounts of the Physical Nature of Minerals, yet their Experiments and Observations are never a whit the less valuable; and others who seem to Philosophize much nearer the Truth, yet are not here to be esteemed Advancers of the Stock of Knowledge upon the score of their Hypotheses; because what is still contested, is not to be given in as Evidence, especially when the Cause does not want it.

I have spoken already of *Alchymy*, or the Art of Making Gold; and so I shall pass on to the *Chymist's Art*, which consists in making such Analyses of Bodies by Fire, or other Agents, Chymically prepared, as may reduce them into more simple Substances than those out of which they were before compounded. I make a difference between the *Chymist* and the *Refiner*; because the Operations of the *Chymist* are employ'd about making useful Medicines, or Philosophical Experiments; whereas the Disquisitions of the *Refiner* terminate altogether in finding out ways how to part his Metals from their Ore's, and from one another, and to purifie them
from

from their Dross. The Discoveries therefore which have been made by *Chymistry* properly so called, are so much later than those Ages which Sir *William Temple* contends for, that those who thought they had a great deal to say for the other Parts of *Chymistry*, do here give up the Controversie. *Borrichius* himself owns, that *Hippocrates*, *Aristotle* and *Galen* knew so little of *Chymistry*, that they could not so much as make *Rose-Water*. Now, though he says this, with a design to Disparage their Skill in *Physic*, when compared with the *Ægyptian*, yet therein he destroys his own Hypothesis; because, in several Places of his *Vindication of the Hermetical and Chymical Philosophy and Medicine*, against *Conringius's* Book *de Medicina Hermetica*, he takes Pains to prove, that the Knowledge of these very Men was originally owing to the *Ægyptians*. But the Thing speaks it self: The Inward Use of Antimonial, Vitriolic and Mercurial Preparations in *Physic*, was but little known before the Time of *Basilius Valentinus*, and *Paracelsus*: What was ancients, was taken from the *Arabs*, who are Moderns against Sir *William Temple*. (1) They may be looked upon as the first Inventors of Chymical Medicine: (1) They first extracted Vinous Spirits from Fermented Liquors; Not

(1) *Borrichius de Ortu & Prog. Chem. Morhofius ad Langebottum.*

Not to mention abundance of other Preparations, which *Arnoldus de Villa Nova*, *Raymund Lully* his Scholar, and *F. Bacon* learned from them. I will not deny but some Chymical Experiments were very anciently known. *Solomon* (m) hints at (m) Prov. XXV. 20. the Disagreement of *Vinegar* and *Nitre*; which, though not intelligible of common *Nitre*, yet as *Mr. Boyle* (n) found (n) Boyle's *Producible-ness of Chymical Principles*, p. 30, 31. by his own Experience, it is certainly true of *Ægyptian Nitre*; which, as being a natural *Alkali*, will cause an Ebullition, when joined with any Acid Salt.

Some Passages likewise are produced by *Borrichius*, to prove that the Ancients understood something of Calcinations, and the Use of Lixivate Salts: But these things are very few, very imperfect, and occasional. Chymistry was not esteemed as a distinct Art; or the Analyses thereby produced, worthy a Philosopher's notice; though the Industry of later Ages have found them to be so regular and remarkable, that many Persons have thought that the Constituent Principles of Mixed Bodies are no other way so certainly to be found out. Hence have the *Hypotheses* of the *Paracelsians* taken their Beginning, who held, that *Salt*, *Sulphur* and *Mercury* were the Active Principles of Composition of all Mixed Bodies.

Hence

(o) Scepti-
cal Chymist,
and Produ-
cib. of Chy-
mical Prin-
ciples.

Hence several others have been led to believe, that the Primary Constituents of most Bodies were *Acid* and *Alkalizate Salts*. Which Hypotheses, though liable to many Exceptions, as Mr. Boyle (o) has fully proved, are founded upon such a variety of surprizing Experiments, that those who first started them, were not so unadvised, as one that is wholly unacquainted with the Laboratories of the *Chymists*, might, at first view, suspect. For it is certain, that Five distinct and tolerably uniform Substances may be drawn from most Vegetable and Animal Substances, by Fire; *Phlegm*, *Fixed Salt*, *Oil*, *Earth*, and *Spirit*, or *Volatile Salt* dissolved in *Phlegm*. So that here is a new Field of Knowledge, of which the Ancients had no sort of Notion.

(p) See
Mr. Boyle's
Usefulness
of Experi-
mental Phi-
losophy.

The great and successful Change hereby made (p) in the *Pharmaceutical Part* of Physic, shews that these Philosophers, by Fire, have spent their Time to very good purpose. Those Physicians who reason upon *Galenical Principles*, acknowledge, that in many Cases, the *Tinctures*, *Extracts*, *Spirits*, *Volatile Salts*, and *Resins* of Vegetables and Animals, are much more efficacious Remedies than the *Galenical Preparations* of those self-same Medicines. Nay, though they are not easily reconciled

ciled to Mineral Preparations, because the Ancients not knowing how to separate them from their grosser *Fæces*, durst seldom apply them to any but Chirurgical Uses; yet they themselves are forced to own, that some Diseases are of so malignant a Nature, that they cannot be dispelled by milder Methods. The Use of *Mercury* in Venereal Distempers, is so great, and so certain, that if there be such a Thing as a Specific Remedy in Nature, it may justly deserve that Title. The Unskilfulness of those who have prepared and administred *Antimonial* Medicines, has made them infamous with many Persons, though many admirable Cures have been, and are wrought by them, skilfully corrected, every Day. And it is well known, that the Inward Use of *Steel* has been so successful, that in many Diseases, where the nicest Remedies seem requisite, whether the Constitution of the Patients, or the Nature of the Distempers, be considered, it is, without Fear, made use of; though its Medicinal Vertues, in these Cases, have been found out by Chymical Methods.

Upon the whole Matter, it is certain, that here is a new and gainful Acquisition made: The old *Galenical Materia Medica* is almost as well known, in all probability,

lity, as ever it was ; since there are so great Numbers of Receipts preserved in the Writings of the old Physicians. The Industry of Modern Naturalists has, in most, at least in all material Cases, clearly discovered what those Individual Remedies are, which are there described. So that whatsoever Enlargement is made, is a clear Addition ; especially, since these Minerals and Metals were then as free and common as they are now. Besides, vast Numbers of *Galenical* Medicines, Chymically prepared, are less nauseous, and equally powerful ; which is so great an Advantage to Physic, that it ought not to be overlooked.

CHAP. XVII.

Of Ancient and Modern Anatomy.

Anatomy is one of the most necessary Arts to open to us Natural Knowledge, of any that was ever thought of. Its Usefulness to Physicians was very early seen ; and the *Greeks* took great Pains to bring it to Perfection. Some of the first Dissectors (*q*) tried their Skill upon living Bodies of Men, as well as Brutes. This was

(*q*) Vide
Corn. Cel.
sum in Pre-
fatione.

was so inhumane and barbarous a Custom, that it was soon left off: And it created such an abhorrence in Men's Minds of the Art it self, that in *Galen's* time, even dead Bodies were seldom opened; and he was often obliged (r) to use Apes, instead of Men, which sometimes led him into great Mistakes.

(r) *And-
tom. Ad-
minist. pas-
sim.*

It may be said, perhaps, that because there is not an ancient System of Anatomy extant, therefore the Extent of their Knowledge in this Particular cannot be known. But the numerous Anatomical Treatises of *Galen* do abundantly supply that Defect. In his elaborate Work of *the Uses of the Parts of Humane Bodies*, he gives so full an Idea of ancient Anatomy, that if no other ancient Book of Anatomy were extant, it alone would be sufficient for this Purpose. He is very large in all his Writings of this kind, in taking Notice of the Opinions of the Anatomists that were ancients than himself, especially when they were mistaken, and had spent much Time and Pains in Opening Bodies of Brutes, of which he somewhere promises to write a Comparative Anatomy. So that his Books not only acquaint us with his own Opinions, but also with the Reasonings and Discoveries of *Hippocrates*, *Aristotle*, *Herophilus* and

P

Erasi-

Erasistratus, whose Names were justly Venerable, for their Skill in these Things. Besides, he never contradicts any body, without appealing to Experience, wherein though he was now and then mistaken, yet he does not write like a Pedant, affirming a thing to be true or false, upon the Credit of *Hippocrates*, or *Herophilus*, but builds his Arguments upon Nature, as far as he knew her. He had an excellent Understanding, and a very piercing Genius; so that the false Uses which he frequently assigns to several Parts, do certainly shew that he did not understand the true Texture of those Parts; because where his Anatomy did not fail him, his Ratiocinations are, generally speaking, exact. Wherefore, in this Particular, his Mistakes instruct us as effectually in the Ancients Ignorance, as his true Notions do in their Knowledge. This will appear at large hereafter, where it will be of mighty use to prove, That the Ancients cannot be supposed to have known many of the most eminent Modern Discoveries; since if they had known them, they would not have assigned such Uses to those Parts, as are not reconcilable to those Discoveries. If *Galen* had known that the *Pancreas* had been a Heap of small Glands, which all emit into one common Canal, a particular

cular Juice carried afterwards through that Canal into the Guts, which there meeting with the Bile, goes forward, and assists it in the making of the Chyle, he would never have said (s) that Nature made it for a Pillow to support the Veins, which go out of the Liver in that Place, where they divide into several Branches, lest if they had been without a Rest, they should have been hurt by the violent Eruption of the Blood; and this too, without assigning any other Use for it.

(s) *De Usu
Partium,
lib. v. c. 2.*

By *Anatomy*, there is seldom any thing understood but the Art of laying open the several Parts of the Body with a Knife, that so the Relation which they severally bear each to other may be clearly discerned. This is generally understood of the *containing* Parts, Skin, Flesh, Bones, Membranes, Veins, Arteries, Muscles, Tendons, Ligaments, Cartilages, Glands, Bowels, wherein only the Ancients busied themselves: As for the Examination of the Nature and particular Texture of the *contained* Parts, Blood, Chyle, Urine, Bile, Serum, Fat, Juices of the Pancreas, Spleen and Nerves, Lympha, Spittle, Marrow of the Bones, Mucilages of the Joints, and the like; they made very few Experiments, and those too, for want of Chymistry and Microscopes, very imperfect.

fect. The Discoveries therefore which have been made in that nobler Part, which are numerous and considerable, are in a manner wholly owing to later Ages. In the other, a great deal was anciently done, though a great deal more was left for Posterity to do.

I shall begin with the Body in general. It is certain, that all the great Divisions of the Bones, Muscles, Veins and Arteries, most of the visible Cartilages, Tendons and Ligaments, were exactly known in *Galen's* time; the Positions of the Muscles, their several Originations, the Insertions of their Tendons, and investing Membranes, were, for the most part, traced with great Nicety and Truth; the more conspicuous Pairs of Nerves which arise either from the Brain or Spinal Marrow, were well known, and carefully followed; most of the great Branches of the Veins and Arteries, almost all the Bones and Cartilages, with very many Muscles, have still old *Greek* Names imposed upon them by the Old Anatomists, or *Latin* Names translated from the *Greek* ones: So that, not only the easie things, and such as are discernible at first sight, were thoroughly known; but even several Particulars, especially in the Anatomy of the Nerves, were discovered, which are not obvious without
great

great Care, and a good deal of Practical Skill in Dissecting. So much in general; from which it is evident, that as far as Anatomy is peculiarly useful to a Chirurgeon, to inform him how the Bones, Muscles, Blood-Vessels, Cartilages, Tendons, Ligaments and Membranes, lie in the Limbs, and more conspicuous Parts of the Body, so far the Ancients went: And here, there is very little that the Moderns have any Right to pretend to, as their own Discovery; tho' any Man that understands these things, must own, That these are the first things which offer themselves to an Anatomist's View.

Here I shall beg leave to descend to Particulars, because I have not seen any Comparison made between *Ancient and Modern Anatomy*, wherein I could acquiesce; whilst some, as Mr. *Glanville* (t), and some others who seem to have copied from him, have allowed the Ancients less than was their Due; others, as *Vander Linden*, and *Almeloveen* (u), have attributed more to them than came to their Share; especially since (though perhaps it may be a little tedious, yet) it cannot be called a Digression.

Hippocrates (w) took the Brain to be a Gland. His Opinion was nearer to the Truth than any of his Successors; but he

(t) Essay of Modern Improvements of Useful Knowledge.

(u) *Inventa Nov. Antiqua.*

(w) *De Glandulis*, pag. 418. S. 7. Edit. *Vander Linden.*

seems to have thought it to be a similar Substance, which it evidently is not. And therefore, when several Parts of it were discovered not to be glandulous, his Opinion was rejected. *Plato* took it to be Marrow, such as nourishes the Bones ; but its Weight and Texture soon destroyed his Notion, since it sinks in Water wherein Marrow swims ; and is hardened by Fire, by which the other is melted.

(x) *De Usu Partium*, lib. viii. cap. 6.

Galen (x) saw a little farther, and he asserts it to be of a Nervous Substance, only something softer than the Nerves in the Body. Still they believed that the Brain was an Uniform Substance, and as long as they did so, they were not like to go very far. The first Anatomist who discovered the true Texture of the Brain,

(y) *Malpighius Epist. de Cerebro ad Fracassatum*, p. 2.

was *Archangelus Piccolhomineus* (y) an Italian, who lived in the last Age. He found that the Brain properly so called, and *Cerebellum*, consist of Two distinct Substances, an outer Ash-coloured Substance, through which the Blood-Vessels, which lie under the *Pia Mater* in innumerable Folds and Windings, are disseminated ; and an inner every where united to it, of a Nervous Nature, that joins this *Bark* (as it is usually call'd) to the *Medulla Oblongata*, which is the Original of all the Pairs of Nerves that issue from the Brain, and

and of the Spinal Marrow, and lies under the Brain and *Cerebellum*. After him, Dr. *Willis* (2) was so very exact, that he (2) *Anat. Cerebri.* traced this Medullar Substance through all its Insertions into the Cortical, and the *Medulla Oblongata*, and examined the Rises of all the Nerves, and went along with them into every Part of the Body with wonderful Curiosity. Hereby not only the Brain was demonstrably proved to be the Fountain of Sense and Motion, but also by the Courses of the Nerves, the Manner how every Part of the Body conspires with any others to procure any one particular Motion, was clearly shewn; and thereby it was made plain, even to Sense, that where-ever many Parts joined at once to cause the same Motion, that Motion is caused by Nerves that go into every one of those Parts, which are all struck together. And tho' *Vieussens* and *du Verney* have in many things corrected Dr. *Willis's Anatomy of the Nerves*; yet they have strengthened his general Hypothesis, even at the time when they discovered his Mistakes, which is the same thing to our present purpose. *Galen* (a) indeed, had a right Notion of this Matter, but he traced only the larger (a) *Dr. U. P. 1. 8. c. 4.* Pairs of Nerves, such as could not escape a good Anatomist.

But the Manner of the Forming of the *Animal Spirit* in the Brain, was wholly unknown. In order to the Discovery whereof, *Malpighius* (b), by his Microscopes, found that the Cortical Part of the Brain consists of an innumerable Company of very small Glandules, which are all supplied with Blood by Capillary Arteries; and that the Animal Spirit, which is separated from the Mass of the Blood in these Glandules, is carried from them into the *Medulla Oblongata* thorough little Pipes, whereof one belongs to every Gland, whose other End is inserted into the *Medulla Oblongata*, and that these Numberless Pipes, which in the Brain of some Fishes look like the Teeth of a small Ivory Comb (c), are properly that which all Anatomists after *Piccolhomineus* have called the *Corpus Callosum*, or the Medullar Part of the Brain. This Discovery destroys the Ancient Notions of the Uses of the Ventricles of the Brain, and makes it very probable, that those Cavities are only Sinks to carry off excrementitious Humours, and not Store-Houses of the Animal Spirit: It shews likewise how little they knew of the Brain, who Believed that it was an uniform Substance. Some of the Ancients disputed (d) whether the Brain were not made

(b) *De Cerebri Cortice.*

(c) *De Cerebro,*
pag. 4.

(d) *Galen de U. P.*
l. viii. c. 2.

made to cool the Heart. Now, though these are ridiculed by *Galen*, so that their Opinions are not imputable to those who never held them; yet they shew, that these famous Men had examined these things very superficially: For no Man makes himself ridiculous if he can help it; and now, since Mankind are satisfied, by Ocular Demonstration, that the Brain is the Original of the Nerves, and the Principle of Sense and Motion, he would be thought out of his Wits, that should doubt of this Primary Use of the Brain; though formerly, when things had not been so experimentally proved, Men might talk in the dark, and assign such Reasons as they could think of, without the Suspicion of being ignorant or impertinent.

The *Eye* is so very remarkable a Member, and has so many Parts peculiar to it self, that the Ancients took great Notice of it. They found its Humours, the Watry, Crystalline, and Glassy, and all its Tunicles, and gave a good Description of them; but the Optic Nerve, the Aqueous Ducts which supply the Watry Humour, and the Vessels which carry Tears were not sufficiently examined. The first was done by Dr. *Briggs* (e), who has found, that in the *Tunica Retiformis*, which is contiguous to the Glassy Humour,

(e) Theory of Vision.
Grew's Transact.
numb 6.
and Philos.
Transact.
numb. 147.

the

the Filaments of the Optic Nerve there expanded, lie in a most exact and regular Order, all parallel one to another; which when they are united afterwards in the Nerve, are not shuffled confusedly together, but still preserve the same Order till they come to the Brain. The Crystalline Humour had already been discovered to be of a Double-Convex Figure, made of Two unequal Segments of Spheres, and not perfectly Spherical, as the Ancients thought. So that this further Discovery made by Dr. Briggs, shews evidently why all the Parts of the Image are so distinctly carried to the Brain, since every Ray strikes upon a several Filament of the Optic Nerve; and all those Strings so struck, are moved equably at the same time. For want of knowing the Nature and Laws of Refraction, which have been exactly stated by Modern Mathematicians, the Ancients discoursed very lamely of Vision. This made Galen think that the Crystalline Humour (f) was the Seat of Vision, whereas its only Use is, to refract the Rays; as the common Experiment of a dark Room, with one only Hole to let in Light, plainly proves: For if one puts a Convex Glass within it, so as to suffer no light to be let in but thorough that Glass, a most exact Land-skip of

(f) De Usu
Partium,
lib. viii.
cap. 6.

of every thing without, in their proper Colours, Heights and Distances, will be represented upon a Paper placed in the Focus of the Glass: And it is well known, that the same thing will appear, if the Crystalline Humour taken out of an Oxe's or a Man's Eye, be placed in the Hole, instead of the Glass. The Way how the Watry Humour of the Eye, when by Accident lost, may be and is constantly supplied, was first found out and described by Monsieur *Nuck* (g), who discovered a particular Canal of Water arising from the internal Carotidal Artery, which creeping along the Sclerotic Coat of the Eye, perforates the Cornea near the Pupil, and then branching it self curiously about the Iris, enters into and supplies the Watry Humour. As to the Vessels which moisten the Eye, that it may move freely in its Orbit, the Ancients knew in general, that there were Two Glands in the Corners of the Eyes (h); but the Lympheducts, through which the Moisture is conveyed from those Glands, were not fully traced till *Steno* (i) and *Briggs* (k) described them; so that there is just the same difference between our Knowledge and the Ancients in this Particular, as there is between *his* Knowledge who is sure there is some Road or other

(g) De
Ductibus
novis A-
quosis.

(h) Galen
de U. P.

(i) Obser-
vat. Ana-
tomica de
Oris Ocu-
lorum &
Narium
Vasis.

(k) Oph-
thalmogra-
phia.

other from this Place to that, and *his* who knows the whole Course, and all the Turnings of the Road, and can describe it on a Map.

The Instruments by which Sounds are conveyed from the *Drum* to the *Auditory Nerves* in the inner Cavities of the *Ear*, were very little, if at all, known to the Ancients. In the First Cavity there are Four small Bones, the *Hammer*, the *Anvil*, the *Stirrup*, and a small flattish Bone just in the Articulation of the *Anvil* and the *Stirrup*. It is now certainly known, that when the Drum is struck upon by the external Air, these little Bones, which are as big in an Infant as in adult Persons, move each other; the Drum moves the Hammer, That the Anvil, That the Stirrup, which opens the Oval Entrance into the Second Cavity: None of these Bones were ever mentioned by the Ancients, who only talked of Windings and Turnings within the *Os Petrosum*, that were covered by the large Membrane of the Drum. *Jacobus Carpus*, one of the first Restorers of Anatomy in the last Age, found out the *Hammer* and the *Anvil*; *Realdus Columbus* discovered the *Stirrup*; and *Franciscus Silvius*, the little flattish Bone, by him called *Os Orbiculare*, but mistook its Position: He thought it

it had been placed Sideways of the Head of the *Stirrup*, whereas Monsieur *du Verney* (l) found that it lies in the Head of the *Stirrup*, between that and the *Anvil*. The other inner Cavities were not better understood, the Spiral Bones of the *Cochlea*, that are divided into Two distinct Cavities, like Two pair of Winding-Stairs parallel to one another, which turn round the same Axis, with the Three Semicircular *Canals* of the *Labyrinthus*, into which the inner Air enters, and strikes upon the small Twigs of the Auditory Nerves inserted into those small Bones, were things that they knew so little of, that they had no Names for them; and indeed, till Monsieur *du Verney* came, those Mazes were but negligently, at least unsuccessfully, examined by Moderns, as well as Ancients; it being impossible so much as to form an Idea of what any former Anatomists asserted of the wonderful Mechanism of those little Bones, before he wrote, if we set aside Monsieur *Perrault's* (m) *Anatomy* of those Parts, which came out a Year or two before, who is not near so exact as Monsieur *du Verney*.

(l) *Traité
del' Organe
de l'Ouye.
Paris,
1683.*

(m) *Essays
de Physique.
Part II.*

The other Parts of the Head and Neck, wherein the *Old Anatomy* was the most defective,

(n) Vide
Malpighi.
um de Lin-
guâ.

defective, were the *Tongue*, as to its Internal Texture; and the *Glands of the Mouth, Jaws and Throat*. The Texture of the *Tongue* was but guessed at, which occasioned great Disputes concerning the Nature of its Substance, (n) some thinking it to be Glandulous, some Muscular, and some of a peculiar Nature, not to be matched in any other Part of the Body. This therefore *Malpighius* examined with his Glasses, and discovered, that it was cloathed with a double Membrane; that in the inner Membrane there are abundance of small *Papillæ*, which have extremities of Nerves inserted into them, by which the *Tongue* discerns Tasts, and that under that Membrane it is of a Muscular Nature, consisting of numberless Heaps of Fibres, which run all manner of ways, over one another, like a Mat.

The general Uses of the *Glands of the Mouth, Jaws and Neck*, were anciently known; it was visible that the Mouth was moistened by them, and the Mass of the Spittle supplied from them; and then, having named them from the Places near which they lie, as the *Palate*, the *Jaws*, the *Tongue*, the *Ears*, the *Neck*, they went no further; and there was little, if any thing, more done, till
Dr. Whar-

Dr. *Wharton* and *Nicolaus Steno* examined these Glands. And upon an exact Enquiry, Four several Salival Ducts have been discovered, which from several Glands discharge the Spittle into the Mouth. The first was described by Dr. *Wharton* (o), (o) Adenograph. c. 21. near Forty Years ago; it comes from the *Conglomerate Glands* that lie close to the inner side of the lower Jaw, and discharges it self near the middle of the Chin into the Mouth. The Second was found out by *Steno* (p), who published his Observations in *MDCLXII*; this comes from those Glands that lie near the Ears, in the inside of the Cheek, and the outside of the Upper Jaw. The Third was found out by (q) *Thomas Bartholin*, (q) Nuck Sialograph. who gave an Account of it in *MDCLXXXII*, and about the same time by one *Rivinus* a German: It arises from the Glands under the Tongue, and going in a distinct Canal to the Mouth of *Wharton's* Duct, there, for the most part, by a common Orifice, opens into the Mouth. The Fourth was discovered by Monsieur *Nuck* (r); he found a Gland within the Orbit of the Eye, from which, not far from the Mouth of *Steno's* Duct, Spittle is supplied to the Mouth by a peculiar Canal. Besides these, the same Monsieur *Nuck* found some smaller Glands near

(p) Observat. Anat. de Oris Vasis.

(r) Ibid.

near the last, but lower down, which, by Four distinct Pipes, carry some Spittle into the Mouth; so careful has Nature been to provide so many Passages for that necessary and noble Juice, that if some should fail, others might supply their Want.

CHAP. XVIII.

Of the Circulation of the Blood.

(s) *Epist.
de Pulmo-
nibus.*

FROM the *Head*, we are to look into the *Thorax*, and there to consider the *Heart* and the *Lungs*. The *Lungs*, as most of the other *Viscera*, were believed to be of a *Parenchymous* Substance, till *Malpighius* found by his Glasses (s) that they consist of innumerable small Bladders, that open into each other, as far as the outermost; which are covered by the outer Membrane, that incloses the whole Body of the *Lungs*: And that the small Branches of the *Wind-Pipe* are all inserted into these Bladders; about every one of which the *Veins* and *Arteries* are entwined, in an unconceivable Number of Nets and Mazes; that so the inspired Air may

may press upon, or mix with, the Mass of Blood, in such small Parcels as the Ancients had no Notion of. The *Wind-Pipe* also it self is nourished by an *Artery* that creeps up the Back-side, and accompanies it in all its Branchings : Which was first found out by *Frederic Ruysch*, a Dutch Professor of *Anatomy* at *Leyden*, about Thirty Years ago.

But the great Discovery that has been made of the *Lungs*, is, That the whole Mass of Blood is carried out of the Right Ventricle of the Heart, by the *Arteria Pulmonaris*, called anciently *Vena Arteriosa*, thorough all the small Bladders of the *Lungs*, into the *Vena Pulmonaris*, (or *Arteria Venosa*;) and from thence, into the Left Ventricle of the Heart again. So that the Heart is a strong Pump, which throws the Blood, let in from the Veins, into the *Lungs*; and from the *Lungs*, afterwards, into the Arteries; and this by a constant rapid Motion, whereby the Blood is driven round several times in an Hour. This Discovery, first made perfectly intelligible by *Dr. Harvey*, is of so very great Importance to shew the Communication of all the Humours of the Body, each with other, that as soon as Men were perfectly satisfied that it was not to be contested, which they were in a few Years, a great many put in

Q for

for the Prize, unwilling that Dr. Harvey should go away with all the Glory. *Vander Linden*, who published a most exact Edition of *Hippocrates*, in *Holland*, about XXX Years ago, has taken a great deal of Pains to prove that *Hippocrates* knew the *Circulation of the Blood*, and that Dr. *Harvey* only revived it. The Substance of what has

been said in this Matter, is this;

That *Hippocrates* speaks (t) in one place, of the Usual and Constant Motion of the Blood:

That, in another place, he calls (u) the Veins and Arteries, the Fountains of Humane Nature, the Rivers that water

the whole Body, and convey Life; and which, if they be

dried up, the Man dies: That, in a third place, he says,

(w) That the Blood-Vessels, which are dispersed over the whole Body, give Spirit, Moisture and Motion, and all spring

from one; which one (Blood-Vessel) has no Beginning, nor

no End, that I can find; for where there is a Circle, there

is no Beginning. These are

the clearest Passages that are produced, to prove, that *Hippocrates* knew the Circulation

(t) Πασσενόεσαν ἐν τῇ
νόσῳ διὰ παντός, ἅτε τὰ
αἷμα ἐφθαρμένον τε, καὶ
ἐκκεκινημένον ἢ εἰσδύσαν
κίνησιν. De Morbi., lib. 1.
§. 30. Edit. Vand.

(u) Ἀυταὶ πηγὰς οὐσίῃ
ἀνθρώπου, καὶ οἱ ποταμοὶ
ἐνταῦθα ἀνὰ τὸ σῶμα,
τοῖσιν ἀρδεῖ τὸ σκῆνός·
ἅτοι ὃ καὶ ζῶν φέρει τὴν
ἀνθρώπου· καὶ ἐὰν ἀνδρώ-
σιν ἀπέθανεν ὁ ἀνθρώ-
πος. De Corde, §. 5.

(w) Αἱ φλέβες διὰ τῶ
σώματος κεχρῆναι, πνεύ-
μα, καὶ ῥεῦμα καὶ κίνησιν πα-
ρέχον. Ἐπὶ μίῃς πολλαὶ
διαβλασάνουσαι· καὶ αὐτὴ
μὲν ἡ μία, ὅθεν ἦρχεται. καὶ
ἡ τετελεύτηκεν, ἣ οἶδα,
κύκλος γὰρ γενημένος, ἀρ-
χὴ δὲ οὐκ εὐρέθη. De Venis,
§. 17.

the clearest Passages that are produced, to prove, that *Hippocrates* knew the Circulation

lation of the Blood; and it is plain from them, that he did believe it as an *Hypothesis*; that is, in plain *English*, that he did suppose the Blood to be carried round the Body by a constant accustomed Motion; But that he did not know what this constant accustomed Motion was, and that he had not found that Course which, in our Age, Dr. *Harvey* first clearly demonstrated, will appear evident from the following Considerations. (1.) He says nothing of the *Circulation of the Blood*, in his Discourse of the Heart, where he Anatomizes it as well as he could, and speaks of the (x) Ventricles, and the Valves (y), which are the immediate Instruments by which the Work is done. (2.) He believes that the Auricles of the Heart (z) are like Bellows, which receive the Air to cool the Heart. Now, there are other Uses of them certainly discovered, since they assist the Heart in the Receiving of the Blood from the *Vena Cava*, and the *Vena Pulmonaris*. This, no Man that knows how the Blood circulates, can be unacquainted with; and accordingly, would have been mentioned by *Hippocrates*, had he understood it. (3.) *Hippocrates* (a) speaks of Veins, as receiving Blood from the

(x) *De Corde*, § 4.
 (y) *Ibid.* §. 7, 8.
 (z) *Ibid.* §. 6.
 (a) *Arteriarum quidem purum sanguinem & spiritum à corde recipiunt; Venæ autem & ipsæ à corde sanguinem sumunt, per quas corpori distribuitur.* De Structura Hominis, §. 2.

Heart, and going from it : Which also was the constant way of Speaking of *Galen*, and all the Ancients. Now, no Man that can express himself properly, will ever say, That any Liquors are carried away from any Cistern, as from a Fountain or Source, through *those* Canals which, to his Knowledge, convey Liquors to that Cistern. (4.) *Hippocrates* says, the Blood is carried into the Lungs, from the Heart, for the Nourishment of the Lungs; without assigning any other Reason (b). These seem to be positive Arguments, that *Hippocrates* knew nothing of this Matter; and accordingly, all his Commentators, Ancient and Modern, before Dr. *Harvey*, never interpreted the former Passages of the *Circulation of the Blood*: Neither would *Vander Linden*, in all probability, if Dr. *Harvey* had not helped him to the Notion; which he was then resolved to find in *Hippocrates*, whom he supposed to be not the Father only, but the Finisher also of the whole Medical Art. It is pretended to by none of the Ancients, or rather their Admirers for them, after *Hippocrates*. As for *Galen*, any Man that reads what he says of the Heart and Lungs, in the Sixth Book of his *De Usu Partium*, must own, that he does not discourse as if he were acquainted with
Modern

(b) De
Corde, §. 10.

Modern Discoveries ; and therefore it is not so much as pretended that he knew this Recurrent Motion of the Blood. Which also further shews, that if *Hippocrates* did know it, he explained himself so obscurely, that *Galen* could not understand him ; who, in all probability, understood *Hippocrates's* Text as well as any of his Commentators, who have written since the *Greek* Tongue, and much more, since the *Ionic* Dialect has ceased to be a living Language.

Since the Ancients have no Right to so noble a Discovery, it may be worth while to enquire, to whom of the Moderns the Glory of it is due ; for this is also exceedingly contested. The first Step that was made towards it, was, the finding that the whole Mass of the Blood passes thorough the Lungs, by the Pulmonary Artery and Vein.

The first that I could ever find, who had a distinct *Idea* of this Matter, was *Michael Servetus*, a *Spanish* Physician, who was burnt for *Arianism*, at *Geneva*, near *CXL* Years ago. Well had it been for the *Church of Christ*, if he had wholly confined himself to his own Profession ! His Sagacity in this Particular, before so much in the dark, gives us great Reason to believe, that the World might then have had just Cause to

(c) *Vitalis Spiritus in sinistro cordis ventriculo suam Originem habet, juvantibus maxime pulmonibus ad ipsius generationem. Est spiritus tenuis, caloris vi elaboratus, flavo colore, igneâ potentia, ut sit quasi ex puriore sanguine lucidus vapor: generatur ex facta in pulmone mixtione* have blessed his Memory. In a Book (c) of his, entituled, *Christianismi Restitutio*, printed in the Year MDLIII. (d) he clearly asserts, that the Blood passes thorough the Lungs, from the Left to the Right Ventricle of the Heart; and not thorough the *Partition* which divides the two Ventricles, as was at that Time commonly believed. How he introduces it, or in which of the Six Discourses, into which *Servetus* divides his Book, it is to be found, I know not, having never seen the Book my self. Mr. *Charles Bernard*, a very learned and eminent Chirurgeon of *London*, who did me the Favour to communicate this Passage to me, (set down at length in the Margin) which was transcribed out of *Servetus*, could inform me no further, only that he had it from a learned Friend of his, who had himself copied it from *Servetus*.

inspirati aëris cum elaborato subtili sanguine, quem dexter ventriculus sinistro communicat. Fit autem communicatio hæc non per parietem cordis medium ut vulgo creditur, sed magno artificio à dextro cordis ventriculo, longo per pulmones ductu, agitatur sanguis subtilis; à pulmonibus preparatur, flavus ejicitur, Et à venâ arteriosâ in arteriam venosam transfunditur; deinde in ipsâ arteriâ venosâ inspirato aëri miscetur Et expiratione à fuligine repurgatur; atque ita tandem à sinistro cordis ventriculo totum mixtum per diastolen attrahitur, apta supellex ut fiat spiritus vitalis. Servet. Christian. Restit.

(d) Vid. Sandii Bibliothecam Anti-Trinitariorum, p. 13.

Realduſ Columbus, of *Cremona*, was the next that said any thing of it, in his *Anatomy*, printed at *Venice*, MDLIX. in Folio; and

and at *Paris*, in *MDLXXII.* in *Octavo*; and afterwards elsewhere. There he asserts the same (e) Circulation thorough the Lungs, that *Servetus* had done before; but says, that no Man had ever taken notice of it before him, or had written any thing about it: Which shews that he did not copy from *Servetus*; unless one should say, that he stole the Notion, without mentioning *Servetus's* Name; which is injurious, since in these Matters the same thing may be, and very often is observed by several Persons, who never acquainted each other with their Discoveries. But *Columbus* is much more particular; (f) for he says, That the Veins lodge the whole Mass of the Blood

(e) *Due insunt cordi cavitates, h. e. ventriculi duo; ex his alter à dextris est, à sinistris alter; dexter sinistro multo est major; in dextro sanguis adest naturalis, ac vitalis in sinistro: illud autem ob- servatu perpulcrum est. substantiam cordis dex-*

trum ventriculum ambientem tenuem satis esse, sinistram vero crassam; & hoc tum æquilibrii causâ factum est, tum ne sanguis vitalis, qui tenuissimus est, extra resudaret. Inter hos ventriculos septum adest, per quod fere omnes existimant sanguini à dextro ad sinistram aditum patefieri; id ut fiat facilius, in transitu ob vitalium spirituum generationem tenuem reddi: sed longâ errant viâ: nam sanguis per arteriosam venam ad pulmonem fertur, ibique attenuatur; deinde cum aëre unâ per arteriam venalem ad sinistram cordis ventriculum desertur; quod nemo hætenus aut animadvertit, aut scriptum reliquit. Reald. Columb. Anat. lib. vii. p. 325. Edit. Lat.

(f) *Idcirco quando dilatatur, sanguinem à cavâ venâ in dextrum ventriculum suscipit, nec non ab arteriâ venosâ sanguinem paratum ut diximus unâ cum aëre in sinistram: propterea membrana illæ demittuntur & ingressui cedunt: nam cum cor coarctatur, hæ clauduntur; ne quod susciperetur per easdem vias retrocedat; eodémque tempore membrana tum magnæ arteriæ, tum venæ arteriosæ recluduntur, aditumque præbent spirituosum sanguini exeunti, qui per universum corpus funditur, sanguinique naturali ad pulmones delato. Res itaque semper habet, cum dilatatur, quas prius memoravimus, recluduntur, clauduntur reliquæ, itaque comperies sanguinem qui in dextrum ventriculum ingressus est, non posse in cavam venam retrocedere. Ibid. pag. 330. Vidé quoque lib. xi. pag. 411.*

in the *Vena Cava*, which carries it into the Heart, whence it cannot return the same Way that it went; from the Right Ventricle it is thrown into the Lungs by the Pulmonary Artery, where the Valves are so placed, as to hinder its Return that Way into the Heart, and so it is thrown into the Left Ventricle, and by the *Aorta* again, when enliven'd by the Air, diffused thorough the whole Body.

Some Years after appeared *Andreas Cæsalpinus*, who printed his *Peripatetical Questions* at *Venice*, in *Quarto*, in *MDLXXI*. And afterwards, with his *Medical Questions*, at the same Place, in *MDXCIII*. He is rather more particular than *Columbus*, especially in examining how Arteries and Veins join at their Extremities; which he supposes to be by opening their Mouths into each other: And he uses the word *Circulation* in his *Peripatetical Questions*, which had never been used in that sense before. He also takes notice, that the Blood swells below the Ligature in Veins, and urges that in Confirmation of his Opinion. Some Hints of this Matter are likewise to be found in *Constantinus Varolius*, who printed his *Anatomy* in the Year *MDXCIX*.

At last, *Dr. William Harvey* printed a Discourse on purpose, upon this Subject, at

at *Francfort*, in MDCXXVIII. This Notion had only been occasionally and slightly treated of by *Columbus* and *Cæsalpinus*, who themselves, in all probability, did not know the Consequence of what they asserted; and therefore it was never applied to other Purposes, either to shew the Uses of the other *Viscera*, or to explain the Natures of Diseases: Neither, for any thing that appears at this day, had they made such numbers of Experiments as were necessary to explain their Doctrine, and to clear it from Opposition. All this *Dr. Harvey* undertook to do, and with indefatigable Pains traced the visible Veins and Arteries throughout the Body, in their whole Journey *from* and *to* the Heart, so as to demonstrate, even to the most incredulous, not only that the Blood circulates thorough the Lungs and Heart, but the very Manner how, and the Time in which that great Work is performed. When he had once proved that the Motion of the Blood was so rapid as we now find it is, then he drew such Consequences from it, as shewed that he thoroughly understood his Argument, and would leave little, at least as little as he could, to future Industry to discover in that particular Part of Anatomy. This gave him a just Title to the Honour of so Noble a Discovery,

covery, since what his Predecessors had said before him, was not enough understood, to form just Notions from their Words. One may also observe how gradually this Discovery, as all abstruse Truths of Humane Disquisition, was explained to the World. *Hippocrates* first talked of the Usual Motion of the Blood. *Plato* said, That the Heart was the Original of the Veins, and of the Blood, that was carried about every Member of the Body. *Aristotle* also, somewhere, speaks of a Recurrent Motion of the Blood. Still all this was only Opinion and Belief: It was Rational, and became Men of their Genius's; but, not having as yet been made evident by Experiments, it might as easily be denied as affirmed. *Servetus* first saw that the Blood passes thorough the Lungs; *Columbus* went further, and shew'd the Uses of the Valves, or Trap-doors of the Heart, which let the Blood in and out of their respective Vessels, but not the self same Road. Thus the Way was just open when Doctor *Harvey* came, who built upon the First Foundations: To make his Work yet the easier, the Valves of the Veins, which were discovered by *F. Paul* the Venetian, had not long before been explained by *Fabricius ab Aqua-Pendente*, whence the Circulation was yet more clearly demonstrated.

There

There was one thing still wanting to compleat this Theory, and that was, the Knowledge how the Veins received that Blood which the Arteries discharged; first it was believed that the Mouths of each sort of Vessels joined into one another: That Opinion was soon laid aside, because it was found that the Capillary Vessels were so extremely small, that it was impossible with the naked Eye to trace them. This put them upon imagining that the Blood ouzes out of the Arteries, and is absorbed by the Veins, whose small Orifices receive it, as it lies in the Fibres of the Muscles, or in the Parenchyma's of the Bowels: Which Opinion has been generally received by most Anatomists since Dr. *Harvey's* Time. But Monsieur *Leeuwenhoek* has lately found in several (g) Letter 65, 66. sorts of Fishes (g), which were more manageable by his Glasses than other Animals, that Arteries and Veins are really continued Syphons variously wound about each other towards their Extremities in numberless Mazes, over all the Body: And others have found (h) what (h) Philos. Transact. numb. 177. he says to be very true, in a Water Newt. So that this Discovery has passed uncontested. And since it has been constantly found, that Nature follows like Methods in all sorts of Animals, where she uses the

the same sorts of Instruments, it will always be believed, that the Blood circulates in Men, after the same Manner as it does in *Eels, Perches, Pikes, Carps, Bats*, and some other Creatures, in which Monsieur *Leeuwenhoek* tried it. Though the Ways how it may be visible to the Eye, in Humane Bodies, have not, that I know of, been yet discovered. However, this Visible Circulation of the Blood in these Creatures, effectually removes Sir *William Temple's* Scruple, who seems unwilling to believe the Circulation of the Blood, because he could not see it: His Words

(i) 44, 45. are these; (i) *Nay, it is disputed whether Harvey's Circulation of the Blood be true or no; for though Reason may seem to favour it more than the contrary Opinion, yet Sense can very hardly allow it; and to satisfy Mankind, both these must concur.* Sense therefore here allows it, and that this Sense might the sooner concur, Monsieur *Leeuwenhoek* describes the Method how this Experiment may be tried in his *LXVIth* Letter. The Inferences that may be made from this noble Discovery are obvious, and so I shall not stay to mention them.

CHAP. XIX.

Farther Reflections upon Ancient and Modern Anatomy.

IF after this long Enquiry into the First Discovery of the *Circulation of the Blood*, it should be found that the *Anatomy* of the Heart was but slightly known to the Ancients, it will not, I suppose, be a Matter of any great Wonder. The First Opinion which we have of the Texture of the Heart, was that of *Hippocrates* (*k*), (*k*) De Corde, §. 4. That it is a very strong Muscle. This, though true, was rejected afterwards, for want of knowing its true Use. Its Internal Divisions, its Valves, and larger Visible Fibres, were well known, and distinctly described by the Ancients; only they were mistaken in thinking that there is a Communication between the Ventricles thorough the *Septum*, which is now generally known to be an Errour. The Order of the Muscular Fibres of the Heart was not known before *Dr. Lower*, who discovered them to be Spiral like a Snail-Shell, as if several Skains of Threads of differing Lengths had been wound up into a Bottom of such a Shape, hollow, and

(1) De
Motu Ani-
malium,
Part II.
cap. 5.

and divided within. By all these Discoveries *Alphonfus Borellus* (1) was enabled to give such a Solution of all the Appearances of the Motion of the Heart, and of the Blood in the Arteries, upon Mathematical and Mechanical Principles, as will give a more satisfactory Account of the wonderful Methods of Nature, in dispensing Life and Nourishment to every Part of the Body, than all that had ever been written upon these Subjects before those things were found out.

Below the *Midriff* are several very noble *Viscera*: The *Stomach*, the *Liver*, the *Pancreas* or *Sweet-bread*, the *Spleen*, the *Reins*, the *Intestines*, the *Glands of the Mesentery*, and the *Instruments of Generation of both Sexes*; in the Anatomical Knowledge of all which Parts, the Ancients were exceedingly defective.

(m) *Phar-*
maceut. Ra-
tional.

The *Coats of the Stomach* have been separated, and the several Fibres of the middle Coat examined by *Dr. Willis* (m) with more Exactness than formerly; he also has been very nice in tracing the Blood-Vessels and Nerves that run amongst the Coats, has evidently shewn that its Inside is covered with a glandulous Coat, whose Glands separate that Mucilage; which both preserves the Fibres from being injured by the Aliments which

which the Stomach receives, and concurs with the Spittle to further the Digestion there performed ; and has given a particular Account of all those several Rows of Fibres which compose the muscular Coat. To which if we add *Steno's* Discovery of the Fibres of the Muscular Coat of the Gullet, that they are Spiral in a double Order, one ascending, the other descending, which run contrary Courses, and mutually cross each other in every Winding ; with *Dr. Cole's* ⁽ⁿ⁾ Discovery ^{(n) Philos. Transact. n. 125.} of the Nature of the Fibres of the Intestines, that they also move spirally, tho' not, perhaps, in a contrary Order, from the beginning of the *Duodenum*, to the end of the straight Gut, the Anatomy of those Parts seems to be almost compleat.

The great Use of the *Stomach* and the *Guts*, is to prepare the Chyle, and then to transmit it thorough the Glands of the Mesentery into the Blood. This the Ancients knew very well ; the Manner how it was done they knew not. *Galen* ^(o) ^{(o) De Usu Partium, l. 4. c. 2,3,4,5.} held, that the Mesaraic Veins, as also those which go from the Stomach to the Liver, carry the Chyle thither ; which, by the Warmth of the Liver, is put into a Heat, whereby the Fæculencies are separated from the more spirituous Parts, and by

(p) De
U. P. l. 4.
c. 19.

by their Weight sink to the Bottom. The purer Parts go into the *Vena Cava*; the Dregs, which are of two sorts, *Choler* and *Melancholy*, go into several Receptacles; the *Choler* is lodged in the Gall-Bladder, and *Porus Bilarius*: *Melancholy* is carried off by the Spleen. The Original of all these Notions, was Ignorance of the Anatomy of all these Parts, as also of the constant Motion of the Blood thorough the Lungs and Heart. *Herophilus*, who is commended as the ablest Anatomist of Antiquity, found out (p) that there were Veins dispersed quite through the Mesentery, as far as the small Guts reach, which carried the Chyle from the Intestines into several *Glandulous Bodies*, and there lodged them. These are the *Milky Veins* again discovered by *Asellius* about $\overline{\text{L}}$ Years ago; and those Glands which *Herophilus* spoke of, are probably that great Collection of Glands in the Mesentery, that is commonly called the *Pancreas Asellii*. After *Herophilus*, none of the Ancients had the Luck to trace the Motions of the Chyle any farther, and so these *Milky Veins* were confounded with the *Mesaraics*, and 'twas commonly believed, That because all *Mesaraics* carry the Blood from the Intestines into the Liver, therefore they carried Chyle also, when

when there was any Chyle to carry ; and hence, probably, it was that the Liver was believed to be the common Work-House of the Blood. But when *Asellius* had traced the Chyle as far as the great Gland of the Mesentery, it was soon found not to lie there. And *Pecquet*, about $\overline{\text{XL}}$ Years since, discovered the *common Receptacle of the Chyle*, whither it is all brought. Thence he also found that it is carried, by particular Vessels, thorough the Thorax, almost as high as the Left Shoulder, and there thrown into the Left Subclavian Vein, and so directly carried to the Heart. It has also been discovered, that in his Canal, usually call'd *Ductus Thoracicus*, there are numerous Valves, which hinder the Return of the Chyle to the common Receptacle, so that it can be moved forwards, but not backwards.

Since this Passage of the Chyle has been discovered, it has been by some believed, that the *Milk* is conveyed into the Breasts, by little Vessels, from the *Ductus Thoracicus*. The whole Oeconomy of that Affair has been particularly described, very lately, by Mr. *Nuck*, before whose time it was but imperfectly known. He says therefore, that the Breasts are Heaps of Glands, supplied with Blood by innumerable Ra-

R

mifications

mifications of the Axillary and Thoracic Arteries ; some of which passing thorough the Breast-bone, unite with the Vessels of the opposite Side. These Arteries, which are unconceivably small, part with the Milk in those small Glands, into small Pipes, four or five of which meeting together, make one small Trunk ; of these small Trunks, the large Pipes, which terminate in the Nipple, are made up ; though before they arrive thither, they straiten into so small a compass, that a stiff Hair will just pass thorough. The Nipple, which is a Fibrous Body, has seven or eight, or more Holes, thorough which every Pipe emits its Milk upon Suction ; and lest any one of them being stopp'd, the Milk should stagnate, they all have cross Passages into each other at the bottom of the Nipple, where it joins to the Breast.

The fore-mentioned Discovery of the Passage of the Chyle, obliged Men to re-examine the Notions which, till then, had generally obtained, concerning the Nature and Uses of the *Liver*. Hitherto it had been generally believed, that the Blood was made there, and so dispersed into several Parts, for the Uses of the Body, by the *Vena Cava*. *Erasistratus*, indeed, supposed (q) that its principal Use was,

(q) *Galen*
de U. P.
l. iv. c. 13.

was, to separate the Bile, and to lodge it in its proper Vessels: But, for want of farther Light, his Notion could not then be sufficiently proved; and so it presently fell, and was never revived, till *Asellius's* and *Pecquet's* Discoveries put it out of doubt. Till *Malpighius* discovered its Texture by his Glasses, its Nature was very obscure. But he has found out, (1.) That the Substance of the Liver is framed of innumerable Lobules, which are very often of a Cubical Figure, and consist of several little Glands, like the Stones of Raisins; so that they look like Bunches of Grapes, and are each of them cloathed with a distinct Membrane. (2.) That the whole Bulk of the Liver consists of these Grape-stone-like Glands, and of divers sorts of Vessels. (3.) That the small Branches of the *Cava*, *Porta*, and *Porus Biliaris*, run thorough all, even the least of these Lobules, in an equal Number; and that the Branches of the *Porta* are as Arteries that convey the Blood *to*, and the Branches of the *Cava* are the Veins which carry the Blood *from* all these little Grape-stone-like Glands. From whence it is plain, that the Liver is a Glandulous Body, with its proper Excretory Vessels, which carry away the Gall that lay before in the Mass of the Blood.

(r) De
U. P. l.v.
c. 2.

Near the Liver lies the *Pancreas*, which *Galen* believed (r) to be a Pillow to support the Divisions of the Veins, as they go out of the Liver; and, for what appears at present, the Ancients do not seem to have concerned themselves any further about it. Since, it has been found to be a Glandulous Body, wherein a distinct Juice is separated from the Blood; which, by a peculiar Canal, first discovered by *Georgius Wirtfungus*, a *Paduan* Physician, is carried into the *Duodenum*; where meeting with the Bile, and the Aliment just thrown out of the Stomach, assists and promotes the Business of Digestion.

The *Spleen* was as little understood as the *Pancreas*, and for the same Reasons: Its Anatomy was unknown, and its Bulk made it very remarkable; something therefore was to be said about it: And what no Body could positively dis-prove, might the easier be either received or contradicted. The most general Opinion was, that the grosser Excrements of the Chyle and Blood were carried off from the Liver, by the *Ramus Splenicus*, and lodged in the Spleen, as in a common Cistern: But since the *Circulation of the Blood* has been known, it has been found, that the Blood can go from the Spleen to the Liver, but that nothing can return
back

back again into the Spleen. And as for its Texture, (s) *Malpighius* has discover'd, that the Substance of the Spleen, deducting the numerous Blood-Vessels and Nerves, as also the Fibres which arise from its Second Membrane, and which support the other Parts, is made up of innumerable little Cells, like Honey-combs, in which there are vast Numbers of small Glandules, which resemble Bunches of Grapes; and that these hang upon the Fibres, and are fed by Twigs of Arteries and Nerves, and send forth the Blood there purged, into the *Ramus Splenicus*, which carries it into the Liver; to what Purpose, not yet certainly discovered.

The Use of the *Reins* is so very conspicuous, that, from *Hippocrates's* Time, downwards, no Man ever mistook it: But the Mechanism of those wonderful Strainers was wholly unknown, till the so often mentioned *Malpighius* (s) found it out. He therefore, by his Glasses, discovered, that the Kidneys are not one uniform Substance, but consist of several small Globules, which are all like so many several Kidneys, bound about with one common Membrane; and that every Globule has small Twigs from the emulgent Arteries, that carry Blood to it; Glands, in which the Urine is strained from it;

(s) De Liene.

(t) De Renibus.

Veins, by which the purified Blood is carried off to the Emulgent Veins, thence to go into the *Cava*; a Pipe, to convey the Urine into the great Basin in the middle of the Kidney; and a Nipple, towards which several of those small Pipes tend, and thorough which the Urine ouzes out of them into the Basin. This clear Account of the Structure of the Reins, has effectually confuted several Notions that Men had entertained, of some Secondary Uses of those Parts; since hereby it appears, that every Part of the Kidneys is immediately and wholly subservient to that single Work, of freeing the Blood from its superfluous *Serum*.

What has been done by Modern *Anatomists*, towards the Compleating of the Knowledge of the remaining Parts, I shall omit. That the Ancients likewise took Pains about them, is evident from the Writings of *Hippocrates*, *Aristotle* and *Galen*. The Discoveries which have since been made are so great, that they are, in a manner, undisputed: And the Books which treat of them are so well known, that it will not be suspected that I decline to enlarge upon them, out of a Dread of giving up more to the Ancients in this Particular, than I have done all along.

The Discoveries hitherto mention'd, have been of those Parts or Humours of the Body, whose Existence was well enough known to the Ancients. But, besides them, other Humours, with Vessels to separate, contain, and carry them to several Parts of the Body, have been taken notice of; of which, in strictness, the Ancients cannot be said to have had any sort of Knowledge. These are, the *Lympha*, or Colourless Juice, which is carried to the Chyle and Blood, from separate Parts of the Body: And the *Mucilage of the Joints*, which lubricates them, and the Muscles, in their Motions. The Discovery of the *Lympha*, which was made about $\overline{\text{XL}}$ Years ago, is contended for by several Persons. *Thomas Bartholine*, a *Dane*, and *Olaus Rudbeck*, a *Suede*, published their Observations about the same time: And *Dr. Jolliffe*, an *English-Man*, shewed the same to several of his Friends, but without publishing any thing concerning them. The Discoveries being undoubted, and all Three working upon the same Materials, there seems no reason to deny any of them the Glory of their Inventions. The Thing which they found, was, that there are innumerable small, clear Vessels in many Parts of the Body, chiefly in the Lower Belly, which convey

a Colourless Juice, either into the common Receptacle of the Chyle, or else into the Veins, there to mix with the Blood. The *Valves* which *Frederic Ruysch* found and demonstrated in them, about the same Time, manifestly shewed, that this is its Road; because they prove, that the *Lympha* can go forwards from the Liver, Spleen, Lungs, Glands of the Loins and Neck, or any other Place, whence they arise, towards some Chyliferous Duct, or Vein; but cannot go back from those Chyliferous Ducts, or Veins, to the Place of their Origination. What this Origination is, was long uncertain, it not being easie to trace the several Canals up to their several Sources.

(u) *Observat. Anatom.*

(w) *Epist. de Glandul. Conglobat.*

(x) *Adenograph.*

Steno (u) and *Malpighius* (w) did, with infinite Labour, find, that abundance of Lympheducts passed thorough those numerous *Conglobate Glands* that are dispersed in the *Abdomen* and *Thorax*; which made them think that the Arterious Blood was there purged of its *Lympha*, that was from thence carried off into its proper Place, by a Vessel of its own. But Mr. *Nuck* has since (x) found, that the Lympheducts arise immediately from Arteries themselves; and that many of them are percolated thorough those *Conglobate Glands*, in their Way to the Receptacle

ceptacle of the Chyle, or those Veins which receive them. By these, and innumerable other Observations, the Uses of the Glands of the Body have been found out; all agreeing in this one thing, namely, That they separate the several Juices that are discernible in the Body, from the Mass of the Blood wherein they lay before. From their Texture they have of late been divided into *Conglomerate* and *Conglobate*. The *Conglomerate Glands* consist of many smaller Glands, which lie near one another, covered with one common Membrane, with one or more common Canals, into which the separated Juice is poured by little Pipes, coming from every smaller Glandule; as in the Liver, the Kidneys, the Pancreas, and Salival Glands of the Mouth. The *Conglobate Glands* are single, often without an Excretory Duct of their own, only perforated by the Lympheducts. Of all which Things, as Essential to the Nature of Glands, the Ancient Anatomists had no sort of Notion.

The *Mucilage of the Joints and Muscles* was found out by Dr. *Havers* (y). He (y) *osteo-*
discovered in every Joint, particular *log.*
Glands, out of which issues a Mucilaginous Substance, whose Nature he examined by numerous Experiments; which, with

with the Marrow supplied by the Bones, always serves to oil the Wheels, that so our Joints and Muscles might answer those Ends of Motion, for which Nature designed them. This was a very useful Discovery, since it makes abundance of Things that were obscure in that part of Anatomy, plain, and facile to be understood: And, among other Things, it shews the Use of that excellent Oil which is contained in our Bones, and there separated by proper Strainers, from the Mass of the Blood; especially, since, by a nice Examination of the true inward Texture of all the Bones and Cartilages of the Body, he shew'd how this Oil is communicated to the Mucilage, and so united, as to perform their Office. And if one compares what Dr. *Havers* says of Bones and Cartilages, with what had been said concerning them before him, his Observations about their Frame may well be added to some of the noblest of all the former Discoveries.

These are some of the most remarkable Instances, how far the Knowledge of the Frame of our Bodies has been carried in our Age. Several Observations may be made concerning them, which will be of Use to the present Question. (1.) It is evident, that only the most visible Things
were

were anciently known ; such alone as might be discovered without great Nicety. Muscles and Bones are easily separable ; their Length is soon traced, and their Origination presently found. The same may be truly said of large Blood-Vessels, and Nerves : But when they come to be exquisitely sub-divided, when their Smallness will not suffer the Eye, much less the Hand, to follow them, then the Ancients were constantly at a Loss : For which Reason, they understood none of the *Viscera*, to any tolerable degree. (2.) One may perceive, that every new Discovery strengthens what went before ; otherwise the World would soon have heard of it, and the erroneous Theories of such Pretenders to new Things would have been exploded and forgotten, unless by here and there a curious Man, that pleases himself with reading obsolete Books. *Nullius in Verba* is not only the Motto of the *ROYAL SOCIETY*, but a received Principle among all the Philosophers of the present Age : And therefore, when once any new Discoveries have been examined, and received, we have more Reason to acquiesce in them, than there was formerly. This is evident in the *Circulation of the Blood* : Several Veins and Arteries have been found, at least,
more

more exactly traced, since, than they were in Dr. *Harvey's* Time. Not one of these Discoveries has ever shewn a single Instance of any Artery going *to*, or of any Vein coming *from* the Heart. Ligatures have been made of infinite Numbers of Vessels; and the Course of all the Animal Juices, in all manner of living Creatures, has thereby been made visible to the naked Eye; and yet not one of these has ever weakened Dr. *Harvey's* Doctrine. The Pleasure of Destroying in Matters of this kind, is not much less than the Pleasure of Building. And therefore, when we see that those Books which have been written against some of the eminentest of these Discoveries, though but a few Years ago, comparatively speaking, are so far dead, that it is already become a Piece of Learning even to know their Titles, we have sufficient Assurance that those Discoverers, whose Writings out-live Opposition, neither deceive themselves nor others. So that, whatsoever it might be formerly, yet in this Age, general Consent in Physiological Matters, especially after a long Canvass of the Things consented to, is an almost infallible Sign of Truth. (3.) The more Ways are made use of to arrive at any one particular Part of Knowledge, the surer

surer that Knowledge is, when it appears that these different Methods lend Help each to other. If *Malpighius's*, or *Leeuwenhoek's* Glasses had made such Discoveries as Men's Reason could not have agreed to ; if objects had appeared confused and disorderly in their Microscopes ; if their Observations had contradicted what the naked Eye reveals, then their Verdict had been little worth. But when the Discoveries made by the Knife and the Microscope, disagree only as Twi-light and Noon-day, then a Man is satisfied that the Knowledge which each affords to us, differs only in Degree, not in Sort. (4.) It can signifie nothing in the present Controversie, to pretend that Books are lost ; or to say, that, for ought we know, *Herophilus* might anciently have made this Discovery, or *Erasistratus* that ; their Reasonings demonstrate the Extent of their Knowledge, as convincingly as if we had a Thousand old Systems of Ancient Anatomy extant. (5.) In judging of Modern Discoveries, one is nicely to distinguish between *Hypothesis* and *Theory*. The Anatomy of the Nerves holds good, whether the Nerves carry a Nutritious Juice to the several Parts of the Body, or no. The *Pancreas* sends a Juice into the *Duodenum*, which mixes there with the Bile,

Bile, let the Nature of that Juice be what it will. Yet here a nice Judge may observe, that every Discovery has mended the Hypotheses of the Modern Anatomists; and so it will always do, till the Theories of every Part, and every Juice, be as entire as Experiments and Observations can make them.

As these Discoveries have made the Frame of our own Bodies a much more intelligible Thing than it was before, though there is yet a great deal unknown; so the same Discoveries having been applied to, and found in almost all sorts of known Animals, have made the Anatomy of Brutes, Birds, Fishes and Insects, much more perfect than it could possibly be in former Ages. Most of the Rules which *Galen* lays down in his *Anatomical Administrations*, are, concerning the Dissection of Apes. If he had been now to write, besides those tedious Advices how to part the Muscles from the Membranes, and to observe their several Insertions and Originations, the Jointings of the Bones, and the like, he would have taught the World how to make Ligatures of all sorts of Vessels, in their proper Places; what Liquors had been most convenient to make Injections with, thereby to discern the Courses of Veins, Arteries, Chyle-Vessels,

fels, or Lympheducts ; how to unravel the Testicles ; how to use Microscopes to the best Advantage : He would have taught his Disciples when and where to look for such and such Vessels or Glands ; where Chymical Trials were useful ; and what the Processes were, by which he made his Experiments, or found out his Theories : Which Things fill up every Page in the Writings of later Dissectors. This he would have done, as well as what he did, had these Ways of making Anatomical Discoveries been then known and practised. The World might then have expected such Anatomies of Brutes, as Dr. *Tyson* has given of the *Rattle-Snake* ; or Dr. *Moulin*, of the *Elephant* : Such Dissections of Fishes as Dr. *Tyson's* of the *Porpessè* ; and *Steno's*, of a *Shark's Head* : Such of Insects as *Malpighius's* of a *Silk-Worm* ; *Swammerdam's*, of the *Ephemeron* ; Dr. *Lister's*, of *Snails*, and *Testaceous Animals* ; Mr. *Waller's*, of the *Flying Gloeworm* ; and the same Dr. *Tyson's*, of *Long and Round Body-Worms*. All which shew Skill and Industry, not conceivable by a Man that is not a little versed in these Matters.

To this *Anatomy of Bodies that have Sensitive Life*, we ought to add the *Anatomy of Vegetables*, begun and brought
to

to great Perfection in *Italy* and *England* at the same Time, by *Malpighius* and *Dr. Grew*. By their Glasses they have been able to give an Account of the different Textures of all the Parts of Trees, Shrubs and Herbs; to trace the several Vessels which carry Air, Lympha, Milk, Rosin and Turpentine, in those Plants which afford them; to describe the whole Process of Vegetation, from Seed to Seed; and, in a word, though they have left a great deal to be admired, because it was to them incomprehensible; yet they have discovered a great deal to be admired, because of its being known by their Means.

CHAP. XX.

Of Ancient and Modern Natural Histories of Elementary Bodies and Minerals.

HAVING now finished my Comparison of *Ancient and Modern Anatomy*, with as much Exactness as my little Insight into those Things would give me leave, I am sensible that most Men will think that I have been too tedious. But, besides

besides that I had not any where found it carefully done to my Hands, (though it is probable that it has in Books which have escaped my Notice,) I thought that it would be a very effectual Instance, how little the Ancients may have been presumed to have perfected any one Part of Natural Knowledge, when their own Bodies, which they carried about with them, and which, of any thing, they were the nearest concerned to know, were, comparatively speaking, so very imperfectly traced. However, in the remaining Parts of my Parallel, I shall be much shorter; which, I hope, may be some Amends for my too great Length in this.

From those *Instruments*, or *Mechanical Arts*, whether Ancient or Modern, by which *Knowledge* has been advanced, I am now to go to the *Knowledge* it self. According to the Method already proposed, I am to begin with *Natural History* in its usual Acceptation, as it takes in the *Knowledge* of the several Kinds of *Elementary Bodies*, *Minerals*, *Plants*, *Insects*, *Beasts*, *Birds* and *Fishes*. The Usefulness and the Pleasure of this Part of Learning, is too well known to need any Proof. And besides, it is a Study, about which the greatest Men of all Ages have
S employed

employed themselves. Of the very few lost Books that are mentioned in the *Old Testament*, one was an *History of Plants*, written by the Wisest of Men, and he a King. So that there is Reason to believe, that *Natural History* was cultivated with abundance of Care by all those who did not place the Perfection of Knowledge in the Art of Wrangling about Questions, which were either useless, or which could not easily be decided.

Before I enter into Particulars, it is necessary to enquire what are the greatest Excellencies of a Compleat History of any one sort of Natural Bodies. This may soon be determined. That History of any Body, is certainly the best, which, by a full and clear Description, lays down all the Characteristical Marks of the Body then to be described; so as that its Specific Idea may be clearly form'd, and it self certainly and easily distinguish'd from any other Body, though, at first View, it be never so like it; which enumerates all its known Qualities; which shews whether there are any more besides those commonly observed; and, last of all, which enquires into the several Ways whereby that Body may be beneficial or hurtful to Man, or any other Body; by giving a particular Account of the several

Phænomena

Phænomena which appear upon its Application to, or Combination with other Bodies, of like, or unlike Natures. All this is plainly necessary, if a Man would write a full History of any single Species of Animals, Plants, Insects, or Minerals, whatsoever. Or, if he would draw up a General History of any one of these *Universal Sorts*, then he ought to examine wherein every Species of this *Universal Sort* agrees each with other; or wherein they are discriminated from any other *Universal Sort* of Things: And thus, by degrees, descend to Particulars, and range every Species, not manifestly Anomalous, under its own Family, or Tribe; thereby to help the Memory of Learners, and assist the Contemplations of those who, with Satisfaction to themselves and others, would Philosophize upon this amazing Variety of Things.

By this Test the Comparison may be made. I shall begin with the simplest Bodies first; which, as they are the commonest, so, one would think, should have been long ago examined with the strictest Care. By these I mean, *Air, Water, Fire, Earth*, commonly called *Elements*. Three of these are certainly distinct and real Bodies, endued with proper and peculiar Qualities, and so come under the present Question.

(2) De
Cælo, l. 4.
c. 4.

Of the *History of Air* the Ancients seemed to know little more than just what might be collected from the Observation of its most obvious Qualities. Its Necessity for the immediate Subsistence of the Life of all sorts of Animate Bodies, and the unspeakable Force of Rapid Winds, or Air forcibly driven all one Way, made it be sufficiently observed by all the World; whilst its Internal Texture, and very few of its remoter Qualities, were scarce so much as dreamt of by all the Philosophers of Antiquity. Its Weight only was known to *Aristotle* (2), (or the Author of the Book *de Cælo*,) who observed, that a full Bladder out-weighed an empty one. Yet this was carried no further by any of the Ancients, that we know of; dis-believed by his own School, who seemed not to have attended to his Words, opposed and ridiculed when again revived, and demonstrably proved, by the Philosophers of the present Age. All which are Evidences, that anciently it was little examined into, since Proofs were wanting to evince that, which Ignorance only made disputable. But this has been spoken to already; I shall therefore only add, that, besides what *Mr. Boyle* has written concerning the Air, we may consult *Otto Guerick's Magdebourg-Experiments*; the *Experiments of the Academy*

Academy del Cimento; *Sturmius's Collegium Curiosum*; *Mr. Halley's Discourses concerning Gravity*, and the *Phænomena of the Baroscope*, in the *Philosophical Transactions* (a). From all which, we shall find, not only how little of the Nature of the Air was anciently known; but also, that there is scarce any one Body, whose Theory is now so near being compleated, as is that of the Air.

(a) Num.
179, &
181.

The *Natural History of Earth and Water* comes under that of *Minerals*: *Fire*, as it appears to our Senses, seems to be a Quality, rather than a Substance; and to consist in its own Nature, in a Rapid Agitation of Bodies, put into a quick Motion; and divided by this Motion, into very small Parts. After this had been once asserted by the *Corpuscularian* Philosophers, it was exceedingly strengthened by many Experimental Writers, who have taken abundance of Pains to state the whole *Doctrine of Qualities* clearly, and intelligibly; that so Men might know the difference between the Existence or Essential Nature of a Body, and its being represented to our Senses under such or such an Idea. This is the Natural Consequence of proceeding upon clear and intelligible Principles; and resolving to admit nothing as conclusive, which cannot be ma-

nifestly conceived, and evidently distinguished from every thing else. Here, if in any thing, the old Philosophers were egregiously defective: What has been done since, will appear, by consulting, among others, the Discourses which Mr. Boyle has written upon most of the considerable Qualities of Bodies, which come under our Notice; such as his *Histories of Fluidity and Firmness, of Colours, of Cold*, his *Origin of Forms and Qualities, Experiments about the Mechanical Production of divers particular Qualities*, and several others, which come under this Head; because they are not Notions framed only in a Closet, by the help of a lively Fancy; but genuine Histories of the *Phænomena* of Natural Bodies; which appeared in vast Numbers, after such Trials were made upon them, as were proper to discover their several Natures.

And therefore, that it may not be thought that I mistake every plausible Notion of a Witty Philosopher, for a new Discovery of Nature, I must desire that my former Distinction between *Hypotheses* and *Theories* may be remembred. I do not here reckon the several *Hypotheses* of Des Cartes, Gassendi, or Hobbes, as Acquisitions to real Knowledge, since they may only be Chimæra's, and amusing Notions,

Notions, fit to entertain working Heads. I only alledge such Doctrines as are raised upon faithful Experiments, and nice Observations; and such Consequences as are the immediate Results of, and manifest Corollaries drawn from, these Experiments and Observations: Which is what is commonly meant by *Theories*. But of this more hereafter.

That the *Natural History of Minerals* was anciently very imperfect, is evident from what has been said of *Chymistry* already; to which, all the Advances that have ever been made in that Art, unless when Experiments have been tried upon *Vegetable* or *Animal Substances*, are properly to be referred. I take *Minerals* here in the largest sence; for all sorts of *Earths*, *Sulphurs*, *Salts*, *Stones*, *Metals*, and *Minerals* properly so called. For *Chymistry* is not only circumstantially useful, but essentially necessary here; since a great many Minerals of very differing Natures would never have been known to have belonged to several Families, if they had not been examined in the Furnaces of the Chymists. Nay, most *Fossils* are of such a Nature, that what sort of Minerals they contain, cannot be known, till they be tried in the Fire. Worthless *Marcasites* cannot any otherwise be distinguisht from

rich Lumps of Ore. For this Reason, and because the Subterraneous World is not so easily accessible, the Knowledge of *Fossils*, taken in the general, has received less Advancement than any one Part of Natural Learning. But I shall rather chuse to speak here of the Discoveries which have been made in the Mineral Kingdom without the help of Chymistry: The greatest of which is, of a Stone which the

(b) Their Opinions are collected by *Gassendi*, in his *Animadversions upon Laërtius's Life of Epicurus*, p. 362, 363.

the Ancients admired (b), without ever examining to what Uses it might be applied; and that is the *Magnet*; the noblest Properties whereof

Sir *William Temple* acknowledges to be (c) P. 48. anciently unknown (c): Which is more, indeed, than what some do

(d) This they have collected from a Passage in *Plautus, Merc. Act. 5. Sc. 2. Huc Secundus Ventus nunc est, cape modo vorforiam*; where by *vorforia* they understand the *Compass*, because the Needle always points towards the North: Whereas *vorforia* is nothing but that Rope with which the Mariners turned their Sails.

(d), who, at the same time, make our Fore-fathers to have been extremely stupid, that could suffer such a Discovery to be ever lost. So that all that can be said of the Advances which, by the Uses of the *Load-stone*, have been made in several Parts of Learning, do not in the least affect Sir

William Temple. However, I shall mention some of the greatest; because he charges the Moderns with not making all those

those Uses of so noble an Invention, which he supposes the Ancient *Greeks* and *Romans* would have made, had it fallen into their Hands: Which makes him assert, that the Discoveries hereby made in remote Countries have been rather pursued to accumulate Wealth (e), than to encrease Knowledge. Now, if both these can be done at once, there is no harm done: And since there is no Dispute of the one, I think it will be an easie Matter to prove the other. I shall name but a few Particulars, most of them rather belonging to another Head.

(e) P. 49.

Geography therefore was anciently a very imperfect Study, for want of this Knowledge of the Properties of the *Load-stone*. The Figure of the Earth could formerly only be guess'd at; which Sir *William Temple's* admired *Epicurus* (f) did, for that Reason, deny to be Round; wherein he seems to have been more reasonable, than in many other of his Assertions; because he thought it an Affront to the Understanding of Man, to be determined by bare Conjectures, in a Matter which could at that time be no other Way decided. Whereas now, most Parts of the Ocean being made easily accessible, the Latitudes, and respective Bearings of every Place, are commonly known: The Nature and Appearances

(f) Vid. Gassendi's Animadversions upon Laërtius's *Epicurus*, pag. 672.

pearances of Winds and Tides are become familiar, and have been nicely examined by Intelligent Men in all Parts of the World : The Influence of the Moon, joined with the Motion of the Earth, have been taken in upon almost infallible Grounds, to found Theories of the Sea's Motion upon. And there are great Numbers of other noble, pleasant and useful Propositions in *Geography*, *Astronomy* and *Navigation*, which ultimately owe their Original to the Discovery of that single Quality of this wonderful Stone, *that it always points towards the North*. If these Sciences have brought to us the Wealth of the *Indies* ; if they have enlarged the Commerce and Intercourse of Mankind, it is so far from being a Disparagement to the Industry of the Moderns, who have cultivated them to such useful Purposes, that it is the highest Character that could be given of those Men, that they pursued their Inventions to such noble Ends. Knowledge, not reduced to Practice, when that is possible, is so far imperfect, that it loses its principal Use. And it is not for acquiring Wealth, but for mis-employing it when it is acquired, that a Man ought to be blamed.

Now, to compleat what I have to say of *Geography* all at once, I shall take notice,

tice, that as the Improvements by Navigation have made all the Sea-Coasts of the Universe accessible, so the Art of Engraving upon Copper-Plates has made it easie for Men to draw such Draughts of every particular Coast, as will imprint lasting and just Idea's of all the Parts of the known World. For want of this, the Ancient Descriptions even of those Countries which they knew, were rude, and imperfect: Their Maps were neither exact, nor beautiful: The Longitudes and Latitudes of Places, were very little considered; the latter of which can now be exactly determined, and the former may be very nearly adjusted, since the Application of Telescopes to Astronomical Uses has enabled Men to make much nicer Observations of the Moon's Eclipses than could formerly be made; besides those of *Jupiter's* Satellites, to which the Ancients were entirely Strangers. This makes our Maps wonderfully exact; which are not only the Divertisements of the Curious, but of unspeakable Use in Civil Life, at Sea especially; where, by the help of Sea-Charts, Sailers know where they are, what Rocks lie near them, what Sands they must avoid; and can as perfectly tell which Way they must steer to any known Port of the Universe, as a Traveller

(g) Commonly called the *Peutingerian Tables*.

veller can, upon *Salisbury-Plain*, or *New-Market-Heath*, which Way he must ride to a great Town, which he knows beforehand is not far from the Edge of the Plain, or of the Heath. *Velferus* has printed some ancient Maps (g), that were made for the Direction of the *Roman Quarter-Masters*; and if a Man will compare them with *Sanfon's*, or *Blaeu's*, he will see the difference; which in future Ages will certainly be vastly greater, if those Countries which are now barbarous, or undiscovered, should ever come into the Hands of a Civilized or Learned People. But I have not yet done with the *Load-stone*.

(h) To him this Discovery is attributed

by *Salmuth* upon *Pancirollus*; others call him *John Goia*, of *Amalphi*; but *Gassendi*, *Animad.* pag. 364. says, it was found out by a *Frenchman*, about the Year MCC. since it is mentioned by one *Guyotus Provineus*, a *French Poet* of that Time, who calls the Compass *Marineta*; to which *Gassendi* also adds, That it was most probably a *French Invention*, because the *North-Point* is by all Nations marked in their Compasses by a *Flower-de-Luce*, the Arms of *France*.

North.

North, that all the Philosophers of that Age did not immediately try all manner of Experiments upon that strange Stone, which was found to be so exceedingly useful in Matters of common Life. The *Portuguezes*, who first made daring Voyages, by the Help of the Compass, into the Southern and South-Eastern Seas, better knew the Value of that rich Discovery: But Philosophy was in those darker Ages divided between the *School-men* and the *Chymists*; the former presently salved the Business with their *Substantial Forms*, and what they could not comprehend, came very properly under the Notion of an *Occult Quality*: The latter found nothing extraordinary in their Crucibles, when they analyzed the *Magnet*; and so they seem soon to have given it over: Besides, in those Days, few Men studied Chymistry with any other Design than that of finding out the Philosopher's Stone, to which the Load-stone could do them no further service than that of supplying them with another hard Name to Cant with (i). For these Reasons therefore, it lay in a good measure neglected by Men of Letters, till our Famous Country-man, Doctor *Gilbert of Colchester*, by a vast number of Experiments, found that the *Earth* was but a larger *Magnet*; and he, indeed, was the

(i) *Magnesia Nigra*, is one of the hard Words used by *Eyrenæus Philalethes*: and it is ridiculed by *Surly*, in *Ben Jonson's Alchemist*.

the first Author of all those Magnetical Speculations which have been made since his had the good fortune to be generally approved. This Great Man, whom *Galileo* and *Kepler* express a great Veneration for in their Writings, deserves here to be mentioned upon another Account ; because He, my Lord *Bacon*, and Mr. *Harriot*, all *Englishmen*, are the Three Men to whom Monsieur *Des Cartes* was so very much obliged for the first Hints of the greatest Things, which he has given us in his Philosophical and Mathematical Discourses. For nothing does more convincingly put Things of this Nature out of doubt, than to trace them up to their first Originals, which can be done but in very few. So great have been the Advantages which have accrued to the World, only by Men's Enquiries into the Properties of one single Natural Body.

But the Knowledge of *Minerals* (strictly so called) though infinitely useful to the Life of Man, is not the only thing which may be learn'd in the Subterraneous World. The Bowels of the Earth are wonderfully Fruitful, and afford a Variety, comparatively speaking, not much regarded till these later Ages. Not only *Salts* and *Metals*, *Marble*, *Coal*, and *Amber*, may be, and are dug from thence ; but the

the Inhabitants of the Earth and Sea, have made their Graves in the solideſt Rocks, in the profoundeſt Caverns, in Places, to one's thinking, the moſt inaccessible, as well as the moſt unexpected, that could have been imagined. Beds of *Oysters*, *Cockles*, and *Scallops*, have been found in the Bowels of the higheſt Hills, and the hardeſt Quarries. Groves of Trees have been taken out of the Ground, in Countries where they have never been ſeen to grow. In ſhort, by raking into the deepeſt Places of the Earth, we have ſeen that Things have once changed their Places; and without the Authority of Writings, or Ancient Tradition, we are aſſured that the Face of the World is not what it always was.

Men have yet proceeded further, and made Obſervations upon the Figures of every Stone which they found; very many of which, Antiquity, and even every other Age but this, did quite overlook. Thoſe, whoſe Luſtre and Colour made them remarkable, which are peculiarly called *Gems*, or thoſe whoſe Figure had ſomething that was ſurprizing at firſt view, were indeed taken notice of, and ſufficiently valued; but of them too, very few were then known, in compariſon of what have ſince been diſcovered. The

Ancients

Ancients Knowledge of the Species of Stones, and of the whole Natural History of the Earth, is in a manner all contained in the 33^d, 34th, 35th, 36th, & 37th Books of Pliny's Natural History; where there is so much Fabulous, that it is not easily distinguishable from what is Real: If this

(k) *De Purpurâ: Dissertat. de Glossopetris.*

(l) *La Vana Speculazione disingannata dal Senso*, printed at Naples, in MDCLXX. and epitomiz'd in the *Philosoph. Transact.* numb. 219.

(m) *In Prodomo: & Dissertat. de Cane Carcharia & Glossopetris.*

(n) *Travels*, p. 113, — 131. and *Three Physico-Theological Discourses*, Edit. 2.

(o) *Microgr.* p. 109, — 112. *Lecture of Springs*, p. 48, 49, 50.

(p) *Philosoph. Transact. & de Cochlitis.*

(q) *Essay towards a Natural History of the Earth.*

(r) *Nat. Hist. of Oxfordshire.*

were compared with the Writings of Fabius Columna (k), Agostino Scilla (l), Steno (m), Ray (n), Hooke (o), Lister (p), Woodward (q), and Plot (r), what new Scenes of Knowledge would appear? What Discoveries has Signior Scilla, made of the Petrifications (as they are vulgarly esteemed) of the Isle of Malta alone? The Ancients were not sufficiently aware of the Treasures which the Earth contains within it. The Ancients, did I say? hardly any of the Moderns, till within these last Thirty Years. Gold, indeed, and Silver, have, for very many Ages, been insatiably thirsted after; and the other Metals, Tin and Copper, Iron and Lead, whose Uses have long been known, have been carefully searched for. But when those

those

those Six Metals, and some of the most remarkable Minerals, such as *Mercury*, *Antimony*, *Vitriol*, *Nitre*, *Sulphur*, *Sal Gemmæ*, *Pit-Coal*, *Amber*, and the like, were once found, the Curiosity of Mankind was pretty much at a stand. Whereas, since so many Learned and Industrious Men have thought it worth their while to make Enquiries after the nicest Varieties, and most minute Productions of their Mother Earth, they have found such incredible Numbers of *formed Stones*, and *Shells as hard as Stones*, upon its Surface, and in its lowermost Recesses that Men have ever dug to, that they have thereby been enabled to raise several Hypotheses (s), which may perhaps hereafter, when Men are better acquainted with the Productions of the Subterraneous World, be a means of solving some of the greatest Difficulties in the *Mosaical History*.

(s) Vid. Woodward's *Essay towards the Natural History of the Earth*, and Whiston's *Theory of the Earth*.

I have taken notice of this, to justify those Gentlemen who have laboured in these sort of Enquiries: Some of them who have taken the greatest Pains, have been publicly ridiculed (t), as if what they had done, had tended no more to the Advancement of valuable Knowledge, than if they had gather'd Pebbles upon

(t) See the Character of a Virtuoso, in the Essay in Defence of the Female Sex.

T the

the Shore to throw away again, as *Caligula's* Soldiers did upon the *Batavian* Coast, when they should have been transported into *Britain*. There would have been a stop put to the Progress of Learning long ago, if immediate Usefulness had been the sole Motive of Men's Enquiries. Whatsoever our Great Creator has thought fit to give a Specific Being to, is, if accessible, certainly worth our searching after. And though we do not see the present Advantage that will accrue to Mankind by the Discovery of this or that particular Species of Minerals, Stones, Plants, or Insects, yet Posterity may; and then all the Returns for the Uses that they can ever make of them, will be in a great measure due to him that found them out. He that first pick'd up a *Magnet*, and perceived that it would draw Iron, might then perhaps be laugh'd at, for preserving a Child's Play-thing; and yet the Observation of that noble Quality, was necessarily previous to the succeeding Observations of its constant pointing towards the North, which have proved so unspeakably useful in Civil Life. So that I think all these excellent Men do highly deserve Commendation for these seemingly useless Labours, and the more, since they run the hazard of being laughed at by Men

Men of Wit and Satyr, who always have their End, if they make their Readers Sport, whether the thing which they expose, deserves to be ridiculed or not.

But it is time to leave this Argument, when I have observed, that all that has yet been published concerning the *formed Stones, Shells and Petrifications* found in and upon the Earth, will seem but Gleanings, in comparison of that vast Collection which those excellent Naturalists, Mr. *Edward Lhwyd* of Oxford, and Dr. *Woodward* have promised shortly to present the World withal.

CHAP. XXI.

*Of Ancient and Modern Histories
of Plants.*

THE *Natural History of Plants* comes next ; which, for Variety and Use, is one of the noblest and pleasantest Parts of Knowledge. Its Mechanical and Medicinal Advantages were early known. Fruits afforded the first Sustenance to Mankind ; and the old Heathens esteemed those worthy of

Consecration, who taught them to Till their Grounds, Gather their Seed, and Grind their Corn: With Trees they built themselves Houses; afterwards they found that the Bark of some Plants would serve for Cloaths, and others afforded Medicines against Wounds and Diseases. There is no doubt therefore, but this Part of Knowledge was sufficiently cultivated for the Uses of Humane Life; especially when Mankind becoming numerous, those that were inquisitive communicated their Notions together, and Conversation had introduced the Arts of Luxury and Plenty into the World. Even in *America*, where *most* of the Nations which the *Europæans* discovered were Salvage, and *all* Unlearned, the Natives knew the Oeconomical and Medical Uses of many of their noblest Plants. They made Bread of their *Mayz*, and the Roots of *Tucca*, some smoaked *Tobacco*, some poysoned their Arrows with the Juice of one Plant, others made their *Chocolate* with the Seeds of another, some cloathed themselves with *Cotton*, others cured *Agues* with the *Cortex*, and Venereal Diseases with *Guajacum*, and almost every other sort of Disease to which they were incident with some Specific or other, which Use and Experience had taught them. But whether the *Natural History* of

of *Plants* was yet notwithstanding all this, so exactly known formerly, as it is at present, is the Question.

The ancientest Writers of *Plants* now extant, are *Theophrastus*, *Pliny*, and *Dioscorides*; indeed, the only ones who say any thing considerable to the present Purpose. *Theophrastus* describes little; gives abundance of Observations upon several *Plants*, and the like; but what he says, is rather to be taken notice of when we speak of *Agriculture* and *Gardening*, than in this place. *Pliny* and *Dioscorides*, who lived long after him, give Descriptions indeed of a great many *Plants*, but short, imperfect, and without Method; they say, for Instance, that a *Plant* is hairy, has broad Leaves, that its Stalks are knotty, hollow, or square; that its Branches creep upon the Ground, are erect, and so forth; in short, if there is any thing remarkable in the Colour or Shape of the Stalk, Root, Seed, Flower or Fruit, which strikes the Eye at first sight, it may perhaps be taken notice of, but then every thing is confused, and seldom above one or two *Plants* of a sort are mentioned; though sometimes later *Botanists* have observed some Scores plainly reducible to the same general Head. *Pliny* ranges many of

the Plants, which he describes in an Order (u) something Alphabetical; others (w) he digests according to their Virtues; others (x) he puts together, because they were discovered by great Persons, and called by their Discoverers Names:

(u) N. H. l. 12. c. 13. and l. 27. throughout.

(w) The 12th. Book is chiefly of Plants which bear odoriferous Gums, and so on of all the rest.

(x) N. H. l. 25. c. 6, 7. & alibi passim.

All which Methods, how much soever they may assist the Memory in remembring hard Names, or in retaining the *Materia Medica* in one View in a Man's Head, signifie nothing to the Understanding the Characteristical Differences of the several Plants; by which alone, and not by accidental Agreements in Virtue, Smell, Colour, Taste, Place of Growth, Time of Sprouting, or any Mechanical Use to which they may be made serviceable, Men may reasonably expect to become exact *Botanists*: Without such a Method, to which the Ancients were altogether Strangers, the Knowledge of Plants is a confused thing, depending wholly upon an uncommon Strength of Memory and Imagination, and even with the Help of the best Books scarce attainable without a Master, and then too not under a very long Time.

Conradus Gesner, to whose Labours the World has been unspeakably beholden in almost

almost all Parts of Natural History, was the first Man (that I know of) who hinted at the true Way to distinguish Plants, and reduce them to fixed and certain Heads. In a Letter to *Theodorus Zuingerus* (y), he says, that Plants are to be ranged according to the Shape of their Flowers, Fruits and Seeds; having observed that Cultivation, or any accidental Difference of Soil, never alters the Shape of these more Essential Parts; but that every Plant has something there peculiar, by which it may be distinguished, not only from others of a remoter Genus, but also from those of the same Family.

About the same time, *Andreas Cæsalpinus*, and *Fabius Columna*, the first especially, reduced that into an Art, which *Gesner* had hinted at before. The first of these, divided the whole Body of Plants, then known, into Classes, from the Number and Order of their Seeds and Seed-Vessels, and drew up a History accordingly. But his Method was too general; and because it took too little notice of the *Roots*, *Leaves*, *Stalks*, and *Perianthia* of Plants, which in some Tribes ought necessarily to be considered, it was long laid by as useless; though *Clusius*, *Gaspar Bauhinus*, *Parkinson*, *Gerard* and

Johnson, and *John Bauhinus*, had taken very laudable Pains, not only in describing the more general Sorts taken notice of by the Ancients, but also in observing their several Sub-divisions with great Niceness and Skill. *Gaspar Bauhinus*, who spent Forty Years in compleating his *Pinax*, or *General Index* to all the Botanical Writers, Ancient and Modern, that had appeared before him, ranged the whole System of Plants, then known, into such Classes as he thought properest. Yet tho' his Method is allow'd to have been the best, setting *Cæsalpinus's* aside, which had till then been made use of, (2) it was far from being Natural, and accordingly has never since been follow'd. *John Bauhinus* also had described every particular Plant then known, in his *General History of Plants*, with great Accuracy; and compared whatsoever had been said by former Botanists, and adjusted old Names to those Plants which Modern Herbarists had gathered, with so much Care, that the Philological Part of *Botany* seems by him to have, in a manner, received its utmost Perfection.

(2) Vid.
Morison.
trælad. Bot-
anic. p.
403.

The great Work therefore already begun by *Cæsalpinus* and *Columna*, was still imperfect; which, though perhaps not the most Laborious, was yet the most Necessary

Necessary to a Man that would consider those things Philosophically, and comprehend the whole Vegetable Kingdom, as the Chymists call it, under one View. This was, to digest every Species of Plants under such and such Families and Tribes ; that so, by the help of a general Method (taken only from the Plants themselves, and not from any accidental Respects, under which they may be considered) once thoroughly understood, a Learner might not be at a loss upon the Sight of every new Plant that he should meet with, but might discern its general Head at first View ; and then, by running over the Tables thereunto belonging, might, at last, either come to the particular Species which he sought for, or, which would please him much better, find that the Plant before him was hitherto undescribed, and that by it there would be a new accession made to the old Stock. Mr. Ray drew a rough Draught of this Matter, in the *Tables of Plants* inserted into Bishop Wilkins's his Book, *Of a Real Character, and Philosophical Language* ; and was soon followed by Dr. Morison, in his *Hortus Regius Blesensis*, who, pursuant to his own Method, (which, indeed, is nothing else but *Andreas Cæsalpinus's* a little alter'd,) began *A General History of Plants* ; which he

he not living to finish, Mr. Ray undertook the whole Work anew, and very happily compleated it.

This great Performance of his, which will be a standing Monument of Modern Industry and Exactness, deserves to be more particularly described. First, therefore, He gives an Anatomical Account, from *Malpighius* and *Grew*, of Plants in general: And because the Ancients had said nothing upon that Subject, of which, for want of Microscopes, they could have but a very obscure Notion, all that he says upon that Head is Modern. Afterwards, when he comes to particular Plants, he draws up Tables, to which he reduces the whole Vegetable Kingdom, except some few irregular Plants, which stand by themselves. These Tables are taken from the Shape and Colour of the Flowers, Seeds, Seed-Vessels, Stalks, Leaves and Roots; from the Number or Order of these when determined, and Irregularity when undetermined; from the want, or having of particular Juices, Lympha's, Milks, Oils, Rosins, or the like: In short, from Differences, or Agreements, wholly arising from the Plants themselves. His Descriptions are as exact as *John Bauhine's* every where; since he copy's him where others have not described a Plant, better than

than he ; and always supplies, with great Nicety and Art, what was wanting in their Descriptions : We may be sure therefore that here has been a gradual Improvement ; for *John Bauhine's* Descriptions are much better than those of the generality of Botanists that were before him ; and there are scarce any of theirs, which are not preferable to those of *Pliny* and *Dioscorides* : He gives the *Synonyma* of the most exact and best known Botanists ; the want of adjusting which carefully, had made former Compilers tedious ; and by inserting what was already extant in the *Malabar-Garden*, *Boym's Flora Sinensis*, *Marcgravius's Natural History of Brasil*, *Hernandez's Account of the Plants of Mexico*, *Cornutus's History of the Plants of Canada*, and other *Indian Accounts of Natural Rarities*, into his General History, has shewed, that the Moderns have been as careful to compleat the Natural History of remoter Countries, as to understand the Productions of their own.

Before I quit this Work of Mr. Ray's, which is but one of the many Labours that he has happily gone through to enlarge the Bounds of Natural Knowledge, I must observe what he delights so much to have remembred ; That a considerable part of the Debt which Posterity will owe to this excellent

excellent Naturalist, will be due to the Assistances which he has for many Years received from my most Learned Friend Dr. *Tancred Robinson*, whose Skill in all Parts of Physical Knowledge have long made him capable of performing whatsoever he should think fit to undertake in that sort of Learning, and consequently of enlarging the Bounds of our Knowledge as much as any of those great Men who have been here remembered.

It may be wonder'd at, perhaps, why I should mention Modern Discoveries of Natural Knowledge in the *East* and *West-Indies*, since the Ancients were not to be blamed for being ignorant of Things which they had no Opportunity of knowing. But, besides that it proves the Extent of the Knowledge of the present Age in Natural History, which may be considered, without any regard to the Opportunities of acquiring it; it proves also, against Sir *William Temple*, that the Moderns have done what they could in every Point, to make the greatest Use they were able of every Addition to their former Knowledge, which might accrue to them by the Discovery of the Usefulness of the *Load-stone* in Navigation: His words are these; (a) *The vast Continents of China, the East and West-Indies, the long*

(a) P. 49.

long Extent and Coasts of Africa, have been hereby introduced into our Acquaintance, and our Maps; and great Encreases of Wealth and Luxury, but none of Knowledge brought among us, further than the Extent and Situation of Countrey, the Customs and Manners of so many Original Nations. — I do not doubt but many great and more noble Uses would have been made of such Conquests, or Discoveries, if they had fallen to the Share of the Greeks and Romans, in those Ages, when Knowledge and Fame were in as great Request as endless Gains and Wealth are among us now: And how much greater Discoveries might have been made by such Spirits as theirs, is hard to gueß. Sir William Temple here owns, that the Political Uses which can be made by such Discoveries, are inconsiderable; though, at the same time, he confesses, that even those have not been neglected, since he acknowledges that Men have brought from those Barbarous Nations an Account of their Customs and Manners; which is the only Political Use, that I know of, that is to be learnt by Travel. What other Advantages might have been made, is hard to tell, unless such as may conduce to the Compleating of Natural History; the Benefits whereof are agreed upon, of all Hands, to be very great. The Subject

now

now before me is *Botanics*, which has been so far from being neglected, that all imaginable Care has been taken to compleat it. Monsieur *Herman* spent several Years in the *East-Indies*, and at the *Cape of Good Hope*, to bring back into *Europe* an Account of the Natural Rarities of those Countries; and his Writings since his return, shew that he did not lose his Time. Monsieur *Van Rheed*, the noble Collector of the Plants that are so magnificently printed in the Eleven Volumes of the *Hortus Malabaricus*, has added more to the Number of those formerly known, than are to be found in all the Writings of the Ancients. As much may be said of that Excellent Collection of Exotic Plants which Dr. *Plukenet* has since given us in his incomparable Tables, besides great Numbers before undescribed, of which he has set down Characteristical Marks in his *Botanical Almagest*. Nay, this ought further to be added in his Commendation; That coming after those who had newly done so great Things before him, such a Harvest where small Gleanings were rationally to be expected, is more surprizing and extraordinary. When (b) Prince *Maurice* of *Nassaw* was in *Brasil*, he ordered Pictures and Descriptions to be taken of all the Beasts, Birds, Fishes and

(b) *Mentzel. Index Plantar. Multiling. in Praefatione.*

and Plants that could be found in that Country : They are now in the Elector of *Brandenburgh's* Library fit for the Press. But I must not forget *Dr. Sloane's Catalogue of the Plants of Jamaica, and the Caribbee Islands*, a Specimen only of a larger Work, which when once it appears, will (if we had no other Arguments) effectually confute all those who imagine that *Wealth* and *Luxury* only have been the Motives of *Europæan Voyages* into the *New World*. Since I may venture to say, that there is but a very small Part of the *Old* so well known, after so long study, as those Islands, as to all their Natural Productions, will then be, through the Labour and Skill of that industrious Naturalist. And if *Mr. Banister* had lived to have compleated his Enquiries into the *Natural History of Virginia*, we should have had another Instance of our own Nation, how very Laborious and Careful the Men of these later Ages have been to leave no part of accessible Knowledge uncultivated. Every Day New Additions are made to this Part of Natural History. *Breynius's*, *Plumier's*, and *Herman's* Collections, are Modern to those of *Bellonius*, *Clusius*, *Rauwolfius*, and *Prosper Alpinus* ; as theirs are to those of *Pliny* and *Dioscorides*. One is also to consider, that this is a much more

more laborious Business, than the Knowledge of Fowls, Fishes, and Quadrupeds. The Confusion in which the Ancients left *Botanical Knowledge*, shews how little they understood it. And, which is still more remarkable, it is not only in Accounts of Plants peculiar to the *Indies*, or to *China*, that our *Botanical Knowledge* excels theirs, but in the Productions of Countries, equally accessible to them, as to us. There are no new Species in *Europe* or *Asia*, which the Ancient Herbarists could not have discovered ; no new Soils to produce them without Seed, in case such a thing were ever naturally possible. Let but a Man compare Mr. Ray's *Catalogue of English Plants*, and those other numerous Catalogues of the Plants of other Countries, drawn up by other Modern Botanists, with the Writings of *Pliny* and *Dioscorides* ; let him examine Ray's *General History*, or, if that be not at hand, Gerard's, Parkinson's, or John Bauhine's *Herbals*, or Gaspar Bauhine's *Pinax* ; and deduct every Plant, not growing wild, within the Limits of the *Roman Empire*, and he will see enough to convince him, that not only this Part of Knowledge is incomparably more exact and large than it was formerly, but also, by comparing the Writings of the first Restorers of the

Know-

Knowledge of Simples, *Matthiolus*, *Donæus*, *Fuchsius*, *Turner*, and the rest, with the Writings of *Plukenet*, *Ray* and *Morison*, that it has been always growing, and will do so still, till the Subject be exhausted.

It is well known, that Travelling in *Mahometan* Countries is extremely dangerous; that it is what no Man that makes Learning his Aim in Journeying, would willingly undertake, if he were not ardently possessed with the Love of it. So that whatsoever Perils the *Ancient Sages* endured in their Journeys into *Ægypt* for Knowledge, they are equalled at least, if not out-done by our *Modern Sages*; to use that word, in *Sir William Temple's* sence, for one that goes far and near to seek for Knowledge. Nay, I may safely add, that a few inquisitive and learned Travellers, such as *Rauwolfius*, *Prosper Alpinus*, *Bellonius*, *Guillandinus*, and *Sir George Wheler*, have acquainted the learned Men of these Parts of the World with the Natural History of the Countries of the *Levant*, not only better than they could have known it by reading the Books of the Ancients, but, in many Particulars, better than the Ancients themselves, Natives of those very Countries, knew it, if the extant Books can enable us to give a

competent Judgment in this Matter. And if Travelling far for Knowledge, be sufficient to recommend the Ancients to our Imitation, I may observe, that Mr. *Edmond Halley*, who went to *St. Helena*, an Island situate in the *XVIth* Degree of Southern Latitude, to take an Account of the Fixed Stars in the Southern Hemisphere, which are never visible to us who live in the Northern; and to *Dantzick*, to conferr about Astronomical Matters, with the great *Hevelius*, has taken much larger Journeys than any of the Ancients ever did in the sole Pursuit of Knowledge.

CHAP. XXII.

Of Ancient and Modern Agriculture and Gardening.

THE *Ancients* put so great a Value upon the Country-man's Arts, and we have so many Treatises still extant concerning them, written by their greatest Philosophers, their ablest Philologers, and their best Poets, that to say nothing of them, may be thought an inexcusable Omission.

Omission. Husbandry and Gardening are Subjects upon which *Theophrastus* (*Aristotle's* Darling Disciple,) *Varro* (who is said to be the learnedest of all the *Romans*,) and *Pliny* (perhaps no-way his inferior) have written large Discourses yet remaining. *Varro* and *Pliny* quote numbers of Authors, some of them no less than Crowned Heads, since lost. *Hesiod*, whom some of the Ancients make older than *Homer*, and *Virgil* the Prince of *Roman* Poets, have left us Precepts of these Arts. *Columella* says, they are related to Philosophy it self, which those Heathen Sages priz'd so highly : And the later *Roman* Writers are still upbraiding the Luxury of their own Times, which wholly took off their Minds from these most useful Employments, and sending their effeminate Country-men back to their renowned Ancestors who went from the Plough to the Camp, and having there commanded victorious Armies, returned back again to the Plough, to redeem the Time they had lost.

There is no doubt but great Things were done in these Arts by the Ancients : Had we no Books extant to acquaint us with their Knowledge, yet the thing shews it self : Countries cannot be peopled by Civilized Nations, nor great Cities filled,

nor Trade carried on by polite and industrious Inhabitants, unless the Arts of Husbandry flourish. Mankind, without them, would be Wild, like the *Negroes*, and *American Salvages*, or *Arabs*. But yet one Nation may be much more Knowing in these Things than another, and one Age consequently, though all may have Skill enough to answer the Necessities of Civil Life.

In making my Comparison, I shall comprehend all that the Ancients understood by their *Res Rustica*, as it takes in the *Forester's*, the *Husbandman's*, and the *Gardener's* Business: *Cato*, *Varro* and *Columella* include the *Grasier's* also, thereby compleating the whole Body of *Farming*; but since *his* Work cannot well be made a Science of, I shall omit it.

By a *Forester* here, I understand one that knows how to Plant, Propagate and Encrease all sorts of Timber Trees; what Soils are proper for every sort; how they may best be defended from Dangers in their Growth; to what Uses they are most applicable, when they have arrived to their utmost Perfection; and how they may be best applied: Such a Man, in short, as Mr. *Evelyn* instructs in his *Silva*, where he gives a full System of the *Wood-man's* Skill, what he ought to know,

know, and what to practise. A great part of his Work, and indeed the Nicest part of it, the Ancients were Strangers to, as having less Occasion for it. The World was then, comparatively speaking, in its Infancy ; there was no want of Wood, for Fuel, Building, or Ships ; and this Plenty made Men less curious in Contriving Methods of Preserving what they had in so great Abundance. *England*, till within a few Ages, was every where overrun with Wood : The *Hercynian* Forest anciently took up what is now the most flourishing Part of *Germany* : And *France*, which is at present so wonderfully Populous, that little Cultivable Ground remains Untill'd, was in *Cæsar's* time overspread with Woods and Forests. As Men encrease, Tillage becomes more and more requisite ; the consumption of Wood will be proportionably greater ; and its want, and the necessary Uses of Timber, which grow upon Men as they become more numerous, will of consequence put them upon Ways to preserve and encrease it. Commerce with distant Parts, will shew Men rare and useful Trees, to which their own Soil was before a stranger ; and Luxury will soon teach them to transplant them.

No wonder therefore if Modern Writers excel the Ancients, upon a Subject which they had less Occasion for. The Romans, indeed, were Curious in Planting Trees for Shade or Fruit; but their Industry in that Particular comes under another Head, as rather belonging to the Gardener's Work. It may therefore, perhaps, be esteemed a small Character of Mr. Evelyn's *Discourse of Forest Trees*, to say, that it Out-does all that *Theophrastus* and *Pliny* have left us on that Subject: For it not only does that, and a great deal more, but contains more useful Precepts, Hints and Discoveries upon that now so necessary a part of our *Res Rustica*, than the World had till then known from all the Observations of former Ages. To name others after him, would be a Derogation to his Performance.

Agriculture properly so called, has been always necessary since *Noah's* time, when the Flood, that destroy'd the World of the Ungodly, wrought such a Change upon the Face of the Earth, as made it necessary for all Mankind in the sweat of their brows to eat their bread. And the early Populousness of the Eastern Nations, (though I would not bring *Semiramis* and *Zoroaster's* Armies to prove it) shews how much it was followed. For though those Countries

tries should be allowed to be, as they really are, marvellously Fruitful; yet even *Ægypt*, and the Plains of *Babylonia*, must be Tilled, to yield a Crop to satisfy the Hunger of their Inhabitants. Westward, as the World was later Peopled, so Tillage was proportionably later; and the *Athenians* tell of one *Triptolemus*, who learn'd the Art of Sowing Corn of the *Ægyptians*, above M Years after *Noah's Flood* (c). (c) Vid. *Marsham's Chronicon. pag. 249. Edit. Lond.* After that, Necessity taught them many Rules; and it is evident from *Theophrastus*, and the *Roman Writers* of *Geoponic's*, that their Knowledge in this kind was very great. They were thoroughly versed in the Art of Dressing their Grounds, and the Seasons when it was proper to do every part of a Husbandman's Work; what Compost was fit to meliorate their over-wrought or barren Lands; what Soil was best for this Grain, and what for that. Their Vines and Olives, which were their Farmer's Care, were managed with much Skill and Curiosity; and *Pliny* reckons up a great many sorts of both of them, which the Luxury of that Age had taught them to Cultivate. In a word; They were Industrious, and Skilful Husbandmen; and perhaps, 'tis not possible to tell, at this distance, whether our Farmers manage their Grounds more judiciously

than they did theirs : Since any Improvements particular to one Climate and Soil, do not prove that Age in which they are made, more Knowing than another, wherein such Improvements could take no place : Though at the same time, a Country naturally barren, which has a weak Sun in an unkindly Climate, requires more Skill, as well as more Industry, to make it Fertile. And therefore it may be question'd, whether, considering the Natural Felicity of the Soils of *Sicily*, *Africa* and *Greece*, and much more of *Agypt*, *Judæa* and *Babylonia*, whose Fertility was anciently, with Reason, so much extolled, the Improvements in *England*, *Scotland* and *Holland* may not justly come into Competition with any ancient Performances, which how great soever in themselves, were yet less upon this Account, that the Husbandmen in those Regions had not such Difficulties to struggle with.

But though the Ancients, probably, understood the Art of Sowing Wheat, and Barly, and Legumes, and Flax, and how to Manage their Vines and Olives, as well as any Age has done since ; yet other Things of unspeakable Use they were wholly Strangers to. The Art of Making *Cydar*, at least of Chusing the best Apples, and Managing their Orchards
and

and Plantations accordingly, they knew little or nothing of. And here again I must remember to take notice, (which, upon every Opportunity, I gladly do,) that Mr. Evelyn's *Pomona* has taught the present Age many things concerning the way of Ordering Apple-Trees, and Making *Cydar*, to which the World, till then, were wholly Strangers, and for which he ought here to be mentioned with Honour. The *Sugar-Cane* was not anciently unknown, since it grows naturally in *Arabia* and *Indostan*; but so little was the Old World acquainted with the Nature of its delicious Juice, that some of their ablest Men doubted whether it were a Dew like Manna, or the Juice of the Plant it self. All the Arts and Methods therefore of Preparing *Sugar*, which have made it so very Useful to Humane Life, are owing to Modern *Portuguezes* and *English*. *Malt Drinks* were used in *Gaul* and *Spain* anciently, as also in *Ægypt*, where, probably, they were first invented; but whether they were so accurately made as ours, no Man can tell, unless he knew certainly whether and with what they fermented them. May I not farther instance in *Coffee* and *Tobacco*? The *Romans* drove a greater Trade in *Arabia*, and were better acquainted with its Commodities, than this Part of the
World

World has been at any time since, which no Man that has ever read the *XIII*th. Book of *Pliny's Natural History* can possibly doubt of; yet there is no one Syllable of any thing like *Coffee* in his whole Work, nor indeed in any other Ancient Author before the *Arabs*. It is very probable that it grows wild in *Arabia*, since it is known to grow no where else; and that the Prohibition of Wine by the *Mahometan* Law, made the *Arabs* find out its Virtues, (whereas before it was a neglected Shrub) to supply the place of the other Liquor. But still its Cultivation is, as to the present Question, Modern; and since the *Arabs* do now bestow great Care and Pains in Managing it, it comes not improperly in among the Augmentations of *Modern Agriculture*. And that *Tobacco* ought here to be mentioned, is question'd by none who know what a Delight and Refreshment it is to so many Nations, so many several Ways. The Accounts of *Virginia* and *Brasil* will inform us what Pains our *Europæan* Planters are at, to make that Herb Palatable to all sorts of Persons. So that without taking notice of any more Particulars, we may be assured, that the *Modern Husbandry* is a larger, if not a more exact thing than the *Ancient*; and even in those things wherein

wherein the Ancients did most excell, in the Management of their Vines and Olives, the comparative Excellency of the later Ages will perhaps be allowed by all those who are acquainted with the Curiosity of the present, in Managing of their Fruit-Trees; which shall be treated of in its proper Place.

I deferred to speak of *Gardening* till the last; because Luxury always comes after Necessity, though, generally, when it is once introduced, it still goes on encreasing, till it is come to the utmost pitch to which it can be carried. In the present Subject, we shall find a gradual Improvement so very visible, that I hope to put it past Controversie.

The Babylonian *Horti Pensiles*, or Gardens on the tops of Buildings, ought, in most Men's Opinion, first to be mentioned in point of Antiquity: These, *Josephus* assures us, were only large Walks of Trees planted on the tops of Mounts of Masons Work, erected in the midst of the City by *Nebuchadnezzar*, to please his Wife. If they are no older, *Alcinous's* Garden, described by *Homer* (d), was long before them. There one sees the Simplicity of that Heroical Age very plainly. The Poet thought he did a magnificent Thing, when he made it Four Acres

(d) *Odys.*
lib. viii.

Acres in Circumference : He tells us, it was stored with Pear-Trees and Apple-Trees, Pomegranates and Figs, Vines and Olives, which furnished him with constant successions of Fruit ; and had two Fountains, one cut into Streams, to water it within, the other flowing from thence, to supply the Necessities of the Inhabitants of the Town. And this is all he says of it : Poets and Romancers describe every thing for their Hero's Uses, as splendidly as they can, what they have seen, read, or heard of, is always brought in, as 'tis expected it should. Accordingly the Garden described by *Eustathius* (e), in the later times of the *Græcian* Empire, when Luxury was improved into an Art, which it was far from being in old *Homer's* time, is much finer, though far short of the Gardens and *Villa's* of the Princes and Great Men of the present Age. *Eustathius's* Garden has open and arched Walks of Lawrel, Cypress and Myrtle, with Arbors of Vines for the Conveniencies of the Guests, to gather the Grapes as they lay at their Meals by the Fountain-side ; with a *Jet d'eau* in the middle of it, spouting Water out of an Eagle's Bill ; by which a She-Goat was milked, with the Liquor dropping out of the Nipples into a Pail on purpose : round the Fountain are Swallows

(e) *Amor-
um Ysmi-
nia & Ys-
mines, l. i.*

lows and Peacocks, Doves and Cocks, all either Cast or Carved, out of whose Bills the Water flowing, gave a Sound to the several Birds. This indeed is very Pleasant and Poetical, and shews, that *Eustathius* had seen or heard of something of this nature, by which he guided his Fancy.

What the *Roman* Gardens were, we are sufficiently taught by their Writers of *Country Affairs*: (f) *Columella's* and (g) *Pliny's* Precepts and Descriptions are fit for nothing else but a Kitchen-Garden: They give Directions for Ordering Cucumbers, Melons, Artichokes, Coleworts, Turneps, Radishes, Parsnips, Skirrets, Garlick, Leeks, Onions, Asparagus, and a numerous train of Pot-Herbs, with a little Garden-Physic. They both assign this as the Reason why *Virgil* would say nothing of Gardening, in his *Georgic's*, it being a Subject so very poor and jejune, that it would not bear the Ornaments which that Divine Poet gave to all his Works: So they seem to understand his *Spatia iniqua* which he complains of, upon which account he left off where he did.

For if we fanſie that the Gardens of *Lucullus*, *Pompey*, *Cicero*, *Mecænas*, *Seneca*, and of all those Great *Romans* which are so highly extolled by the Ancients, were what we ordinarily call Gardens, we are very much mistaken: Their Gardens were spacious

(f) Lib. x.
tot. 6
lib. xi.
cap. 3.
(g) Lib.
xix.

spacious Plats of Ground, filled and surrounded with stately Walks of Platan's, and other shady Trees, built round with Xysti, Portico's, finely paved with curiously coloured, and far-fetch'd Marble, lay'd in Artificial Figures, noble Ranges of Pillars, adorned within with Fish-Ponds, Aviaries, Fountains and Statues. Such still are the Villa's of the *Italian* Princes at *Frascati*, *Tivoli*, and their other delicious Seats in *Latium* and *Campania*, so celebrated of old, for being the Gardens of the *European* World. Such, in some measure, are the famous Gardens about *Ispahan*, where Shade and Coolness give them their greatest Pleasure, in a Region where the Soil naturally furnishes its Inhabitants with excellent Fruit, and fragrant Flowers; so that they are at little Pains to cultivate that which they can have without, and which would not afford half that Delight in their Gardens of Pleasure, that they find in lying, in the cool of the Day, under a shady *Plane*, by a Fountain-side. This made the Ancients, who all lived in warm Climates, admire the *Plane* so exceedingly, that frantic Stories are told of *Xerxes's* doting upon one in the *Lesser Asia*, when he was bringing down his mighty Armies against *Greece* (b). The Walks of *Academos*,

(b) *Ælian.*
Var. Hist.
2. 14.

demus, and the Gardens of *Epicurus*, were of this sort, Cool and Delicious, but which can give us no Idea of the Artificial Beauties of Modern Gardens. For the Question is not, which is in it self pleasanter, or whether if we lived in *Greece* or *Persia*, we should not rather chuse to imitate the Fashion of those Countries; but, which shews the greatest Skill of him that makes it.

The Gardens of this Age are of several sorts, *for the Kitchen, for Flowers, for Greens, and Shady Walks, for Fruit-Trees, and for the Apothecary.*

To the First of these, the Industry of the Ancients (as we have seen already) was in a manner wholly confined. That they knew how to Manage those Kitchen Stores which their Gardens yielded, is unquestionable; but their Variety was not near so great, since neither was the New World known, nor the Old so well examined as it has been since. Besides, they knew little of the Art of Raising Summer Plants, in the severest Frosts, and so making all Seasons of the Year unite in one, at Great Men's Tables; the bringing which to the present Perfection, is due to the Industry and Sagacity of the Age we live in; which how much it has enlarged this part of Gardening from
what

what it was anciently, every Man by himself will easily imagine. The *Romans*, indeed, had a Way of Preserving Melons in Winter, by Sowing them in a large Box fill'd with rich Mold and Dung, which they housed in Winter, and exposed in Sun-shiny Days under their *Specularia*, that seem to have been of the Nature of our Glasses; by which Contrivance, *Tiberius* the Emperor had Melons all the Year round. That shews what Necessity might have forced them to, had they been put to it.

As for *Flower Gardens*, the Ancients minded them not. They require an open Sun, and a free Air, which in hot Countries would have been Nuisances, rather than Delights. Plants remarkable for their Beauty, or their Smell, had a Place, indeed, in their Plantations; but we find no mention of any great Variety of Species, or Art in Ranging or Managing those they had. There is nothing said in any *Greek* or *Roman* Authors of large Gravel-Walks, surrounding spacious Grass-Plats, edged with beautiful Borders, fill'd with all that Choice of Auricula's, Tulipa's, Carnations, Tuberoses, Jonquilles, Lily's, Hyacinths, Narcissus's, and that almost infinite Diversity of Beautiful and Odoriferous Flowers that now adorn our
Gardens.

Gardens. They knew not the Art of Diversifying the Colours, Enlarging the Flowers, and giving them all those sickly or luxuriant Beauties which are so commonly to be met with in our Gardens. Some Notion they had of Managing *Dwarf-Trees*, and Clipping other Trees that would bear it into what Form the Gardeners please; but they speak so little of it, that we have no reason to think they understood much of that beautiful Furniture which *Dwarfs* and *Ever-greens* afford us.

The Usefulness of *Fruit-Trees* made them be anciently more regarded. The Vines and Olives of the Ancient *Greeks* and *Romans* we have mentioned already. They had several sorts of Apples, Pears, Quinces, Peaches, Pomegranates, Plums, Figs and Nuts: As for Oranges and Limons, and the delicious Fruits of the *East* and *West-Indies*, they were wholly Strangers to them. And they had not near the Variety of those they knew, with which *Monsieur de la Quintinie*, were they now alive, could furnish them. Though they had many Precepts concerning Pruning, Setting, Graffing and Inoculating, knew their Usefulness, and could perform all those Operations with Success; yet, comparatively speaking, their Manner was coarse; and had their Climates been as

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unkindly,

unkindly, their Success would have been but indifferent. They could Manage Earth, and Air, and Water, pretty tolerably ; but how to bring the Sun under Rules, (if I may use so bold an Expression) they knew not ; which yet, by their Wall-Plantations, our Gardeners do every Day. That is an Invention the Ancients were entirely unacquainted with ; thereby, in Cold Countries, we can command the Warmth of *Italy* and *Spain*, and have Fruits of a Bigness, and Colour, and Taste, which even at Home they can scarce reach.

It will not be hard now, with due Allowances, to make a just Comparison between *Ancient* and *Modern Horticulture*. Monsieur *de la Quintinie* will give us a full and just Idea of what the Skill of this Age can reach to : Mr. *Evelyn's Kalendarium Hortense* ought to be joined with it, to shew the Difference in a more Northern Clime. What Variety our Florists can pretend to, will appear from *Parkinson's Paradise*, *Ferrarius's Flora*, or *Sweertius's Florilegium*. In those Books one may see what Art can do, to beautifie and enlarge Flowers beyond what Nature ordinarily produces. Other Men can only follow Nature ; the Gardener alone leads it, and hastens or slackens its

pace

pace according as suits best with his Designs or Inclinations.

I need say nothing of the *Physic-Garden*, since what has been said already in the fore-going Chapter enables every Man to judge there aright. So much for the *Knowledge of Things not endued with Sensible Life*.

CHAP. XXIII.

Of Ancient and Modern Histories of Animals.

Insects seem to be the lowest and simplest Order of Animals; for which Reason I shall begin with them. That some are very beneficial to Man, affording him Food and Rayment; as, the *Bee*, and the *Silk-Worm*: And others, again, exceedingly troublesome; as, *Wasps*, *Hornets*, *Gnats*, *Moths*, and abundance more; was formerly as well known as now. In their Observations about *Bees*, the Ancients were very curious. *Pliny* (i) mentions one *Aristomachus*, who spent LVIII Years in Observing them: And it is evident from Him, *Aristotle* and *Ælian*, that, as far as they could make their Observa-

(i) *N. H.*
l. 11. c. 9.

tions, the Ancients did not neglect to digest necessary Materials for the Natural History of this wonderful and useful Insect. They were so particularly careful to collect what they could gather concerning it, that it is to be feared, a great part of what they say, is fabulous.

But if they were curious to collect Materials for the History of this single Insect, they were, in the main, as negligent about the rest. They had, indeed, Names for the general Sorts of most of them; and they took notice of some, though but few, remarkable Sub-divisions. The Extent of their Knowledge, in this Particular, has been nicely shewn by *Aldrovandus* and *Moufet*. In their Writings one may see, that the Ancients knew nothing of many Sorts; and of those which they mention, they give but indifferent Descriptions; contenting themselves with such Accounts as might, perhaps, refresh the Memories of those who knew them before, though they could signify little to Persons who had never seen them. But of their Generation or Anatomy they could know nothing considerable, since those things are, in a great measure, owing to Observations made by Microscopes; and having observed few Sub-divisions, they could say little to the Ranging of those

those Insects which they knew already by distinct Characteristics, under several Heads. For want of observing the several Steps of Nature in all their Mutations, and taking notice of the Sagacity of many sorts of Insects, in providing convenient Lodgings for themselves, and fit Harbours for their young ones, both for Shelter and Food, they often took those to be different, which were only the same Species at different Seasons; and those to be near of Kin, which Chance only, not an Identity of Nature, brought together.

The Clearing of all these Things is owing to Modern Industry, since the Time that Sir *William Temple* has set as a Period of the Advancement of Modern Knowledge; even within these last $\overline{\text{XL}}$ Years. It lies, for the most part, in a few Hands, and so is the more easily traced. In *Italy*, *Malpighius* and *Redi* took several Parts.

Redi (k) examined abundance of general Sorts, those Insects especially which are believed to be produced from the Putrefaction of Flesh; those he found to grow from Eggs laid by other grown Insects of the same Kinds: But he could not trace the Origination of those which are found upon Leaves, Branches, Flowers, and Roots of Trees. The Generation of those was nicely examined by *Malpighius*, in

(k) Experimenta
circa Generationem
Insectorum.

his curious Discourse of *Galls*, which is in the II^d Part of his *Anatomy of Plants*; wherein he has sufficiently shewn, that those Excrescencies and Swellings which appear in Summer-time upon the Leaves, tender Twigs, Fruits and Roots of many Trees, Shrubs and Herbs, from whence several sorts of Insects spring, are all caused by Eggs laid there by full-grown Insects of their own Kinds; for which Nature has kindly provided that secure Harbour, till they are able to come forth, and take care of themselves. But *Redi* has gone further yet, and has made many Observations upon Insects that live, and are carried about on the Bodies of other Insects. His Observations have not been weakened by Monsieur *Leeuwenhoek*, whose Glasses, which are said to excell any ever yet used by other People, shewed him the same Animals that Monsieur *Redi* had discovered already; and innumerable sorts of others, never yet thought of.

Besides Monsieur *Leeuwenhoek*, there have been Two Men in *Holland* very eminent for this Business, *Goedartius* and *Swammerdam*. *Goedartius*, who was no Philosopher, but one who, for his Diversion, took great Delight in Painting all sorts of Insects, has given exact Histories of the several Changes of great Numbers of Caterpil-

Caterpillars into Butter-Flies, and Worms or Maggots into Flies; which had never before been taken notice of, as Specifically different. These Changes had long ago been observed in Caterpillars and Maggots, by *Aristotle*, *Theophrastus* and *Pliny*: But they, who acquaint us with the greatest part of what has been done in this Matter by the Ancients, content themselves with general Things. They enter not into minute Enquiries about the several Species of these Animals, which are exceedingly numerous: They do not state the Times of their several Changes. So that these Matters being left untouch'd, we have an admirable Specimen of the Modern Advancement of Knowledge, in ^(l) *De In-*
Goedartius's Papers (l). *sectis*, Edit.
Lister.

Still an Anatomical Solution of these Appearances was wholly unknown. What *Ovid* (m) says of the Metamorphoses of ^(m) *Me-*
Insects, is suitable enough to the Design *tam.* l. 15.
of his Poem: And there we may well allow such a Natural Change of Caterpillars into Butter-Flies, as is not to be accounted for by the Regular Laws of the Growth and Augmentation of Natural Bodies. But a Natural Historian has no need of the Fictions of a Poet. These Difficulties therefore were cleared by ⁽ⁿ⁾ *Hist.*
Swammerdam (n), who in his *General* *General.*
History *Insect.*

History of Insects, proves, that all the Parts of the full-grown Insect, which first appears in a different Form from what it assumes afterwards, were actually existent in the *Fœtus*, which creeps about as a Caterpillar, or a Maggot, till the Wings, Horns and Feet, which are inclosed in fine Membranes, come to their full Growth; at which time, that Membrane which at first was only visible, dries up, and breaks; out of which comes forth the Insect proper to that Kind; which then gendring with its like, lays such Eggs as in a seasonable Time are hatched; that so the Species, which is not generated by Chance, may always be preserved.

In *England*, Dr. *Lister* has done the most, to compleat this Part of Natural History. His Book of *Spiders*, gives an Account of great Numbers of Species of those Animals, formerly unobserved. His *Latin and English Editions* of *Goedartius*, have not only made that Author more intelligible, by ranging his confused Observations under certain Heads conformable to Nature, which may serve also as Foundations to enlarge upon, as more Species shall hereafter be discovered, but he has taken that Occasion of saying many new Things, pertinent to that Subject, all tending to encrease our Knowledge of those

small

small Productions of the Divine Mechanics. His Tables of *Shells*, exhibit to the Eye a surprizing Variety of those Inhabitants of the Waters, of which, comparatively speaking, the World before had no Idea. *Buonanni* publish'd a beautiful Collection of them some Years before, at *Rome*, which when compared with those mentioned in Ancient Books, does as far exceed them, as it self is exceeded by Dr. *Lister's*. And his Anatomical Discourses of *Testaceous Animals*, lately printed, have discovered several curious Things in that wonderful Tribe; some of which, though observed above XXX Years ago by Mr. *Ray*, yet had not been much believed, because not sufficiently illustrated by an able Anatomist.

This is what our Age has seen; and it is not the less admirable, because all of it, perhaps, cannot be made immediately useful to Humane Life: It is an excellent Argument to prove, That it is not Gain alone which biasses the Pursuits of the Men of this Age after Knowledge; for here are numerous Instances of Learned Men, who finding other Parts of Natural Learning taken up by Men, who, in all probability would leave little for After-comers, have, rather than not contribute their Proportion towards the Advance-
ment

ment of Knowledge, spent a World of Time, Pains and Cost, in examining the Excrescencies of all the Parts of Trees, Shrubs and Herbs, in observing the critical Times of the Changes of all sorts of Caterpillars and Maggots, in finding out, by the Knife and Microscopes, the minutest Parts of the smallest Animals, examining every Crevice, and poring in every Ditch, in tracing every Insect up to its Original Egg; and all this with as great Diligence, as if they had had an *Alexander* to have given them as many Talents, as he is said to have given to his Master *Aristotle*.

I shall put *Fishes*, *Fowls* and *Quadrupeds* together; because the Question, as it relates to the Natural History of these Animals, may be brought into a small Compass. For as to the Anatomical part, it is certain, That every Instance of the Defect of Ancient Anatomy already mentioned, is a Proof how little the Texture of the Inward Parts of all these Creatures could possibly be known, and consequently, that no old Descriptions of these Animals which should go beyond the Parts immediately visible, could have been considerable. There is hardly one eminent Modern Discovery in Anatomy, which was not first found in Brutes, and afterwards

wards examined in Humane Bodies. Many of them could never have been known without the Help of Live-Dissections ; and the rest required abundance of Trials upon great Numbers of different sorts of Beasts, some appearing plainer in one sort of Animals, and some in another, before the Discoverers themselves could frame such a clear Idea of the Things which they were then in pursuit of, as that they could readily look for them in Humane Bodies, which could not be procured in so great Plenty, and of which they had not always the Convenience. All which things extremely tended to the Perfecting the Anatomy of all sorts of Brutes. About the other Part, which may comprehend an Account of their Way of Living, their Uses to Humane Life, their Sagacity, and the like, the Ancients took much Pains, and went very far : And there are a great many admirable things in *Aristotle's History of Animals*, concerning all these Matters. What Helps he had from Writers that lived before his own time, we know not ; if he had but little, it must be owned that his Book is one of the greatest Instances of Industry and Sagacity that perhaps has ever been given. But since the Question is not so much, whether that is an excellent Book, as, whether it is perfect ; it ought to

to be compared with Mr. *Willughby's Histories of Fishes and Birds*, and Mr. *Ray's Synopsis of Quadrupeds*, as the perfectest Modern Books upon these Matters; and then it will be easie to make a Judgment. I shall not make it my self; because no Man can mistake, that compares them, though never so negligently, together. I name only *Aristotle*; because he is, to us at least, an Original Author: He had examined abundance of things himself; and though he took a great deal upon trust, yet that could not be avoided, since he had so little, that we know of, from more remote Antiquity, and it was too vast a Work for any one single Man to go through with by himself. *Ælian* and *Pliny* seem only to have Copied; and, with submission be it spoken, their Writings are *Rhapsodies* of Stories and Relations partly true, and partly fabulous, which themselves, very often, had not Skill enough to separate one from the other, rather than *Natural Histories*: From which Accusation, even *Aristotle* himself cannot wholly be excused. Though this must be said in Vindication of *Pliny*, That he neither Believed himself, nor proposed, as Credible, abundance of those strange things which he related in his *Natural History*. His Design was, to set down what-

whatsoever he had found in all his Reading, which was very diffuse, upon those Heads which he treated of: And accordingly, where-ever he met with a shocking Story, he told it, indeed, (as *Gesner* and *Aldrovandus* did afterwards, though they were infinitely better Naturalists than he,) but it was in such a manner, many times, that a Reader must be exceedingly careless that is imposed upon either to believe the thing himself, or to think that *Pliny* believed it, and set it down for Credible. Which is a great deal more than, I think, can be said for *Ælian*, whose Authority is not near so good as his *Greek*, for the Elegancy of which he was extremely valued, and the more, because being by Birth a *Roman*, he had never (o) in his Life been out of *Italy*. But it is time to return.

(o) Vid.
Philostat.
de Vita So-
phist. in
Ælian.

If we would make this Comparison the easier, we should consult *Gesner* and *Aldrovandus*; or, if they are too voluminous, *Wotton De Differentiis Animalium*, who has put under one View, in several Heads, almost every thing that is to be found in any ancient Authors concerning these Things. What he has collected of the Elephant, may be compared with Doctor *Moulin's* Anatomy of the same Creature: The Ancients Observation concerning Vipers, may be read along with *Redi's* and

and Charas's. Their Anatomical Descriptions of many other Animals, may be examined with those excellent ones published by the Members of the *French Academy*, and Mr. Ray in his *Synopsis*: And then the Imperfections of the one, and the Excellencies of the other, will be clearly seen, and the Distance between each exactly stated; though perhaps this may seem too far about, since it is manifest at first sight, That no ancient Descriptions of any Creatures could be at present valuable, when their whole Anatomy was so imperfect. Some Mistakes however, might, methinks, have been prevented; the *Ægyptian Sages*, sure, might have taught them, that a Crocodile moves his Under-Jaw, and not his Upper; they might soon have found, that a Lion has Vertebres in his Neck, and with them, by consequence, can move it upon occasion, and has as large a Heart as other Creatures of his Size; that a (p) Porcupine doth not shoot his long Quills upon those that set upon him; and

(p) Borel-
lus de Mo-
tu Animalium,
Part II.
Prop. 219.

Fabulosa narratio passim circumfertur de Hystrice, quæ cutem tendendo, spinas illas prælongas quibus dorsum ejus tegitur, longius ejaculatur. De hoc Animali enarrabo ea, quæ propriis oculis vidi. Hystrix non ejaculatur spinas suas prælongas, sed tantummodo eas arrectas retinendo tremulâ concussione agitatur & vibrat. Hoc quidem efficitur à pelle musculosâ, & à musculis semilunaribus, quibus interna cutis stipata est, qui radices spinarum erigunt & concutiunt. Vid. quoque Raii Synopsis Animal. Quadruped. pag. 209.

several

several other things, which would have prevented several Over-sights that are not much for the Honour of *Ancient Diligence*. This would have saved abundance of fabulous Relations that are to be met with in ancient Naturalists. Their heaping up monstrous Stories, without giving distinguishing Marks, many times, to testify which they believed, and which not, is an evident Sign that they were not enough acquainted with these Creatures, to make a thorough Judgment what might be relied upon, and what ought to be rejected. For accurate Skill in these things helps a Man to judge as certainly of those Relations which himself never saw, as Political Skill does to judge of Accounts of Matters that belong to Civil Life; and a great deal better, since Nature goes in an even Course than the Wills and Fancies of Men, which alone, and not Rules of Prudence, are the Foundations of most of the Things that are transacted in the World.

C H A P.

CHAP. XXIV.

*Of Ancient and Modern Astronomy
and Optics.*

HAVING now gone through with the several Parts of *Natural History*, I am to enquire into the State of *Physico-Mathematical* and *Physical* Sciences: Such as *Astronomy*, *Optics*, *Music* and *Medics*. I put *Astronomy* first, because of the vast Extent and real Nobleness of its Subject; and also, because it has suffered the least Eclipse of any part of Knowledge whatsoever in the barbarous Times: For when the *Greeks* neglected it, the *Arabs*, and from them the *Spaniards*, took it up. That this Enquiry might be the more exactly made, and that the Truth might be fully and clearly stated, Mr. *Edmond Halley*, whose Labours towards the Advancement of this Science, have made him Famous in so many distant Parts of the World, did me the Favour to communicate this following Paper:

‘As for the *Astronomy* of the Ancients, this is usually reckoned for one of those Sciences wherein consisted the Learning of the *Ægyptians*; and *Strabo* expressly declares,

declares, That there were in *Babylonia*
 several Universities, wherein Astronomy
 was chiefly professed; and *Pliny* tells us
 much the same thing: So that it might
 well be expected, that where such a
 Science was so much studied, it ought
 to have been proportionably cultivated.
 Notwithstanding all which, it does ap-
 pear, That there was nothing done by the
Chaldæans older than about CCCC Years
 before *Alexander's* Conquest, that could
 be serviceable either to *Hipparchus* or
Ptolemee, in their Determination of the
 Celestial Motions: For had there been
 any Observations older than those we
 have, it cannot be doubted but the Victo-
 rious *Greeks* must have procured them,
 as well as those they did, they being still
 more valuable for their Antiquity. All
 we have of them, is only Seven Eclipses
 of the Moon, preserved in *Ptolemee's*
Syntaxis; and even those but very
 cursely set down, and the oldest not
 much above DCC Years before Christ;
 so that after all the Fame of these *Chal-*
dæans, we may be sure that they had
 not gone far in this Science; and though
Callisthenes be said, by *Porphry*, to have
 brought from *Babylon* to *Greece*, Obser-
 vations above MDCCCC Years older than
Alexander, yet the proper Authors making

blue

Y

no

' no Mention or Use of any such, renders
 ' it justly suspected for a Fable. What
 ' the *Ægyptians* did in this Matter is less
 ' evident, no one Observation made by
 ' them being to be found in their Country-
 ' man *Ptolemee*, excepting what was done
 ' by the *Greeks* of *Alexandria*, under CCC
 ' Years before *Christ*. So that whatever
 ' was the Learning of these two ancient
 ' Nations, as to the Motions of the Stars,
 ' it seems to have been chiefly Theorical;
 ' and I will not deny but some of them
 ' might very long since be apprized of the
 ' Sun's being the Centre of our System,
 ' for such was the Doctrine of *Pythagoras*
 ' and *Philolaus*, and some others who were
 ' said to have travelled into these Parts.

' From hence it may appear, That the
 ' *Greeks* were the first Practical Astrono-
 ' mers, who endeavoured in earnest to
 ' make themselves Masters of the Science,
 ' and to whom we owe all the old Obser-
 ' vations of the Planets, and of the Equi-
 ' noxes and Tropics: *Thales* was the first
 ' that could predict an Eclipse in *Greece*,
 ' not DC Years before *Christ*, and without
 ' doubt it was but a rude Account he had
 ' of the Motions; and 'twas *Hipparchus*
 ' who made the first Catalogue of the
 ' Fix'd-Stars, not above CL Years before
 ' *Christ*; without which Catalogue there
 ' could

could be scarce such a Science as *Astronomy*; and it is to the Subtilty and Diligence of that great Author that the World was beholding for all its Astronomy, for above MD Years. All that *Ptolemee* did in his *Syntaxis*, was no more but a bare Transcription of the Theories of *Hipparchus*, with some little Emendation of the Periodical Motions, after about CCC Years Interval; and this Book of *Ptolemee*'s was, without Dispute, the utmost Perfection of the Ancient Astronomy, nor was there any thing in any Nation before it comparable thereto; for which Reason, all the other Authors thereof were disregarded and lost, and among them, *Hipparchus* himself. Nor did Posterity dare to alter the Theories delivered by *Ptolemee*, though successively *Albategnius* and the *Arabs*, and after them the *Spanish* Astronomers under *Alphonsus*, endeavoured to amend the Errors they observed in their Computations. But their Labours were fruitless, whilst from the Defects of their Principles, it was impossible to reconcile the Moon's Motion within a Degree, nor the Planets, *Mars* and *Mercury*, to a much greater Space.

Now in this Science to compare the Ancients with the Moderns, and so make

' a Parallel as just as may be, I oppose the
 ' Noble *Tycho Brahe*, or *Hevelius* to *Hip-*
 ' *parchus*, and *John Kepler* to *Claudius Pto-*
 ' *lemee*; and I suppose, no one acquaint-
 ' ed with the Stars, will doubt, That the
 ' Catalogue of the Fix'd-Stars made by
 ' *Tycho Brahe*, about \overline{C} Years since, does,
 ' beyond Competition, far excell that of
 ' *Hipparchus*, being commonly true to a
 ' Minute or two, when the other, many
 ' times, fails half a Degree, both in Lon-
 ' gitude and Latitude; and this is the
 ' fairlier carried, for that it was as easie
 ' for *Hipparchus* to observe the Fix'd-Stars,
 ' as for *Tycho* or *Hevelius*, had he made
 ' Use of the same Industry and Instruments,
 ' the *Telescope*, wherewith we now ob-
 ' serve to the utmost possible Nicety, be-
 ' ing equally unknown to *Tycho* as to *Hip-*
 ' *parchus*, and not used by *Hevelius*. But
 ' what may justly be expected from Mon-
 ' sieur *Cassini*, and Mr. *Flamsteed*, in this
 ' Matter, does yet further advance in Pre-
 ' ciseness, as not capable to err half a Mi-
 ' nute, though made with Instruments
 (q) P. 57. ' (q) of the Production of Gresham. As to
 ' the other Comparison between *Kepler*
 ' and *Ptolemee*, I question not but all
 ' that can judge, will be fully convinced
 ' that the Hypothesis of Eccentrics, and
 ' Epicycles introduced by the Ancients
 ' only

‘ only to represent the Motions, and that
‘ but courfly too, with the Opinion of
‘ *Ptolemee* himself thereon, that the Na-
‘ tural Motions were otherwise performed;
‘ ought not to be valued against that ele-
‘ gant Theory of the Planetary Motions,
‘ first invented by the acute Diligence of
‘ *Kepler*, and now lately demonstrated by
‘ that excellent Geometer Mr. *Newton*,
‘ viz. *That all the Planets move in Elliptic*
‘ *Orbs about the Sun, at whose Center, being*
‘ *placed in one Focus of the Ellipse, they*
‘ *describe Equal Area's in Equal Times.*
‘ This, as it is the necessary Result of the
‘ Laws of Motion and Gravity, is also
‘ found rigorously to answer to all that
‘ is observed in the Motions; so that the
‘ Moderns may, with as much Reason
‘ as in any other Science whatsoever,
‘ value themselves on their having Im-
‘ proved, I had almost said Perfected, this
‘ of *Astronomy*.’

Optical Instruments have been so ser-
viceable in the Advancement of *Astronomy*,
that the Sciences which demonstrate their
wonderful Properties ought next to be con-
sidered. Here also I must own my Obli-
gation to Mr. *Halley*, for this following Ac-
count of what the Ancients have done in
them, and how much they have been out-
done by Modern Mathematicians :

' I suppose there are few so thorough-
 ' paced Faurors of Antiquity, as to brag
 ' much of their Skill, either in *Optics* or
 ' *Dioptrics*. Their Want of *Optics* appears
 ' in their want of Authors treating there-
 ' on; and yet much better in their want of
 ' *Ordonnance* (as it is called) in their Pain-
 ' tings, and *Basse Reliev's*, as has been al-
 ' ready said in its proper place. And as to
 ' *Dioptrics*, though some of the Ancients
 ' mention *Refraction*, as a natural Effect of
 ' Transparent *Media*; yet *Des Cartes* was
 ' the first who, in this Age, has discovered
 ' the Laws of *Refraction*, and brought *Diop-*
 ' *trics* to a Science. And the Invention of
 ' *Telescopes* and *Microscopes*, which must be
 ' wholly allowed to this Century, has re-
 ' ceived no small Improvements from the
 ' Study and Charge of Sir *Paul Neile*, and
 ' some other *Members of Gresham*. And these
 ' are such Instruments of real Knowledge,
 ' that though we will allow the Ancients
 ' to have done all that great *Genii*, with
 ' due Application, could arrive at; yet, for
 ' want of them, their Philosophical Argu-
 ' mentation could not come up to the pre-
 ' sent Pitch; not being able to fathom the
 ' boundless Depths of the Heavens, nor to
 ' unravel the *Minutiæ* of Nature, without
 ' the Assistance of the Glasses we are now
 ' possessed of.

C H A P.

CHAP. XXV.

Of Ancient and Modern Music.

SIR William Temple having assured us, (r), that it is agreed by the Learned, (r) P. 45. that the Science of Music, so admired by the Ancients, is wholly lost in the World; And that what we have now, is made up of certain Notes that fell into the Fancy of a poor Friar, in chanting his Mattins; it may seem improper to speak of Music here, which ought rather to have been ranked amongst those Sciences wherein the Moderns have, upon a strict Enquiry, been found to have been out-done by the Ancients. I have chosen, however, to speak of it in this Place, for these following Reasons.

(1.) That whereas all Modern Mathematicians have paid a mighty Deference to the Ancients, and have not only used the Names of *Archimedes*, *Apollonius*, *Dio- phantus*, and the other Ancient Mathematicians with great Respect; but have also acknowledged, that what further Advancements have since been made, are, in a

manner, wholly owing to the first Rudiments, formerly taught: Modern Musicians have rarely made use of the Writings of *Aristoxenus*, *Ptolemee*, and the rest of the Ancient Masters in that Art; and, of those that have studied them, very few, unless their Editors, have confessed that they could understand them; and others have laid them aside, as useless for their Purpose; so that it is very probable, many excellent Composers have scarce ever heard of their Names.

(2.) *Music* has still, and always will have very lasting Charms. Wherefore, since the Moderns have used their utmost Diligence to improve whatsoever was improvable in the Writings of all sorts of Ancient Authors, upon other equally difficult, and very often not so delightful Subjects, one can hardly imagine but that the World would, long e're now, have heard something more demonstrably proved of the Comparative Perfection of Ancient *Music*, with large Harangues in the Commendation of the respective Inventors, if their Memory had been preserved, than barely an Account of the fabulous Stories of *Orpheus* or *Amphion*, which either have

no

no Foundation at all, or as *Horace* of old understood them (s), are allegorically to be interpreted of their reducing a Wild and Salvage People into Order and Regularity. But this is not urged against Sir *William Temple*, who is not convinced of the Extent of Modern Industry, Sagacity and Curiosity; though to other Admirers of Ancient *Music*, who, upon Hearsay, believe it to be more Perfect than the Modern, and yet are, for other Reasons, sufficiently convinced of the unwearied Diligence, and answerable Success of the Modern Learned, in retrieving and improving other Parts of Ancient Knowledge, it will not appear inconsiderable.

(3.) *Music* is a *Physico-Mathematical* Science, built upon fixed Rules, and stated Proportions; which, one would think, might have been as well improved upon the old Foundations, as upon new ones, since the Grounds of *Music* have always been the same: And *Guido's Scale*, as *Dr. Wallis* assures us, is the same for Substance with the *Diagramma Veterum*.

(4.) The Ancients had not, in the Opinion of several who are Judges of the Matter, so many Gradations of Half-Notes
and

(s) *Silvestres homines, Jacer intérpréſque Decorum, Cadibus & viſtu ſædo deterruit Orpheus: Diſtus ob hoc lenire Tigres, rabidiſque Leones. Diſtus & Amphion, Thebanæ conditor arcis, Saxa movere ſono Teſtudinis, & prece blandâ, Ducere quo vellet.*

Art. Poet.

and Quarter-Notes between the Whole ones, as are now used ; which must of necessity introduce an unspeakable Variety into Modern *Music*, more than could formerly be had : Because it is in Notes, as it is in Numbers ; the more there are of them, the more variously they may be combined together.

(5.) Excessive Commendations can signify nothing here ; because every Man gives the highest Applauses to the Perfectest thing he ever saw or heard, of any kind : And if he is not capable of Inventing in any particular Art himself, he can form no clear Idea of it, beyond what himself was then affected with, when he first heard those discourse of it, who pretended to be Judges of every thing relating to it.

(6.) It is very probable, that the Ancient *Music* had all that which still most affects common Hearers. The generality of Auditors are moved with an excellent Voice, are pleased when Time is exactly kept, and love to hear an Instrument played true to a fine Voice, when the one does not so far drown the other, but that they can readily understand what is sung, and can, without previous Skill, perceive that the one exactly answers the other throughout ; and their Passions will be

be effectually moved with sprightly or lamentable Compositions: In all which Things the Ancients, probably, were very perfect. To such Men, many of our Modern Compositions, where several Parts are sung or played at the same time, would seem confused, intricate and unpleasant: Though in those Cases, the greater this seeming Confusion is, the more Pleasure does the Skilful Hearer take, in unraveling every several Part, and in observing how artfully those seemingly disagreeing Tones join, like true-cut Tallies, one within another, to make up that united Concord, which very often gives little Satisfaction to common Ears; though in such sort of Compositions it is, that the Excellency of Modern *Music* chiefly consists. For, in making a Judgment of *Music*, it is much the same thing as it is in making a Judgment of *Pictures*. A great Judge in *Painting*, does not gaze upon an exquisite Piece, so much to raise his Passions, as to inform his Judgment, as to approve, or to find fault: His Eye runs over every Part, to find out every Excellency; and his Pleasure lies in the Reflex Act of his Mind, when he knows that he can judiciously tell where every Beauty lies, or where the Defects are discernible: Which an ordinary Spectator would

would never find out. The chiefest thing which this Man minds, is the Story ; and if that is lively represented, if the Figures do not laugh when they should weep, or weep when they should appear pleased, he is satisfied, if there are no obvious Faults committed any where else : And this, perhaps, equally well, if the Piece be drawn by *Raphaël*, as by an ordinary Master, who is just able to make things look like Life. So likewise in *Music* ; He that hears a *numerous* Song, set to a very moving Tune, exquisitely sung to a sweet Instrument, will find his Passions raised, whilst his Understanding, possibly, may have little or no share in the Business. He scarce knows, perhaps, the Names of the Notes, and so can be affected only with an Harmony, of which he can render no Account. To this Man, what is intricate, appears confused ; and therefore he can make no Judgment of the true Excellency of those Things, which seem *fiddling* to him only, for want of Skill in *Music*. Whereas, on the contrary, the Skill or Ignorance of the Composer, serve rather to entertain the Understanding, than to gratifie the Passions of a skilful Master, whose Passions are then the most thoroughly raised, when his Understanding receives the greatest Satisfaction.

(7.) It

(7.) It will be difficult to form a just Idea of the Pleasure which the Ancient *Music* afforded, unless one reflects upon the confessedly unimitable Sweetness of the Ancient *Poetry*, the *Greek* especially; which, when sung by clear and sweet Voices, in such a manner, as that the Hearer never lost a Syllable, could scarce fail of producing those Emotions of Soul which the Poet intended to raise. And, indeed, the great End of *Music*, which is to please the Audience, was anciently, perhaps, better answered than now; though a Modern Master would then have been dissatisfied, because such Consonants as the Ancient *Symphonies* properly were, in which several Instruments, and perhaps Voices, play'd and sung the same Part together, cannot discover the Extent and Perfection of the Art, which here only is to be considered, so much as the Compositions of our Modern *Opera's*.

From all this it may, perhaps, be not unreasonable to conclude, that though (t) *those Charms of Music, by which Men (t) P. 45. and Beasts, Fishes, Fowls and Serpents, were so frequently enchanted, and their very Natures changed, be really and irrecoverably lost, if ever they were had; yet the Art of Music, that is to say, of*

of Singing, and Playing upon Harmonious Instruments, is, in it self, much a perfecter thing, though perhaps not much pleasanter to an unskilful Audience, than it ever was amongst the *Ancient Greeks* and *Romans*.

C H A P. XXVI.

*Of Ancient and Modern Physic
and Surgery.*

After these *Mathematical* Sciences, it is convenient to go to those which are more properly *Physical*, and in our Language alone peculiarly so called. What these want in Certainty, they make up in Usefulness: For, if Life and Health be the greatest good Things which we can enjoy here, a Conjectural Knowledge, that may but sometimes give us Relief when those are in danger, is much more valuable than a certain Knowledge of other Things, which can only employ the Understanding, or furnish us with such Conveniencies as may be spared; since we see that several Nations which never had them, lived happily, and did great Things in the World.

Before

Before I begin my Comparison between *Ancient* and *Modern* Skill in *Physic*, it may be necessary to state the Difference between an *Empiric* and a *Rational Physician*; and to enquire how far a *Rational Physician* may reason right, as to what relates to the Curing of his Patient's Distemper, though his general Hypotheses be wrong, and his Theories, in themselves consider'd, insufficient. An *Empiric* is properly he who, without considering the Constitution of his Patient, the Symptoms of his Disease, or those Circumstances of his Case which arise from Outward Accidents, administers such *Physic* as has formerly done good to some Body else that was tormented with an Illness which was called by the same Name with this that his Patient now labours under. A *Rational Physician* is he who critically enquires into the Constitution, and peculiar Accidents of Life, of the Person to whom he is to administer; who weighs all the known Virtues of the Medicines which may be thought proper to the Case in hand; who balances all the Symptoms, and, from past Observations, finds which have been fatal, and which safe; which arise from Outward Accidents, and which from the Disease it self; and who thence collects which ought soonest to be removed,

moved, and which may be neglected, and thereupon prescribes accordingly.

Now it is evident, that such a Man's Prescriptions may be very valuable, because they are founded upon repeated Observations of the *Phænomena* of Diseases. And he may form Secondary Theories, which, like *Ptolemee's Eccentrics* and *Epicycles*, shall be good Guides to Practice; not by giving a certain Insight into the first Causes, and several Steps, by which the Disease first began, and was afterwards carried on; but by enabling the Physician to make lucky Conjectures at proper Courses, and fit Medicines, whereby to relieve or cure his Patient. And herein he may be equally successful, whether he resolves every thing into Hot or Cold, Moist or Dry; into Acids, or *Alkali's*; into Salt, Sulphur, or *Mercury*; or into any thing else. He does not know, for Instance, that Spittle, Bile, and the Pancreatic Juice, are the main Instruments of Digestion; yet he sees that his Patient digests his Meat with great Difficulty: He is sure that, as long as that lasts, the sick Man cannot have a good Habit of Body: He finds that the Distemper arises sometimes, though not always, from a Visible Cause; and he has tried the Goodness of such and such Medicines, in

seemingly

seemingly parallel Cases. He may be able therefore to give very excellent Advice, though he cannot, perhaps, dive into the Original and Causes of the Distemper so well as another Man; who having greater Anatomical Helps, and being accustomed to reason upon more certain Physiological Principles, has made a strict Enquiry into that particular Case: And so by consequence, tho' he cannot be said to know so much of the Nature of the Disease as that other Man; yet, perhaps, their Method of Practice, notwithstanding the great Disparity of each others Knowledge, shall be, in the main, the same.

Though all this seems certain, yet, in the Argument before us, it is not an easie thing to state the Question so equally, as to satisfy all contending Sides. He that looks into the Writings of the generality of the *Rational Physicians*, as they called themselves, by way of Eminence; that is to say, of those who, about an Hundred Years ago, set up *Hippocrates* and *Galen*, for the Parents and Perfecters of Medicinal Knowledge, will find, throughout all their Writings, great Contempt of every thing that is not plainly deducible from those Texts. On the other hand, If he dips into the Books of the Chymical Philosophers, he will meet with equal Scorn

of those Books and Methods, which they, in Derision, have called *Galenical*. And yet it is evident, that Practising Physicians of both Parties, have often wrought extraordinary Cures by their own Methods. So that there seems to have been equal Injustice on all hands, in excluding all Methods of Cure not built upon their own Principles. Here therefore, without being positive in a Dispute, about which the Parties concerned are not themselves agreed, I shall only offer these few Things: (1.) That if the Greatness of any one particular Genius were all that was to be look'd after, *Hippocrates* alone seems to have been the Man, whose Assertions in the Practical Part of Physic might be blindly received: For He, without the Help of any great Assistances, that we know of, did that, which, if it were still to do, would seem sufficient to employ the united Force of more than one Age. He was scrupulously Exact in Distinguishing Diseases, in Observing the proper Symptoms of each, and taking Notice of their Duration, thereby to make a Judgment how far they might be esteemed dangerous, and how far safe. Herein his particular Excellency seems to have lain; and this, in the Order of Knowledge, is the first thing that a *Rational Physician* ought

bought to make himself Master of: Which is a sure Argument, that *Hippocrates* thoroughly understood what things were necessary for him to study with the greatest Care, in order to make his Writings always useful to Posterity. (2.) That, in the Opinion of the ablest Judges, the *Natural History of Diseases* was as perfectly known, and they were as accurately distinguished by the Ancients, as ever they have been since; and consequently, that the Knowledge of the *Appearances*, or *Diagnostics* (as they call them) of every Distemper common to us and them, is owing to, at least may be found in the Writings of the Ancients; for this they appeal to the Writings of *Aretæus*, and *Cælius Aurelianus*, whose Descriptions of the Diseases they treat of, are in a manner perfect: The Fragments of *Herophilus*, and some other ancient Physicians preserved in *Cælius Aurelianus*, shew this not to have been peculiar to him, but common with the other great Men of Antiquity. (3.) That, setting aside Chymical Remedies, and some few Drugs brought to us out of the *West-Indies*, the Body of the *Materia Medica* now in Use, is owing to the Ancients, who applied their Remedies with as great Skill and Judgment as any Modern Physicians whatsoever. But yet, (4.) Though

we should allow the Ancient Methods of Practice to have been as perfect, nay, perfecter than those now in use, which some great Men have eagerly contended for; yet it does not follow, that the whole Compass of their Profession was so well understood by the Ancients as it is now; because it is absolutely impossible to form just Theories of all Diseases, so as to lay down the perfectest Methods of Cure possible, which shall be adapted to all Persons, in all Circumstances, till Anatomy and Physiology are perfectly known; and by consequence, later Theories will always be more estimable, as they are raised upon newer Discoveries in Anatomy and Physiology: So that we may be sure no Ancient Theories can be so excellent, as some of those which have been devised by Modern Philosophers. (5.) That if the Addition of every new Medicine be an useful Accession to the Body of *Physic*, then a new Method of Preparing known Medicines; of making those things profitable and noble Remedies, which before were dreaded as Poysons, or laid by as useless; and of trying such Experiments upon Bodies yet unexamined, as will soon and certainly discover some of their most principal Virtues, must be of unspeakable Advantage, and make the Knowledge of those

those who possess such a Method justly more valuable than that of those who want it. But this relates more particularly to *Chymistry*, of which enough has been said already. (6.) That if the Practice of proper Judges be a reasonable Prejudice for or against any thing, then this Science has received vast Improvements of late Years: For now the generality of Physicians acquiesce in Modern Theories, or, which in the present Dispute is all one, advance new ones upon Anatomical and Physical Principles, pursuant to those Discoveries which have been lately made. In their Practice, they mix *Galenical* and *Chymical* Medicines together. They own, that *Galenical* Ways of Preparing Drugs, anciently made use of in the Practice of *Physic*, are, in many Cases, not so valuable as *Chymical* ones. In short, though they pay a due Respect to the Writings of the Ancients, and in those things where they find by their own Experience that the Ancient Observations hold, follow their Directions; yet their constant Language, and as constant Practice, whensoever one opposes Ancient Authorities to them, is, *That the Ancients did very well for their Time; but that Experience, and further Light, has taught them better Things.* This, I must

needs own, has very great Weight with me, who am apt, *cæteris paribus*, to believe every Man in his own Way; *Physicians* especially, because their Science is entirely got by a long Series of repeated Experiments and Observations: So that it seems to be almost impossible, but that, in all such Cases, where Men have the Assistance of former Light, and where the Subject upon which they employ their Pains wanted a great deal of that Perfection, which those that study it have an Idea of, as still wanting, and can only be attained by a longer Experience, successive Ages must make great Additions to the former Stock. (7.) That though the noble Discoveries of these latter Ages, might, possibly, be found in *Hippocrates*, *Aristotle* and *Galen*; yet, since no Interpreters could ever find them there, till they were actually discovered anew by Modern Physicians, who followed Nature only as their Guide, these late Discoverers have as just Right to the Glory due to such Discoveries, as the Ancients could possibly have: They both copied after the same Original; they both decyphered the same Characters, that before were unintelligible; not by reading Books, but by trying Experiments, and making Observations. And therefore, *Vander Linden*,
Almeloveen,

Almeloveen, and the rest of the Bigots for the Ancients, deal very unjustly, when they cry out, upon the Sight of any New Discovery, This *Hippocrates* knew ; This *Aristotle* taught. Could these Men have made these Discoveries by studying those Ancient Authors, without the Assistance of Dr. *Harvey*, *Asellius*, *Pecquet*, *Malpighius*, or the rest ? This would hold, in case the Circulation of the Blood, the Chyle-Vessels, Lympheducts, and the other great Discoveries in Anatomy, had really been in the Ancients. That they are not, I hope I have proved already. To which I shall only add, That former Commentators wanted neither *Greek*, nor Skill ; and had such Things been in their Writings, they would infallibly have found them there.

It is easie now to tell what Acquisitions have been made since *Galen's* Days. When *Hippocrates* lived, Anatomy was a rude, imperfect Thing : It has since been growing, and the Theories of all Diseases have been proportionably more compleat. *Chymistry* has been introduced into *Physic* ; thereby the *Materia Medica* has been enlarged by some as noble Medicines as any the Ancients were acquainted with ; the Nauseousness of many Medicines has been removed ; and they have been made less

Z 4 clogging,

clogging, and more efficacious, since they may be taken in lesser Quantities, and in more pleasant Vehicles ; to as good, if not better purpose than before. *Botanics* have been unspeakably enlarged ; and thereby also the Dispensatories have been stocked with some excellent Remedies, that the Old World knew nothing of. If these Particulars be rightly stated, as they seem to be, they will go very far to decide the Question ; And so I shall leave it, without determining any thing positively about it. So much for that part of *Medicine* which in our Language is peculiarly call'd *Physic*. *Surgery* comes next to be considered ; which though at present it be looked upon as inferior to *Physic*, yet it was much the ancientest, and is still the certainest part of *Medicine*. For here the Eye directs the *Surgeon* how he shall proceed, and if he knows but the Virtue of his Medicines, and how to apply them, he can, generally speaking, tell whether his Patient be curable or not. Anciently this was only a Branch of the *Physician's* Work ; and the Old *Physicians* in the Heroical Times, *Æsculapius*, *Chiron*, *Machaon*, and the rest, were little more than *Surgeons*, that could apply a Plaister, and cure a Green Wound. Nay, after Learning had emboldened Men to reason
upon

upon the Causes of Diseases, whose Original was not visible to the naked Eye, and to try whether Inward Remedies would not cure them, *Surgery* was constantly treated of by *Physicians*, as a Part of their Profession. *Celsus* alone will convince every Man of the Truth of this Proposition.

But how they treated of it, I durst not adventure to assert; tho' the Public will thank me for leaving it untouch'd, since that eminently Learned Surgeon, Mr. *Charles Bernard*, who is so great an Honour to his Profession, has done me the favour to communicate this following Paper, which I shall subjoin in his own words:

' If we enquire into the Improvements
' which have been made by the Moderns
' in *Surgery*, we shall be forced to confess,
' that we have so little reason to value
' our selves beyond the Ancients, or to
' be tempted to condemn them, as the
' fashion is among those who know little,
' and have read nothing, that we cannot
' give stronger or more convincing Proofs
' of our own Ignorance, as well as our
' Pride. I do not pretend that the Mo-
' derns have not at all contributed to-
' wards the Improvement of *Surgery*;
' that were both absurd and injurious, and
' would

‘ would argue as much Folly as that which
‘ I am reproaching : but that which I am
‘ contesting for, is, That it consists ra-
‘ ther in refining and dressing up the In-
‘ ventions of the Ancients, and setting
‘ them in a better light, than in adding
‘ many important ones of our own. Whe-
‘ ther it be, that the Art of Healing Ex-
‘ ternal Hurts, being principally the Sub-
‘ ject of our Senses, was earlier studied,
‘ and therefore capable of being sooner
‘ brought to a greater degree of Perfe-
‘ ction, than the other Branch of Medi-
‘ cine ; or, that the majority of the meer
‘ Professors having been, for some Ages, illi-
‘ terate and Empirical, it hath not been
‘ advanc’d and cultivated so as it might
‘ have been, had they been better qua-
‘ lified than they generally were, and do
‘ yet, for the greatest part continue to
‘ be : For a Testimony of which, that
‘ exceeding Paucity of good Writers which
‘ occur in *Surgery*, when compar’d with
‘ those in most of the other learned Arts
‘ and Sciences, is, in my Opinion suffi-
‘ cient ; and yet, were they fewer, ’twould,
‘ in the Judgment of these *Sciolis*, be no
‘ great detriment to the Art. For the
‘ Folly of which Assertion, the best Ex-
‘ cuse that can be made, seems to be, that
‘ because some Methods of proceeding
‘ both

both in *Physic* and *Surgery*, which are incommunicable, to which every Man must be directed by his own Judgment, and Natural Sagacity, not being to be found in those Authors whom these opinionated Practitioners have had the luck to consult, they are led immediately to despise all Reading, as useless and uninstruative; especially that of the Ancients, who do not generally, I confess, write to Novitiates and Fools, or to those who will be always such.

But whoever hath been conversant in their Writings, and hath the Opportunity and Capacity of Comparing and Judging from his own Experience, will readily confess, that one thing which does not a little recommend the Reading of them beyond most of the Moderns, is, that they are more accurate in describing the *Pathognomonics*, and more just and nice in distinguishing the Species of Tumors and Ulcers, than our more refined Moderns are.

If this Age hath par'd away any rude and superfluous Methods of Practice, as it must be confessed they have, it cannot be demonstrated that they were all deriv'd from the Ancients, but were in a great measure introduc'd by ignorant and barbarous Professors of a much later date.

There

‘ There is no question but that the
 ‘ principal Improvements which have these
 ‘ latter Ages been made in *Surgery*, are
 ‘ owing chiefly to the Discoveries which
 ‘ have been made in *Anatomy*, by which
 ‘ we are better enabled to solve many of
 ‘ those *Phænomena* which were before
 ‘ inexplicable, or explained amiss; the
 ‘ most important part, in the mean while
 ‘ (I mean, the Art of Healing, to which
 ‘ all the others ought to be subservient)
 ‘ remaining very little better than the An-
 ‘ cients left it.

‘ As an uncontestable Proof of what I
 ‘ say, I appeal to all those Bodies of
 ‘ *Surgery* which have been hitherto pub-
 ‘ lished by the most Learned and Celebra-
 ‘ ted of the Moderns, being all manifestly
 ‘ Transcripts from one another, and the
 ‘ best of them from the Ancients. But
 ‘ this may indeed be said in Defence of the
 ‘ Moderns in this Particular, That even
 ‘ Transcribing is not their Invention, tho’
 ‘ it be their Practice; for *Ætius* and *Ægi-
 ‘ neta* have borrow’d not a little of what
 ‘ they have, from *Galen*; and *Marcellus*
 ‘ *Empiricus* more grossly from *Scribonius*
 ‘ *Largus*, without so much as remembering
 ‘ his Name among the rest of those Au-
 ‘ thors to whom he was less beholden.

‘ Among

‘ Among all the Systematical Writers, I think there are very few who refuse the Preference to *Hieron Fabricius ab Aquapendente*, as a Person of unquestioned Learning and Judgment; and yet is not he ashamed to let his Readers know, that *Celsus* among the *Latins* (who, he tells us, is *Mirabilis in Omnibus*, and advises, in *Horace’s* words, *Nocturnâ versare manu, versare diurnâ*,) *Paulus Ægineta* among the *Greeks*, and *Albucasis* among the *Arabians* (whom I am unwilling to place among the Moderns, being in the number of those whom our Modern Judges reject, either because they never read him, or because he had the misfortune to live \overline{DC} Years since) are the Triumvirate to whom he principally stands indebted, for the Assistance he received from them, in composing his excellent Book.

‘ But how many Operations are there now in use, which were unknown to the Ancients? I fear, that upon a due Enquiry, there would be more useful ones found to be omitted or discontinued, than to have been invented by us. But to descend a little to Particulars, that we may, without Prejudice or Partiality, be enabled to determine whether the Ancients are indeed so contemptible,

' temtible, and their Writings so useless,
 ' as some would represent them. *Cutting*
 ' *for the Stone* (to begin with that) was
 ' unquestionably theirs, and the man-
 ' ner accurately described by *Celsus* and
 ' others; and yet, that no Person or Age
 ' may be defrauded of the Glory they de-
 ' serve, where we can do them right, we
 ' must confess, that that way of perform-
 ' ing it which in most Cases is preferable,
 ' and in some only practicable, which by
 ' Authors is styl'd *Magnus Apparatus*, the
 ' High Operation, or Cutting upon the
 ' Staff, was invented by one *Johannes de*
 ' *Romanis* of *Cremona*, who flourisht at
 ' *Rome*, about the Year *MDXX*. The
 ' Manner of the Operation, and the In-
 ' struments necessary, were first described
 ' and publish'd by his Scholar *Marianus*
 ' *Sanctus Barolitanus*, at *Venice*, in *MDXXXV*.
 ' The Use of the *Modiolus*, in Opening the
 ' Skull, was likewise theirs; our Country-
 ' man *Woodall* only mending the Instru-
 ' ment, by making that taper, which was
 ' before cylindrical, and for that reason
 ' not altogether so secure: The *Alæ*, or
 ' Wings, being the Invention of that Great
 ' Man *Aquapendens*, to whom we stand
 ' obliged for many other useful Instru-
 ' ments. The *Paracentesis*, in all its kinds,
 ' is theirs: *Barbette*, indeed, invented an
 ' Instru-

Instrument which is sometimes more commodiously made use of than the Ancient Methods are. *Laryngotomy*, or the Opening of the Wind-Pipe in a Quinsey, was practis'd by them; an Operation secure and necessary, however, at this day so disus'd, that it is almost become obsolete, either through the Timidity of the Patient, or Relations, or the Backwardness or Ignorance of the Physician or Surgeon; and though *Aretæus*, *P. Ægineta*, and *Cælius Aurelianus*, seem, from the Authority of *Antyllus*, to discourse doubtfully of it, yet the greatest part of the Ancients, both *Greeks* and *Arabians*, advise it; and *Galen* in particular, from Reason and Experience, as well as from the Authority of *Asclepiades*, justly recommends it as the last Refuge in a Quinsey. Cutting for the *Hernia Intestinalis*, with the true Distinctions and Cures of all the other Species, are accurately described by them. They taught us the Cure of the *Pterygion* and *Cataract*; they describ'd and distinguish'd all the Diseases of the Eyes, (which were not then, as now, to the reproach of the Age they are, almost solely in the Hands of Old Women and Mountebanks) as justly as any of our Modern Oculists, who, indeed, do little more than

' than transcribe from them. *Opening an*
 ' *Artery, and the Jugular-Vein, (pretended*
 ' to be revived here in *England*) was no
 ' more first attempted by the Moderns,
 ' than making *Ligature* in an *Aneurism*,
 ' which tho' an Operation of no mighty
 ' difficulty, was certainly not understood,
 ' very lately, by *Fred. Ruysch*, a consi-
 ' derable *Dutch Anatomist*, and Professor
 ' of that and Surgery at *Amsteldam*, [as
 ' may be seen in his *Observationes Ana-*
 ' *tomico-Chirurgicæ*, Obs. 2. printed in
 ' *Quarto*, at *Amstel. MDCXCI.*] The *Extir-*
 ' *pation of the Tonsils, or Uvula*, is not
 ' our Invention; though, indeed, the re-
 ' moval of the former by *Potential Cau-*
 ' *teries*, which we sometimes use, when
 ' the Patient will not admit Excision, or
 ' Fire, seems neither to have been practis'd
 ' nor known to the Ancients. The man-
 ' ner of treating the *Fistula Lacrymalis*,
 ' (a nice and difficult Cure, very often,)
 ' which we continue at this day, is no
 ' other than what was taught by them,
 ' only the Use of the *Cannula* for the
 ' Cautery seems owing to *Fabr. ab Aqua-*
 ' *pendente*. As for the *Actual Cautery*,
 ' no inconsiderable, however terrible a
 ' Branch of Surgery it may seem, though
 ' *Costæus, Fienus* and *Severinus* have written
 ' so amply concerning it, yet from one
 ' single

‘single Aphorism ’tis demonstrable, that
‘*Hippocrates* knew its true Use as well as
‘any that have since succeeded him ; not
‘to mention how frequent it is in the
‘Writings of all the rest of the Ancients,
‘and us’d in many Cases, (I do not
‘doubt but with admirable success)
‘wherein it is wholly neglected, or not
‘understood by us. The Cure of the
‘*Varices*, by Incision, scarce talk’d of in
‘our days, seems to have been familiarly
‘practis’d among the Ancients, as is ma-
‘nifest from *Celsus*, and *Paulus Ægineta* ;
‘though so painful an Operation, that, as
‘*Tully* [2. *Tuscul.*] and *Plutarch* tell us, *Ma-*
‘*rius* was the first who in one Leg under-
‘went it, standing, and without being
‘bound, though he could not be prevail’d
‘upon to purchase with so much Torture
‘a Cure in the other : And though *Pliny*
‘tells us, that he was *unus Hominum*, the
‘single Instance ; yet *Tully* assures us, that
‘by his Example, there were others that
‘sustain’d it with equal Resolution and
‘Fortitude. And whoever is conversant
‘with those obstinate Varicous Ulcers
‘which we frequently meet with, will
‘confess, that for the effecting a Cure,
‘’tis absolutely necessary, however pain-
‘ful and superfluous an Operation some
‘may esteem it. The Ancients mention

‘ the *Vari* and *Valgi*, and prescribe us a
‘ Method of Cure ; but the manner of
‘ their Reduction by the Instruments now
‘ in use they knew not, which were the
‘ Invention of *Fabricius ab Aquapendente* ;
‘ as was also that for *Extraction* of the *Po-*
‘ *lypus*, which nevertheless the Ancients
‘ cur’d as frequently, though not so com-
‘ modiously as our selves. But the *Po-*
‘ *lypus* of the *Ear* (a Disease indeed which
‘ occurs not so often as the preceding)
‘ seems so little known to the Moderns,
‘ that the very Mention of any such Disease
‘ is rarely to be met with in any of their
‘ Writings, yet the Cure of it is not
‘ omitted by the Ancients. They were
‘ perfectly acquainted and furnish’d with
‘ convenient Instruments for the Redu-
‘ ction of all the Species of *Fractures* and
‘ *Luxations*, and the Methods of treating
‘ them afterwards ; together with all the
‘ kinds of *Sutures* at this day in use among
‘ us, and some too that are now lost, at
‘ least so uncertain, that some very learned
‘ Men have thought they employed not
‘ their time amiss, in endeavouring to
‘ determine what they were, and to re-
‘ cover their Use. And though some
‘ have contended, that *Issues* were un-
‘ known to them, the contrary is evident,
‘ from *Celsus*, and *Cælius Aurelianus*, tho’
‘ we

‘ we must acknowledge, that the placing
 ‘ and continuing them as now we do, ap-
 ‘ pears not to have been in use among
 ‘ them. Nor is the *Seton* so extremely
 ‘ Modern, but that *Lanfrancus*, who liv’d
 ‘ CCCC Years since, directs its Use, and de-
 ‘ scribes the manner of Making, (yet men-
 ‘ tions it not as an Invention of his time,)
 ‘ though, indeed, till *Hildanus*’s his days,
 ‘ it seems to have been always made with
 ‘ the Actual Cautery.

‘ There is no doubt but the *Υστερο-*
 ‘ *τομία*, or Cutting the Infant out of
 ‘ the Mother, to preserve both, common-
 ‘ ly call’d *Partus Cæsareus*, (not often,
 ‘ if at all practis’d among us, though re-
 ‘ viv’d by some of our Neighbours with a
 ‘ success which ought to provoke the Emu-
 ‘ lation of our Professors here) is owing
 ‘ purely to the Felicity of the Moderns of
 ‘ the last Century. For, not to enter
 ‘ into the Controversie, whether *Pliny*,
 ‘ *Nonius* or *Isidore* were in the right, in
 ‘ asserting, that the First of the *Cæsars*
 ‘ was denominated from his manner of
 ‘ Birth; or *Probus* and *Festus*, in affirm-
 ‘ ing, that they were the *Cæsones*; whereas
 ‘ the *Cæsars* were only so called, from
 ‘ their Hair: Most certain it is, that
 ‘ neither Side pretend the Operation to
 ‘ have been done *Matre Superstite*: Nor

‘ is there any Evidence, that cutting the
 ‘ *Fœtus* out of the Womb, and preserving
 ‘ the Mother, was ever propos’d or thought
 ‘ of by the Ancients, whether *Greek, Latine*
 ‘ or *Arabian* ; both the Story, and the
 ‘ Reason of the Name, being to be found
 ‘ only in the Historians and Gramma-
 ‘ rians. Who it was that first propos’d
 ‘ or practis’d it, I confess, I am not able
 ‘ to determine : For *Fr. Rossetus*, who first
 ‘ wrote solemnly and expressly, or indeed
 ‘ at all, concerning it, produces several
 ‘ Examples of other Men’s Experience and
 ‘ Success, before ever he attempted it him-
 ‘ self.

As for those Operations which the *Greeks*
 ‘ call’d *Κολοσώματα*, or *Curtorum Chirurgia*,
 ‘ they amounted to no more than cutting
 ‘ the Hair-Lip, or the like, for that they
 ‘ knew and practis’d ; and therefore it be-
 ‘ comes us to do right to the Age whose
 ‘ it was, for the Discovery of that which
 ‘ *Gaspar Taliacotius* properly so calls, and
 ‘ which himself brought to Perfection ;
 ‘ and (whatever Scruples some who have
 ‘ not examin’d the History, may entertain
 ‘ concerning either the Truth or Possibility
 ‘ of the Fact) practis’d with wonderful
 ‘ Dexterity and Success, as may be prov’d
 ‘ from Authorities not to be contested.
 ‘ So that it is a most surprising thing to
 ‘ con-

consider, that few or none should have
since attempted to imitate so worthy
and excellent a Pattern, especially in an
Age wherein so many deplorable and
scandalous Objects do every day seem
either to beg or command our Assistance.
But I do not assert him to have been the
first Inventor, because it is what I find
mention'd, though imperfectly, by *Alex.*
Benedictus, before *Taliacotius* was born;
and afterwards, by *Vesalius*, in his *Chi-*
rurgia Magna, if at least that mean Piece
be his, as we have it publish'd by *Bor-*
garutius, which *Fabr. Hildanus* justly
questions. There is likewise an Epistle
quoted by *Steph. Gourmelenus*, in his
Ars Chirurgica, written from one *Calen-*
tius to his Friend *Orpianus*, (who, it seems,
had the misfortune to want a Nose,)
giving him an Account, that there was
one *Brauca*, a *Sicilian*, *qui didicit nares*
inferere, which *Calentius* himself had seen
perform'd, and therefore invites him to
come, with this Encouragement, That
he might be sure to return with a Nose
of what size he pleas'd. Who this *Or-*
pianus was, is not material to enquire;
nor can I, I confess, say much of this
Brauca, (or *Branca*, as *Taliacotius* calls
him, who seems to know no more of
Him or his History, than what he tran-

' scrib'd from *Gourmelenus*; and *Gourme-*
 ' *lenus* himself, no more than is express'd
 ' in this Epistle of *Calentius*, which af-
 ' fords but little light into the History;) sup
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 ' though it is very probable that he was
 ' the same Person whom *Ambr. Parey* men-
 ' tions to have practis'd this way of
 ' Inoculating Noses some Years before his
 ' time in *Italy*, and gives an Instance of
 ' a Cadet of the Family à *S. Thoano*, who
 ' being weary and asham'd of a Silver
 ' Nose, applying himself to this *Italian*,
 ' return'd with one of Flesh, to the Won-
 ' der and Satisfaction of all that knew
 ' him. As for this *Elisius Calentius*, from
 ' whom we have the first mention, that I
 ' can find, of any such Operation, he was
 ' Contemporary and Familiar with *San-*
 ' *nazarius*, and *Jov. Pontanus*, who men-
 ' tions him; as does also *Lilius Gyraldus*,
 ' in his History of the Modern Poets, and
 ' tells us, agreeably enough, that he was
 ' Poor, Amorous, and a Poet; that he was
 ' born at *Amphracta*, in *Apulia*, but liv'd
 ' generally at *Naples*: His Works were
 ' printed about *MDIII*; and afterwards,
 ' his *Epistles*, among other select ones,
 ' were publish'd by *Gilb. Cognatus*, and
 ' printed by *Oporinus*, in *MDLVIII*. But
 ' I must not omit, among the rest, (what
 ' indeed is so notorious, that no Man, I
 ' sup- no
lect
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‘suppose will deny it,) That all the sorts
‘of *Amputations*, as Limbs, and Breasts, &c.
‘were as familiarly practis’d among the
‘Ancients, as any can pretend they are
‘among us, if we had only the Authority
‘of a Poet for it, *Immedicabile vulnus*
‘*ense rescindendum est*.

‘The Art of *Bandage*, or *Rowling*,
‘no mean or unnecessary, though neg-
‘lected piece of *Surgery*, and upon which
‘the *French* do so much value themselves,
‘they knew so well, and had in such per-
‘fection, that we have not pretended to
‘add much to that excellent and useful
‘Treatise which *Galen* hath expressly writ-
‘ten upon that Subject. And though the
‘Variety of Instruments now in use may
‘seem, in some measure, to be justly chal-
‘leng’d by the Moderns, every Man ad-
‘ding as his own Fancy suggested, and
‘the Necessity required; yet by what are
‘transmitted to us by the Ancients, ’tis
‘notorious, that they were neither igno-
‘rant nor destitute of those which were
‘most necessary; and that they had va-
‘riety of others too, may, by what we
‘see describ’d by *Oribasius* and others, and
‘at this day made use of, more easily be
‘imagin’d than prov’d, but seems highly
‘probable.

‘ As for Topical Medicines, most cer-
‘ tain it is that we are oblig’d to them, for
‘ instructing us in the Nature and Proper-
‘ ties of almost all those of which we do
‘ at this day form our Applications; some
‘ few excepted, the Productions of Mo-
‘ dern Chymistry, in this or the preceding
‘ Century.

‘ And as for general Methods of Cure,
‘ many of them have been so excellently
‘ well handled by the Ancients, (to in-
‘ stance only in Wounds of the Head)
‘ that several of the Moderns who have
‘ written most judiciously upon them,
‘ have been of Opinion, that they could
‘ not serve and oblige Posterity better,
‘ than by Commenting upon that admi-
‘ rable Book of *Hippocrates* upon the same
‘ Subject.

‘ That which without Injury to the
‘ Ancients, or Vanity in our Selves, may
‘ be justly said, is, That the publishing
‘ Observations after that Method which
‘ some of the Moderns have done, is that
‘ wherein we must be allowed infinitely
‘ to have exceeded them; and is vastly
‘ of more Advantage to the Reader, than
‘ the perusal of tedious Systems are ca-
‘ pable of being, two or three of which
‘ generally comprehending whatever is to
‘ be found in all the rest: But particular
‘ Cases,

‘ Cases, when judiciously and faithfully re-
 ‘ ported, (of which too few, I fear, even
 ‘ of the Moderns, are guilty,) *Et prodesse*
 ‘ *solent & delectare*, are diverting and
 ‘ instructive at once, the Reader more
 ‘ effectually adding other Men’s Expe-
 ‘ rience to his own.

‘ But to insist upon every Particular,
 ‘ and to pretend to demonstrate what hath
 ‘ been invented, discontinued, or lost in
 ‘ every Age, if it be to be done, requires
 ‘ a Person of greater Leisure, and infi-
 ‘ nitely more capable than my self. What
 ‘ I have said, is sufficient to shew, that it
 ‘ becomes us to speak of the Ancients
 ‘ with Respect and Civility at least, if it
 ‘ were only for this, That it was our
 ‘ Instruction, and the Benefit of Mankind
 ‘ in general, which induc’d them to take
 ‘ that Care, and to be at so much Expence
 ‘ of Time and Labour to communicate
 ‘ their Knowledge to the World : Not that
 ‘ we are implicitly to be determin’d by
 ‘ their Authority, or to suppose that they
 ‘ have not left room for succeeding Ages
 ‘ to Invent, and to Improve all those Parts
 ‘ of *Surgery* wherein they appear either to
 ‘ have been mistaken or deficient. For
 ‘ my own part, I must confess, I do en-
 ‘ tirely concur with *Thomas Bartholine*,
 ‘ [*Epist. Med. Cent. 3.*] who very well
 ‘ under-

' understood the Advantages which the
 ' Moderns had, and was himself as soli-
 ' citous for the Improvement of Know-
 ' ledge, as inquisitive into Nature, and
 ' as happy in his Discoveries, as any of
 ' those who imagine it a part of their
 ' Wit and Breeding, to ridicule and con-
 ' temn the Ancients; *Pessimè studiis suis*
 ' *consulunt* (says he) *qui ita recentiorum*
 ' *scriptis se immergunt, ut veteres vel neg-*
 ' *ligant vel contemnant, quum plerarumque*
 ' *rerum lux ex illis pendeat*: And in ano-
 ' ther place; *Ita semper recentiorum sen-*
 ' *tentiis & opinionibus calculum adjeci, ut*
 ' *sua antiquitati reverentia servaretur, cui*
 ' *artis nostræ fundamenta debemus.*

CHAP.

C H A P. XXVII.

Of Ancient and Modern Natural Philosophy.

HAVING gone through with the most considerable Branches of *Natural* and *Mathematical Knowledge*, I am now to enquire into the Comparative Excellency of Ancient and Modern *Books of Philosophy*, thereby to see in which of them Nature, and its Operations, are explained best. Here I shall first enquire into the several *Methods of Philosophizing*; and afterwards, into the Intrinsic Worth of the Doctrines themselves. *Moderns* here are taken in a very strict sence. I shall mention none who have made any *Entries upon this noble Stage of Nature* (u) (u) P. 44. above LXXX Years ago, since the time of those first Flights of the Restorers of Learning, that are so exceedingly applauded by Sir *William Temple*. For *Natural Philosophy* was the last part of Knowledge which was cultivated with any particular Care, upon the Revival of Learning; though *Natural History*, which is a principal Ground-work, had been long before encreasing, and a considerable Heap of

of Materials had been collected, in order to the Work.

As for *Modern Methods of Philosophizing*, when compared with the *Ancient*, I shall only observe these following Particulars. (1.) No Arguments are received as cogent, no Principles are allowed as current, amongst the celebrated Philosophers of the present Age, but what are in themselves intelligible; that so a Man may frame an Idea of them, of one sort or other. Matter and Motion, with their several Qualities, are only considered in Modern Solutions of Physical Problems.

(x) P. 46. *Substantial Forms, Occult Qualities, (x), Intentional Species, Idiosyncrasies, Sympathies and Antipathies of Things*, are exploded; not because they are Terms used by Ancient Philosophers, but because they are only empty Sounds, Words whereof no Man can form a certain and determinate Idea. (2.) Forming of Sects and Parties in Philosophy, that shall take their Denominations from, and think themselves obliged to stand by the Opinions of any particular Philosophers, is, in a manner, wholly laid aside. *Des Cartes* is not more believed upon his own Word, than *Aristotle*: Matter of Fact is the only thing appealed to; and Systems are little further regarded, than as they are proper to instruct

instruct young Beginners, who must have a general Notion of the whole Work, before they can sufficiently comprehend any particular Part of it; and who must be taught to reason by the Solutions of other Men, before they can be able to give Rational Solutions of their own: In which Case, a false Hypothesis, ingeniously contrived, may now and then do the Service of a true one. (3.) *Mathematics* are joined along with *Physiology*, not only as Helps to Men's Understandings, and Quickeners of their Parts, but as absolutely necessary to the comprehending of the Oeconomy of Nature, in all her Works. (4.) The *New Philosophers*, as they are commonly called, avoid making general Conclusions, till they have collected a great Number of Experiments or Observations upon the Thing in hand; and, as new Light comes in, the old Hypotheses fall without any Noise or Stir. So that the Inferences that are now a-days made from any Enquiries into Natural Things, though perhaps they be set down in general Terms, yet are (as it were by Consent) received with this tacit Reserve, *As far as the Experiments or Observations already made, will warrant.*

How much the pursuing of these Four Things will enlarge *Natural Philosophy*, is easie

easy to guess. I do not say, that none of these things were anciently minded; but only, that they were not then so generally put in practice. The great Men of Antiquity often exprest themselves in unintelligible Cant: They chiefly aim'd at being Heads of particular Sects: Few of their Natural Philosophers were great Mathematicians: And they did in general establish Hypotheses without a sufficient Fund of Experiments and Observations whereupon to build them. The *Corpuscularian Philosophy* is in all probability the oldest, and its Principles are those intelligible ones I just now commended. But its Foundations being very large, and requiring much Time, Cost, and Patience, to build any great Matters upon, it soon fell, before it appears to have been thoroughly understood. For it seems evident, that *Epicurus* minded little but the raising of a Sect, which might talk as plausibly as those of *Aristotle*, or *Plato*, since he despised all manner of Learning, even Mathematics themselves, and gloried in his having spun all his Thoughts out of his own Brain; a good Argument of his Wit indeed, but a very ordinary one of that Skill in Nature which *Lucretius* extols in him, as often as he takes occasion to speak of him. The Ancient Physics
look

look like a thing wholly of Ostentation and Pomp, otherwise I cannot understand why *Plato* should reprove *Eudoxus* and *Archytas*, for trying to make their Skill in Geometry useful in Matters of Civil Life, by inventing of Instruments of public Advantage; or think that those sublime Truths were debased, when the unlearned part of Mankind were made the better for them. And therefore, as *Plutarch* complains, in his *Life of Marcellus*, Mechanical Arts were despised by Geometers till *Archimedes's* Time: Now though this be particularly spoken there by *Plutarch*, of the Making of Instruments of Defence and Offence in War, yet it is equally applicable to all the Ancient Philosophy and Mathematics in general. The Old Philosophers seemed still to be afraid that the Common People should despise their Arts, if generally understood: This made them keep, for the most part, to those Studies which required few Hands and Mechanical Tools to compleat them: Which to any Man that has a right Notion of the Extent of a Natural Philosopher's Work, will appear absolutely necessary. Above all, the Ancients do not seem sufficiently to have understood the Connexion between Mathematical Proportions of Lines and Solids, in an abstracted Proposition, and
in

(y) De
U.P. l. x.
c. 12, 13,
14.

in every Part of the Creation ; at least, in their Reasonings about the Causes of Natural Things, they did not take much Pains to shew it. When *Galen* was to give an Account of Vision, in his Books (y) *de Usu Partium*, because he had Occasion to use some few Geometrical Terms, as *Cone*, *Axis*, *Triangle*, and the like ; he makes a long Excuse, and tells a tedious Story of a Dæmon which appear'd to him, and commanded him to write what he did ; and all this, lest the Physicians of that Age should think he Conjur'd, and so take a Prejudice against all he said. This shews, that in *Galen's* Time at least, there was little Correspondence between Mathematical and Physical Sciences, and that Mankind did not believe there was so intimate a Relation between them as it is now generally known there is. Many a Man that cannot demonstrate any one single Proposition in *Euclid*, takes it now for granted, that Geometry is of infinite Use to a Philosopher ; and it is believed now upon Trust, because it is become an Axiom amongst the Learned in these Matters. And if it had been so received in *Galen's* Time, or by those more Ancient Authors whom *Galen* and his Contemporaries followed, or pretended at least to follow, as their Patterns ; such as *Hippocrates*,

pocrates, whom all Sides revered, *Herophilus*, *Erasistratus*, *Asclepiades*, and several more, there would have been no need of any Excuses for what he was doing; since his Readers being accustomed to such sort of Reasonings, would either readily have understood them, or acquiesced in them as legitimate Ways of Proof. If Three or Four Mathematical Terms were so affrighting, how would those learned Discourses of *Steno* and *Croone*, concerning Muscular Motion, have moved them? How much would they have been amazed at such minute Calculations of the Motive-strength of all the Muscles in the several general sorts of Animals, as require great Skill in Geometry, even to understand them, which are made by *Borellus*, in his Discourses of the Motion of Animals? It is not enough, in this Case, to quote a Saying or two out of some great Man amongst the Ancients; or to tell us, that *Plato* said, long ago, *That God Geometrizes in all his Works*; as long as no Man can produce one Ancient Essay upon any Part of Physiology, where Mathematical Ratiocinations were introduced to solve those *Phænomena* of Natural Things, upon which it was possible to talk plausibly without their Help. At least, it is certain, That they contented themselves with general

B b Theories,

Theories, without entring into minute Disquisitions into the several Varieties of Things, as is evident in the two Cases already alledged, of *Vision* and *Muscular Motion*.

Now as this Method of Philosophizing laid down above, is right, so it is easie to prove, that it has been carefully followed by Modern Philosophers. My Lord *Bacon* was the first Great Man who took much pains to convince the World that they had hitherto been in a wrong Path, and that Nature her self, rather than her Secretaries, was to be addressed to by those who were desirous to know much of her Mind. Monsieur *Des Cartes*, who came soon after, did not perfectly tread in his Steps, since he was for doing too great a part of his Work in his Closet, concluding too soon, before he had made Experiments enough; but then to a vast Genius he joined exquisite Skill in Geometry, and working upon Intelligible Principles in an Intelligible Manner, though he very often failed of one part of his End, namely, a right Explication of the *Phænomena* of Nature; yet by marrying Geometry and Physics together, he put the World in Hopes of a Masculine Off-spring in process of Time, though the first Productions should prove abortive. This was the
state

state of Natural Philosophy, when those great Men who, after King *Charles II*^d's Restoration, joined in a Body, called by that Prince himself, the *ROYAL SOCIETY*, went on with the Design; they made it their Business to set their Members a work to collect a perfect History of Nature, in order to establish thereupon a Body of Physics. What has been done towards it by the Members of that Illustrious Body, will be evident to those who consider that *Boyle, Barrow, Newton, Huygens, Malpighius, Leeuwenhoek, Willughby, Willis*, and abundance more already named amongst the great Advancers of real Learning, have belonged to it: If it shall be thought too tedious an Undertaking, to examine all their Writings, Mr. *Boyle's Works*, Monsieur *Le Clerc's Physics*, any one good System of the Cartesian Philosophy, Monsieur *Rohault's* for Instance, or to comprehend all under one, a Book intituled, *Philosophia Vetus & Nova ad Usus Scholæ accommodata*, may be consulted, and then there will be no difficulty to determine of which Side the Verdict ought to be given; in the last Book especially it is evident how very little the Ancients did in all Parts of Natural Philosophy, and what a great Compass it at present takes, since it makes the Comparison I all along appeal to.

Thus, it seems to me to be sufficiently plain, That the Ancients Knowledge in all Matters relating to *Mathematics* and *Physicks*, was incomparably inferior to that of the Moderns. These are Subjects, many of them at least, which require great Intensity of Thought, great Strength and Clearness of Imagination, even only to understand them; how much more then to invent them? The Ancient *Orators*, who spoke so great things in Praise of *Eloquence*, who make it so very hard a thing to be an Orator, had little or no Notion of the Difficulty of these Sciences; the *Romans* especially, who despised what they did not understand, and who did not without some Indignation learn of a People whom themselves had conquered. But if they could have conceived what a Force of Genius is required to invent such Propositions as are to be found in the Writings of their own Mathematicians, and of the Modern Geometers and Philosophers, they would soon have acknowledged that there was need of as great at least, if not greater Strength of Parts and Application to do very considerable things in these Sciences, as in their own admired *Eloquence*, which was never more artfully employed than in commending it self: The Panegyrics which they made upon
Geometry,

Geometry, were rather Marks of their Pedantry, than of their Skill; *Plato* and *Pythagoras* admired them, and therefore they did so too, out of a blind Reverence to those great Names. Otherwise, amongst those numerous Commendations which are given to *Archimedes*, some would have been spent upon the many noble Theorems which he discovered, and not almost all upon the Engines wherewith he baffled *Marcellus* at the Siege of *Syracuse*. The Proposition, *That the Superficies of a Sphere is equal to the Area's of Four of its greatest Circles*, which is one of the most wonderful Inventions that was ever found in Geometry, shews him to have been a much greater Man, than all that is said of him by the *Roman* or *Greek* Historians. Had Experimental Philosophy been anciently brought upon the Stage, had Geometry been solemnly and generally applied to the Mechanism of Nature, and not solely made use of to instruct Men in the Art of Reasoning, and even that too, not very frequently neither, the Moderns would not have had so great Reason to boast as now they have: For these are things which come under Ocular Demonstration, which do not depend upon the Fancies of Men for their Approbation, as Oratory and Poetry often

do. So that one may not only in general say, that the Ancients are out-done by the Moderns in these Matters, but also assign most of the Particulars, and determine the Proportion wherein and how far they have been exceeded, and shew the several Steps whereby this sort of Learning has from Age to Age received Improvement; which ends Disputes and satisfies the Understanding at once.

CHAP. XXVIII.

Of the Philological Learning of the Moderns.

Hitherto, in the main, I please my self, that there cannot be much said against what I have asserted, though I have all along taken care not to speak too positively, where I found that it was not an easie thing to vindicate every Proposition without entring into a Controversie, which would bear plausible things on both Sides, and so might be run out into a multitude of Words, which in Matters of this kind are very tiresome. But there are other Parts of Learning still behind,

hind, where the bare offering to compare the Moderns to the Ancients, may seem a Paradox; where the subject Matter is entirely ancient, and is chiefly, if not altogether contained in Books that were written before the Ancient Learning suffered much Decay.

Under this Head *Philology* and *Divinity* may very properly be ranked. I place *Divinity* last, to avoid Repetition; because what I have to say concerning Modern *Philology*, will strengthen many things that may be urged in the Behalf of Modern *Divinity* as compared with the Ancient.

In speaking of the Extent and Excellency of the *Philological Learning* of the Moderns within these last $\overline{\text{CC}}$ Years, I would not be mis-understood. For the Question is not, whether any Modern Critic has understood *Plato* or *Aristotle*, *Homer* or *Pindar*, as well as they did themselves, or even so well as they were understood by the Age in which they wrote, for that were ridiculous; but whether Modern Industry may not have been able to discover a great many Mistakes in the Assertions of the Ancients about Matters not done in their own Times, but several Ages before they were born. For the Ancients did not live all in one Age;

and though they appear all under one Denomination, and so as it were upon a Level, like things seen at a vast Distance, to us who are very remote from the youngest of them; yet, upon a nearer View, they will be found exceedingly remote some from others; and so as liable to Mistakes, when they talk of Matters not transacted in their own Times, as we are when we reason of Matters of Fact, which were acted in the Reign of *William the Conqueror*. Wherefore, if one reflects upon the Alteration which Printing has introduced into the State of Learning, when every Book once printed, becomes, in a manner, out of danger of being lost, or hurt by Copiers; and that Books may be compar'd, examin'd and canvass'd with much more ease than they could before; it will not seem ridiculous to say, That *Joseph Scaliger*, *Isaac Casaubon*, *Salmasius*, *Henricus Valesius*, *Selden*, *Usher*, *Bockart*, and other Philologers of their Stamp, may have had a very comprehensive View of Antiquity, such a one as Strangers to those Matters, can have no Idea of; nay, a much greater than, taken all together, any one of the Ancients themselves ever had, or indeed, could have. *Demosthenes* and *Aristophanes* knew the State of their own Times better than *Casaubon* or *Salmasius* :

masius : But it is a question whether *Boethius* or *Sidonius Apollinarius* knew the State of *Demosthenes's* Time so well ; yet these also are Ancients to us, and have left behind them Writings of a very estimable Value. Literary Commerce could not anciently be so frequent as now it is, though the *Roman* Empire made it more easie than otherwise it could have been.

In *Ecclesiastical Antiquity* this can be more fully proved than it can in *Civil* ; because Monuments of that Kind are more numerous, and have been better preserved. How widely were the *Greek* Writers, many times mistaken, when they gave an Account of the Affairs of the *Latin* Churches. And how imperfect, many times, were the Accounts which the *Western* Churches had of Things of the greatest Moment, that had been determined in the *East* ? Though the Council of *Nice* was Oecumenical, yet the *African* Churches knew so little of its Canons above $\overline{\text{L}}$ Years after it was held, that the Bishops of *Rome* imposed Canons made in another Council, held several Years after, in another Place, upon them, as Canons made in the Council of *Nice* : Yet they were all, at that time, under one common Government, and these things were

were acknowledged by all Sides to be of Eternal Concernment. The same Negligence, if not greater, is discernible in Matters which were studied, rather as Recreation and Diversion, than as necessary Business. How many of the Ancients busied themselves about Examining into the Antiquities of several Nations, especially after the *Old Testament* was translated into *Greek*? Yet, how few of them understood the Languages of those Countries of which they disputed? There were but Two of the Ancient Fathers, that we know of, that pretended to Learning, who understood *Hebrew* accurately; *Origen*, and *St. Hierom*: And how well *St. Hierom* understood it, is now certainly known; not like the *Lightfoot's*, the *Buxtorf's*, the *Drusius's*, and the *Cappell's* of the present Age, one may be very well assured: The other *Oriental* Languages, even these Inquisitive Fathers knew little or nothing of. To how good Purpose they have been cultivated by the Moderns, the Writings of *Selden*, *Bochart*, *Pocock*, and several others, do abundantly declare. When *Pocock* and *Golius* went into the *East*, to bring away their Learning, they went to excellent Purpose indeed. The *Bodleian* and *Leyden* Libraries can witness what vast Heaps of
Eastern

Eastern MSS. have been brought, by such Men as these, into *Europe*. One would think I were drawing up a *Catalogue*, not writing of a *Discourse*, if I should enumerate the Books which have been printed about the *Oriental* Learning, within these last *LXX* Years: And how much they have enlightned all manner of Antiquity, is easie to tell.

How clearly has the *Old Chronology* and *Geography* been stated by Modern Critics and Philologers; and the Mistakes and Carelesness of many Writers detected, who were esteemed Authentic even in the Times wherein they lived? *Selden* and *Bochart*, to name no more at present, have plainly proved, that all the Ancient *Greek* Antiquaries were not near so well acquainted with the Originals of that *Mythology*, which then made up a good part of their Religion, as well as of their Learning, as they are known at present, since the Languages of those Countries, from whence most of those Rites and Stories took their Original, have been carefully examined, and critically studied. Is it not a very odd thing, that of so many as have written of the *Pyramids*, there should not be one exact Account of them, Ancient nor Modern, till Mr. *Greaves* described them? They

(2) Barba-
ra Pyrami-
dum fileat
miracula
Memphis.
Martial.

They were admired formerly, as much as now (2); reckoned amongst the Seven Wonders of the World; and mentioned, from *Herodotus's* Time, downwards, by all that gave any Account of *Ægypt*: Yet most Men copied after *Herodotus*; and many of the rest, who did not, spoke by guess. None of the extant Ancient Authors was so Exact as Mr. *Sandys*, who wanted nothing but Mathematical Skill, to have left nothing for Mr. *Greaves*, who came after him, to do. This is an eminent Instance, whereby we may give a certain Judgment of the Historical Exactness of the Ancients, compared to that of the Moderns. It may be improved to considerable Purposes; at least, it is of great Use to justify those Modern Writers, who have, with great freedom, accused some of the greatest of the Ancients, of Carelessness in their Accounts of Civil Occurrences, as well as of Natural Rarities; and who have dared to believe their own Reason, against the positive Evidence of an old Historian, in Matters wherein one would think that he had greater Opportunities of knowing the certain Truth, than any Man that has lived for several Ages.

But here I expect it should be objected, That this is not to be esteemed as a Part of

of Real Learning. To pore upon old MSS. to compare various Readings ; to turn over *Glossaries*, and old *Scholia* upon Ancient Historians, Orators and Poets ; to be minutely critical in all the little Fashions of the Ancient *Greeks* and *Romans*, the Memory whereof was, in a manner, lost within L or a C Years after they had been in use ; may be good Arguments of a Man's Industry, and Willingness to drudge ; but seem to signify little to denominate him a great Genius, or one who was able to do considerable Things himself.

The Objection is specious enough, and the Indiscretions of many Modern Commentators have given but too much Colour for it ; which has, in our Nation especially, been riveted in Men's Minds, more, perhaps, than in any other learned Nation in *Europe* : Though in Enquiries into the remotest Antiquities of the oldest Nations, perhaps no People have done near so much as some learned *Englishmen*. But this Objection lies chiefly against the Men, not the Knowledge, the Extent whereof it is only my Business to enquire into ; and yet, even there too, it is without Ground : For, whoever will be at the pains to reflect upon the vast Extent of the various Knowledge which
such

such Men as those I named before have gathered together, which they were able to produce to such excellent Purposes in their Writings, must confess that their *Genius's* were little, if at all, inferior to their *Memories*; those among them, especially, who have busied themselves in restoring corrupted Places of Ancient Authors. There are Thousands of Corrections and Censures upon Authors to be found in the Annotations of Modern Critics, which required more Fineness of Thought, and Happiness of Invention, than, perhaps, Twenty such Volumes as those were, upon which these very Criticisms were made. For though, generally speaking, good Copies are absolutely necessary; though the Critic himself ought to have a perfect Command of the Language and particular Stile of his Author, should have a clear Idea of the Way and Humour of the Age in which he wrote; many of which things require great Sagacity, as well as great Industry; yet there is a peculiar Quickness in discerning what is proper to the Passage then to be corrected, in distinguishing all the particular Circumstances necessary to be observed, and those, perhaps, very numerous; which often raise a judicious Critic as much above the Author upon whom he

he tries his Skill, as he that discerns another Man's Thoughts, is therein greater than he that thinks. And the Objection that is commonly made against Editors of old Books, That every Man cries up his own Author, beyond all that have ever written upon that Subject, or in that Way, will rarely hold of truly great Critics, when they pass their Judgments, and employ their Thoughts upon indifferent Books ; since some have taken as much pains, in their Critical Annotations (a), to expose Authors who have had the good luck to be exceedingly commended by learned Men, as ever others did to praise them.

(a) *Vid.*
Petri Cu-
næi Ani-
madversio-
nes in Non-
ni Dionysia-
ca.

Soon after Learning was restored, when Copies of Books, by Printing, were pretty well multiplied, *Criticism* began ; which first was exercised in setting out Correct Editions of Ancient Books ; Men being forced to try to mend the Copies of Books, which they saw were so negligently written. It soon became the Fashionable Learning ; and after *Erasmus*, *Budæus*, *Beatus Rhénanus*, and *Turnebus* had dispersed that sort of Knowledge through *England*, *France*, *Germany*, and the *Low-Countries*, which before had been kept altogether amongst the *Italians*, it was, for about CXX Years, cultivated with
very

very great Care : And if since it has been at a stand, it has not been because the Parts of Men are sunk, but because the Subject is, in a manner exhausted ; or at least, so far drained, that it requires more Labour, and a greater Force of Genius, now to gather good Gleanings, than formerly to bring home a plentiful Harvest ; and yet this Age has produced Men who, in the last, might have been reckon'd with the *Scaligers*, and the *Lipsius's*. It is not very long since *Holstenius*, *Bochart*, and *Gerhard Vossius*, died ; but if they will not be allowed to have been of our Age, yet *Isaac Vossius*, *Nicolas Heinsius*, *Frederic Gronovius*, *Ezekiel Spanheym*, and *Grævius*, may come in ; the two last of whom are still alive, and the others died but a few Years since. *England*, perhaps, cannot shew a proportionable Stock of Critics of this Stamp. In *Henry VIIIth*'s Time there was an admirable Set of Philologers in the Nation ; though there is a great difference to be made between a good Critic, and a Man that writes *Latin* as easily and correctly as his Mother-Tongue. *Sir Thomas More*, *Cardinal Pole*, *Linacre*, *Collet*, *Cheek*, *Ascham*, and several more, often to be met with in *Erasmus's Epistles*, wrote *Latin* with a Purity that no *Italian* needed then

to

to have been ashamed of. Let the Subject they wrote upon have been what it would, one may see by the Purity of their Stile, that they wrote in a Language which express'd their Thoughts without Constraint. A great Familiarity with the politest Authors of Antiquity, was what these Men valued themselves much upon; and it was then the Delight of the learned Men of this Nation, as much as their Disputes in Religion would give them leave. Though this seemed to sink by degrees, yet that afterwards Critical Skill in Antiquity was valued and pursued by our greatest Scholars, will not be questioned by those who consider that *Sir Henry Savile*, *Mr. Camden*, Archbishop *Usher*, *Mr. Selden*, *Sir John Marsham*, *Mr. Gataker* (not to mention some now alive, whose Fame will one day equal that of the *Salmasius's* and the *Grotius's* of other Nations) were the Glories of our Country, as well as of the Age they lived in.

In short, to conclude this Argument: Though Philological and Critical Learning has been generally accused of Pedantry, because it has sometimes been pursued by Men who seemed to value themselves upon Abundance of Quotations of *Greek* and *Latin*, and a vain Ostentation

of diffused Reading, without any thing else in their Writings to recommend them; yet the Difficulty that there is, to do any thing considerable in it, joined with the great Advantages which thereby have accrued to the Commonwealth of Learning, have made this no mean Head whereon to commend the great *Sagacity*, as well as *Industry* of these later Ages.

CHAP. XXIX.

Of the Theological Learning of the Moderns.

TO *Philology*, I before added *Divinity*, and, as I hope to prove, not without Reason. As they relate to our Question, they both agree in this, that the Subject of them both is truly Ancient; and that it is impossible to become truly excellent in either of them, without a familiar Conversation with those Original Books, to which the great Masters of both these Sciences do constantly appeal. Our *Blessed Saviour* did not reveal his Law by halves to his Apostles, nor is the *New Testament* an imperfect Rule of Faith:

Faith: The *Old Testament* likewise has constantly been at hand; and the *Jews* have, ever since their Return from the *Babylonish Captivity*, been scrupulously solicitous to deliver the *Genuine Hebrew and Chaldee Text* of the *Old Testament* pure and uncorrupted, to succeeding Ages. Yet, though these, together with the Writings of the *Greek* and *Latin* Fathers, be Instruments without which no Divine can work; and though it seems almost impossible that any Man should be able to perform all the Duties of his Profession, that are incumbent upon him as a Scholar, without a competent Exactness in all these Things; yet it is very possible that Modern Divines, who make use of these Instruments, may be better Work-men than those Ancient Fathers, who furnished them with the greatest part.

Now, that there may be no Disputes about Terms mis-understood, it will be necessary to explain what is here meant by a *Perfect Divine*; that is to say, such an one as may be a Standard whereon to found a Comparison. A *Perfect Divine* ought to understand the Text of the *Old* and *New Testament* so exactly, as to have a clear Notion of every Book in general, and of the Grammatical Meaning of every Text in particular; that so he may be

able to reconcile all Difficulties, and answer all Objections that may arise: He ought to understand the State of the Church, as to its Doctrine and Discipline, in its several Ages: He ought to be thoroughly vers'd in all the General Notions of *Ethics*, taken in their utmost Extent, to enable him to resolve such Cases of Conscience as may occur, with Judgment and Satisfaction: He ought to be a Master of all the Topics of Persuasion which can ever lie in his Way, that so his Exhortations may please and convince those whom he designs to persuade at the same time: Last of all, He ought to be able to Answer all the Objections which may be, or have been raised against the Doctrine and Discipline of the Church, by its open or secret Enemies. These seem to be the necessary Qualifications of a *Perfect Divine*; it may, perhaps be question'd whether any Man did ever fully come up to this Description; neither is it necessary to the present Purpose that any should, since the Question will be as perfectly answered, by determining who have come the nearest to it, as by assigning any particular Person that ever quite reach'd up to it. For these Differences do not lie in a Mathematical Point, and I do not desire that any Disputable Things should
ever

ever be brought under Debate. One Qualification, indeed, and that the most valuable of all, I have omitted; but that relates not to the present Controversie, since we are not now enquiring who were the Holiest Men, but who were the Greatest Masters of their Professions, the Ancient Fathers, or the Modern Divines.

The first thing required, is, *an Exact Knowledge of the Text of the Old and New Testament.* In Understanding the *Old*, even the *LXX* Interpreters themselves have often failed, as has been abundantly proved by Modern Critics. The Copies they used were sometimes faulty; and since they did not mend those Faults, it is more than probable they did not see them. It has been observed already, That scarce any of the Fathers understood *Hebrew* besides *Origen* and *St. Hierom*, who therefore were followed as Oracles by many of their Successors; even that alone will not suffice, because there are no other Books besides the *Old Testament* written in that Language: For which Reason, *Syriac*, *Chaldee*, *Samaritan* and *Arabic*, have been studied by Modern Critics; not to mention the Writings of the *Rabbins* and the *Talmudists*, to which the Ancients were utter Strangers. If we come to Particulars; Who of the An-

cients ever unravelled the Chronology of the *Old Testament*, like Archbishop *Usher*, and Sir *John Marsham*? Though *Eusebius's Chronicon* is a standing Evidence how much he, and *Julius Africanus* before him, endeavoured to clear that Matter, which was of so great Use to confound the vain Pretences to Antiquity of those other Nations that were so unwilling to yield to the *Jews* in this Particular. Who has ever given so rational and so intelligible an Account of the Design and Intent of the several Parts of the Ceremonial Law, as Dr. *Spencer*? Who has acquainted the World with the Geography of *Genesis*, or the Natural History of the Bible, like Monsieur *Bochart*? These are much harder things than the lengthning of a fine-spun Allegory, or than a few Moral Reflections, which constitute the greatest part of the Ancient Comments. But the *New Testament*, it will be said, was written in a Time that was nearer at hand; and so was certainly better understood. Without doubt it was, by the First Fathers; for which Reason their Interpretations (b) and their Reasonings, if we could have recovered, many of them would have been of infinite value: But when once the Synagogue and the Church broke off their Correspondence, when

once

(b) See Mr. Dodwell's Two First Dissertations upon St. Irenæus.

once the immediate Reasons of the first Establishment of many Parts of the Christian Discipline, and of great numbers of Allusions to Jewish Customs and Traditions which are to be found in the *New Testament*, could only be known by Study and Reading, all which the first Christians knew without Study, as we do the Manners and Fashions of our own Age and Country, then the ancient Interpretations of the *New Testament* began to fail; and though some of them, St. *Chrysostom's* and *Theodoret's* especially, are in themselves, setting Antiquity aside, truly valuable; yet, for want of such a diffused Knowledge of Eastern Antiquities as was necessary, and which only could be had by a long Conversation with the Books that are written in those Languages, these admirable Commentators seem in several Places not to have found out the true Original of many things in the *New Testament* which have been discovered since.

To the next thing, which is Skill in *Ecclesiastical Antiquity*, I have spoken already. The *Third* and the *Fourth*, which relate to a Divine, as a *Casulist*, or as a *Preacher*, may be considered of together; wherein we of the present Age may, without Vanity, boast of having the best

Books, and of them too the greatest Numbers, upon these Subjects, written in our own Language, and by our own Countrey-men, of any People in the World. The Excellency of a *Casuiſt*, is, to give ſuch Reſolutions of Doubts and Questions propoſed to him, as may both ſuit with the particular Circumſtances of the Perſon who deſires Satisfaction ; and alſo may be perfectly agreeable to the Law of God. A *Preacher* then ſeems to perform his Office beſt, when he can at once inſtruct and move his Auditors ; can raiſe their Paſſions, and inform their Judgment ; that ſo every Sermon upon a Doctrinal Head, may contain the Solution of a Caſe of Conſcience. For the firſt of theſe ; It is certain, that many of the ableſt of the Ancient Fathers were very excellent *Casuiſts* ; as, indeed, every Man who has a right Judgment, an honeſt Mind, and a thorough Acquaintance with the Deſign of our *Bleſſed Saviour*, revealed in the Goſpel, muſt of neceſſity be. And if, at this diſtance, many of their Deciſions ſeem over-ſevere, there is as great, at leaſt, if not greater Reason to ſuſpect, that the Complaints now-a-days raiſed againſt them, may ariſe from our Degeneracy, as from their unwarrantable Strictneſs. But for the *Ancient Way of Preaching*, there

there is much more to be said. The great Handle by which an Hearer is enabled to carry along with him a Preacher's Arguments, is, Method and Order. Herein the Ancient Homilists are exceedingly defective: Flights of Rhetoric, which are more or less judiciously applied, according to the Abilities of the several Preachers, make up the greatest part of their Discourses: And, after *Origen*, most Men busied themselves in giving the People Allegorical Interpretations of Passages of Scriptures; which were infinite, according to the Fancies of those that used them. *St. Chrysostom*, indeed, reformed this Custom in the *Greek Church*: His Authority went a great way; and his Interpretations were almost always Literal, and, suitably to his vast Genius, very Judicious. But he that considers *Preaching*, as an Art capable of Rules and Improvement, will find a mighty difference between a Just, Methodical Discourse, built upon a proper Text of Scripture, wherein, after the Text is carefully explained, some one Duty or Doctrine of Religion, thence arising, is plainly proved by just and solid Arguments, from which such Topics of Persuasion are drawn at last, as are the most likely to raise such an Affection, and engage those Passions in the Minds
of

of all the Auditors, as will please and move Good Men, and silence, at least, if not persuade the Bad ; and between a Loose, Paraphrastical Explication of a large Portion of Scripture, ending, at last, in a general Ethical Harangue, which is the usual Method of most of St. Chrysostom's Homilies. Whereas by the former Method, strictly followed, many of our *English* Sermons, especially of the Great Men of our own Church, since the Restauration, are Solutions of the most difficult Questions in Divinity, and just Discourses upon the several Duties of the Christian Life ; and this with so much Smoothness, so great Beauty of Language, and such a just Application of the greatest Ornaments of True and Masculine Eloquence, to Things at first View, oftentimes, the most opposite, that the Hearer takes a Pleasure to think, that then he is most instructed, when he is best pleased. The Want of this Method in the Ancient Homilists, is the great Reason why they are so little read. It is not because they are hard to be understood ; for an indifferent Skill in *Greek* and *Latin* is sufficient to go through with the greatest part of them : But Want of Method, great Multiplicity of Words, and frequent Repetitions, tire out most Readers : They know
not

not how far they are got, but by the Number of the Leaves ; and so having no keft for their Minds to lean upon, when once they begin to be weary, they are soon disgusted. If therefore these Inconveniences are, in a great measure, avoided by Modern Preachers, their Sermons are, in their kind, more perfect, though the Matter which both of them work upon be the fame. And if these Things be the Effects of great Study, and of an exact Judgment, at least in those who contributed the most to so great an Alteration ; then this also may come in as a proper Evidence of the Encrease of Modern Learning ; and with much more Reason than those Things which only tend to divert a Man, when he is unfit for serious Business. Who those are who have succeeded the *Hookers*, the *Chillingworths*, the *Sandersons*, and the *Hammonds* of the last Age, to such excellent purpose for the present, and those that shall come after, I need not name ; but shall rather conclude with that Saying in *Velleius Paterculus*, upon a not much unlike Occasion ; *Vivorum ut admiratio magna, ita censura difficilis est.*

The last thing which I mention'd, as necessary for a Divine, is, *To be able to Answer such Objections as have been, or may be*

be raised against the Christian Faith. Of the Controversies which have arisen among Christians, and the Adversaries with whom they have been obliged to engage, there are in the present Account two Sorts ; those which the Ancient Fathers were concerned with, and those that have appeared since. Of the latter it may, possibly, seem hard to pass a Judgment, since one cannot well say how Men would have managed Disputes which never came in their way. The former may also be subdivided into those which have been renewed in our own Time ; and those of which we have only the Memory in Ancient Books. So that one is rather to consider how Controversies were handled in general, and so infer how these Modern ones, which have only engaged the Wits and Passions of later Ages, would have been managed, had there been an Occasion.

It is evident, that in their first Disputes with the *Gentiles*, the old Apologists did with great Accuracy expose both the Follies of their Worship, and the Vanity of their Philosophy : They opened the Christian Religion with great Clearness ; they shewed the Grounds of their Belief, and proved its Reasonableness upon such Principles as were both solid in themselves, and

and suitable to the Ways of Arguing, and the peculiar Notions of all their several Adversaries. Afterwards, when the Mysteries of the Christian Religion were so eagerly debated, in Ages wherein they feared no Foreign Force, the Men of Learning shewed as great Subtilty in their Arguments, and as great Dexterity in shifting off the Sophisms of their Opponents, as have ever been shewed in later Times. So that thus far the Moderns seem to have little Advantage: And, indeed, the Books that were written by the Ancients in Defence of the Christian Religion, were very admirable: But in the Controversies that were managed amongst themselves, there seem to be, many times, as visible Signs of too great a Subtilty, as of a judicious Understanding of the Point in hand: They used little Method in ranging their Arguments, and rarely stated the Question in plain and short Terms: This made them often multiply Words to a tedious length, which both tired the Readers, and darkned the Dispute. That all these Faults are too often found in the Polemical Discourses of the Moderns, is most certain: But Comparisons are always laid between the ablest Men of both Sides. The Modern Defences of the Doctrines of the *Trinity*, and the *Incarnation*, may

may be compared with the old Defences of the same Doctrines against the *Arians*, and other Ancient Heretics. If Heretics may be compared with Heretics, there is no question but the *Socinians* are much abler Disputants than the *Arians* and *Eunomians* were of old: They have collected every thing that can look like an Argument; they have critically canvass'd every Text of Scripture which anciently was not so Grammatically understood as now it is, and have spared no Pains nor Art to wrest every thing that, with any Shew of Reason, could be drawn to their Side: They have refined upon the Philosophical Notions of God, and of his Attributes; and have taken great Care not to confound their Readers, or themselves, with Want of Method, or a Multiplicity of Words. Such able Adversaries have not failed of as able Opponents. And when Men of Skill manage any Dispute, whatsoever it be, they will teach one another the Art of Reasoning, even though beforehand they should not well have understood it, if their Debates continue to any length. Whence also it has followed, that though these Great Men, who have defended our Faith against such subtile Adversaries, would have shewn their Skill equally upon any other Subject which they might have under-

undertaken; yet upon these Questions, the Truth would otherwise never have been so perfectly known.

And here it ought to be observed, That the Art of making Controversies easie and intelligible, even though the Arguments should be all the same that had formerly been urged, shews much greater Skill, and a more thorough Understanding of those Matters, than had been discovered before: For, he that makes another understand a thing in few words, has a more clear and comprehensive Knowledge of that thing, than another Man who uses a great many. Such a Man's Excursions, if he has a mind at any time to go out of the way, or to enlarge, for the ease of those who love to have things expressed in an Homeletical manner, will never tire; because, having his Point still in view, he will take care that his Readers or Auditors shall always know where he is. Hence it is, that there are many Sermons in our Language, upon the most abstruse Questions in the Christian Religion, wherein *English* Readers, who have never read Fathers nor School-men, whose Heads have never been fill'd with Terms of Art, and Distinctions, many times, without a difference, may both in few and clear Propositions

positions, know what they are to believe, and at the same time know how to defend it. Hereby, in all our Controversies with *Papists*, *Socinians*, and *Dissenters*, many admirable Discourses have been written, wherein one sees the Question rightly stated, presently brought to an Head, and accurately proved by such Arguments as its particular Nature may require. It cannot be denied, but a good deal of this Methodical Exactness was at first owing to the School-men; but they are Moderns here: And if their Writings have some Excellencies, which the elegant Composures of more learned Ages want; this also affords us a convincing Argument, that Mankind will, in something or other, be always improving; and that Men of working Heads, what Subject soever they handle, though they live in Times when they have none but barbarous Patterns to copy after, will do many things which politer People did not know, or else over-look'd.

Upon this Occasion, I cannot but take notice, that the Moderns have made clearer and shorter Institutions of all manner of Arts and Sciences, than any which the Ancients have left us. I have already instanced in the Method whereto all the Parts of Natural History have been re-
duced.

duced: It is evident, That Method in all those Things, must be the Effect of a Comprehensive Knowledge of the Bodies so ranged, and of a Nice Comparison of every several Body and Animal one with another, since otherwise their mutual Differences and Agreements cannot possibly be adjusted; the same has been done in *Medics* and *Surgery*, in *Anatomy*, in *Chymistry*, in all Parts of *Physics* and *Mathematics*: How confused, many times, and always lax, are *Galen's* Anatomical Discourses, in comparison of *Bartholin's*, *Diemerbroek's*, and *Gibson's*? Monsieur *Perrault* has observed already, (c) that *Aristotle* expressed himself so obscurely in his *Physical Discourses*, that his Meaning is almost as variously represented, as there have been Commentators who have written upon him; whereas no Man ever doubted of the precise Meaning of the Writings of *Des Cartes* and *Robault*, tho' all Men are not of their Opinion. In *Mathematics* the thing is yet more visible: How long and tedious are *Euclid's Demonstrations*, either in *Greek*, or as they are Commented upon by *Clavius*, in Comparison of *Tacquet's* or *Barrow's*? *Tacquet* has made *Astronomy* intelligible, with a very little Help, which before was not to be attained without a Master, and abundance

(c) *Parallele des Anciens & des Modernes*, Dialog. III. pag. 251, — 257.

(d) Annexed to the last Editions of Des Cartes's Geometry.

dance of Patience; the same has *Varenius* done in the *Mathematical Part of Geography*; *Tacquet*, in *Practical Geometry, Optics, and Catoptrics*. The *Doctrine of the Conic Sections*, in *Apollonius Pergæus*, is so intricate, the Demonstrations are so long, and so perplexed, that they have usually deterred all but First-Rate Geometers: This, Pensioner *De Witt* has made so easie, in his *Elements of Curve Lines*, (d), that it is readily mastered by any Man who has read the First Six Books of *Euclid*. Such Abridgments save a great deal of Labour, and make Knowledge pleasant to those who, in the last Age, were so exceedingly frightened with the Thoughts of the Difficulty of these Studies, that Sir *Henry Savile* made as formal a Business of his *Prælections upon the Definitions, Axioms, and Eight First Propositions of the First Book of Euclid*, which may be thoroughly comprehended, by a Man of ordinary Parts, in Two Hours time, by the help of *Tacquet's Elements*, as a Man would now of Lectures upon the hardest Propositions, in Mr. *Newton's Mathematical Principles of Natural Philosophy*. To these judicious Abridgments, the wonderful Encrease of this part of Knowledge, for these last *LXX* Years, is in a great measure to be attributed; and though Methodizers and

and Compilers of Systems have commonly the hard Fate to be undervalued by those who have been Inventors themselves; yet, in Mathematical Sciences, the case is something different; for things cannot be abbreviated there, without a very exact Knowledge of the Subjects then to be abridged, and brought into one view. In *Moral, or Historical Discourses*, an Epitomizer immediately sees what is either in it self superfluous, or not to his particular Purpose; and so when he has cut it off, what remains, is in some sort entire, and may be understood without the rest, so that there is no harm done: But here that will by no means suffice; for the most verbose Mathematicians have rarely ever said any thing for Saying sake, theirs being Subjects in which Figures of Rhetoric could have no sort of place; but they made every Conclusion depend upon such a Chain of Premises already proved, that if one Link were broken, the whole Chain fell in pieces; and therefore, he that would reduce those Demonstrations into a narrower Compass, must take the whole Proposition a new in pieces, must turn it several ways, must consider all the relations which that Line, or that Solid, has to other Lines or Solids, must carefully have considered how many several

Ways it can be generated, before he can be able to demonstrate it by a shorter Method, and by other Arguments, than those by which it was proved before : In short, he must, in a manner, be able to invent the Proposition of himself, before he can put it into this new Dress ; for which Reason, *Tacquet*, *Barrow*, and *De Witt*, have been reckoned amongst the principal Geometers of the Age, as well as for their other Inventions in Geometry : *Tschirnhaus's Medicina Mentis* will give a clear Idea of many things relating to this Matter.

And now, having gone through the several Parts of the Parallel which I proposed at first to make, I shall close all with Sir *William Temple's* Words, a little altered : (e) ' Though *Thales*, *Pythagoras*,
' *Democritus*, *Hippocrates*, *Plato*, *Aristotle*
' and *Epicurus*, may be reckoned amongst
' the First mighty Conquerors of Ignorance, in our World ; and though they
' made great Progresses in the several Empires of Science, yet not so great in very
' many Parts, as their Successors have since
' been able to reach. These have pretended to much more, than barely to learn
' what the others taught, or to remember
' what they invented ; and being able to
' compass that it self, have set up for Authors

‘thors upon their own Stocks, and not
 ‘contenting themselves only with Com-
 ‘menting upon those Texts, have both
 ‘copied after former Originals already
 ‘set them, and have added Originals of
 ‘their own in many things of a much
 ‘greater Value.’

CHAP. XXX.

*Reflections upon the Reasons of the
 Decay of Modern Learning, as-
 sign'd by Sir William Temple.*

HAVING therefore, as I hope, suffi-
 ciently proved, that there has not
 been such a Fall in Modern Learning,
 as Sir *William Temple* supposes, (though
 in many Particulars it may have fallen
 short of, and in others not out-done the
 Ancient;) nay, even that, comparatively
 speaking, the Extent of Knowledge is, at
 this Time, vastly greater than it was in
 former Ages; It may seem, perhaps, a
 needless thing to examine those Reasons
 which he alledges, of the Decrease of
 that, which in the gross has suffered no
 Decay. Something, however, I shall say

to them ; because if they do not prove what Sir *William Temple* designs, yet they will prove at least, what a perfect thing Learning might have been, if it had not met with such Impediments.

(f) P. 64,
65.

The first Blow which he says (f) that Learning received, was by the Disputes which arose about Religion in *Europe*, soon after the Revival of Learning in these Parts of the World. There is no doubt, but the Thoughts of many very able Men were taken up with those Controversies ; who, if they had turn'd them with the same Application to Natural or Civil Knowledge, would therein have done extraordinary things. Yet, considering all things, it may be justly question'd, whether Learning may not, by these very Disputes, have received either immediately, or occasionally, a great Improvement, or at least, suffered not any considerable Diminution. For, (1.) It is certain, That whatsoever relates to *Divinity* as a Science, has hereby been better scann'd, and more accurately understood and explained, than otherwise it would ever have been ; and, I suppose, this will be readily owned to be one of the most excellent Parts of Knowledge. (2.) It is a question whether a great many of the chiefest Promoters of any Part of this
Theolo-

Theological Knowledge, would, or could have done so great things, upon any other Subject. Opposition, in general, whets Men's Parts extremely; and that inward Satisfaction which a good Man takes, in thinking that he is employed upon Arguments of greatest Concern to the Souls of Men, inspires him with an Ardour that adds Wings to his native Alacrity; and makes him, in all such Cases, even out-doe himself. (3.) When different Parties are once formed, and great Numbers of Youths are constantly trained up to succeed the older Champions of their respective Sides; as these shall drop off, all those after-Comers will not apply their Minds to Studies immediately relating to their own Professions, but here and there one, as his Genius shall lead him, will try to excell in different Ways, for the Glory of his own Party; especially if he sees any of his Adversaries eminently Famous before him, in those things. Thus *Petavius* set himself to contradict *Joseph Scaliger's* Books *de Emendatione Temporum*, and *Scioppius* fell upon his other Critical Writings: Whilst *Isaac Casaubon* concerned himself only with Publishing and Commenting upon *Athenæus*, *Polybius*, and *Theophrastus*, he was complemented by all Sides; but

when once he wrote against the Annals of Cardinal *Baronius*, he met with numerous Adversaries; and there was scarce a Critic of the Church of *Rome*, for some time afterwards, that did not peck at something or other in his other Writings. This Emulation eminently appeared in the Order of the Jesuits, the main Design of whose Institution seems to have been to engross all Learning, as well as all Politics, to themselves; and therefore we see so many extraordinary Men amongst them for all sorts of things, thereby to give the World Occasion to think, that there must certainly be something more than ordinary in the Constitution of a Body, which every Day produced such excellent Persons. So that if one considers how far this Emulation went, which even yet is not wholly extinct, it is hard to say, whether Disputes in Religion have not rather helped to encrease the Stock of Learning, than otherwise; at least, one may venture to say, that they have not diminish'd it.

It is most certain, that the different Political Interests in *Europe*, have done it a mighty Kindness. During the Establishment of the *Roman* Empire, one Common Interest guided that vast Body, and these Western Kingdoms amongst the rest. *Rome* was

was the Center of the Learning of the West, as well of their Hopes, and thither the Provinces of this Part of the World had always Resort: Whereas now every Kingdom standing upon its own Bottom, they are all mutually jealous of each others Glory, and in nothing more than in Matters of Learning in those Countries where they have Opportunities to pursue it. About an \overline{CL} , or \overline{CC} Years since, it was esteemed a very honourable Thing to write a true *Ciceronian* Style: This the *Italians* pretended to keep to themselves, and they would scarce allow that any Man beyond the *Alpes*, unless, perhaps, *Longolius*, and Cardinal *Pole*, wrote pure *Roman* Latin: This made other Nations strive to equal them; and one rarely meets with a Book written at that time upon a Subject that would bear the Elegancies of Style in bad Latin. When *Critical Learning* was in fashion, every Nation had some few Great Men at the same time, or very near it, to set against those of another: *Italy* boasted of *Carolus Sigonius*, *Fulvius Ursinus*, and *Petrus Victorius*; *France* had *Joseph Scaliger*, *Isaac Casaubon*, *Cujacius*, *Pithæus*, *Brissonius*, and several more; *Switzerland* produced *Gesner*, for that and almost every thing else; *Germany* had *Leopardus Gruter*,
Putschius,

Putschius, and others; the *Low Countries* had *Justus Lipsius*; *England* had Sir *Henry Savile*; every Country had some Great Men to keep up its Glory in those things which then were in greatest request. In this last Age, *Mathematical* and *Physical* Sciences seem to have been the Darling Studies of the Learned Men of *Europe*; there also the same Emulation has been equally visible. When *Great Britain* could shew such Men as my Lord *Bacon*, my Lord *Napier* (the Inventor of Logarithms,) Mr. *Harriot*, Mr. *Oughtred*, and M. *Horrox*; *Holland* had *Stevinus*, who first found out Decimal Arithmetic, and *Snellius*; *France* could reckon up *Des Cartes*, *Mersennus*, *Fermat*, and *Gassendi*; *Italy* had *Galileo*, *Torricellius*, and *Cavallerius*; *Germany*, *Kepler*; and *Denmark*, not long before, *Tycho Brahe*. When afterwards the Philosophers of *England* grew numerous, and united their Strength, *France* also took the Hint, and its King set up a *Royal Society*, to Rival ours. The Duke of *Tuscany* had set up already, at *Florence*, the *Academy del Cimento*, whose Members employed themselves in pursuing the same Methods. In *Germany*, an *Academy* of the same nature has been raised. Even *Ireland* has had its *Philosophical Society*. From all which, such Swarms of Great Men, in every

every Part of Natural and Mathematical Knowledge, have within these few Years appeared, that it may, perhaps, without Vanity, be believed, that if this Humour lasts much longer, and learned Men do not divert their Thoughts to Speculations of another kind, the next Age will not find much Work of this kind to do : For this sort of Learning has spread where-ever Letters have had any Encouragement in *Europe*, so successfully, that even the Northern Kingdoms have had their *Bartholin's*, their *Borrichius's*, their *Rudbek's*, their *Wormius's*, and their *Hevelius's*, who have put in for that Prize which the Inhabitants of warmer Climates seemed already in possession of. This has occasion'd the Writing of abundance of Books, to vindicate the Glory of every great Invention to some eminent Man of that Country that the Authors of those Books belonged to. Which Disputes, though many times very pedantically managed, and with an Heat misbecoming Learned Men, yet has had this good Effect, that while some were zealous to secure the Glory of the Invention of Things already discovered, to their own Countries ; others were equally solicitous to add a more undisputed Honour to them, by new Inventions, which

which they were sure no Man could possibly challenge.

(e) P. 67,
— 71.

Another Reason of the Decay of Learning, according to Sir *William Temple* (g), is, the want of Protection from Great Men, and an unsatiable Thirst after Gain, now grown the Humour of the Age. That Princes do not now delight to talk of Matters of Learning in their public Conversations, as they did about an $\overline{\text{CL}}$ Years ago, is but too evident: When Learning first came up, Men fancied that every thing could be done by it, and they were charm'd with the Eloquence of its Professors, who did not fail to set forth all its Advantages in the most engaging Dress. It was so very modish, that the Fair Sex seemed to believe that *Greek* and *Latin* added to their Charms; and *Plato* and *Aristotle* untranslated, were frequent Ornaments of their Closets. One would think by the Effects, that it was a proper Way of Educating them, since there are no Accounts in History of so many truly great Women in any one Age, as are to be found between the Years $\overline{\text{MD}}$ and $\overline{\text{MDC}}$. This Humour in both Sexes abated by degrees; and the Great Men being either disgusted with the Labour that was requisite to become thoroughly Learned, or with the frequent Repetitions of the same

same things, Business and Diversions took up their Thoughts, as they had done formerly. But yet, in the main, the Learned Men of this Age have not so much reason to think themselves ill used, as it is commonly thought. What by Fellowships of Colleges, and Ecclesiastical Preferments, here in *England*; and by the same sort of Preferments, added to the Allowances in several Monastical Orders, in Popish Countries, there are very fair Settlements for Men of Studious and Sedentary Lives; and innumerable Instances can be given, in these two last Ages, of the excellent Uses which great Numbers of Men have made of them: So that every such Preferment bestowed upon any learned Man, upon the score of his Merit, by Princes, or Great Men, in whose Gift they were, is an Instance of their Beneficence to Men of Letters: And whether a Man is considered by a Pension out of a Princes Exchequer, or by the Collation of a Preferment in that Prince's Gift, it is, to a Man who enjoys it, the self-same thing. Neither have Examples been wanting in the present Age, of Sovereign Princes who have made it as much their Business to encourage Learned Men, as, perhaps, in any of the former, that are so much commended for that very Reason. *Christina*
Queen

Queen of *Sweden*, who, in other respects, was by no means the Glory of her Sex, did, whilst she liv'd at *Stockholm*, send for the learnedest Men of *Europe* to come to her, that she might converse with them about those things wherein they were most excellent. *Des Cartes*, *Salmasius*, *Bochart*, *Nicolas Heinsius*, *Isaac Vossius*, were of that number: And her Profuseness, which knew no bounds, was scarce in any thing more visible, than in her Marks of Respect to Men of Letters. Afterwards, when she settled at *Rome*, her Palace was always an Academy of the *Virtuosi* of that City. The present *French* King, whilst *Monsieur Colbert* liv'd, took a singular Pride in sending Presents to the most celebrated Scholars of *Europe*; without regarding whether they were his own Subjects, or of his own Religion, or no. This he did purely for his Glory, the Principle which *Sir William Temple* (b) so exceedingly applauds. His own Protestant Subjects, before he involved them in one Common Ruine, tasted of his Liberality of that kind, upon Occasion: And whatsoever his other Actions are, or have been, yet his extraordinary Care to breed up his Son to Learning, his erecting of Academies for Arts and Sciences at *Paris*, and his frequent Bounties

(b) p. 68.

ties to Men of Letters, justly require that, upon this account, he should be mention'd with Honour. Cardinal *de Richelieu*, Cardinal *Mazarini*, Monsieur *Fouquet*, and Monsieur *Colbert*, though no Sovereign Princes, yet had Purse greater than many of them. Cardinal *de Richelieu* was himself a Scholar ; and all of them were eminently Favourers of Learned Men. I have mention'd my own Country last, that I might once more observe, that it was a Prince of our own, who founded the *ROYAL SOCIETY*, (i) *whose Studies*, (i) P. 57. *Writings and Productions*, though they have not out-shined or eclipsed the *Lycæum of Plato*, the *Academy of Aristotle*, the *Stoa of Zeno*, or the *Garden of Epicurus* ; because they were neither written at the same Time, nor, for the most part, upon the same Subjects ; yet will always help to keep alive the Memory of that Prince who incorporated them into a Body, that so they might the easier do that by their Joint-Labours, which singly would have been, in a manner, impossible to be effected.

The last of Sir *William Temple's* Reasons of the great Decay of Modern Learning, (k) is *Pedantry*. The urging of (k) P. 76. which, is an evident Argument, that his Discourse is levelled against Learning, not

not as it stands now, but as it was $\overline{\text{L}}$ or $\overline{\text{LX}}$ Years ago. For the New Philosophy has introduced so great a Correspondence between Men of Learning and Men of Business, which has also been encreased by other Accidents amongst the Masters of other learned Professions, that that *Pedantry* which formerly was almost universal, is now in a great measure dis-used; especially amongst the Young Men, who are taught, in the Universities, to laugh at that frequent Citation of Scraps of *Latin*, in common Discourse, or upon Arguments that do not require it; and that nauseous Ostentation of Reading and Scholarship in public Companies, which formerly was so much in fashion. Affecting to write politely in Modern Languages, especially the *French* and ours, has also not a little helpt to lessen it; because it has enabled abundance of Men who want Academical Education, to talk plausibly, and some exactly, upon abundance of learned Subjects. This also has made Writers habitually careful to avoid those Impertinences which they know would be taken notice of, and ridiculed; and it is probable, that a careful perusal of the fine new *French* Books, which of late Years have been greedily sought after by the politer sort of Gentlemen and Scholars,

lars, may, in this Particular, have done a great deal of good. By this means, and by the help also of some other concurrent Causes, those who were not learned themselves, being able to maintain Disputes with those that were, forced them to talk more warily, and brought them by little and little to be out of countenance at that vain thrusting of their Learning into every thing, which before had been but too visible.

Agers. Whether Knowledge will ever meet with its due proportionably as it has in the next Age, is a Question not easily decided. It depends upon a great many Circumstances; which, singly, will be ineffectual, and which no Man can now be assured, will ever meet with their due proportion. Reason, indeed, to fear that it may decay, both because Ancient Learning is too much studied in Modern Books, and taken upon trust by Modern Writers, who are not enough acquainted with Antiquity, and be-
E e C O N

cause Natural and Mathematical Knowledge, wherein chiefly the Moderns are to be studied as Originals, begin to be neglected by the generality of those who would set up for Scholars. For the Honour of the Age, as to those things, it visibly shews from what it was XX or XXX Years ago, and that through the

CONCLUSION.

THis seems to me to be the present State of Learning, as it may be compared with what it was in former Ages. Whether Knowledge will improve in the next Age, proportionably as it has done in this, is a Question not easily decided. It depends upon a great many Circumstances ; which, singly, will be ineffectual, and, which no Man can now be assured, will ever meet. There seems Reason, indeed, to fear that it may decay, both because Ancient Learning is too much studied in Modern Books, and taken upon trust by Modern Writers, who are not enough acquainted with Antiquity, to correct their own Mistakes ; and because Natural and Mathematical Knowledge, wherein chiefly the Moderns are to be studied as Originals, begin to be neglected by the generality of those who would set up for Scholars. For the Humour of the Age, as to those things, is visibly altered from what it was XX or XXX Years ago : So that though the

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ROYAL SOCIETY has weathered the rude Attacks of such sort of Adversaries as *Stubbe*, who endeavoured to have it thought, That Studying of Natural Philosophy and Mathematics, was a ready Method to introduce Scepticism at least, if not Atheism, into the World : Yet the sly Insinuations of the *Men of Wit*, That no great Things have ever, or are ever like to be perform'd by the *Men of Gresham*, and, That every Man whom they call a *Virtuoso*, must needs be a *Sir Nicolas Gimcrack* : together with the public ridiculing of all those who spend their Time and Fortunes in seeking after what some call useless Natural Rarities ; who dissect all Animals, little as well as great ; who think no part of God's Workmanship below their strictest Examination, and nicest Search : have so far taken off the Edge of those who have opulent Fortunes, and a Love to Learning, that Physiological Studies begin to be contracted amongst Physicians and Mechanics. For nothing wounds so much as a Jest ; and when Men do once become ridiculous, their Labours will be slighted, and they will find few Imitators. How far this may deaden the Industry of the Philosophers of the next Age, is not easie to tell ; for almost all the Parts of Mathematical and Natural

Knowledge require a good deal of Time and Pains, of Industry and Attention, before a Man can thoroughly relish them: And those who do not, rarely know their Worth, and consequently do very seldom pass a right Judgment upon them. However, be the Studies of the Men of the next Age what they will, the Writings of the Learned Men of the present Time will be preserved; and as they have raised a nobler Monument to the Memory of *Archimedes* and *Diophantus*, of *Hippocrates* and *Aristotle*, of *Herophilus* and *Galen*, by Improving their Inventions, than had been raised for a Thousand Years before; so some future Age, though, perhaps, not the next, and in a Country now possibly little thought of, may do that which our great Men would be glad to see done; that is to say, may raise real Knowledge, upon the Foundations laid in this our Age, to the utmost possible Perfection to which it can be brought by mortal Men in this imperfect state, and thereby effectually immortalize the Memories of those who laid those Foundations, and collected those Materials which were so serviceable to them in completing the noble Work.

But this is what every Man would gladly hope might be reserved for his own
Posterity,

Posterity, and his own Country. How it may be reserved is obvious: It must be by joyning Ancient and Modern Learning together, and by studying each as Originals, in those things wherein they severally do most excell; by that means few Mistakes will be committed, the World will soon see what remains unfinish'd, and Men will furnish themselves with fitting Methods to compleat it: And by doing Justice to every Side, they will have Reason to expect, that those that come after them will do the same Justice to them, whenever they shall think fit to submit their Productions to public Censure.

F I N I S.

Posterity, and his own Country. How it may be reserved is obvious: It must be by joining Ancient and Modern Learning together, and by studying each as Originals, in those things wherein they really do most excell; by that means few Mistakes will be committed, the World will soon see what remains unimpaired, and

CORRIGENDA.

Page 30. line 21. r. into very: p. 57. l. 4. marg. r. p. 44: p. 59. l. 20. r. peculiar: p. 88. l. 17. r. to us: p. 122. l. 30. r. old Mythology: p. 129. l. 7. after *Ostanes* add *or Oranes*: p. 130. for *Alchymists* and *Alchymy* r. *Alchemists* and *Alchemy*, passim: p. 171. l. 17. r. these: p. 195. l. 19. r. scarce: p. 201. l. 8. marg. r. cedat: p. 230. l. 33. marg. r. efficitur: p. 232. l. 27. r. Constantius; and l. 29. r. 1591: p. 359. l. 28. r. are ar: p. 377. l. 2. r. Apollinaris: p. 390. l. 28. r. recovered many of them: p. 395. l. 13. r. Rest: p. 399. l. 19. r. Homiletical.

FINIS.

DISSERTATION
UPON THE
EPISTLES

PHALARIS,
THEMISTOCLES,
SOCRATES,
EURIPIDES, and Others;
And the
FABLES of Æsop.

BY
RICHARD BENTLEY, D.D.
Chaplain in Ordinary to His Majesty,
and Master of the University.

LONDON, Printed by J. Leake, the Printer, Bath,
at the Sign of the Trench, near the South-
Gate, in Pall-Mall, 1734.

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to His MAJESTY.

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MDCCLXXII.

Sir William Temple's Essay upon
Ancient and Modern Learning,
pag. 58.

IT may perhaps be further affirmed, in
favour of the Ancients ; That the oldest
Books we have, are still in their kind the
best. The two most Ancient that I know of
in Prose, among those we call Profane Au-
thors, are Æsop's Fables, and Phalaris's
Epistles, both living near the same time,
which was that of Cyrus and Pythagoras.
As the first has been agreed by all Ages since
for the greatest Master in his kind ; and
all others of that sort have been but Imita-
tions of his Original : so I think the Epistles
of Phalaris to have more Race, more Spirit,
more Force of Wit and Genius, than any
others I have ever seen either Ancient or
Modern. I know, several Learned Men
(or that usually pass for such, under the
Name of Critics) have not esteemed them
Genuine ; and Politian, with some others,
have attributed them to Lucian : but I think
he must have little Skill in Painting, that
cannot find out this to be an Original. Such
Diversity of Passions, upon such Variety of
Actions and Passages of Life and Govern-
ment ; such Freedom of Thought, such Bold-
ness

ness of Expression; such Bounty to his Friends, such Scorn of his Enemies; such Honour of Learned Men, such Esteem of Good; such Knowledge of Life, such Contempt of Death; with such Fierceness of Nature, and Cruelty of Revenge, could never be represented but by him that possessed them. And I esteem Lucian to have been no more capable of Writing, than of Acting what Phalaris did. In all One writ, you find the Scholar or the Sophist; and all, the Other, the Tyrant and the Commander.

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DISSERTATION

UPON

The EPISTLES of
 PHALARIS, and others; and the
 FABLES of ÆSOP.

To Mr. Wotton.

S I R,

I Remember, that discoursing with
 you upon this Passage of Sir W. T.
 (which I have here set down,) I
 happen'd to say, That with all De-
 ference to so great an Authority, and
 under a just Awe of so sharp a Censure,
 I believed it might be even demonstrated;
 that the *Epistles of Phalaris* are Spurious;

*

A 3

and

and that we have nothing now extant of *Æsop's* own Composing. This casual Declaration of my Opinion, by the power of that long Friendship that has been between us, you improved into a Promise, That I would send you my Reasons in Writing, to be added to the New Edition of your Book : believing it, as I suppose, a considerable Point in the Controversie you are engaged in. For if it once be made out, that those Writings your Adversary so extolls, are Supposititious, and of no very long Standing ; you have then His and his Parties own Confession, That some of the Later Pens have out-done the Old ones in their kinds : And to others, that have but a mean Esteem of the Wit and Stile of those Books, it will be a double Prejudice against him, in your favour, That he could neither discover the true Time, nor the true Value of his Authors.

These, I imagine, were your Thoughts ; when you engaged me to this, that I am now doing. But I must take the freedom to profess, that I write without any view or regard to your Controversie ; which I do not make my own, nor presume to interpose in it. 'Tis a Subject so nice and delicate, and of such a mixed and diffused nature, that I am content to make the
best

best Use I can of both Ancients and Moderns, without venturing with you, upon the hazard of a wrong Comparison, or the envy of a true one.

That *some of the Oldest Books are the best in their kinds*, the same Person having the double Glory of Invention and Perfection; is a thing observed even by some of the Ancients (a). But then the Authors they gave this Honour to, are *Homer* and *Archilochus*, one the Father of Heroic Poem, and the other of Epode and Trochaic. But the choice of *Phalaris* and *Æsop*, as they are now extant, for the two great inimitable Originals, is a piece of Criticism of a peculiar Complexion, and must proceed from a Singularity of Palate and Judgment.

To pass a Censure upon all kinds of Writings, to shew their several Excellencies and Defects, and especially to assign each of them to their proper Authors, was the chief Province and the greatest Commendation of the Ancient Critics. And it appears from those Remains of Antiquity that are left us, that they never wanted Employment. For to forge and counterfeit Books, and father them upon Great Names, has been a Practice almost as old as Letters. But it was then most of all in fashion, when

(a) *Dion.
Chrysost.
Orat. 33.
p. 397.*

(b) Galen.
in Hippoc.
de Natura
Hominis,
Comm. 2.
p. 17. Ed.
Basil.

the (b) Kings of *Pergamus* and *Alexandria*, rivalling one another in the Magnificence and Copiousness of their Libraries, gave great rates for any Treatises that carried the names of celebrated Authors. Which was an Invitation to the Scribes and Copyers of those Times, to enhance the Price of their Wares by ascribing them to Men of Fame and Reputation; and to suppress the true Names, that would have yielded less Money. And now and then even an Author, that wrote for Bread, and made a Traffic of his Labours, would purposely conceal himself, and personate some old Writer of eminent Note; giving the Title and Credit of his Works to the Dead, that himself might the better live by them. But what was then done chiefly for Lucre, was afterwards done out of Glory and Affectation, as an Exercise of Stile, and an Ostentation of Wit. In this the Tribe of the Sophists are principally concerned; in whose Schools it was the ordinary task to compose Ἡθοποιίας, to make Speeches and write Letters in the Name and Character of some Heroe, or great Commander or Philosopher; τίνας αὖν εἴποι λόγους, *What would Achilles, Medea, or Alexander say in such or such Circumstances?* Thus *Ovid*, we see, who was bred up in that way, writ Love Letters in

in the Names of *Penelope* and the rest. 'Tis true, they came abroad under his own Name; because they were written in *Latin* and in Verse, and so had no colour or pretence to be the Originals of the *Græcian* Ladies. But some of the *Greek* Sophists had the Success and Satisfaction to see their Essays in that kind pass with some Readers for the genuine Works of those they endeavoured to express. This, no doubt, was great Content and Joy to them; being as full a Testimony of their Skill in Imitation; as the Birds gave to the Painter, when they peck'd at his Grapes. One of them (c) indeed, has dealt ingenuously, and confess'd that he feign'd the Answers to *Brutus*, only as a Trial of Skill: but most of them took the other way, and concealing their own Names, put off their Copies for Originals; preferring that silent Pride and fraudulent Pleasure, though it was to die with them, before an honest Commendation from Posterity for being good Imitators. And to speak freely, the greatest part of Mankind are so easily imposed on in this way, that there is too great Invitation to put the trick upon them. What clumsy Cheats, those *Sibylline* Oracles now extant, and *Aristeas's* Story of the *Septuagint*, passed without controul even among very learned Men.

And

(c) Mithras
deus Præf.
Epist. Bruti.

And even some Modern Attempts of this kind have met with Success not altogether discouraging. For though *Annius* of *Viterbo*, after a Reputation of some Years, and *Inghiramius* immediately, were shamed out of all Credit: yet *Sigonius's* Essay *de Consolatione*, as coming from a skilful Hand, may perhaps pass for *Cicero's* with some, as long as *Cicero* himself shall last. Which I cannot presage of that bungling Supplement to *Petronius* (I mean not that from *Traw*, but the pretended one from *Buda*) that Scandal to all Forgeries: though, I hear, 'tis at present admired as a genuine Piece by some that think themselves no ordinary Judges.

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PHALARIS'S EPISTLES.

THat Sophist, whoever he was, that wrote a small Book of Letters in the Name and Character of *Phalaris*, (give me leave to say this now, which I shall prove by and by) had not so bad a hand at Humouring and Personating, but that several believed, it was the Tyrant himself that talked so big, and could not discover the Ass under the Skin of that Lion. For we find *Stobæus* (d), quoting (d) *Stob.*
 the 38, and 67, and 72, of those *Epistles*, *Tit. vii.*
 under the Title of *Phalaris*. And *Suidas*, in the Account he gives of him, says he has wrote most admirable Letters, ἐπιστολὰς θαυμασίας πάντων, meaning those that we are speaking of. And *Johannes Tzetzes*, a Man of much rambling Learning, has many and large Extracts out of them, in his *Chiliads*; ascribing them all to the Tyrant whose Livery they wear. These three, I think, are the only Men among the Ancients, that make any mention of them: but since they give not the least hint of any Doubts concerning their Author; we may conclude, that all the
 Scholars

(e) *Hist-*
ria Sicula,
 p. 118.
 (f) *Hist-*
ria Sacra
& Exotica,
 p. 249.
 (g) *Marm.*
Arundel.
 p. 106.

Scholars of those Ages received them as true Originals ; so that they have the general Warrant and Certificate for this last Thousand Years before the Restoration of Learning. As for the Moderns ; besides the Approbation of those smaller Critics, that have been concerned in the Editions of them, and cry them up of course ; some very Learned Men have espoused and maintained them, such as *Thomas Fazellus*(e), and *Jacobus Cappellus*(f). Even Mr. *Selden* himself (g) draws an Argument in Chronology from them, without discovering any Suspicion or Jealousie of a Cheat. To whom I may add their latest and greatest Advocate ; who has honoured them with that most high Character, prefixt to this Treatise.

Others, indeed, have shewn their Distrust of *Phalaris's* Title to them ; but are content to declare their Sentiment without assigning their Reasons. *Phalaris*, or some body else, [says *Cælius Rhod.* lib. iii. c. 7.] *The Epistles that go under the Name of Phalaris*, [*Menagius ad Laert.* p. 35.] Some name the very Person, at whose door they lay the Forgery. *Lucian*, whom they commonly mistake for *Phalaris*, [says *Ang. Politianus*, Epist. 1.] *The Epistles of Phalaris*, if they are truly his, and not rather *Lucians*, [*Lilius Greg. Gyraldus*, Poet. Hist.

Hist. p. 88.] who, in another place, [p. 332.] informs us, that *Politian's* Opinion had generally obtained among the Learned of that Age: *The Epistles*, says he, of *Phalaris*, which most People attribute to *Lucian*. How judiciously they ascribe them to *Lucian*, we shall see better anon; after I have examin'd the Case of *Phalaris*, who has the Plea and Right of Possession. And I shall not go to dispossess him, as those have done before me, by an Arbitrary Sentence in his own Tyrannical Way; but proceed with him upon lawful Evidence, and a fair, impartial Trial. And I am very much mistaken in the Nature and Force of my Proofs, if ever any Man hereafter, that reads them, persist in his old Opinion of making *Phalaris* an Author.

The Censures that are made from Stile and Language alone, are commonly nice and uncertain, and depend upon slender Notices. Some very sagacious and learned Men have been deceived in those Conjectures, even to ridicule. The great *Scaliger* published a few Iambics, as a choice Fragment of an old Tragedian, given him by *Muretus*; who soon after confess'd the Jest, that they were made by himself. *Boxhornius* writ a Commentary upon a small Poem *De Lite*, supposed by him to be some ancient

ancient Author's; but it was soon discover'd to be *Michael Hospitalius's*, a late Chancellor of *France*. So that if I had no other Argument, but the Stile, to detect the Spuriousness of *Phalaris's Epistles*; I my self, indeed, should be satisfied with that alone, but I durst not hope to convince every body else. I shall begin therefore with another sort of Proofs, that will affect the most slow Judgments, and assure the most timid or incredulous.

The Time of *Phalaris's* Tyranny cannot be precisely determined, so various and defective are the Accounts of those that write of him. *Eusebius* sets the Beginning of it Olymp. xxxi, 2. *Phalaris apud Agrigentinos tyrannidem exercet*; and the End of it Olymp. xxxvii, 2. *Phalaridis tyrannis destructa*. By which Reckoning he governed xxviii Years. But *St. Hierom*, out of some unknown Chronologer (for that Note is not extant in the Greek of *Eusebius*) gives a different Time of his Reign, above lxxx Years later than the other; Olymp. liii, 3. or as other Copies read it, lii, 2. *Phalaris tyrannidem exercuit annos xvi*. Which is agreeable to *Suidas*, who places him, κατὰ τὴν β. ὀλυμπιάδα, about the lii Olympiad. If the former Account be admitted, the Cheat is manifest at first sight:

sight : for those Letters of *Phalaris* to *Stesichorus* and *Pythagoras* must of necessity be false. Because *Stesichorus* was but VI Years old at that supposed time of *Phalaris*'s Death ; and *Pythagoras* was not taken notice of in *Greece* till LXXX Years after it. But for the sake of *Aristotle* and *Jamblichus*, who make these Three to be Contemporaries, and that I may prevent all possible Cavils and Exceptions ; I am willing to allow the latter Account, the more favourable to the pretended Letters ; his Government commencing Olymp. LIII, 3. and expiring after XVI Years, Olymp. LVII, 3.

I. In the last Epistle, to those of *Enna*, a City of *Sicily* ; *Phalaris* says, the *Hyblenses* and *Phintienses* had promised to lend him Money at Interest ; Οἱ δὲ ὑπάρχοντο δανείσειν, ὡς Ὑβλαῖσι καὶ Φιντιεῖς. The Sophist was careful to mention such Cities as he knew were in *Sicily*. For so *Ptolemee* places *Φιντία* there ; and *Antoninus*, *Phintis* ; and *Pliny*, *Phintienses*. But it is ill luck for this Forger of Letters, that a Fragment of (b) *Diodorus*, a *Sicilian*, and well acquainted with the History of his Country, was preserved to be a Witness against him. That excellent Writer informs us, that *Phintias*, Tyrant of *Agrigentum*, (the very Place where *Phalaris* was before

(b) Diod.
p. 867.

fore him) first built *Phintia*, calling it by his own Name; *Κτίζει δὲ Φιντίας πόλιν, ὀνομάσας αὐτὴν Φιντιάδα*: and that this was done, while the *Romans* were at War with King *Pyrrhus*, that is, Olymp. cxxv; which is above cclxx Years after *Phalaris's* Death, taking even the later Account of *St. Hierom.* A pretty Slip this of our Sophist, who, like the rest of his Profession, was more vers'd in the Books of Orators than Historians, to introduce his Tyrant borrowing Money of a City, almost ccc Years before it was named or built.

II. In the xcii Epistle, he threatens *Stesichorus* the Poet, for raising Money and Soldiers against him at *Aluntium* and *Alæsa*, *ἢ εἰς Ἀλέντιον ἢ εἰς Ἀλαίσαν*: and that perhaps he might be snapt, before he got home again from *Alæsa* to *Himera*, *ἐξ Ἀλαίσης εἰς Ἱμέραν*. What a pity 'tis again, that the Sophist had not read *Diodorus*: for he would have told him, that this *Alæsa* was not in being in *Phalaris's* days. (i) It was first built by *Archonides*, a *Sicilian*, Olymp. xciv, 2. or, as others say, by the *Carthaginians*, about Two Years before. So that here are above cxx Years slipt, since the latest period of *Phalaris*. And we must add above a dozen more to the reckoning, upon the Sophist's own

(i) *Diod.*
p. 246.

own score : For this Letter is supposed to bear date before *Stesichorus* and *Phalaris* were made Friends ; which was a dozen Years, as he tells his Tale (k), before *Stesichorus* died ; and *Phalaris* he makes to survive him. I am aware, that the same Author says, (l) that there were other Cities in *Sicily*, called *Alæsa* : But it is evident from the situation, that this *Alæsa* of *Archonides* is meant in the Epistles ; for this lies on the same Coast with *Himera* and *Aluntium*, (to which two the Sophist here joins it,) and is at a small distance from them. And indeed there was no other Town of that name in the days of the Sophist, the rest being ruin'd long before.

III. The LXX Epistle gives an account of several rich Presents to *Polyclitus* the *Messenian* Physician, for doing a great cure upon *Phalaris*. Among the rest, he names ποτηρίων Θηρικλείων ζεύγη δέκα, *ten couple of Thericlean cups*. But there is another thing, besides a pretty Invention, very useful to a Lyar ; and that is, a good Memory. For we will suppose our Author to have once known something of these Cups, the time and the reason they were first called so ; but that he had unhappily forgot it, when he writ this Epistle. They were large Drinking-Cups, of a peculiar

* B shape,

shape, so called from the first Contriver of them, one *Thericles* a Corinthian Potter. *Pliny*, by mistaking his Author *Theophrastus*, makes him a Turner, [lib. xvi. cap. 40.] *Celebratur & Thericles nomine, calices ex terebintho solitus facere torno.* The words of *Theophrastus* are these, [*Hist. Plant.* l. v. cap. 4.] τορνέεσθαι δ' ἐξ αὐτῆς (τερμίνθου) κύλικας Θερικλείας, ὥς μινδ' αὖ ἐνα διαίνωναι πρὸς τὰς κεραμέας; That the Turners make Thericlean Cups of the Turpentine tree, which cannot be distinguished from those made by the Potters. Here can nothing be gathered hence, to make *Thericles* himself a Turner; for after he had first invented them, they were called *Thericlean*, from their shape, whatsoever Artificer made them, and whether of Earth, or of Wood, or of Metal. But as I said, by the general consent of Writers, we must call him a Potter. *Hesychius*, Θερικλεία, κύλικα εἶδος, ὅπου Θερικλῆος κεραμέως. *Lucian* [in *Lexiphanes*, pag. 960.] Καὶ γινῆ πολλά, οἷα Θερικλῆος ὥπια. *Etymologicon M.* Θερικλείον κύλικα, ἣν λέγουσι, πρῶτον κεραμεὺς Θερικλῆος ἐποίησεν, ὥς φησιν Εὐβουλός, ὃς τ' μέσης Κωμωδίας ποιητής. The words of *Eubulus*, whom he cites, are extant in *Athenæus*, [lib. xi. p. 471.]

Καθαρώτερον γὰρ τ' κεραμον εἰργαζόμενος,
ἢ Θερικλῆος πῶς κύλικος, ἥνικ' ἦν νέος.

And

And again ;

Ω γαῖα κεραμῖτ', ἥ σε Θεικλῆς ποτε
ἔπρωξε, κοίλῃς λαρόνος εὐρύνας βάθος.

Now the next thing to be enquired, is the Age of this *Thericles* ; and we learn that from *Athenæus* ; one Witness indeed, but as good as a multitude in a matter of this nature, [pag. 470.] Κατασκευάσαι λέγεται ὁ κύλικα ταύτην Θεικλῆς ὁ Κορίνθιος κεραμεύς, γηρονὸς τοῖς χρόνοις κατὰ τὸ Κωμικὸν Αἰσχρολόγῳ ; This Cup, says he, was invented by *Thericles the Corinthian Potter*, who was contemporary with *Aristophanes the Comædian*. And in all probability, he had this indication from some Fable of that Poet's, now lost ; where that *Corinthian* was mention'd, as one then alive. But all the Plays that we have left of his, are known to have been written and acted between the LXXXIIX and XCVII Olympiads, which is an interval of XXXVI years. Take now the very first year of that number ; and *Thericles*, with the Cups that had their appellation from him, come above CXX years after *Phalaris's* death.

But I must remove one Objection that may be made against the force of this Argument : for some ancient Grammarians give a quite different account, why such

*

B 2

Cups

(m) *Athenæus*, pag. 471.

Cups were called *Thericlean*. Some derive the word, *Θηρίκλαια* ὑπὸ τῶν θηρίων, from the skins of Beasts that were figured upon them: and Pamphilus the Alexandrian (m) would have them called so, ὑπὸ τῆς θήρας κλονεῖν, because Beasts were scared and frightned, when, in Sacrifices, Wine was poured upon them out of those Cups. So I interpret the words of Pamphilus; ὑπὸ τῆς τῆ Διόνυσον τῆς θήρας κλονεῖν, σπένδοντα ταῖς κύλινξι ταύταις κατ' αὐτῶν. For what is more ordinary in old Authors, than the memory of that custom of pouring wine on the heads of the Victims?

*Ipsa tenens dextra pateram pulcherrima Dido
Candentis vacca media inter cornua fudit.*

Nor are wild Beasts only called *θήρες*, but tame too, such as Bulls and Cows; as the Epigrammatist calls the *Minotaure*, ἀνδρῶπον μιζοθήρα. I cannot therefore comprehend why the most learned *Is. Casaubon* will read σπένδοντα in this passage, and not σπείδοντα. For I own, I see little or no sense in it, according to his *Lectiō*. And as for the Authority of the ancient Epitomizer of *Athenæus*, who, he says, reads it σπείδοντα; one may be certain, 'twas a fault only in that Copy of him that *Casaubon* used. For *Eustathius*, who appears never to have seen the true *Athenæus*,
but

but only that Epitome, read it in his Book σπένδοντα, and took it in the same sense that I now interpret it, [p. 1209. *Iliad.*] Η δὲ δῖος ἤθεας κλονεῖ, σπένδουσι γὰρ κατ' αὐτῶν κύλιξι τοιαύταις. And now for those two derivations of the word Θηρί-κλειον; was ever any thing so forced, so frigid, so unworthy of refutation? Does not common Analogy plainly shew, that as from Ηρακλῆς comes Ηράκλειον, from Σοφοκλῆς, Σοφύκλειον, and many such like; so Θηρίκλειον must be from Θηρικλῆς; besides so many express Authorities for it, which I have cited before. To which I may add that of *Julius Pollux*, [l. vi. c. 16.] Θηρίκλειον καὶ Κάνθαρον ἀπὸ τῶν ποιησάντων: and *Plutarch* in *P. Æmilius*, [pag. 273.] Οἷτε τὰς Ἀντιγονίδας, καὶ Σελευκίδας, καὶ Θηρικλείους ὀπιδεικνύμενοι. And *Clemens Alexand.* [II. Pæd. p. 69.] Εἰρήτων τῶν Θηρίκλειοί τινες κύλικες, καὶ Ἀντιγονίδες, καὶ Κάνθαροι. For one may justly infer, that both *Plutarch* and *Clemens* believed Θηρίκλειον to be from Θηρικλῆς; because they join them with those other Cups, all which had their names from Men that either invented or used them. And so says a Manuscript note upon that passage of *Clemens*; Θηρίκλειον ἀπὸ Θηρικλέως τῷ ἐφευρόντι. So that upon the whole, let *Pamphilus* and those other Grammarians

help him as they can, our Sophist stands fully convicted, upon this Indictment, of forgery and imposture.

I must here beg leave of the late learned Editors of our Mock *Phalaris*, with whom I must by and by have some further expostulation, to dissent from their new version of this passage; whereby this argument from *Thericles* would vanish into nothing. For instead of *ten couple of Thericlean Cups*, as the former Interpreters honestly translate it, they present us, as an emendation, with the like number of GLASSES, *Poculorum Vitreorum*, leaving us not the least footstep of our *Corinthian Potter*. But methinks these Glasses come in but odly and stingily among those other things named there of great value, *οὐάλας ἀπέρθε χρυσῶ, &c. Vessels of Gold and Silver, beautiful Slaves, fifty thousand Drachmæ, and a liberal yearly Pension for Life*. If *Agathocles* the Tyrant had made this Present of a score of Glasses, it might have passed for a mark of favour: because he was a Potter in his youth, and we might suppose them of his own making. And as I remember, *Diodorus* tells such a story of him. But why *Phalaris* should make so cheap and brittle a Complement, I cannot conjecture. 'Tis true, *Suidas* translates it a Glass, *ὄψι*

κλειον

κλειον ποτήριον ἑάλινον : and *Etymolog. Mag.*
 Οηρίκλειον κίλικα, ποτήριον ἑάλινον. But
 we know the old Lexicons chiefly consist
 of *Excerpta* out of *Scholiasts* and *Glossaries*
 upon particular Authors ; one of which,
 in one single place, might expound it
 a *Glass*. But that it must universally
 mean so, or particularly in this passage
 before us, neither the use of the Language,
 nor good Sense will allow. For besides
 Earth, which was the first Material ;
 some were made of Wood, as *Theophrastus*
 says in the place already cited ; others of
 Silver or Gold, as *Plutarch* in *P. Æmi-*
lius ; Οἱ δὲ τὰς Οηρικλείας ἢ ἑσα αὖτις
 δεῖπνον ΧΡΥΣΩΜΑΤΑ τῷ Περσέως ὀφειδει-
 κνύμενοι. And *Athenæus*, [lib. v. p. 199.]
 Φέροντες οἱ μὲν οἰνοχόας, οἱ δὲ φιάλας, οἱ δὲ
 Οηρικλείας μεγάλας, πάντα ΧΡΥΣΑ. And
 I conceive, it were more agreeable to the
 Generosity of *Phalaris*, which is the sub-
 ject of so many Letters, to suppose these
Thericlean Cups to be Silver at least, if
 not a more precious Metal.

IV. In the LXXXV Epistle, he boasts of
 a great Victory obtained over the *Zan-*
cleans ; Ταυρομενείτας ἢ Ζακλειέας συμ-
 μαχήσαντας Λεοντίνοις εἰς τέλος νενίκηκα.
 But the very preceding Letter, and the
 XXI, are directed to the *Messenians*, Μεσση-
 νίοις, and the City is there called Μεισσηνή ;

and in the First Epist. he speaks of Πολύ-
 κλεις & ὁ Μεσσήνιος. Here we see we have
 mention made of *Zancleans* and *Messenians*;
 as if *Zancle* and *Messana* were two diffe-
 rent Towns. Certainly the true *Phalaris*
 could not write thus; and it is a piece of
 ignorance inexcusable in our Sophist, not to
 know that both those names belong'd to
 one and the same City, at different times.
Strabo, [lib.vi. p.268.] Μεσσήνη, Ζάγκλη πρὸ-
 τερον καλεσμένη; *Messana*, which was before
 called *Zancle*. See also *Herodotus*, [lib.vii.]
 and *Diodorus*, [lib.iv.] and others. Per-
 haps it may be suspected, in behalf of
 these Epistles, that this change of Name
 was made, during those xvi years of *Pha-
 laris's* Tyranny; and then supposing the
 LXXXV Letter to be written before the
 change, and the other Three after it,
 this argument will be evaded. But *Thu-
 cydides* will not suffer this suspicion to
 pass, who relates, (n) that at the time of
 Xerxes's expedition into Greece (which
 was Olymp. LXXIII.) *Anaxilaus* King of
Rhegium besieged *Zancle*, and took it, and
 called it *Messana*, from the *Peloponnesian*
 City of that name, the place of his nati-
 vity. The same says (o) *Herodotus*: and
 agreeably to this narrative, (p) *Diodorus*
 sets down the death of this *Anaxilaus*
 Olymp. LXXVI, 1. when he had reigned
 XVIII

(n) Lib.vi.
 p. 414.

(o) Lib.vi.
 cap. 23.

(p) Lib.xi.
 p. 37.

xviii years. Take now the latest accounts of *Phalaris's* death, according to St. *Hierom*; and above LX years intervene between that, and the new naming of *Zancle*. So that unless we dare ascribe to that Tyrant a Spirit of Vaticination, we cannot acquit the Author of the Letters of so manifest a cheat.

But I love to deal ingenuously, and will not conceal one testimony in his favour, which is that of (q) *Pausanias*, (q) *Messen.* who tells the story very differently from P. 134. *Herodotus* and *Thucydides*, placing this same *Anaxilaus* of *Rhegium* about a CLXXX years higher than they do; That he assisted the Refugees of *Messana* in *Peloponnesus*, after the second war with the *Spartans*, to take *Zancle* in *Sicily*; which thereupon was called *Messana*, Olymp. xxix: Ταῦτα ὅτι ὁ Ολυμπιάδου ἐπὶ ἔσχατον ἐνάτης καὶ εἰκοσῆς, ἦν Χίβνις Λάκων τὸ δεύτερον ἐνίκᾳ, Μιλτιάδου παρ' Ἀθηναίοις ἀρχόντος. Now if this be true, we must needs put-in one word for our Sophist; that *Phalaris* might name the *Messenians*, without pretending to the gift of Prophecy. (r) *Cluverius* (r) *Sicil. Antiq. P. 85.* indeed would spoil all again; for he makes it a fault in our Copies of *Pausanias*, and for εἰκοσῆς the xxix Olymp. reads ἐξηκοσῆς the LXIX; which is too great a number, to do our Author any service. But we will
not

not take an advantage against him, from a mistake of *Cluverius* ; for without question, the true Lektion is εἰκοστῆς the xxix ; because the time of the *Messenian War* agrees with that computation, and not with the other : and the ancient (s) Catalogue of the *Olympionicae* puts *Chionis's* Victory at that very year. Ολυμπιάς εἰκοστὴ ἐνάτη· Χίωνις Λάκων σάδιον. Τριακοστὴ. ὁ αὐτὸς τὸ δεύτερον. So that if *Pausanias's* Credit is able to bear him out, our Author, as to this present point, may still come off with reputation. But alas ! what can *Pausanias* do for Him, or for himself, against *Herodotus*, and *Thucydides*, that liv'd so near the time they speak of ; against those other unknown Authors that *Diodorus* transcribed ; against the whole tenor of History, confirm'd by so many Synchronisms and Concurrences that even demonstrate *Anaxilaus* to have lived in the days of *Xerxes*, and his Father ; when *Theron*, and not *Phalaris*, was (t) Μέγαρχος, Monarch of *Agrigentum*. Nay, though we should be so obliging, so partial to our Sophist, as for his sake to credit *Pausanias* against so much greater Authority ; yet still the botch is incurable ; 'tis running in debt with one man, to pay off another. For, how then comes it to pass, that the *Messenians* in another Letter, are

(s) Euseb.
Scalig.
P. 39.

(t) Hero-
dot. lib. vii.
P. 438.

are in this called *Zancleans* ? which, by that reckoning of *Pausanias*, had been an obsolete forgotten word, an hundred years before the date of this pretended Epistle.

V. That same xcii Letter, which has furnish'd us already with one detection of the Imposture, will, if strictly examin'd, make a second confession, from these words, ὅς αὐτὰς ἐκλείψω πίνυα δίκην ; 'tis a threat of *Phalaris* to the *Himeræans*, *That he would extirpate them like a Pine-tree.* Now here again am I concerned for our Sophist, that he is thus taken tripping. For the Original of this Saying is thus related by (u) *Herodotus* : When (u) Lib.vi. the *Lampsaceni* in *Asia* had taken captive cap. 37. *Miltiades* the *Athenian*, *Cræsus* King of *Lydia* sent them a Message ; That if they did not set him free, he would come and extirpate them like a Pine ; σφέας πίνυα τρέπον ἀπείλεια ἐκλείψω. The men of *Lampsacus* understood not the meaning of that expression, *like a Pine* ; till one of the eldest of them hit upon it, and told them, That of all trees, the Pine, when once it is cut down, never grows again, but utterly perishes. We see the phrase was then so new and unheard of, that it puzzled a whole City. But now if *Cræsus* was upon that occasion the first Author of this Saying,

Saying, what becomes of this Epistle? For this, as I observed before, being pretended to be written above a dozen years before *Phalaris's* death, carries date at least half a dozen before *Cræsus* began his reign.

Nay, there is good ground of suspicion, that *Herodotus* himself, who wrote an Hundred Years after *Phalaris* was kill'd, was the first broacher of this expression. For 'tis known, those first Historians make every body's Speeches for them. So that the blunder of our Sophist is so much the more shameful. The Third Chapter of the viii Book of *A. Gellius*, which is now lost, carried this Title; *Quod Herodotus parum vere dixerit, unam solumque pinum arborum omnium cæsam nunquam denuo ex iisdem radicibus pullulare*; "That *Herodotus* is in the wrong, in saying, that of all trees, a Pine only, if lopt, never grows again." I suppose, *Gellius*, in that Chapter told us, (w) out of *Theophrastus*, of some other trees, beside the Pine, that perish by lopping; the *Pitch-tree*, the *Firr*, the *Palm*, the *Cedar*, and the *Cypress*. But I would have it observed, that he attributes the Saying, and the Mistake about it, not to *Cræsus*, but to *Herodotus*: after whom, it became a Proverb, which denotes an utter destruction,

(w) Hist.

Pl. lib. iv.

c. 19.

Caus. Pl.

l. v. c. 24.

Plin. l. xvii.

c. 24.

struction, without any possibility of flourishing again. See Πεύκης τέρενον in Zenobius, Diogenianus, and Suidas. And 'tis remarkable, that our Letter-monger has Herodotus's very words, πίτυς and ἐκτρίβειν; when all those three other Writers have πεύκη for πίτυς, and κέπειν instead of ἐκτρίβειν: which shews he had in his eye and memory this very place of Herodotus. A strange piece of stupidity, or else contempt of his Readers, to pretend to assume the garb and person of Phalaris, and yet knowingly to put words in his mouth, not heard of till a whole Century after him.

But here again our late Editors, as if they had been bribed for the Sophist, have lopt off and destroyed this branch of our Evidence, as far as lay in their power: for they have made bold to execute this Proverb upon it self, and have quite *extirpated the Pine-tree* out of their new Version: ὃς αὐτὰς ἐκτρίβῃ πίτυα διχῶ; that is, *qui eos in arundinis morem conteret*, "who will bruise them like a Reed," (say our critical Interpreters.) It seems, the Translation in the former Editions, *Qui eos exscindam instar pinus*, was too easie and vulgar. In H. Scripture, indeed, there is mention, by a very elegant Metaphor, of *bruised and broken Reeds*. But why

why Reeds must be transplanted hither, and the innocent Pine rooted up, I confess to be above my small understanding in Gardening.

VI. In the LXXXV Epistle, we have already taken notice of our Mock-Tyrant's triumph; ἐπὶ Ταυρομένειτας ἢ Ζανκλεῖας εἰς τέλος νενίκηκε, *That he had utterly routed the Tauromenites and the Zancleans.* But there's an old and true Saying, Πολλὰ καὶ τὸ πολέμῳ, *Many new and strange things happen in War.* For we have just now seen those same routed *Zancleans* rise up again, after a Thousand Years, to give him a worse defeat. And now the others too are taking their turn to revenge their old losses. For These, though they are called *Tauromenites*, both here, and in the xv, xxxi, and xxxiii Epistles, make protestation against the name; and declare they were called *Naxians*, in the days of the true *Phalaris*. *Taurominium, quæ antea Naxos*, says *Pliny*, [lib. iii. c. viii.] *Taurominium, quam prisci Naxon vocabant*, says *Solinus*, [cap. xi.] Whence it is, that *Herodotus* and *Thucydides*, because they writ before the change of the name, never speak of *Taurominium*, but of *Naxos*, and the *Naxians*. A full account of the time, and the reason, and the manner of the change, is thus given by (x) *Diodorus*.
Some

(x) Lib. xiv
p. 282, &
305.

Some *Sicilians* planted themselves Olymp. xcvi, 1. upon a Hill called *Taurus*, near the ruins of *Naxus*, and built a new town there, which they called *Tauromenion*, Ἰπὸ τοῦ ταύρου καὶ μένεν, from their settlement upon *Taurus*. About Forty Years after this, Olymp. cv. 3. (y) one (y) Lib. xv. *Andromachus* a *Tauromenite* gathered all P. 411. the remnant of the old *Naxians* that were dispersed through *Sicily*, and persuaded them to fix there. This is such a plain and punctual testimony, that neither the power and stratagems of the Tyrant, nor the rhetoric of the Sophist, are able to evade it. Where are those then, that cry up *Phalaris* for the florid Author of the Letters? who was burnt in his own Bull, above CL Years before *Taurominium* was ever thought on.

But I shall not omit one thing in defense of the Epistles; which though it will not do the work, let it go, however, as far as it can. We have allowed, that *Pythagoras* was contemporary with *Phalaris*; and yet in the History of that Philosopher, we are told of his conversation and exploits at *Taurominium*. *Porphry* says, (z) He deliver'd Croton and Himera, (z) Vita Pythag. p. 169. καὶ Ταυρομίνιον, and *Taurominium*, from Tyrants: and, (a) That in one and the same (a) P. 192, & 193. day he was at *Metapontium* in Italy, and Tauro-

Taurominium in Sicily. The same story
 (b) *Jamblichus* is told by (b) *Jamblichus*; who supplies
 p. 128. us too with another, (c) *That a young man*
 (c) p. 109. *of Taurominium being got drunk, τῶν ἐγ-
 μενέλτῃς μενεαῖς, Pythagoras played him*
sober by a few tunes of grave Spondees.
 These several passages seem to concur
 with, and confirm the credit of the Let-
 ters, that *Taurominium* had a Name and
 Being in the time of *Pythagoras* and *Pha-*
laris. All this would be very plausible,
 and our Sophist might come off with a
 whole skin, but for a cross figure in his
 own Art, *Rhetoric*, called *Prolepsis* or *An-*
ticipation, viz. when Poets or Historians
 call any place by a name, which was not
 yet known in the times they write of.
 As when *Virgil* says of *Æneas*,

— *Lavinæque venit Littora :*

and of *Dædalus*,

Chalcidicâq; levis tandem superadstitit arce :

he is excused by *Prolepsis*; though those
 places were not yet called so in the times
 of *Dædalus* and *Æneas*. So when *Por-*
phyry and *Jamblichus* name *Taurominium*
 in the story of *Pythagoras*; meaning *Naxos*,
 which was afterwards called so; the same
 figure acquits Them. For 'tis no more,
 than when I say, *Julius Cæsar conquered*
 France,

France, and made an expedition into England: though I know that Gaul and Britain were the names in that age. But when Phalaris mentions *Taurominium* so many generations before it was heard of, he cannot have the benefit of that same *Prolepsis*. For this is not a Poetical, but a Prophetical Anticipation. And he must either have had the *Præscience* and *Divination* of the *Sibyls*, or his *Epistles* are as false and commentitious as our *Sibylline Oracles*.

VII. The xxxv Letter to *Polygnotus* presents us with a Sentence of Moral; ἐπὶ λόγῳ ἔργον σκιά παρὰ τοῖς σωφρονετέροισι πεπίστυται, That wise men take Words for the shadow of Things; that is, as the Shadow is not alone without the presence of the Body, so Words are accompanied with the Action. 'Tis a very notable Saying, and we are obliged to the Author of it; and if *Phalaris* had not modestly hinted, that others had said it before him, we might have taken it for his own. But then there was either a strange jumping of good Wits, or *Democritus* was a sorry Plagiary; for He laid claim to the first Invention of it, as (d) *Diogenes Laertius* says, Τέτρα ἔστι καὶ τὸ Λόγῳ ἔργον σκίνη: and (e) *Plutarch*, Λόγῳ ὃν ἔργον σκίνη κατὰ Δημόκριτον. What shall we say to this

(d) Vita
Democrit.
(e) De Educ.
cat. Puer.

matter?

*

C

matter? *Democritus* had the character of a man of Probity and Wit; who had neither inclination, nor need, to filch the Sayings of others. Besides, here are *Plutarch* and *Diogenes*, two witnesses that would scorn to flatter, and to ascribe it to *Democritus*, had they ever read it in others before him. This bears hard indeed upon the Author of the Letters: but how can we help it? He should have minded his hits better, when he was minded to act the Tyrant. For *Democritus*, the first Author of the Sentence, was too young to know even *Pythagoras*, τὰ ἑὸν χεῖρον μάχεται, says (f) *Diogenes*; and yet *Pythagoras* survived *Phalaris*, nay, deposed him, if we will believe his Scholars. We may allow Forty Years space for *Democritus*'s writing; from the LXXXIV Olymp. to the xciv, in which he died. Now the earliest of this is above an Hundred Years after the last period of *Phalaris*.

(f) Vita
Democ.

(g) De
Dam.

(h) Epist.
252, &
259.

I am sensible that (g) *Michael Psellus* refers this Saying to *Simonides*; and (h) *Isidorus Peleus*. to the *Lacedæmonians*. But these two are of little authority, in a case of this nature, against *Plutarch* and *Diogenes*. Neither would the matter be mended, should we accept of their testimony. For *Simonides* was but Seven Years old, or, as others say, yet unborn, when

when *Phalaris* was kill'd. And were it a *Lacedæmonian* Apophthegm, though the date be undetermined, it might fairly be presumed to be more recent than He.

VIII. In the LI Epistle to *Eteonicus* there is another Moral Sentence; *Θνητὲς γὰρ ὄντας ἀθάνατον ὀργὴν ἔχειν, ὥς πάντινες, ἔμεροῖνε;* *Mortal Men ought not to entertain Immortal Anger.* But I am afraid he will have no better success with this, than the former. For (i) *Aristotle*, in his (i) *Lib. ii. cap. 21.* *Rhetoric*, among some other sententious Verses, cites this Iambic, as commonly known;

Ἀθάνατον ὀργὴν μὴ φύλαττε θνητὸς ὤν.

This, though the Author of it be not named, was, probably, like most of those Proverbial *Gnomæ*, borrow'd from the Stage; and consequently, must be later than *Phalaris*, let it belong to what Poet you please, Tragic or Comic.

But because it may be suspected, that the Poet himself might take the Thought from common usage, and only give it the turn and measure of a Verse; let us see if we can discover some plainer foot-steps of Imitation, and detect the lurking Sophist under the mask of the Tyrant.

(k) Tit. xx.
Περὶ Ὀρ-
γῆς.

Tyrant. (k) Stobæus gives us these Verses out of *Euripides's Philoctetes* ;

Ὀσπερ ἔθνη τὸν καὶ τὸ σῶμα ἡμῶν ἔφυ,
οὕτω πρὸς αὐτὸν μὴδὲ τι καὶ ὄργην ἔχει
Ἀδύνατον, ὅστις σωρὸν γενεῶν ἐπίσταται.

(l) Argu-
ment. Me-
dea Eurip.

Now to him that compares these with the words of the Epistle, 'twill be evident, that the Author had this very passage before his Pen ; there is *ἔχει* and *πρὸς αὐτὸν* ; not only a sameness of sense, but even of words, and those not necessary to the Sentence : which could not fall out by accident. And where has he now a Friend at a pinch, to support his sinking credit ? for *Euripides* was not born in *Phalaris's* time. Nay, to come nearer to our mark ; from (l) *Aristophanes* the famous Gram-
marian, (who, after *Aristotle*, *Callimachus*, and others, writ the *Διδασκαλία*, *A Catalogue and Chronology of all the Plays of the Poets* ; a Work, were it now extant, most useful to ancient History,) we know that this very Fable, *Philoctetes*, was written Olymp. LXXXVII ; which is CXX Years after the Tyrant's Destruction.

IX. The XII Epistle exhibits *Phalaris* making this complement to his Friends ;
Ὀν εὐτυχέσιων, καὶ αὐτὸς ἐτέρῳ συμπλακῶ
δαίμονι, ἡδεῖς ἔδδεν ἥτιον εὐτυχέω δόξω ; *That while they continued in prosperity, his joy*
for

for that, though himself should fall under misfortunes, would still make him happy. But methinks those words, Ἐτέρω Δαίμονι, the Other God, or Genius, that is, the Bad one, have a quaintness in them something Poetical, and I am mistaken if they be not borrowed from some Retainer to the Muses. And now I call it to mind, they are (m) Pindar's,

(m) Pyth. 3.

Δαίμων δ' ἕτερος
Ἐς κακὸν τρέψας ἐδαμάσατό νιν.

or Callimachus's; for this Scaxon of his is there cited by the Scholiast,

Ὅς πάντες, ἀλλ' ὅς ἔχεν ἄτερος Δαίμων.

Whether of these our Author made bold with, I cannot determine. Pindar I should encline to guess, but that I find him familiar with Callimachus upon another occasion; Epist. cxxii. speaking of Perillus's invention of the Brazen Bull; Ὑπὲρ ἐμῆ τ' ὄλεθρον εὔρε κατὰ τῆς ἐπιβελούων ἀχθιγέτατον. Where he has taken that expression, τὸν ὄλεθρον εὔρε, from these Verses of (n) Cal- (n) Scholia
limachus that concern the same business; Pind.
Pyth. 4.

Πρῶτον ἐπεὶ τ' ταῦρον ἐκάνισεν, ὅς τ' ὄλεθρον
Εὔρε, τ' ἐν χαλκῷ ἢ πυρὶ γνόμενον.

But be it either of them as you will, I suppose the Ages of both those Poets are

well

well enough known ; so that without any computation of Years, one may pronounce these fine Epistles not to belong to *Phalaris* himself, but to his Secretary the Sophist.

X. The xxiii Epistle is directed to *Pythagoras* ; and there he gives to his Doctrine and Institution the name of *Philosophy* ; Ἡ Φαλάριδος τυραννὶς τῷ Πυθαγόρῃ ΦΙΛΟΣΟΦΙΑΣ πλεῖστον ὅσον δεκεὶ κεχωρίσται. And so again in the lvi. he gives him the title of *Philosopher*, Πυθαγόρα τῷ ΦΙΛΟΣΟΦῶ. I could shew now, from a whole crowd of Authors, that *Pythagoras* was the first man that invented that word ; but I shall content my self with two, *Diogenes Laertius*, and *Cicero*.

(o) P. 3.
§ 26.

The former says, (o) Φιλοσοφίαν πρῶτος ὠνόμασε Πυθαγόρας, καὶ ἑαυτὸν Φιλόσοφον, ἐν Σικυῶνι διαλεγόμενον Λέοντι, τῷ Σικυωνίων τυράνῳ, ἢ Φλιασίῳ ; *Pythagoras first named Philosophy, and called himself Philosopher, in conversation with Leon the Tyrant of Sicyon, or, as some say, of Phlius.*

(p) Tuscul.
Quest. l. v.

The latter tells us, (p) *That when Pythagoras had discoursed before Leon, the Tyrant much taken with his wit and eloquence, asked him what Art or Trade he profess. Art, says Pythagoras, I profess none, but I am a PHILOSOPHER. Leon, in admiration at the newness of the name, enquires what*

what those Philosophers were, and wherein they differed from other men; "Quinam essent Philosophi, & quid inter eos & reliquos interesset." What a difference is here between the two Tyrants? The one knows not what *Philosopher* means; the other seems to account it as threadbare a word, as the name of *Wise Men* of *Greece*; and that too, before ever he had spoken with *Pythagoras*. We cannot tell, at this distance of time, which Conversation was first, that with *Phalaris*, or that with *Leon*. But allowing *Leon's* to be the first, yet it could not be long before the other. And 'tis very hard to believe, that the fame of so small a business could so soon reach *Phalaris's* ear in his Castle, through his Guard of Blue-coats, and the loud bellowings of his Bull. Nay, could we suppose him to have heard of it; yet surely when he had written to *Pythagoras*, he would have usher'd the Word in with some kind of introduction, *That Science which you call Philosophy*; and not speak of it as familiarly, as if it had been the language of his Nurse.

XI. In the LXIII Epistle, he is in great wrath with one *Aristolochus*, a Tragic Poet that no body ever heard of, for writing *Tragedies* against him, κατ' ἐμὴν γράψεν Τραγῳδίαν: and in the xcvi. he threatens

Lyfinus, another Poet of the same stamp with the former, for writing against him both Tragedies and Hexameters, ἀλλ' ἐπὶ τῇ τραγωδίᾳ εἰς ἐμὲ γράψας. Now to forgive him that silly expression, of writing Tragedies against Him, for he could not be the Argument of Tragedy, while he was living; I must take the boldness to tell him, who am out of his reach, that he lays a false crime to their charge. For there was no such Thing nor Word as Tragedy, while he tyranniz'd at *Agrigentum*. That we may slight that obscure story about *Epigenes* the *Sicyonian*, *Thespis*, we know, was the first Inventor of it;

*Ignotum Tragica genus invenisse camænæ
Dicitur, & plaustri vexisse poemata Thespis.*

Neither was the Name of Tragedy more ancient than the Thing; as sometimes it happens, when an old Word is borrowed and applied to a new Notion; but both were born together: the Name being taken from *Τράγος*, the Goat that was the Prize to the best Poet and Actor. But *Alcestis*, the first Tragedy of *Thespis*, was acted about (q) the *LXI Olymp.* which is more than twelve Years after *Phalaris's* death.

(q) *Marm.
Arund. Sui-
das Oég-
m.*

XII. Had all other ways fail'd us of detecting this Impostor, yet his very Speech

Speech had betray'd him. For his Language is *Attic*, the beloved Dialect of the Sophists, in which all their *Μελέται*, or *Exercises*, were composed; in which they affected to excell each other, even to Pedantry and Solecism. But he had forgot that the Scene of these Epistles was not *Athens*, but *Sicily*, where the *Doric* tongue was generally spoken and written; as besides the testimonies of others, the very Thing speaks it self in the Remains of *Sicilian* Authors, *Sophron*, *Epicharmus*, *Stesichorus*, *Theocritus*, *Moschus*, and others. How comes it to pass then, that our Tyrant transacts every thing in *Attic*, not only foreign Affairs of State, but domestic Matters with *Sicilian* Friends, but the very Accounts of his Household? Pray, how came that Idiom to be the Court Language at *Agrigentum*? 'Tis very strange, that a Tyrant, and such a Tyrant as He, should so doat on the Dialect of a Democracy, which was so eminently *μισο-τύραννικον*, the *Hater of Tyrants*; which, in his very days, had driven out *Pististratus*, though a generous and easie Governour. Especially, since in those early times, before Stage-Poetry and Philosophy and History had made it famous over *Greece*, that Dialect was no more valued than any of the rest.

I would

I would not be here mistaken; as if I affirmed, that the *Doric* was absolutely universal, or original in *Sicily*. I know, that the old *Sicani*, the Natives of the Isle, had a peculiar Language of their own; and that the *Greek* Tongue there, like the *Punic*, was only a foreigner, being introduced by those Colonies that planted themselves there. Most of which coming from *Corinth*, *Crete*, *Rhodes*, &c. where all spoke the *Doric* Dialect; thence it was that the same Idiom so commonly obtained almost all over *Sicily*; as it appears to have done, to omit other testimonies, from the ancient Medals of that Island, ΤΑΥΡΟΜΕΝΙΤΑΝ, ΜΕΣΣΑΝΙΩΝ, ΘΕΡΜΙΤΑΝ, ΠΑΝΟΡΜΙΤΑΝ, ΛΙΑΥΒΑΙΤΑΝ, ΣΕΛΙΝΩΝΤΙΩΝ; all which words, inscribed upon their Money, demonstrate the *Doric* Dialect to have been then the language of those Cities. 'Tis true, there came some Colonies to *Sicily*, from *Eubœa*, and *Samos*, and other places; which, in those Parts where they settled, might speak, for a while, the *Ionic* or the *Attic*; and afterwards, being mixed with the *Dorians*, might make a new sort of Dialect, a compound of both: as (r) *Thucydides* observes of *Himera*, that the language of that City was at first a medly of *Doric* and *Chalchidic*. But that is no more than what

happen'd

(r) Lib.vi.
P. 414.

happen'd even in *Greece* it self, where there were many (s) ὑποδιαίρεσις τοπικαί, (s) *Vetus*
local sub-Divisions of every Dialect, one *Auctor*
 Country having always some singularity *Περὶ Δι-*
 of Speech, not used by any other. But *αλέκτων.*
 those little peculiarities do not hinder us from saying in general, that the *Sicilians* spoke *Doric*. For the other Dialects were swallowed up and extinguished by those two powerful Cities of *Dorian* Original, *Syracuse*, and *Agrigentum*, that shared the whole Island between them. *Syracuse* was a *Corinthian* Colony, and spoke (t) the (t) *Theo-*
 Dialect of her Mother City. *Agrigentum* *crit. Id. xv.*
 was first built by the *Geloans* of *Sicily*, who had been themselves a Plantation of the *Cretans* and *Rhodians*, both of which were *Dorian* Nations. So that upon the whole, though in some other Towns, and for a time, there might be a few footsteps of the *Ionic* and *Attic* ; yet our Sophist is inexcusable, in making a Tyrant of *Agrigentum*, a City of *Doric* Language and Original, write Epistles in such a Dialect, as if he had gone to School at *Athens*.

But there is a (u) learned *Greek* Professor (whose Pardon I must ask, that I forgot to name him above, among the Patrons of *Phalaris*,) who, after he has asserted the credit of *Euripides's* Letters,
 (u) *Vid. Eurip. Edit. Cantab. p. 523.*
 gra-

(w) Is enim Astypala natus erat, una ex Cycladibus, ubi Athenien-sium erat Colonia.

(x) v. Agv-
τάλ.
(y) Lib. x.
p. 488.
(z) Lib. iv.
cap. 12.

(a) Vid.
Vitam
Phalar.
& Indi-
cem. Edit.
Oxon.

gratuitously undertakes to apologize for These too, about this matter of the Dialect. First, says he, (w) *because* Phalaris was born at Astypala, an Island of the Cyclades, where was an Athenian Colony, that is one reason for his speaking Attic. It were easie to overthrow this first argument at once; by refuting our spurious Epistles, and by shewing, from much better Authority, that Phalaris was a Sicilian born. But I may speak, perhaps of that by and by; and I will have every Proof I bring stand by it self, without the support of another. Let us allow then, that Phalaris came from Astypalæa, (for so it is to be called;) not that Isle of the Cyclades, according to (x) *Stephanus*; but of the Sporades, mention'd by (y) *Strabo* and (z) *Pliny*: for this latter was nearest to Crete, whither Phalaris's Wife and Son are supposed to have fled, Epist. LXIX. 'Tis true, our late industrious Editors have discovered a new place of his birth, (a) *Astypalæa*, a City of Crete, never mention'd before by any Geographer, situate in the 37th. deg. of Longit. bearing South and by North off of *Utopia*. And I am wholly of their opinion, that he was born in that, or in none of them. But because Tradition is rather for the Island, we will beg their good leave to suppose it to

to be so : and There, as it seems, was formerly a Plantation of *Athenians* ; and *Phalaris* being one of their Posterity, must needs, for that reason, have a twang of their Dialect. Now, what a pity 'tis, that *Phalaris* himself, or his Secretary, did not know of this Plantation, when he writ the cxx Letter to the *Athenians*, Ὁ σοφώτατος γυνεὺς Ἀθηναῖος ! What a fine complement would he have made upon that subject of their Kindred ! If any one know an exprefs testimony, that there was an *Athenian* Colony at that *Astypalæa*, he can teach me more than I now remember. This I know in general, from (b) *Thucydides* and others, that the *Athenians* sent Colonies to most of the Islands ; and so That may come in among the rest. But what then ? must the Language for ever afterwards be *Attic*, wherever the *Athenians* once had footing ? *Thucydides* says in the same passage, That they planted *Ionian*. They had Colonies at *Miletus*, at *Ephesus*, and most of the Maritime Towns of *Asia Minor*. Nay, the *Ionians* and the *Attics* were anciently one People, and the Language the same : and when *Homer* says, (c) Ἐνθάδε Βοιωτοὶ καὶ Ἰάονες, by the latter he is known to mean the *Athenians*. And yet we see, that in process of time, the Colonies had a different

(b) Lib. i.
p. 10. Καὶ
Ἰώνας μὲν
Ἀθηναῖοι
καὶ Νησιω-
τῶν τὰς
πολλὰς
ᾤκισαν.

(c) *Strabo*,
lib. viii.
p. 333. &
lib. ix.
p. 392.

rent Dialect from that of the Mother Nation. Why then must *Astypalæa* needs be *Attic*? and that so tenaciously, that twenty Years living in *Sicily* could not at all alter it in one of her Islanders? He

(d) *Polya-
nus Stra-
tag.*

was part of that time a (d) Publican, or Collector of Taxes and Customs: Could not that perpetual negoce and converse with *Dorians* bring his mouth, by degrees, to speak a little broader? Would

(e) *Ibid.*

not He that (e) aim'd at Monarchy, and for that design studied to be popular, have quitted his old Dialect for that of the place; and not by every word he spoke make the invidious discovery of his being a Stranger? But what if, after all, even the *Astypalæans* themselves should be found to speak *Doric*? If we make a conjecture from their neighbourhood, and the company they are put in, we can scarce question but they were *Dorians*. (f) *Strabo* says, the Island lies between *Cos*, and *Rhodes*, and *Crete*, μεταξύ τῆς Κῶς μάλιστα καὶ Ῥόδου, καὶ Κρήτης. And that all these three used the *Doric* Dialect, is too well known, to need any proof.

(f) *Lib. x.
p. 488.*

(g) *Sed nec
ipse Diodo-
rus Siculus*

the Atticism of *Phalaris*. (g) He defends him by the like practice of others; that *nec Empedocles Agrigentinus, nec Ocellus Lucanus Dorice sed Attice fere scripserunt.*

being

being *Dorians* born, repudiated their vernacular Idiom for that of the *Athenians*; as *Diodorus* of *Agyrium*, *Empedocles* of *Agri-gentum*, and *Ocellus* of *Lucania*. So that, though *Phalaris* be supposed to be a Native of *Sicily*, yet here is an excuse for him, for quitting the Language. But I conceive, with submission, that this Argument is built partly upon a vulgar Mistake, and partly upon such Instances as are quite different and aliene from the case of our Epistles.

Ocellus Lucanus, the *Pythagorean* Philosopher, writ a small Treatise *Of the Nature of the Universe*; which has been several times printed, and is ἐν κοινῇ διαλέξει, in the common and ordinary *Greek*. But, if I may expect thanks for the discovery, I dare engage to make out; that the Author compos'd it, not in the dress that it now wears, but in *Doric*, his own Country fashion. For I find, it was agreed and covenanted among all the Scholars of that *Italian Sect*, (b) *φωνῇ χρῆσθαι τῇ πατρίᾳ*, (b) *Fam. blichus Vit. Pythagor.* 202. to use their own Mother-Tongue: this was the injunction of *Pythagoras*; this was the *tessera* of the whole Party; and those that know any thing of their story, will believe they would have lost their Lives, rather than have broken it: 'Tis most certain, if one had publish'd a Book against that

that Injunction, he would have been banish'd the Society. Besides, when *Jamblichus* tells us of this Compact of theirs, he makes not one Exception to it; which he could not have miss'd, neither from ignorance nor forgetfulness, if so common a Tract as this of *Ocellus* had been writ in the *Attic*. Nay, we are assured, that other Pieces of this Author were made in the *Doric*; as one Of *Law*, *Περὶ Νόμου*, cited by (i) *Stobæus*: the fragment begins thus; *Συνέχει τὰ μὲν σκάνεα ζῶα, ταύτας δ' αἴτιον ψυχᾶς τὸ ἡέσμον ἀρμονία, ταύτας δ' αἴτιον ὁ θεός*. But, which is plain demonstration, four citations are brought by the (k) same Writer out of this very Book, *Περὶ τῆς παντὸς φύσεως*, *About the Nature of the Universe*; all which are in *Doric*, and not, as they are now extant, in the ordinary Dialect. The first of them begins thus, *Ἐτι δὲ τὸ ἀναρχὸν καὶ ἀτελεύτατον καὶ τὸ χῆμα καὶ τὰς κινήσεις καὶ τὸ χεῖρον καὶ τὰς ὁσίας τῆτο πιστῶς*: which is thus extant in the vulgar (l) *Ocellus*, p. 16. *Ἐτι δὲ καὶ τὸ ἀναρχὸν καὶ ἀτελεύτητον καὶ τὸ χῆμα καὶ τὴν κινήσεως καὶ τὴν ὁσίας τῆτο πιστῶτα*. The second, thus beginning, *Ἐπει δὲ ἐν τῷ παντί*, extant p. 17. The third, *Πρώτως γὰρ ἔλα τὸ πανδεχές, &c.* thus extant, p. 21. *Πρώτως ἔλη τὸ πανδεχές*. The fourth, *Παντελής δὲ εἶδρα τὰς ὡς τὰν γὰρ*.

(i) *Eclog.*
Phys. c. 16.

(k) *Ibid.*
c. 24.

(l) *Edit.*
Cantab.

ἔστιν διακοσμήσιμος; extant in ordinary Greek,
p. 31. Παντελής ὃ φδορεῖ τὸν Ὀρέτιον γινώ
διακοσμήσεως. From which passages these
two points are manifestly evinced; That
Ocellus composed his Writings in *Doric*;
and so is falsely brought in for an Excuse
to our *Phalaris*: and, which is much
more considerable, That this Tract of his
now extant, is to be acknowledged for a
genuine Work; which hitherto Learned
Men have doubted of, from this very busi-
ness of the Dialect. For we now see by
these Fragments, that every word of the
true Book is faithfully preserved; the
Doric only being changed into the ordi-
nary Language, at the fancy of some
Copier since the days of *Stobæus*.

As for *Empedocles* and *Diodorus*, a Poet
and an Historian, their case is widely re-
mote from that of our Tyrant. The
former, being to write an Epic Poem,
show'd an excellent judgment in laying
aside his Country Dialect for that of the
Ionians; which *Homer* and his followers
had used before him, and had given it, as
it were, the dominion of all Heroic Poetry.
For the *Doric* Idiom had not Grace and
Majesty enough for the Subject he was
engaged in; being proper indeed for
Mimes, Comedies, and Pastorals, where Men
of ordinary rank are represented; or for
* D Epigrams,

Epigrams, a Poem of a low vein ; or for Lyrics, and the Chorus of Tragedy, upon the account of the *Doric* Music ; but not to be used in Heroic, without great disadvantage. And the Historian likewise, with the rest of that and other *Dorian* Nations, *Philistus*, *Timæus*, *Ephorus*, *Herodotus*, *Dionysius Halic.* &c. had great reason to decline the use of their vernacular Tongue, as improper for History ; which, besides the affectation of Eloquence, aims at easiness and perspicuity, and is designed for general use. But the *Doric* is coarse and rustic, and always clouded with an obscurity ; *ἐχέοντι πὺν ἀσάφει τὸ Δωρικὸν διὰ τὴν λέξιν*, says (m) *Porphyry* ; who attributes the decay of the *Pythagorean* Sect to their writing in that Dialect. And we have just now seen an instance of it ; since some body thought it worth his labour, to transcribe *Ocellus* into another Idiom. And now, what affinity is there between *Phalaris's* case, and that of Historians, or Heroic Poets ? What mighty motives can be here for assuming a foreign Dialect ? The Letters are dated in the middle of *Sicily*, mostly directed to the next Towns, or to some of his own Domestics, about private affairs, or even the expences of his family, and never designed for the public view. If any will still

(m) Vita
Pythag.
p. 205.

still excuse the Tyrant for Atticizing in those circumstances, 'tis hard to deny them the glory of being the faithfulest of his Vassals.

XIII. But since Tyrants will not be confined by Laws; let us suppose, if you will, that our *Phalaris* might make use of the *Attic*, for no reason at all, but his own arbitrary humour and pleasure: yet we have still another Indictment against the credit of the Epistles. For even the *Attic* of the true *Phalaris's* age is not there represented; but a more recent Idiom and Stile, that by the whole thread and colour of it betrays it self to be a thousand years younger than He. Every living Language, like the perspiring Bodies of living Creatures, is in perpetual motion and alteration; some words go off, and become obsolete; others are taken in, and by degrees grow into common use; or the same word is inverted to a new sense and notion; which in tract of time makes as observable a change in the air and features of a Language, as Age makes in the lines and mien of a Face. All are sensible of this in their own native Tongues, where continual Use makes every man a Critic. For what *Englishman* does not think himself able, from the very turn and fashion of the Stile, to distinguish

distinguish a fresh *English* composition from another a hundred years old? Now there are as real and sensible differences in the several ages of *Greek*; were there as many that could discern them. But very few are so versed and practised in that Language, as ever to arrive at that subtilty of Taste. And yet as few will be content to relish or dislike a thing, not by their own Sense, but by another man's Palate. So that should I affirm, That I know the novelty of these Epistles from the whole body and form of the work; none, perhaps, would be convinced by it, but those that without my indication could discover it by themselves. I shall let that alone then, and point only at a few particular marks and moles in the Letters, which every one that pleases may know them by. In the very first Epistle; *ἐν ἐμοὶ ὡς πέπεις*, which you accuse me of, is an innovation in language; for which the Ancients used *ὡς πέπεις*. In the xvii. *ὡς δέδωχτά*, having given before, never used by the Ancients in that sense, but always for having betrayed. In the li. *βελουμένω ἐμὲ διώκειν*, desirous to follow me, where he speaks of his Wife that would accompany him in his exile: but *διώκειν* anciently signified, to pursue; when that which fled, fear'd and shun'd the Pursuer. In the

CXLII,

CXLII, among other Presents to a Bride, he sends *θυγατέρας τέτταρας ὁμήλικας*; which would anciently have signified *Daughters*: but he here means it of *Virgins* or *Maidens*; as *Fille* and *Figlia* signifie in *French* and *Italian*; which is a most manifest token of a later *Greek*. Even (n) *Tzetzes*, when he tells the story out of (n) *Chiliad*. this Epistle, interprets it *Maids*, *δεξα-* P. 196.
πάντας. In the LXXVII, *πολλοὶ παίδων ὄντες ἐρασαί*, many that are fond of their children; for that is his sense of the words; which, of old, would have been taken for a *flagitious love of Boys*; as if he had said, *πολλοὶ ὄντες παιδερασαί*. They that will make the search, may find more of this sort; but I suppose these are sufficient to unmask the recent *Sophist* under the person of the old *Tyrant*.

XIV. But should we connive at his using the *Attic Dialect*, and say not a word of those flaws and innovations in his *Stile*; yet there is one thing still, that, I fear, will more difficultly be forgiven him; that is, a very slippery way in telling of *Money*. This is a tender point, and will make every body shy and cautious of entertaining him. In the LXXXV Epistle he talks of a *Hundred Talents*, *τάλαντα ἑκατόν*; of Fifteen more, in the CXVIII; Eight, in the CXXXVII; Seven, in

χίλια

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D 3

the

the CIV ; Five, in the CXLIII ; and Three, in the XCV. These affairs being transacted in the middle of *Sicily*, and all the persons concerned being natives and inhabitants there ; who would not be ready to conclude, that he meant the *Talent* of the Country ? since he gives not the least hint of his meaning a foreign Summ. If a bargain were made in *England*, to pay so many Pounds or Marks ; and the party should pretend at last, that he meant *Scots* Marks, or *French* Livres : few, I suppose, would care to have Dealings with him. Now this is the very case in so many of these Letters. In the LXX, indeed, he is more punctual with *Polyclitus* his Physician ; for he speaks expressly of *Attic* Money, Μυριάδας Ἀττικὰς πέντε. But this is so far from excusing him, that it is a plain condemnation out of his own mouth. For if it was necessary to tell *Polyclitus*, that he meant the *Attic* Money, and not the *Sicilian* ; why had he not the same caution and ingenuity towards all the rest ? We are to know, That in *Sicily*, as in most other Countries, the Name and Value of their Coins, and the way of reckoning by Summs, was peculiar. The Summ *Talent*, in the *Sicilian* Accompt, contained no more in Specie than Three *Attic* Drachms, or *Roman* Denares ; as
plainly

plainly appears from (o) Aristotle, in his now lost Treatise of the Sicilian Government. And the words of Festus are most express; *Talentorum non unum genus: Atticum est sex millium denarium, Syracusanum trium denarium.* What an immense difference!

(o) Pollux
lib. ix. c. 6.

One Attic Talent had the real value of Two Thousand Sicilian Talents. Now, in all these Epistles the very Circumstances assure us, that by the word *Talent* simply named, the Attic Talent is understood. But should not our wise Sophist have known, that a *Talent*, in that Country where he had laid the Scene of his Letters, was quite another thing? Without question, if the true Phalaris had penn'd them, he would have reckoned these Sums by the Sicilian Talents, encreasing only the Number: Or should he have made use of the Attic Accompt, he would always have given express notice of it; never saying *τάλαντον* alone, without the addition of *Ἀττικόν*.

XV. But to let pass all further arguments from Words and Language; to me the very Matter and Business of the Letters sufficiently discovers them to be an Imposture. What force of Wit and Spirit in the Style, what lively painting of Humour, some fanſie they discern there; I will not examine nor dispute. But me-

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D 4

thinks

(p) Suidas
Πάντα ὁ-
κτώ. &
Στησίχ.

(p) Suidas
Πάντα ὁ-
κτώ. &
Στησίχ.

(q) Aristot.
Rhet. l. ii.

thinks little Sense and Judgment is shown in the Ground-work and Subject of them. What an improbable and absurd story is that of the LIV? *Stesichorus* was born at *Himera*; but he chanced to die at *Catana*, a hundred miles distance from home, quite across the Island. (p) There he was buried, and a noble Monument made for him. Thus far the Sophist had read in good Authors. Now upon this he introduces the *Himerenses*, so enraged at the others for having *Stesichorus's* Ashes, that nothing less will serve them, than denouncing of War, and sacking their City. And presently an Embassy is sent to *Phalaris*, to desire his assistance: who, like a generous Allye, promises them what Arms and Men and Money they would: but withal, sprinkles a little dust among the Bees, advising them to milder counsels, and proposing this expedient, That *Catana* should have *Stesichorus's* Tomb, and *Himera* should build a Temple to him. Now, was ever any Declamator's Theme so extravagantly put? What? to go to War upon so slight an occasion? and to call in too the assistance of the Tyrant? Had they so soon forgot *Stesichorus's* own counsel? (q) who, when upon another occasion they would have asked succour of *Phalaris*, dissuaded them by

by the Fable of the *Horse* and his *Rider*. Our Sophist had heard, that Seven Cities contended about *Homer*; and so Two might go to Blows about another Poet. But there's a difference between that Contention, and this Fighting in Earnest. He is as extravagant too in the Honours he would raise to his Poet's Memory; nothing less than a Temple and Deification. *Cicero* tells us, that in his days, there was his Statue still extant at *Himera* (then called *Thermæ*,) which, one would think, was Honour enough. But a Sophist can build Temples in the Air, as cheaply and easily as some others do Castles.

What an inconsistency is there between the LI and LXIX Epistles? In the former he declares his immortal hatred to one *Python*, who, after *Phalaris*'s flight from *Astypalæa*, would have persuaded his Wife *Erythia* to a second marriage with himself; but seeing her resolved to follow her Husband, he poison'd her. Now this could be no long time after his banishment; for then she could not have wanted Opportunities of following him. But in the LXIX Epist. we have her alive again, long after that *Phalaris* had been Tyrant of *Agrigentum*; for he mentions his growing old there. And we must not imagine, but that several years had passed, before he

(r) *Diad.*
Sicul.

p. 205.

(s) *Diog.*
Laert. in
Empedoc.

(t) *Vita*
Phalar.
& *Index.*

he could seize the Government of so populous a City, that had (r) 200,000 Souls in it, or, as others (s) say, 800,000. For he came an indigent Stranger thither, according to the Letters; and by degrees rising from one employment to another, at last had opportunity and power to effect that design. Besides, in the LXIX Letter, she is at *Crete* with her Son; and in the LI, she is poison'd (I suppose) at *Astypalæa*: for there her Poisoner dwelt; and 'tis expressly said, she design'd, but could not follow her Husband. Which seems an intimation, that the Sophist believed *Astypalæa* to be a City in *Crete*. 'Tis certain, our diligent Editors by comparing these two passages together, made that discovery (t) in Geography: for it could not be learnt any where else; and 'tis an admirable token, both that the Epistles are old and genuine, and that the Commentators are not inferior to, nor unworthy of their Author.

What a scene of putid and senseless formality are the LXXIX, LXXIX, and CXLIV Epistles? *Nicocles* a *Syracusan*, a Man of the highest rank and quality, sends his own Brother an hundred miles with a request to *Phalaris*, That He would send to *Stesichorus* another hundred miles, and beg the favour of a Copy of Verses upon *Clearista* his Wife, who was lately dead.

dead. *Phalaris* accordingly sends to *Himera* with mighty application and address, and soon after writes a second Letter of Thanks for so singular a Kindness. Upon the same of this, one (u) *Pelopidas* entreats him, That (u) Ep. lxxv. he would procure the like favour for a friend of His ; but meets with a repulse. Now, whether there was any Poem upon *Clearista* among the Works of *Stesichorus*, whence our Sophist might take the Plot and Ground-work of this story ; or whether all is entirely his own invention and manufacture ; I will not pretend to guess. But let those believe that can, that such stuff as this busied the head of the Tyrant : at least they must confess then, though the Letters would represent him as a great admirer and judge too of Poetry, that he was a mere *Asinus ad Lynam*. For, in the lxxix Epist. he calls this Poem upon *Clearista* μέλῳ and μελῳδίαν, which must here (as it almost ever does) signify a *Lyric Ode*, since it is spoken of *Stesichorus* a Melic or Lyric Poet. But in the cxliv he calls it an *Elegy*, ἐλεγείον ; which is as different from μέλῳ, as *Theognis* is from *Pindar*, or *Tibullus* from *Horace*. What ? the same Copy of Verses both an Ode and an Elegy ? Could not some years acquaintance with *Stesichorus* teach him the very Names ? But to forgive Him, or rather the

the Sophist, such an egregious piece of Dulness; why, forsooth, so much ado, why such a vast way about, to obtain a few Verses? Could not they have writ directly to *Stesichorus*, and at the price of some Present have met with easie success? Do not we know, that all of that String, *Bacchylides*, *Simonides*, *Pindar*, got their livelyhood by the *Muses*? So that to use *Phalaris's* intercession; besides the delay, and an unnecessary trouble to both, was to defraud the Poet of his Fee.

Nay certainly, they might have employed any hand, rather than *Phalaris's*. For, begging pardon of the Epistles, I suspect all to be a Cheat, about *Stesichorus's* friendship with him. For the Poet, out of common gratitude, must needs have celebrated it in some of his Works. But that he *did not*, the Letters themselves are, in this point, a sufficient witness. For, in the LXXIX, *Phalaris* is feigned to entreat him, not once to mention his Name in his Books. This was a fly fetch of our Sophist, to prevent so shrewd an objection from *Stesichorus's* silence as to any friendship at all with him. But that cunning shall not serve his turn. For what if *Phalaris* had really wished him to decline mentioning his Name? *Stesichorus* knew the World well enough, that those
fort

fort of requests are but a modest simulation; and a disobedience would have been easily pardoned. In the LXXIV Letter, he proclaims and glories to his enemy *Orsilochnus*, that *Pythagoras* had stay'd five Months with him: why should he then seek to conceal from Posterity the twelve Years familiarity with *Stesichorus*? *Pindar*, exhorting *Hiero* the Tyrant of *Syracuse* to be kind to Poets and Men of letters, tells him how *Cræsus* had immortal praise for his friendship and bounty to them, *but the* (w) *memory of that cruel and inhospitable Phalaris was hated and cursed everywhere*. How could *Pindar* have said this, had he heard of his extraordinary dearness with *Stesichorus*? For their acquaintance, according to the Letters, was as memorable and as glorious, as that of *Cræsus* with *Æsop* and *Solon*. So that *Pindar*, had he known it, for that sole kindness to his fellow Poet, would have forborn so vile a character. *Plato*, in his Second Epistle, recounts to *Dionysius* some celebrated friendships of learned Men with Tyrants and Magistrates; *Simonides*'s with *Hiero* and *Pausanias*, *Thales*'s with *Periander*, *Anaxagoras*'s with *Pericles*, *Solon*'s and others with *Cræsus*. Now, how could he have missed, had he ever heard of it, this of *Stesichorus* with *Phalaris*? being transacted in *Sicily*, and so a most proper

(w) *Pyth. i.*
 Τὸν ὁ γὰρ
 ῥῶ χαλκίῳ
 καυτῆρα
 νηλεῶς νόον
 ἔχθρῳ
 φάλαειν
 κατέχει
 πάντα φά-
 ρος.

proper and domestic Example. If you say, the infamy of *Phalaris* made him decline that odious instance : in that very word you pronounce our Epistles to be spurious. For if They had been known to *Plato*, even *Phalaris* would have appeared as moderate a Tyrant as *Dionysius* himself. (x) *Lucian*, that feigns an Embassy from *Phalaris* to *Delphi* for the dedication of the Brazen Bull, makes an Oration in his Praise, as *Isocrates* does of *Bufris* ; where, without doubt, he has gathered all the stories he knew for Topics of his commendation : but he has not one word of his friendship with *Stesichorus*. Nor, indeed, has any body else. And do not you yet begin to suspect the credit of the Letters ?

It would be endless to prosecute this part, and shew all the silliness and impertinency in the Matter of the Epistles. For, take them in the whole bulk ; if a Great Person would give me leave, I should say, they are a fardle of Common Places, without any life or spirit from Action and Circumstance. Do but cast your eye upon *Cicero's* Letters, or any States-man's, as *Phalaris* was : what lively characters of Men there ! what descriptions of Place ! what notifications of Time ! what particularity of Circum-

Circumstances ! what multiplicity of Designs and Events ! When you return to these again, you feel, by the emptiness and deadness of them, that you converse with some dreaming Pedant with his elbow on his desk ; not with an active, ambitious Tyrant, with his Hand on his Sword, commanding a Million of Subjects. All that takes or affects you, is, a stiffness and stateliness and operoseness of Style : but as that is improper and unbecoming in all Epistles, so especially it is quite aliene from the character of *Phalaris*, a man of business and dispatch.

XVI. It must needs be a great wonder to those that think the Letters genuine ; how or where they were conceal'd, in what secret Cave, or unknown Corner of the World ; so that no body ever heard of them for a thousand years together. Some trusty Servant of the Tyrant must have buried them under ground ; and it was well that he did so. For if the *Agri-gentines* had met with them, they had certainly gone to pot. They that burnt alive both Him, and his Relations, and his Friends ; would never have spared such monuments of him, to survive Them and their City. And without doubt it was immortal Vellum, and stoln from the (y) *Parchments of Jove* ; that could
last

(y) Διὸς.
παρ Διὸς.

last for ten Ages, though untouch'd and unstirr'd; in spite of all damp and moisture, that moulders other mortal skins. For had our Letters been used or transcribed during that thousand years; some body would surely have spoken of them. Especially since so many of the Ancients had occasion to do so: so that their silence is a direct argument that they never had heard of them. I have just now cited some passages of *Pindar*, *Plato*, and *Lucian*; which are a plain indication, that they were unknown to those Three. Nay, the last of these, besides the proof above-named from his silence and prætermission, does as good as declare expressly, that he never saw our Epistles. For, not to mention other differences of less moment, he makes both (2) *Phalaris*, and his Smith *Perilaus*, to be born at *Agri- gentum*; but the Letters bring one of them from *Astypalæa*, and the other from *Athens*. *Lucian* then knew nothing of them; or at least knew them, as I do, to be spurious, and below his notice. Much less could he be the Author of them, as *Politian* and his followers believe; for he would neither have been guilty of such flat Contradictions; nor have so forfeited all Learning and Wit, by those gross blunders in Chronology, and that wretched pedantry

(2) *Pha-*
lar. i. 'Εγώ
ῥδ' ἔφη α-
φανῶν ἐν
Ἀκρόγαν-
τιῶν. &
ibid. Πε-
εἶλαος ἦν
πρὸς ἡμετέ-
ρας.

pedantry in the Matter. And whosoever those Authors were, that *Lucian* followed, in his Narrative of *Phalaris*; They too are so many Witnesses against the *Epistles*. One can hardly believe, indeed, that the Sophist should venture to fetch his Tyrant from *Astypalæa*, without the warrant of some old Writer. But yet *Lucian* and his Authors compell us to think so. And we find him as fool-hardy on other occasions.

(a) *Heraclides* of *Pontus*, that lived within two Centuries of *Phalaris*'s Age, says, the *Agrigentines*, when they recovered their

(a) *De Polit.* ἐνέπρησε ὁ δὲ ἄνθρωπος μνηστέον.

Liberty, burnt Him and his Mother: but our Sophist makes him an Orphan; (b) ὁ γὰρ

(b) *Epist.* xlix.

ὡς πεινέειν αὐτὸν; which if any one shall contend to mean the loss of his Father only, yet still He and *Heraclides* will not set horses together. For if *Phalaris* fled alone from *Astypalæa*, neither Wife nor Child nor any Relation following him, according to the Letters; how came the Old Woman

to be roasted at *Agrigentum*? (c) *Jamblichus* brings in *Abaris* the Hyperborean in company with *Pythagoras*, to *Phalaris*'s

(c) *Vita Pythag.* p. 183.

Court: But our Sophist has writ a (d) Letter for him, wherein he refuses to come. So little regard had he, to fit his stories to true History: and I have had too much regard to him, in giving him the Honour and Patience of so long an Examination.

(d) *Epist.* lvii.

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E

I must

I MUST now beg the favour of one word with our late Editors of this Author. They have told the world, in their Preface, That (among other Specimens of their Diligence) they collated the King's MS. as far as the XL Epistle ; and would have done

(e) Præf. Phalar. Edit. Oxon. Manuscripto in Bibliotheca Regia, cujus mihi copiam ulteriorem Bibliothecarius pro singulari sua humanitate negavit.

so throughout, but that the Library Keeper, (e) out of his singular Humanity, denied them the further use of it. This was meant as a Lash for Me, who had the Honour then

and since to serve His Majesty in that Office. I must own, 'twas very very resolv'd of them, to make the Preface and the Book all of a piece ; for they have acted in this Calumny both the injustice of the Tyrant, and the forgery of the Sophist. For my own part, I should never have honour'd it with a Refutation in Print, but have given it the Neglect that is due to Weak Detraction ; had I not been engaged to my Friend, to write this Censure upon *Phalaris* ; where to omit to take notice of that Slander, would be tacitly to own it. The true story is thus : A Bookseller came to me, in the name of the Editors, to beg the use of the Manuscript. It was not then in my custody : but as soon as I had the power of

of it, I went voluntarily and offer'd it him ; bidding him tell the Collator not to lose any time ; for I was shortly to go out of Town for two Months. 'Twas deliver'd, used, and return'd. Not a word said by the Bearer, nor the least suspicion in me, that they had not finish'd the collation. For, I speak from experiment, they had more Days to compare it in, than they needed to have Hours. 'Tis a very little Book, and the Writing as legible as Print. Well, the Collation, it seems, was sent defective to *Oxon* ; and the blame, I suppose, laid upon Me. I return'd again to the Library, some months before the Edition was finish'd : No application was made for further use of the Manuscript. Thence I went for a whole fortnight to *Oxon*, where the Book was then printing ; conversed in the very College where the Editors resided. Not the least whisper there of the Manuscript. After a few weeks, out comes the new Edition, with this Sting in the Mouth of it. 'Twas a surprize, indeed, to read there, that our Manuscript was not perused. Could not they have ask'd for it again, then, after my return ? 'Twas neither *singular*, nor common *Humanity*, not to enquire into the truth of the thing ; before they ventur'd to Print, which is a Sword in the

Hand of a Child. But there is a reason for every thing; and the mystery was soon revealed. As for the King's Manuscript, they had no want nor desire of it; for, as I shall shew by and by, they had neither industry nor skill to use either That or their Own. And for my part; I, it seems, had the hard hap, in some private conversation, to say the *Epistles* were a spurious Piece, and unworthy of a new Edition. *Hinc illæ lachrimæ.* This was a thing deeply resented; and to have spoken to me about the Manuscript, had been to lose a plausible occasion of taking revenge.

Pro singulari sua humanitate! I could produce several Letters from learned Professors abroad, whose Books our Editors may in time be fit to read; wherein these very same words are said of me candidly and seriously. For I endeavour to oblige even Foreigners by all Courtesie and Humanity; much more would I encourage and assist any useful Designs at home. And I heartily wish, that I could do any service to that young Gentleman of great Hopes, whose Name is set to the Edition. I can do him no greater at present, than to remove some blemishes from the Book that is ascribed to him: which I desire may be taken aright; to be no disparagement to himself, but a reproof only to his Teachers.

It

It is counted an ill Omen to stumble at the Threshold. In the very First Epistle to *Alcibous*, we have these words, *Ψυχῆς ἡ νόσον ἰατρὸς ἰάται θάνατος* : ὃν ἀνεπαχδέστατον ἀντὶ πολλῶν καὶ μεγάλων ἀδικημάτων, ἐκ ἁκισίων ὧν ἐμοὶ περὶρέπεις, ἀλλ' ἐκισίων ὧν αὐτὸς ἐργασαί περὶδέχεται : that is, *For a disease of the Soul, the only Physician is Death : do you therefore expect a most painful one for those many and great injustices, not involuntary ones, such as you accuse Me of, but voluntary ones that your self have committed.* Let us see now, how our new Editors have managed this passage. First, they interpret ἀνεπαχδέστατον, *nulli gravem* : meaning, I suppose, that *Alcibous's* death would be grievous to no body. Which not only produces a flat and far-fetched sense, but is contrary to the rules of good Language. For the *Greek* is in the Superlative degree : let them put it then *nulli gravissimam* ; and it will shew them the error of their Version. It will be evident to such as know propriety of Speech, that ἀνεπαχδέστατον, since no Dative Case follows it, must be referred to *Alcibous*, and to no body else. I do not expect from our Editors much sagacity in way of Critic : but though they could not of themselves find out the true Reading ; yet methinks they might have embraced

braced it, when they saw it in the Manuscript ; which reads it, *ὃν ἂν ἐπαχθέσταιον*, a most grievous and cruel death ; meaning that in the Brazen Bull ; which he calls, in the cxxii Epist. *ὄλεθρον ἀχθέστατον*, an epithet of the same root and signification. **Ἄν* in this place, is an expletive particle, *παρεπληρωματικόν*, as the Grammarians call it ; which being a rare and quaint usage, was the cause of corrupting the Text.

(f) *Præf.*
P. 3.

The next words in the same passage, *ἀδικημάτων, ἐκ ἀκέρων*, our elegant Interpreters render *scelera, non invita*. And this we are to receive for one of their many (f) improvements after the former Translators. Those Old ones, good honest Men, put us off with plain country Latin, *Scelera, non præter voluntatem patrata*, and other such Periphrases. For, as it was in their days believed, *ἄκων* signified *unwilling*, and was always meant of the Agent : *ἀκέρων* was *involuntary*, and generally meant of the Action. And this latter, when it signifies the Action, cannot be expressed in Latin by one single word. For *Involuntarius* was not in use ; and *Invitus* is the same with *ἄκων*, and is always spoken of the Person, never of the Thing. So that if any body else had said *scelera invita, unwilling Crimes* ; some bold

bold Readers would be apt to take it for Barbarism and Nonsense: but coming from those great Genius's, with whom Learning, that is a leaving the world, has taken her last residence, they receive this as a new discovery in Language; like (g) another of theirs in Geography.

(g) Sup.
P. 44.

In the very next words to these, ἀκρότων, ὧν ἐμοὶ προσέειπες; let us see if they make any better work there. *Invita, ad quæ me hortaris; Involuntary Crimes, to which you exhort me*, says the version of our late Editors. Admirably well done again! Pray, how can this *Alcibous, a Messenian*, be said to *exhort* him to those Cruelties, who so much abhorred Him and Them, (as it is in this very Letter,) that he had the Physician his Townsman tried for his own Life, for saving the Tyrant's? It would puzzle a common Wit to reconcile this; but here's a Note upon this passage, that will set every thing aright. (h) *Ad quæ me hortaris;* i. e. *Moribus tuis nequissimis provocas.* Commend me to these Annotators for a help at a dead lift. *To provoke a Man*, we see, *with the basest tricks*, is, in their language, to *exhort* him. So that when They, by a vile aspersion, instead of thanks for a kindness receiv'd, have given me just *provocation* to answer them as they de-

(h) Annot.
ad Phalar.
p. 145.

*

E 4

serve;

serve ; it is only, in their manner, to *exhort* me to do it. It is my *singular Humanity*, that I do not follow their Exhortation. But I am apt to believe, that even the Sophist himself, as illiterate as he was, would disdain to own such a version to be the Echo of his meaning. Had he had in his thoughts so ridiculous a sense as they father upon him ; he would have said then, εἰς ἃ, or, ἐπ' ἃ ἐμὲ παροτρύνεις. For that is the Syntax of παροτρύνω, when it signifies to *exhort*. Whereas ἃ ἐμοὶ παροτρύνεις (the ὧν in the Text is for ἃ) is, in that sense, as absurd and incongruous in *Greek* ; as *Quæ mihi hortaris*, or, *Quæ mihi provocas* would be in *Latin*. I think I have shewn already, that παροτρύνω is here ἐνεδίξεν, *exprobrare*, to accuse and reproach : *Those involuntary wrongs, that you lay to my charge*. 'Tis true, the word is not used in this acceptance by any ancient Authors. I have mention'd it therefore above, as a token of a more recent Writer. But without doubt it was of known use in the age of the Sophist ; and the innovation was not at all improper. For as the Ancients, both in Poetry and Prose, used παροτρύνω to denote this meaning ;

Γαστέρι μοι παροτρύνεις, χέλλισον Ὀνείδος ἅπαντων.

so by a like metaphor and analogy, we may use *περιτρέψαι* to express the same notion: just as the Latins say, *vitio VERTERE*. All this, I suppose, was known to the Translator of *Phalaris*, who is commonly, but, I believe, falsely supposed to be *Cujacius*; for he interprets it very well, *Cujusmodi mihi objicis*. But that Edition, and another of *Aldus*, tho' the two principal of all, and both of them in the public Library at *Oxon*, had yet the odd fortune to lie all the while conceal'd (*i*), from our late Editors that lived there. (i) *Præf.*
p. 3.

I was, but just now, in the mind to oblige them, by going through their whole Book, and correcting for them all the Faults, that give offence to the best Readers. But now, that I cast my eye backwards, it makes me look as blank, at the prospect of all that's to come; as *Hercules* did, when, after he had made a bargain unseen, he saw the Stables of *Augeas*. For if the very First Epistle, of nine Lines only, has taken me up four Pages in scouring; what a sweet piece of work should I have of it, to cleanse all the rest for them? I must beg their Excuse therefore for the present; and shall only, to keep my Promise, give one Touch of their industry and skill, in making use of the Manuscript.

They

(k) *Pref.* They have confessed to us, they col-
 P. 4. lated the Manuscript to the (k) xl Epistle.

But, it seems, they could make no use of its various Lections, but in one single place, Epist. xxvi. It is writ to one *Ariphrades*, to caution his Son to leave off plotting against *Phalaris*; *ἵνα, ἔτιαν ἐπ' αὐτῷ γένῃται τῷ κακῷ διαλέων ἐν οἷς ἔστι, μὴ περὶ ποινῇ δοκῶν ἡβουκῆναι*; lest, when punishment overtakes him for persisting in his present courses, he pretend he had not fair warning. But what now do our new Editors make of this? *διαλέων ἐν οἷς ἔστι*, they translate, *suam expendens conditionem*. This puts me in mind of the old Greek Proverb, *That Leucon carries one thing, and his Ass quite another*. For here's no affinity at all between the Text and the Version; which would every whit as well agree to any other words in the Book.

Even our Editors themselves seem sensible of this; for they give us this Note upon it, (l) *That διαλέων cannot admit here of any other meaning: and yet they find it no where else used in this sense*. I dare pass my word for the truth of this

latter part: to the former I shall say more anon. So that, say they, the better Reading is in the King's Manuscript,

διὰ τῶν

(l) *Διαλέων alium sensum hic vix admittit. in eodem tamen usurpatum nullibi invenio. Melius itaque in MS. Regio διὰ τῶν ἐν οἷς ἔστι, ob ea quæ jam agit. Annotat. pag. 146.*

διὰ τῶν ἐν οἷς ἔστι, i. e. for those things which he now does. In the King's Manuscript, which I have now by me, it was written at first, διατέων : but another Hand has rased out the ε, as appears by the void space, and made it διὰ τῶν. This Corrector, whoever he was, though we know him from hence to be a sorry Critic ; yet he was a degree above our new Editors. For he made his τῶν an Enclitic ; but they theirs an Interrogative, as we see by their Accent. Which in this place is directly against either common Grammar, or common Sense ; chuse whether they please. But the genuine lection and meaning is, as I rendred it above ; διαλέων ἐν οἷς ἔστι, persisting and proceeding in his present ways. So in the xxxix Epist. μέων ἐν οἷς ἔστι, continuing in the present station. 'Tis true, our Editors will not find διαλέων thus rendred in their Dictionaries : but they may please to enlarge them then from this very place. For, is not διαλέω exactly the same as the Latin *PERTENDO* ? And is not *Pertendo*, to persist and persevere ?

(m) *Verum si incipies, neque pertendes naviter.*

(m) *Ter.
Eunuch.*

Even the Version ascribed to Cujacius has here the true interpretation, *Persistens in proposito* : which I would advise our Editors

tors to consult, when they design to oblige the world by another Edition.

This is all the use they have made of the King's Manuscript: let us see if they have been more diligent in their own. In the xxxiv Epist. the Tyrant tells one *Pollux*, who wonder'd he was grown so recluse, and difficult of access; ἐγὼ δὲ ἐνδέστερον ἢ δὴ φεύγω πάντας ἀνθρώπους: *Nay*, says he, *I avoid company less than I ought to do; for I have found no faith either among strangers or friends.* Our new Interpreters have given us here a cast of their Critic; for (n) instead of ἐνδέστερον they venture to read ἐκτενέστερον, *ego jam sedulo omnes fugio*: as for the former Læction, they confess they know not what to make on't. Here are your Work-men to mend an Author; as bungling Tinkers do old Kettles: there was but one hole in the Text before they medled with it, but they leave it with two. For the fault is not in ἐνδέστερον, but in ἢ δὴ; which is to be corrected ἢ δὲ: ἐνδέστερον ἢ δὲ, *minus quam par est, minus quam oportet.* This is so very easie an Emendation, that a small dose of sagacity might have found it out, by conjecture. But what will the Men of Letters think of our Editors? will they commend their skill or their industry most? when I assure them, that all the Three Manuscripts

(n) Legendum forsitan ἐκτενέστερον, quam enim interpretationem ἐνδέστερον hic admittat, non video.

manuscripts which they pretend to have collated, have it plainly and fairly ἢ δὲ. Which fault will the Editors plead to? to make a public boast of collating Three Manuscripts, and yet neglect every one of them? or, to have observed in the Manuscripts so certain a Correction, without either knowledge to make use on't themselves, or ingenuity to communicate it to the world? 'Tis a bad business on either side; and yet it receives a great aggravation from this other which follows. Epist. LXVIII. Phalaris, to encourage his Son's Bounty; *I do not think, says he, you spend me too much money, ἀλλ' ἐμαυτὸν ἐνδεέστερον εὐρίσκω ἢδὲ γενναιοτέρῳ παιδὶ ὑπερέειν; but I rather think I allow you too sparingly, for so generous a Son.* Here is ἐνδεέστερον ἢδὲ comes again. Now, every one of the Manuscripts have it here too ἢ δὲ: Two of which, they pretend, in their Preface, to have thoroughly collated. And yet they take not the least notice of this plain Emendation, ἐνδεέστερον ἢ δὲ, *parcius æquo, parcius quam oportet*; but blunder on with the vulgar (o) *Ego me Reading, and translate it, (o) But I find my self too poor to supply your Liberality.* Which, besides that it does not answer the words of the Greek, (which would then have been, ἢδὲ, ἢ γενν.) makes mere non-
(o) *Ego me*
pauperiorem
invenio,
quàm ut
fili benig-
nitati suf-
ficere pos-
sim.

nonsense of the Context. For in the very next sentence, he tells his Son ; *You shall sooner want friends to give it to, than I want money to give.* Ingenious Translators ! to make him complain of Poverty, and in the same breath to declare that he has Riches without end.

Let this serve for a short Specimen of their Care and Skill in using of Manuscripts. I have many more instances ready at hand ; but their *Humanity*, I hope, will pardon me, if I don't produce them now ; nor now proceed, as I once thought, to weed all their Book for them. My Time does not lie upon my hands ; and this Tract must be only a short Appendix to the Book of my Friend : but it's likely hereafter, if, in their way of speaking, they mightily *exhort* me to it ; I may be at their service ; if not in this, yet in another Language : to carry the same and glory of our Editors, whither such Editions as theirs seldom go, to foreign Universities.

O F

OF
THEMISTOCLES' EPISTLES.

S I R,

I Presume I have been as good as my word, in detecting the cheat of *Phalaris's Epistles*: the other part of my Promise was a Censure of *Æsop's Fables*. But before I meddle with those, I am willing, now that my Hand's in, to examine some other Impostures of this sort, out of the same Schools of the Sophists. It will be no unpleasant labour to me, nor, I hope, unprofitable to others, to pull off the disguise from those little Pedants, that have stalked about so long in the apparel of Hero's.

The *Epistles of Themistocles* were printed first at *Rome*, in MDCXXVI, out of a Manuscript in the *Vatican*. The Editor, a *Greek Bishop*, believed them genuine; but there were some that suspected a Forgery, as (p) *Leo Allatius* informs us: who himself leaves the matter in doubt; (p) *De Script. Socrat. p. 78.* but withal observes in their favour, that no body had ever said a word in print, to prove them to be spurious. (q) *Suidas* (q) *V. Θε.* is *μυσος.*

is an Evidence in their behalf ; for, speaking of their reputed Author, he says, *he has writ Letters full of Spirit*, ἐγγράφων ἐπιστολὰς φερόντων γέμους. He, I think, is the only old Writer that makes any mention of them. Which alone, as before in *Phalaris's* case, is a shrewd prejudice against their Credit and Reputation.

(r) Lib. 1.
P. 90.

(r) *Thucydides* and *Charon Lampsacenus* say that *Themistocles*, when he fled into *Asia*, made his address to *Artaxerxes*, who was newly come to the Throne ; wherein they are followed by (s) *Cornelius Nepos* and *Plutarch* ; against the common tradition of *Ephorus*, *Heraclides*, and most others, that make *Xerxes* the Father to be then alive. Some (t) Writers relate, that he had five Cities given him by the *Persian* ; others, but three. Now, if the Letters had been known to any of those Authors, both these Disputes had been soon at an end, or rather never had been raised.

(s) Vita
Themistoc.

(t) Plu-
tarch, Dio-
dor. Athe-
næus, &c.

(u) Ep. xx. For he himself expressly says, (u) it was *Xerxes* he went to, and that he gave him but three Cities. Now, where could these Epistles lie, unknown and invisible from *Themistocles's* time to *Suidas* ? We must needs say, that the Letters had a worse Exostracism than their Author : since he was banisht but for five Years, but they for a Thousand.

'Tis

II. 'Tis observable, That every one of the Letters bear date after his banishment ; and contain a compleat Narrative of all his Story afterwards, without the least gap or interruption. Now 'tis hard to say, whether is the more strange of the two ; That not one single Letter of his, before that time, should be preserved ; or not one, afterwards, lost, though written from so distant places, *Argos, Corcyra, Epirus, Ephesus, Magnesia*, from whence there was no very sure conveyance to *Athens*. What a cross vicissitude of Fortune ! while the Author is in Prosperity, all his Letters are unlucky ; and not one of them is missing, after he himself miscarried. But the Sophist can easily account for this, though *Themistocles* cannot : for here are no Letters before his Exile ; because the latter part of his Life was the whole Tour and Compass that the Sophist designed to write of : and not a Letter afterwards perished ; because being forged in a Sophist's Closet, they run no hazard at all of being lost in the carriage.

III. *Themistocles* was an Eloquent Man ; but here are some touches in his Letters of such an elevated strain, that if he did not go to School to *Gorgias Leontinus* the Sophist of that time, I can hardly believe he writ them. The Historians tell us mo-
F
derately,

- derately, That after he was driven from home, he was made much on at *Argos* : but He himself is all melting, when he
- (w) Ep. i. talks on that Subject. (w) He was met, he says, on the road by two *Argivans* of his acquaintance ; who, when he told them the news of his Banishment, rail'd bitterly at the *Athenians* : but when they heard he was going to *Delphi*, rather than to Their town ; in a kind quarrel they tell him, That (x) *the Athenians had justly punished him* ; since he so much wronged the City of *Argos*, to think of any Sanctuary but that. Well, he goes with them to *Argos* ; and there the whole City
- (x) Ἐπα-
νείν Ἀθη-
ναίης, ὡς
δίκαια τι-
νόντων ἡ-
μῶν.
- (y) Ἀνα-
χάζουσιν, ὡς
ἀδικήμε-
νοι, ἢν μὴ
ἀρχώμεν.
- (y) teazes him by mere force to take the Government upon him ; taking it as the greatest injury, that he offer'd to decline it. These, you'll say, are choice flowers both of Courtesy and of Rhetoric : but there's another clearly beyond them ; where he
- (z) Ep. xiv. tells us, (z) That he is so resolved of going to the *Persian Court*, though it was a desperate risque ; that neither the Advice of his Friends, nor his Father Neocles's Ghost, nor his Uncle Themistocles's, nor Augury, nor Omen, nor Apollo's Oracle it self, should be able to dissuade him. Here's a bold resolute Blade for you ! here's your Stoical *κλέμενα* ! 'Tis almost impossible for a Sophist not to betray him-

himself. Nothing will relish and go down with them, that is ordinary and natural. Then they applaud themselves most, when they have said a forced, extravagant thing. If one speaks of any Civility; the Complement must be strain'd beyond all Decorum. If he makes a Resolution; he must needs swagger and swear, and be as willful as a Mad man.

IV. The Subject of many of the Letters is Common place; mere Chat, and telling a Tale, without any Business; an Errand not worth sending to the next Town, much less to be brought from remote Countries some hundreds of Leagues. The xv and xviii Letters are written to Enemies; his Friends, I suppose, failing in their Correspondence: and contain nothing but a little Scolding; which was scarce worth the long carriage from *Ephe-sus* to *Athens*.

V. In the xx Epistle we have this Story: When *Themistocles* was at *Corcyra*, he design'd for *Sicily*, to *Gelo* the *Syracusan* Tyrant. But just as he was going a Ship-board, the news came that *Gelo* was dead, and his Brother *Hiero* succeeded him. Now, if we make it appear, that *Hiero* was come to the Crown some years before *Themistocles's* Banishment, and this Voyage to *Corcyra*; what becomes of the

Credit of our Epistles? 'Tis true, the Chronology of this part of History is not so (a) settled and agreed, as to amount to a Demonstration against the Letters; but however, when joined with the Arguments preceeding, at least it will come up to a high Probability. (b) *Theophrastus*, in his Treatise of *Monarchy*, relates, That when *Hiero* had sent Race-horses, and a most sumptuous Tent, to the *Olympian Games*; *Themistocles* advised the *Greeks* to plunder the *Tyrant's* Tent, τὴν τυράννου, and not to let his Horses run. 'Tis evident then, if *Theophrastus* speak properly, that *Hiero* was *Monarch* of *Syracuse*, when *Themistocles* was at *Olympia*; but it's most certain he never came thither after his Exile.

But, to deal fairly, it must be confessed, that *Ælian*, in telling this story, varies from *Theophrastus*; for he says, (c) *Hiero* himself came to the Games. But that he would go thither in Person, after he got the Government, is wholly improbable. So that, if *Ælian* be believed, this business must have been done, before *Hiero* came to the Throne. For even in *Gelo's* life-time, who left him the Monarchy, he kept Horses for the Race; and won at the *Pythian Games*, (d) *Pythiad* the xxvi, which answers to *Olymp.* Lxxiv. 3. But besides

(a) Οὐδ' αὐτοῖς χρόνοις ἀνέμα συνίσταται.
Plut. Them.
p. 227.

(b) Περὶ Βασιλείας
apud *Plut.*
Them. p.
225.

(c) *Var.*
Hist. ix, 5.

(d) *Pind.*
Schol. Pyth.
1, & 3.

besides that *Theophrastus* is of much greater authority, the other refutes himself in the very next words. For he says, *Themistocles* hindred *Hiero* upon this pretence; That he that had not shared in the common Danger, ought not to share in the common Festival: where it's certain, by the common Danger, he means *Xerxes's* Expedition; when (e) *Gelo* either refused (e) *Herod.* or delayed to give the *Greeks* his assistance. *vii. c. 163.* *Diod. xi.* This affront then was put upon *Hiero*, p. 21. after that Expedition. But the very next (f) Olympiad after, *Hiero* was in the (f) *Diod.* Monarchy. It cannot be true then, that xi. p. 29. his first accession to the Throne, was, according to the Letters, while *Themistocles* stay'd at *Corcyra*.

Besides these Inferences and Deductions, we have the express Verdict and Declaration of most of the (g) Chronologers, (g) *Scho-* who place the beginning of *Hiero's* Reign *li. Pind.* Olymp. LXXV, 3. and *Themistocles's* Banishment *Pyth. 1.* seven years after, Olymp. LXXVII, 2. *Diod. xi.* The *Arundelian* Marble, indeed, differs p. 29, 41. from all these, in the periods of *Gelo* and *Hiero*: which would quite confound all *Euseb. in* this argumentation from notes of Time. *Chron.* But either that Chronologer is quite out, or we can safely believe nothing in History. For he makes *Gelo* first invade the Government, two years after *Xerxes's* Expedition.

(b) Lib. vii. But (b) *Herodotus* spends half a dozen pages in the Account of an Embassy to *Gelo* from *Sparta* and *Athens*, to desire his assistance against the *Persian*. And 'tis agreed among all, (i) That *Gelo's* Victory over the *Carthaginians* in *Sicily* was got the very same day with the Battle at *Salamis*.

(i) *Herodot.*
ibid. &
Diod. l. xi.

VI. The whole Volume of *Themistocles's* Letters consists of *xxi* only; and Three of these are taken up in the story of *Pausanias*. The Second is writ to *Pausanias* himself, before that *Spartan's* Conspiracy with the *Persian* was discovered. There he exhorts him to moderation in his Prosperity; lest some very great turn of Fortune should speedily befall him. Can you desire now a surer indication of a Sophist? Without doubt, he that penn'd this Epistle, knew beforehand what happen'd to *Pausanias*: who was soon after recall'd home by the Magistrates, and put to death for Treason. The *xix* is to *Pausanias* again; but after his Conspiracy was detected. Here he tells the Particulars of that Plot as exactly, as if he had been one of the *Ephori*, that over-heard it. Nay, he foretells him, that the *Lacedæmonians* would take away his life. Now besides that *Themistocles* would scorn to insult so, and rail to no purpose, as this Letter does; he would surely have had

had more wit, than knowingly to write to the Dead. For at the same time he heard those Particulars of *Pausanias's* Treason, he must needs hear of his Execution; since those things were not known till after his Death, and the rifling of his Papers. The vi Epistle is a long Narrative of the whole business of *Pausanias*: for that was a Subject worthy of Eloquence, and therefore was to receive ornament from the Pen of the Sophist. But it was scarce worthy of *Themistocles*, to send such a long News-Letter to *Athens*; where, in all likelihood, the Story was common, before he heard of it himself.

But how shall we reconcile this Affair of *Pausanias* according to the Letters, with what *Diodorus* has left us upon the same Subject? The Letters, we see, make *Themistocles* to be banisht, (k) before *Pausanias* (k) Ep.ii. was suspected; and make the one reside at *Argos*, (l) while the other was convicted (l) Ep.xix. and put to death. But *Diodorus*, who has^{vi.} brought all his History into the method of *Annals*, places the Death of *Pausanias* (m) (m) Lib.xi. Olymp. LXXV, 4; and the Exile of *Themistocles*, (n) six years after, Olymp.LXXVII, 2. (n) Lib.xi. Now, I would fain know of our Sophist, P. 41. how he came to dispose and suit his matters so negligently; to bring *Pausanias* upon the stage again, when he had been

(o) Lib. i.
p. 88.

fix years in his Grave? I imagine he will refer me to (o) *Thucydides*, who makes an immediate transition from one story to the other; 'That the *Spartans* accused *Themistocles*, who was then banisht from home, 'of conspiring with *Pausanias*.' This, indeed, might draw the Sophist and some others into a mistake. But it may be taken two ways: either that it was done presently, upon the Death of *Pausanias*; or a few years after, when *Themistocles*'s Exile gave the *Spartans*, that hated and fear'd him, an opportunity to ruine him. (p) *Plutarch* follows the first way; for he makes *Themistocles*, after his Banishment, to have private dealings with *Pausanias*: in which opinion he favours the Author of these Letters. But the second will rather appear to be the sense of *Thucydides*: if we consider, that he places the matter of *Pau-*

(p) In *Themistocles*. P.
224.

(q) P. 63. *sanias* (q) just after the flight of *Xerxes*; but when *Themistocles* went into *Asia*, he makes (r) *Artaxerxes* to be in the Throne; which was a considerable while after. Besides that *Diodorus*, whose design was to refer all Occurrences to Years, and not to follow the thread of Story beyond the annual Period, is of more credit in a point of Chronology; than *Plutarch* or any other, that write Lives by the Lump.

(r) P. 90.

OF

OF
SOCRATES'S EPISTLES.

THE *Epistles of Socrates*, and his Scholars, *Xenophon, Aristippus, &c.* were publish'd out of the *Vatican Library* by the Learned *Leo Allatius*; and printed at *Paris*, MDCXXXVII. He was so fully persuaded himself, and so concerned to have others think, that they are the legitimate Off-spring of those Authors they are laid to; that he has guarded and protected them, in a Dialogue of LVII Pages in *quarto*, against all the Objections that He or his Friends could raise. And no body since, that ever I heard of, has brought the matter into controverſie. But I am inclin'd to believe, that by that time I have done with them, it will be no more a Controverſie, but that they are ſpurious. I ſhall make uſe of nothing that *Allatius* has brought, except one Objection only; and that I ſhall both manage in a new way, and defend it againſt all his Exceptions.

I. The First Letter is *Socrates's* to ſome King, 'tis ſuppoſed to *Archelaus* King of *Macedonia*; in which he refuſes to go to him,

(s) Τῆς
 βασιλείας
 τὸν μέρος
 δίδοναι.
 & Ἀρχοντα
 καὶ τὸν ἀλ-
 λων καὶ σὺ
 αὐτῶν.

him, though invited in the most kind and obliging manner. That he really denied his company to *Archelaus* and others, we are assured from very good hands: which was the ground for our Falsary to forge this Epistle. But I believe, none of those that mention it, make so tall a Complement to *Socrates*, as he does here to himself. For he says, (s) *The King offer'd him part of his Kingdom; and, that he should not come thither to be commanded, but to command both his Subjects and Himself.* Can you desire a better token of a Sophist, than this? 'Tis a fine offer, indeed, to a poor old Man, that had nothing but his Staff and one Coat to his back. But a Sophist abhors mediocrity; he must always say the greatest thing; and make a Tide and a Flood, though it be but in a Bason of Water.

II. Well; our Philosopher goes on, and give a reasons of his refusal; That his Dæmon forbid him to go: and then he falls into the long story of what happen'd to him in the Battle at *Delium*; which was a tale of twenty years standing at the date of this Letter. But the Sophist had read it in *Plato*; and he would not miss the opportunity of an eloquent Narration. I will not here insist upon the testimony of (t) *Athenæus*; That the whole business is

is a mere fiction of *Plato's*: let that be left in the middle. But we may safely infer thus much from it; That even *Athenæus* himself, whose curiosity nothing escaped, never met with these Epistles. Which alone creates a just suspicion, that they were forged since his days; especially when the universal silence of all Antiquity gives a general consent to it.

There's a passage, indeed, in (x) *Libanius*, (x) *Analogia Socrat.* which, in *Allatius's* judgment, seems plainly to declare, that he had seen this very Epistle. For after he had mention'd *Socrates's* refusal to go to *Scopas*, and *Eurylochus*, and *Archelaus*; he adds; Αὐτῶν ὃ ἐδεόμην τῷ Ἐπιστολῶν, ἐν ἐκείναις τῷ ἀνθρώπῳ κἀλλιστα αὖν ἰδεῖν. Now should we concede, what *Allatius* would have; this is all that can be inferred from thence in their favour; That they are older than *Libanius*; which I am willing to believe: and, That He believed them true; which I matter not at all. For so we have seen *Stobæus*, *Suidas* and others, cry up *Phalaris* for a genuine Book; and yet I fancy none of my Readers are now of their opinion. But with *Allatius's* good leave, I would draw the words of *Libanius* to a quite contrary purpose. After he had said, that many Princes had solicited *Socrates*, by Letter, to come and live in their Courts; and

and he answer'd them all with a denial: *But (says he) I want the Letters themselves; in which you might perfectly see the Spirit of the Man.* This, to me, is an indication, that the Letters he means were not extant. For if he had them in his hand, according to *Allatius*, how could he want them? And 'tis plain, he speaks here of several Letters, being Replies to several Messages; but in this Collection here's but a single one. *I wish (says he) the Letters were to be had; in those you might read his Character.* If this be the sense of those words, as probably it is; *Libanius* is so far from being Patron to our Epistles, that he is a positive Witness against them.

III. The VII Letter is writ by *Socrates* to one of those that had fled to *Thebes* from the violence of the xxx Tyrants: in which he gives him an account of the state of *Athens* since their departure; *That himself was now hated by the Tyrants, because he would have no hand in the condemnation of Leon the Salaminian*: and then he tells the story at large. Now, here's a manifest discovery that the Letters are supposititious. For the business of *Leon* was quite over, before those Fugitives left the Town. For *Leon* was murder'd (u) before *Theramenes* was: and *Theramenes* was murder'd, before

(u) *Xenoph. Hist. lib. ii. p. 467, 470. Died. l. xiv.*

and Æsop's Fables.

fore *Thrasylbulus* and his Party fled to *Thebes*. And that *Socrates* means them in this Letter, 'tis evident from hence; That he speaks here of their Conspiracy, to resort privately towards *Athens* and set upon the Tyrants: which afterwards came to pass.

IV. The VIII, IX, XII, and XIII, are Letters of Jest and Railery between *Antisthenes* and *Aristippus* and *Simon* the Shoo-maker. 'Tis an affront to the memory of those Men, to believe they would fool and trifle in that manner; especially send such impertinent stuff as far as from *Sicily* to *Athens*, which could not decently be spoken even in merriment at a Table.

V. In the XIII Epistle, among the acquaintance of *Simon* he names *Phædrus*, the same that gives the Title to the Dialogue of *Plato*: and the xxv is writ by *Phædrus* himself to *Plato*: and both these are dated after *Socrates's* death. I will appeal now to *Athenæus*, if these two Letters can be genuine. He, among other Errors in Chronology for which he chastises *Plato*, brings this in for one; (y) *That he introduces Phædrus discoursing with Socrates; who must certainly be dead before the days of the Philosopher*. How comes he then to survive him, in these Epistles; and discourse so passionately of his Death?

'Tis

(y) Lib. xi.
pag. 505.
Ἀδύνατον
ἵνα ὁ Φαῖ-
δρος ἔζη
ἔπειτα τῷ
Σωκράτει
ἔτι ζῶντι

'Tis true; for want of ancient History, we cannot back this Authority with any other Testimony. But I am sure, all those that have a just esteem for *Athenæus*, can have no slight one of this Argument against the credit of the Letters.

(2)^o Ην δὲ
λόγος Πολυ-
κράτης
τὸ λόγον
γέγραπτο.

VI. The xiv Epistle gives *Xenophon* a long Narrative of *Socrates's* Tryal and Death; being writ presently after by one of his Scholars that was present at both. Among other particulars, he tells him, (2) *That the Oration or Charge against Socrates was drawn up by Polycrates the Sophist.* But I doubt this will turn to a Charge against another Sophist, for counterfeiting Letters. For, I think, I can plainly prove, That at the date of this Letter there was no such report ever mention'd, that *Polycrates* had any hand in it; and, that this false Tradition, which afterwards obtained in the World, and gave occasion to our Writer to say it in his Letter, did not begin till some years after *Socrates's* condemnation.

(a) Vita
Socrat.

Diogenes Laertius brings *Hermippus's* testimony, That *Polycrates* made the (a) Charge. Συνέγραψε δὲ τὸν λόγον Πολυκράτης ὁ σοφιστής, ὡς φησιν Ἑρμιππός. But, in opposition to this, he presently subjoins; "That *Favorinus*, in the First
" Book

“ Book of his *Commentaries*, says, That
 “ *Polycrates's* Oration against *Socrates*
 “ is not true and real : because he men-
 “ tions in it the Walls, built by *Conon*
 “ six years after *Socrates's* death.” To

which *Laertius* subscribes his own assent,
Καὶ ἔστιν ἔτιως ἔχον, And so it is. I may
 freely say, that this passage of *Favorinus*

has not been yet rightly understood. It
 is generally interpreted, as if he denied
 the Oration that is attributed to *Polycrates*
 to be really his. But this is very far from
 being his opinion. For then he would be
 flatly confuted by *Isocrates*, a Witness un-
 answerable ; who, in a Discourse which
 he addresses to this very *Polycrates*, tells

him ; (b) *I perceive you value your self*

most upon two Orations, The Apology of

Busiris, and Accusation of Socrates. But

Favorinus's meaning was ; That *Polycrates*

did not make that Oration for a true

Charge to be spoke at the Tryal of *So-*

crates ; but writ it several years after, for

no other Trial than that of his own Wit.

The words in the *Greek* can admit of no

other sense ; *Μὴ εἶναι ἀληθὴ τὸ λόγον τὸ Πο-*

λυκράτης κατὰ Σωκράτους· ἐν αὐτῷ γὰρ μνη-

μονεῖται τὸ ὑπὸ Κόνωνος λειχῶν, &c. Ob-

serve, that he says *μνημονεῖται, Polycrates*

mentions : if he had denied him to be the

Author, he would have said in the Passive,

There

(b) Ἐπὶ τῇ
 Βυσίριδος
 ἀπολογία,
 καὶ τῇ Σω-
 κράτους κα-
 τὰ Περικλέους
 κατηγορίᾳ.
Isoc. Busir.

There is mention'd. Besides he expressly calls it τὸ λόγον τὸ Πολυκράτης; only denies it to be ἀληθῆ. But if he had denied it to be His, he would have said, Μὴ εἶναι Πολυκράτης τὸ λόγον τὸ κατὰ Σωκράτης: as *Laertius* speaks in other places; (c) Λακεδαιμονίαν Πολιτείαν, ἣν φησιν εἶναι Ξενοφῶντος. (d) Διὰ λόγους, ὅς Πεισίστρατος ὁ Ἐφέσιος εἶλεγε μὴ εἶναι Αἰχίνος. This, I think, is sufficiently clear. Now we are to know, it was the custom of the old Sophists to make an ostentation of their Art, upon some difficult Subjects and Paradoxes, such as other people could speak nothing to: as the commendation of a Fever or the Gout. *Polycrates* therefore, to shew his Rhetoric in this way, writ an Apology of *Busiris*, that kill'd and eat his Guests; (e) and of *Clytemnestra*, that murder'd her Husband: and to give a proof of his skill, as well in accusing Vertue, as in excusing Vice, he writ an Indictment against *Socrates*; not ἀληθῆ, the true one, as *Favorinus* truly says, but only a Scholastic Exercise; such as *Plato*, *Xenophon*, *Libanius* and others writ in his Defense. So that we are no more forced to believe, that His Oration was the true Charge that was spoken at *Socrates's* Tryal; than, that he really pleaded for *Clytemnestra*, when *Orestes* was going to kill

(c) In *Xenoph.*

(d) In *Æschine.*

(e) *Quintil.* lib. ii. cap. 18.

kill her. Nay, it appears to me, from *Isocrates* himself, that it was but a Scholastic Exercise, and after *Socrates's* death. For he blames *Polycrates*, for reckoning *Alcibiades* among *Socrates's* Disciples: since, besides that no body else ever counted him his Scholar; had he really been so, he had been a commendation to his Master; and not a disparagement, which was the aim of the Sophist.

(f) So that (says he) if the dead could have knowledge of your Writings, *Socrates* would thank you. Is not this a clear indi-

(f) Εἰ γένοιτο ἔξοσις
τοῖς τετελευτηκόσι βελεύ-
σας, οὐδὲ τῶν εἰρημένων,
ὁ μὲν χάριν αὖν εἰδέειν σὺν.
Isoc. Busir.

cation, that *Socrates* was dead, before the Oration was made? and that this was not the true Charge? For then he would have heard it at his Tryal: and there had been no occasion to say, if the dead could have knowledge of it. In the close of all, he advises him to leave off shewing his parts upon such villainous Themes, πονηρὰς ὑποθέσεις; lest he do public mischief by putting false colours upon things. Here again we are plainly told, that his Action against *Socrates*, like those for *Busiris* and *Clytemnestra*, was but a Declamation, a Theme and Exercise in the School, and not a real Indictment in the *Areopagus* at *Athens*. To all which let me add, That neither *Plato* nor *Xenophon* nor any body

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contem-

contemporary with *Socrates*, ever once mention *Polycrates* for the Author of the Charge : which, had the thing been true, they would certainly have thrown in his teeth, considering the perpetual quarrel between Sophists and Philosophers. And 'tis well known; that the *Athenians*, in a penitential mood, either banisht or put to death all those that had any hand in *Socrates's* accusation. If *Polycrates* then were so eminently guilty, as to draw up the Impeachment ; how could he escape untoucht, when all the rest suffer'd ?

But when the *Accusation of Socrates*, though only a Sophistical Exercise, came abroad in the world ; it was natural enough, in some process of time, that those that heard of it only, or but perfunctorily read it, should believe it to be the real Charge. We have seen already, that *Hermippus* was in that mistake, who lived an hundred years after ; and with him *Quintilian*, *Themistius*, and others innumerable. *Favorinus*, it seems, alone had the sagacity, by a notice from Chronology, to find it of a more recent date than *Socrates's* Tryal. And even that very passage of *Favorinus* has lain hitherto in the dark : so that my Reader may forgive me this prolixity and niceness ; since he learns by it a piece of News. As for *Hermippus*,
left

lest the Authority of so celebrated an Author should deter one from so plain a truth ; I will shew another slip of his, and a worse than this, in the story of *Socrates*. When *Gryllus* the Son of *Xenophon* was slain in the same battle that *Epa-minondas* was ; most of the Wits of that Age writ Elegies and Encomium's on him, in complement and consolation to his Father. Among the rest, * *Hermippus* says, * *Laert. in Xenoph.* *Socrates* was one. Which is a blunder of no less than xxxvii years, the interval between *Socrates's* death and the battle of *Mantineæ*.

Socrates was put to death Olymp. xcv, i. when *Laches* was Magistrate. This is universally (g) acknowledged ; and to go about to prove it, were to add Light to the Sun. And six years after this, Olymp. xcvi, 3. (h) in *Eubulides's* Magistracy, *Conon* repair'd the Walls. Which gave the hint to *Favorinus*, and after him to *Diogenes*, to discover the common mistake about *Polycrates's* Oration. But *Leo Alatius*, to avoid the force of their Argument, undertakes an impossible thing ; to prolong *Socrates's* life above twenty years beyond *Laches* : so that He might see *Conon's* Walls, and *Polycrates's* Decla-

(g) See *Diodorus*, *Favorinus*, *Diog. Laertius*, *Aristides*, *Marmor. Arund.* *Euseb. Argumentum Isocr.* *Busir. &c.*

(h) *Diodor. xiv. p. 303.* *Favorin. Diog. Laert.*

mation be the true Charge at his Tryal. Which he would make out by comparing together some Scraps of different Authors, and some Synchronisms of other Men's Lives with *Socrates's*. As if those things which are only mistakes and unwary slips of the Writers, could have any force or credit against so many express Authorities. By the same way that he proceeds, I will shew the quite contrary; that *Socrates* died twenty years before *Laches's* Government. For we have it from good Hands, (i) That *Euripides*, in a Play of his call'd *Palamedes*, using these words, *Ἐγγύη, ἐγγύη τὰν πάνσοπον, &c.* designed to lash the *Athenians* for *Socrates's* murder: and the whole Theatre perceiving it, burst into tears. *Socrates* therefore died before *Euripides*. But 'tis well known, that the latter died six years before *Laches* was Archon. Nay, *Socrates* must needs be dead, before *Palamedes* was acted. But that was acted Olymp.

(i) *Diog. Laert. in Socrat. Argum. Isoc. Busir.*

(k) *Ælian. XCI, 1. (k),* which is sixteen years before *Laches*. Have I not proved now exactly the quite contrary to *Allatius*? But still, I hope, I have more judgment, than to credit such an oblique Argument against so many direct Testimonies. If *Allatius* had looked round about him, he would not have committed so great a blunder; while

(k) *Ælian. Var. Hist. ii, 1. Schol. Aristoph. Opus. p. 401.*

(i) Diog.
Laert. in
Socrat. Ar-
gum. Isoc.
Busir.

(b) *Ælian.*
Var. Hist.
ii, i. *Schol.*
Aristoph.
Opus. p.
401.

while he defends his Epistles at one Post, to expose them to worse Assaults. If *Socrates* died in *Laches's* Magistracy, one Epistle must be spurious, that mentions *Polycrates*. This Breach *Allatius* would secure; and therefore he will needs make him live several years longer. But then, say I, if we concede this to *Allatius*; not one Epistle only, but the whole bundle of them are spurious. For most of them plainly suppose, that *Socrates* died under *Laches*. Even this very Epistle complains (l) that *Xenophon* was abroad when *Socrates* suffer'd; and that the Expedition of *Cyrus* hindred him from being present then at *Athens*: and a second Letter, to name no more, dated after *Socrates's* death, makes *Xenophon* to have newly escaped the dangers of his long March through Enemies Countries. Now, all the world knows, (m) that *Cyrus's* Expedition and *Xenophon's* March was in *Laches's* time, and the year before him. So that upon the whole; there is no escape, no evasion from this Argument; but our Epistles must be convicted of a manifest Cheat.

VII. In the xvii Letter, one of *Socrates's* Scholars, supposed to be present at *Athens* when the things he speaks of were acted, (n) says, the *Athenians* (n) put to death both *Anytus* and *Melitus*, the Prosecutors of *Socrates*:

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Socrates:

(l) Ep. xiv.

xviii.

(m) Marm.
Arund.
Laert. Dio-
dor. &c.(n) Ἰων
τὸν τε καὶ
Μελίτων
ἀπέκλει-
σαν.

(o) Laert.
in Socrat.
& in An-
rifth.
Themist.
Orat. ii.
Augustin.
de Civ. Dei,
viii, 3.

Socrates : which being contrary to known matter of fact, proves the Epistle to be a forgery. *Melitus*, indeed, was kill'd ; but *Anytus* was only banisht ; and (o) several Writers speak of him afterwards at *Heraclea in Pontus*.

VIII. The xviii is a Letter of *Xenophon's*, inviting some Friends to come to see him, at his Plantation near *Olympia*. He says, *Aristippus* and *Phædo* had made him a Visit : and that he recited to them his (p) *Memoirs of Socrates* ; which both of them (q) approved of. This alone is sufficient to blast the reputation of our famous Epistles. For, how is it likely, that *Aristippus* would go so far to see *Xenophon*, who (r) was always his Enemy ? Much less would he have given his approbation to a Book, that was a Satyr against himself. For the Book is yet in being ; and in it he introduces *Socrates*, in a long Lecture, reprehending *Aristippus* (s) for his Intemperance and Lust. Even *Laertius* takes notice, That he brought in *Aristippus's* name upon that scandalous occasion, out of the enmity he bare him.

(p) Ἀπομνημονεύματα.

(q) Ἐδόκει ἀξιόδοτον εἶναι.

(r) Ζενοφών ὁ ἑρῶς περὶ αὐτὸν συγμένως. Laert. in *Aristippo*.

(s) *Xenoph. Memorab. lib. ii. in princip.*

IX. We have already seen *Xenophon* writing *Socrates's* Memoirs at *Scillus*, near *Olympia*. But in the xxii, to *Cebes* and *Simmius*, he is writing them at *Megara* ; for there the

the Letter is dated. And in the *xxi*, to *Xanthippe*, he invites her to come to him to *Megara*. One would think, there was more Sophists than one had a finger in this Volume of Letters: or if he was but one Author, Nature gave him a short Memory without the blessing of a great Wit. 'Tis true, upon *Socrates's* Execution, his Scholars left *Athens* for fear, (t) and retired to *Megara*, to the house of *Euclides*: which occasion'd our Sophist to bring *Xenophon* thither too. But he should have remembered, that while They were scared out of *Athens* for fear of their own Lives, He was safe at a great distance in the retinue of *Agessilaus*; from whose company he went to *Scillus*, without ever residing at *Megara*. Nay, the Sophist is so indiscreet, as to bring in *Xenophon* in *forma pauperis*, to beg and receive relief from *Cebes* and *Simmias*: whereas every body knows, that he got great riches in the War, (u) and lived in very great splendor and hospitality at *Scillus*.

(t) *Laert.*
in *Euclid.*

(u) *Laert.*
in *Xenoph.*
Xenoph.
Exp. Cyri.
l.v. p. 350.

X. In the *xxiv* Epistle, *Plato* says, he is quite weary of a City Life; and had therefore retired into the Country, δια-
τρίβων ἐ μακρὰν Ἐφεστιάδων, which *Allatius* translates, *non longe ab Ephestiadibus*. He ought to have said, *ab Hephæstiadis*. For the true word in the Greek, is Ἡρακλειάδων.

Plato

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G 4

(w) Vita
Platon.

Plato had some Estate there, which he disposed of in his Will: τὸ ἐν Ἡρακλειδῶν χωρίον, as 'tis in (w) *Laertius*. *Hesychius*; Ἡρακλειδάδαι, Ἀθηναῖοι. *Stephanus Byz.* Ἡρακλειδάδαι, δῆμοι. Ἀθηναίων. τὰ τοιαῦτα, ἐξ Ἡρακλειδῶν, &c. In the Roman Manuscript of *Laertius*, 'tis writ Ἡρακλειδάδαι: which manner of spelling is found also in *Hesychius*, Ἡρακλειδάδαι, ἥρωι, ἀπ' Ἡρακλειδάδαι. If the Reader does believe, that our Letter-monger, like *Hesychius*, spelt the word wrong; he will be satisfied of the forgery: For surely, *Plato* himself knew the true name of his own Estate. But if he encline to absolve the Author, and lay the blame upon the Copyers; he may please to accept of this, only as an Emendation.

(x) IX,
& XI.

XI. The xxvii Epistle is *Aristippus's* to his Daughter *Arete*: which, perhaps, is the very same that is mention'd by *Laertius*; who, among the Writings of this Philosopher, names Ἐπιστολὴ πρὸς Ἀρήτιον τὴν Διοτρίαν. *Allatius*, indeed, is ready to vouch it: but I am not so easie of belief. For here are (x) two other Letters of his in this Parcel, and both of them writ in the *Doric* Dialect, though directed to *Athens*: because, forsooth, he was a *Cyrenæan*, and the *Doric* his native Tongue. Pray, what was the matter then, that in this he uses the *Attic*; though he writ from
Sicily

Sicily a *Dorian* Country, to his own Daughter at *Cyrene*? One would suspect, as I observed before, that a couple of Sophists clubb'd to this Collection. 'Tis true, we know, from *Laertius*; that of xxv *Dialogues* publisht by *Aristippus*, some were in the *Doric* Idiom, and some in the *Attic*. But that, I suppose, was done because of the variety of his Persons. In some *Dialogues* the Speakers were *Sicilians*, and those were writ in the *Doric*; and where the *Athenians* were introduced, the *Attic* was proper. But now, in this Letter to his Daughter, both Parties are *Dorians*; and so this Epistle should rather be *Doric*, than either of the other two.

XII. In the same Letter he mentions her Estate in *Bernice*, τὸ ἐν Βερνίκῃ κτῆμα. There is no question but he means *Βερνίκην*; perhaps that City not far from *Cyrene*. But there was nothing then in all *Afric* called by that name: for *Βερνίκην* is the *Macedonian* idiom for *Φερνίκην*, the *Victorious*. In that Country, φ was generally changed into β: as (γ) instead of κεφαλὴ they said κεβλὴ; (γ) *Etym. Magn. &c.* for φίλιππος, βίλιππος; for χαλακρός, βαλακρός; and so in others. So that *Βερνίκην* was unknown in *Afric*, till the *Macedonians* came thither: and indeed, they had their names from the Wives of the *Ptolemies*,
a whole

whole century of years after the date of this Letter.

XIII. He goes on, and tells his Daughter, *That if he should die, he would have her go to Athens, and live with Myrto and Xanthippe the two Wives of Socrates.* It was a common Tradition among the Writers of Philosophic History, that *Socrates* had these two Wives at once; and from thence our Sophist made them the comple-

(2) *Laert.*
in Socrat.
Plutarch.
Aristid. A.
then. xiii.
p. 556.

ment of a place in this Epistle. (2) There are cited as Authors of this story, *Calisthenes*, *Demetrius Phalereus*, *Satyrus*, and *Aristoxenus*, who all took it from *Aristotle* in his Book Of Nobility, *Ἐν τῷ βιβλίῳ τῆς ἐξουσίας*. But Polygamy being against the Law of that Commonwealth, and the story therefore improbable; *Hieronymus Rhodius* produces a temporary Statute made in *Socrates's* days, That by reason of the scarcity of People, a Man might marry two Wives at a time. But notwithstanding such a flush of Authorities, (a) *Panætius* the Stoic, a very great Man, writ expressly against all those named above; and, in

(a) *Athenæus,*
Plutarch. ib.

(b) *in γένεσι.*

the opinion of *Plutarch*, (b) sufficiently confuted the Tradition of the Two Wives. For my own part, I dare pin my belief upon two such excellent Judgments, as *Plutarch's* and *Panætius's*; and upon their credit alone, pronounce this Letter to be an Im-
posture

posture. What grounds they proceeded on I cannot now tell ; but I think there is apparent reason for rejecting the story, even laying aside their testimony. For none of *Socrates's* acquaintance, not *Plato*, not *Xenophon*, say one word of this *Myrto*. *Aristotle*, we see, was the first that mention'd her : but (c) *Plutarch* (c) *Ibid.* suspects that Book to be spurious. So that all this Tradition rose at first from a Falsary, that counterfeited *Aristotle's* name. Besides, they do not agree in telling their tale ; one says, that he had both Wives together : another, that *Myrto* was his first Wife, and the second came after her death : another, that *Xanthippe* was the first. Let either of them come first, and our Epistles are false ; for here we have Both surviving him, and living together. (d) One says, this *Myrto* was *Aristides's* (d) *Ibid.* Daughter ; another his Grand-daughter ; and another, his Grandson's Daughter. Whatsoever she was ; if she outliv'd her Husband, according to the Letters, pray where was her Ladyship at the time of his suffering ? (e) *Xanthippe*, like a loving (e) *Plato Apolog.* Wife, attended him in the Prison ; but the other ne'er came near him. 'Tis a mistake, sure, that has past upon the world, that *Xanthippe* was the Scold : it should seem, that *Myrto* had the better title

title to that honourable name. But what shall we say to *Hieronymus*, who brings you the very Statute, that gave allowance of two Wives at once? *Panætius*, you see, believed it not: and why may not a Statute be forged, as easily as these Epistles? If there was such an Act, there ^{bid (c)} appears no great wisdom in it. It is certain, there is near an equality in the births of Males and Females. So that if some Men had two Wives for their share, others must go without: and what remedy would that be against the scarcity of People? Besides that by such a Law the Rich only would be accommodated, who were able to maintain a couple: the poorer sort, who are always the most fruitful, would be in worse circumstances than before. And without doubt, a very ^{bid (b)} strong interest would have been made against the passing of such a Bill; (f) as <sup>(f) A. Gel-
lius, li. 1.
c. 23.</sup> we know what the *Roman* Matrons did, when *Papirius Prætextatus* made a like story to his Mother. 'Tis very odd too, that no body but *Hieronymus* should ever ^{bid (a)} hear of this Statute; and He too a suspected Witness, because he brings it to serve a turn, and to help at a hard pinch. But certainly such a Political Occurrence, had it been true, could never have lain hid from the whole tribe of Historians. It had

had very well deserved not only a mention, but a remark. But how could it possibly escape the fancy and spleen of all the Comœdians of that Age? how could they miss so pleasant an argument of jest and ridicule? Those that are acquainted with the condition of those times, will look upon this as next to a Demonstration. But let us grant, if you will, half a dozen Wives to *Socrates*; yet nevertheless our Epistles will be still in the mire. For here our Sophist makes the two Women live amiably together: which is pretty hard to believe: for (as (g) those that make them Two, tell the story of them) while their Husband was alive, they were perpetually fighting. But, which is worse yet, there are other Letters in the bundle, that plainly suppose *Socrates* to have had but one Wife. (h) He himself, writing to some body, tells him this domestic news, *That Xanthippe and the Children are well*: but says not a word of my Lady *Myrto*. (i) *Xenophon* sends a Letter top full of kindness and commendation to *Xanthippe* and the Little ones; but it was very uncivil in him, to take no notice of the other; since, according to the story, she brought her Husband the more Children. Nay, if we allow this Letter of *Xenophon's* to be genuine, he play'd a false and dirty

(g) *Aristoxenus* apud *Theodoret*, Serm. xij. ad *Græcos*.

(h) Ep. iv.

(i) Ep. xxi.

dirty trick, much against his character. For at the date of this Epistle, if we believe the very next (k) to it, he was writing *Socrates's Memoirs*. So that while he here in his Letter wheedles the poor Woman, and makes her little Presents, and commends her for her love to her Husband, and for many good qualities ; (l) *Xenoph.* in his Book (l) he traduces her to that present Age, and to all Posterity, for the most curst and devilish Shrew, *that ever was or ever would be*. Nay, which makes it the baser, he was the only Man that said this of her ; for neither *Plato* nor any of the old *Socratics* writ a word about her (m) *Lib.v.* Scolding. Which made (m) *Athenæus* suspect it was a Calumny : especially since *Aristophanes* and his Brethren of the Stage, in all their Raillery and Satyr upon *Socrates*, never once twitted him about his Wife. Well, let that be as it will : but what shall we say to *Xenophon's* double dealing ? For my part, rather than I'll harbour such a thought of that great Man, I'll quit a whole Cart-load of such Letters as these.

XIV. *Xenophon*, in the xv Letter, tells this story of *Plato*, to whom he bore a grudge ; That he should say, *None of his Writings were to be ascribed to himself, but to Socrates young and handsom* ; *Φησὶ μὲν εἶναι ποῖνμα αὐτῆς*

αὐτῷ, Σωκράτης μέντοι νέος ἢ καλῶς ὄντα.
 Now, this sentence is taken out of *Plato's*
 Second Epistle to *Dionysius* the Younger :
 Οὐδ' ἐστὶ σύγγραμμα Πλάτωνος ἔδην, ἔδ' ἔσται· τὰ δ' ἄν νῦν λεγόμενα Σωκράτης ὄντι,
 καλῶς ἢ νέος γεγονότος. Here's a blunder
 with a witness, from the Sophist's igno-
 rance in Chronology. For his forged
 Letter of *Xenophon* bears date immediately
 after *Socrates's* death : but the true one
 of *Plato*, which *Xenophon* here alludes to,
 is recenter by a vast while. For *Dionysius*
 came but to the Crown Olymp. ciii, i.
 which is xxxii years after the Tryal of
Socrates.

I must observe one thing more, that
 by no means should be omitted. There
 were formerly more Epistles of *Xenophon* (o) Serm.
 extant, than appear in this Collection. 81.
 A large fragment is cited in (o) *Stobæus*, (p) Serm.
 out of his Letter to *Crito* ; (p) two frag- 120, 123.
 ments out of a Letter to *Sotira* ; (q) and (q) Serm.
 two more out of one to *Lamprocles* : none 5.
 of which are found here in *Allatius's* Parcel. (r) *Ερως
Theodoret produces a passage out of a Let- πνευματι-
 ter of his to *Æschines* ; wherein he jerks δ' ὁ, καὶ
Plato (r) for his Ambition and Voluptuous- ἀντὶ ληψῆς
 ness ; to gratifie which, he went to Sicily, to διαίτης Σι-
Dionysius's Court. (s) *Eusebius* has this καλιῶτης
 passage and more out of the same Epistle : γαστροδ' ἀ-
 and the whole is extant in (t) *Stobæus*. What μέτρος ἰσχύ-
 shall (t) Serm. 78.
 πρὸς αὐτὸν
 ἀντὶ

shall we say? that the true Letters of *Xenophon* were extant in those days? or that those too were a Cheat, and belong'd to the same Volume whence these of *Alatius* were taken? And so, as I observ'd before, they will be older than *Libanius's* time. I am afraid it will be thought ill manners to question the judgment of *Eusebius* and *Theodoret*. But we know, (u) they have made other mistakes of a like nature: and the very Letter which they cite, betrays it self to be a counterfeit. *Xenophon*, we see, reproaches *Plato*, in a Letter to *Æschines*. If this were true, it was a most rude affront to the Person he writ to, whose friendship he courts so much in the rest of his Letter. For *Æschines* himself was guilty of the very same fault, and is wounded through *Plato's* side. 'Tis well known, that He too, as well as *Plato* and *Aristippus* and others, made a Voyage to *Sicily*, and struck in with *Dionysius*; (w) and that purely for Money and the Table. (x) *Lucian* says, He was Parasite to the Tyrant; and (y) another tells us, he liked his Entertainment so well, that he did not stir from him, till he was deposed. I would ask any Man now, if he can still believe it a genuine Letter; let him have what veneration he can for the Learning of *Eusebius*.

In

(u) See
Dissert. up-
on Jo. Ma-
lal.

(m) *Laert.*
& *Suidas*
in *Æsch.*
Plut. de
Adulat.
(x) In *Pa-*
rasito.
(y) *Poly-*
critus apud
Laert.

In the beginning of this Discourse, I have said, *That I heard of none, that, since the first publication of these Letters, called them into question.* But I was shewn to day (after mine was in the Press) in Bishop Pearson's *Vindiciæ Epp. Sancti Ignatii*, (2) Par. II. a (2) Digression made on purpose against *Socrates's Epistles*. I must confess, with some shame, I had either never read that Chapter, or utterly forgot it. But I am glad now to find that incomparable Man both to think it worth going out of his way to discover this Imposture, and to confirm me in my judgment by the accession of his great Authority. There is nothing there disagreeing with what I had said; but that his Lordship allows the Epistle to *Æschines*, cited by *Eusebius*, to be genuine: which I had endeavoured to convict of a forgery. I referr it to those that please to read both; whether they think I have just reason to change my opinion: especially when I shall tell them, That not *Æschines* only, but even *Xenophon* himself made a Visit to *Dionysius*. I have * *Athenæus* for my Authority, a Witness beyond all exception. * Lib. x. p. 427. *Ξενοφῶν γέν ὁ Γρύλλε παρὰ Διονυσίῳ, &c.* Xenophon (says he) *the Son of Gryllus, when at Dionysius the Sicilian's Table the Cup-bearer forced the company to drink;*

* H Pray,

Pray, says he, Dionysius (speaking aloud to the Tyrant,) if your Butler forces Wine upon us against our wills, why may not your Cook as well compell us to eat? So that if we suppose the Letter genuine, the absurdity will double it self; both Parties being guilty of the very same thing, that is charged upon Plato.

OF

EURIPIDES'S EPISTLES.

(a) *Perfric-
tae frontis
& judicii
imminuti.*
Eurip. E-
dit. Can-
tab. par. ii.
P. 523.

THIS is a bold and dangerous venture, to attack *Euripides's Letters*; since a very Learned Greek Professor has so passionately espoused them; that he declares it to be (a) *great Impudence and want of all Judgment* to question the Truth of them. I do not care to meddle with Controversie upon such high Wagers as those: but if I may have leave to give my opinion, without staking such valuable things as Modesty and good Sense upon it, I am very ready to speak my mind candidly and freely.

I. There are only five Epistles now extant, ascribed to *Euripides*: but without doubt there were formerly more of them;

them; as we have seen just before, that we have not now the whole Sett of *Xenophon's* Letters. Neither can we suppose a Sophist of so barren an Invention, as to have his Fancy quite cramp't and jaded with poor Five. We have here a peculiar happiness, which we wanted in the rest; to know whom we are obliged to for the great blessing of these Epistles. *Apollonides*, that writ a Treatise Περὶ κατεσκευασμένων Ἱστορίων, *About falsified History*, says, one (b) *Sa-* (b) Σαβίριος *birius Pollo* forged them, the same Man ἐκ Πόλεως *that counterfeited the Letters of Aratus*. λων.

This we are told by the Writer of *Aratus's* Life, no unlearned Author: who does not contradict him about these of *Euripides*; but for *Aratus's*, he says, that, bating this *Apollonides*, every body else believed them to be genuine. I cannot pass any judgment of what I never saw; for *Aratus's* Letters are not now to be had: but if they were no better than these of our Tragedian, I should, in spite of the common vogue, be of *Apollonides's* mind; and I wish that Book of his were now extant. One may know, by the manner of the Name, that this *Sabirius Pollo* was a Roman: but I do not find such a Family as the *Sabirii*, nor such a Surname as *Pollo*. What if we read *Sabinus*, or *Sabidius Pollio*?

Non amo te, Sabidi; nec possum dicere quare.

H 2

If

If that *Sabidius* in *Martial* was the forger of our Epistles; though the Poet could give none, yet I can give a very good reason, why I do not love him.

But the Learned Advocate for the Letters makes several Exceptions against the Testimony of *Apollonides*. As first, *That we may fairly inferr from it, that a great many others believed them to be true.* Alas! How many more, both Ancients, and Moderns, believed *Phalaris's* to be true? If that argument would have done the work, I might have spared this Dissertation. *But prove, that these Letters now extant are the same that were forged by Sabirius.* Commend to me an Argument, that, like a Flail, there's no fence against it. Why, had we been told too, that he made *Phalaris's Epistles*: yet how could we prove, unless some passages were cited out of them, that they were the same that we have now? But though I cannot demonstrate that these are *Sabirius's*; yet I'll demonstrate them by and by to be an Imposture; and I hope then it will be no injustice to lay them at his door. *But 'tis an evidence, that the true Epistles of Euripides were once extant; because some body thought it not improper to father false ones upon him.* Now, I should think the very contrary; that the

the Cuckow does not lay her Egg, where the Nest is already full. At least, I am resolved I'll never go a book-hunting after the genuine Epistles of *Phalaris*; though some body has cheated the World with a parcel of false ones.

II. It might easily have happen'd, tho' we suppose the Letters spurious, that in so small a number as Five, there could be nothing found to convict them by. But so well has the Writer managed his Business; that every one of them has matter enough to their own Detection. The last and principal of them is dated from *Macedonia*, in answer to some reproaches, that were cast upon him at *Athens* for his going to *Archelaus*. As for what you write from *Athens*; says he, pray know, that I value no more, *ὡς νῦν Ἀγάθου ἢ Μεσάτου λέγει*, what *Agatho* or *Mesatus* now say; than I formerly did, what *Aristophanes* babbled. Here we have the Poet *Agatho*, (for without doubt he means the Poet, since he has join'd him with *Aristophanes*) residing at *Athens*, and blaming *Euripides* for living with *Archelaus*. Now, could any thing be more unfortunate for our *Sabirius Pollo*, than the naming of this Man? For even this *Agatho* himself was then with *Archelaus* in (c) *Euripides's* company: besides that they were always

(c) *Ælian*
II, 21. &
XIII, 4.
Plut. in A-
poph. Schol.
Aristoph.
Balex.

good friends and acquaintance, not there only, but before at *Athens*.

(d) *Vita*
Eurip. p. 29.
Ed. Cant.

But perhaps some may suspect, it was another *Agathos* a (d) Comic Poet, that was meant in the Letter, and not the famous *Agathos* the Tragedian. This I find to be the Opinion of the Learned Person above-named. But I will make bold to expunge this Comic *Agathos* out of the Catalogue of Mankind. For he sprung but up, like a Mushroom, out of a rotten passage in *Suidas*; who, after he has spoken of *Agathos* the Tragic Poet, has these words; *ἡγεμονοποιὸς Σωκράτης διδασκάλος· ἡγεμονο-
δεῖτο δὲ εἰς ἀνδύτητα*: which his Interpreters (*Wolfius* and *Portus*) thus translate, *Fuit & alius Agathos Comædiarum Scriptor*. But there's nothing like *Fuit & alius* in the Original; but the same *Agathos* is here meant, that was mentioned before. This they might have known from the following words, *ἡγεμονοδεῖτο δὲ εἰς ἀνδύτητα*, he was libelled for his Effeminateness. For

(e) Πάναθεν πνα Σαρ-
δανάπαλον, ἢ Κινύρα, ἢ
αὐτὸν Ἀγάθωνα ἢ Ἰστια-
γόρα· ἐπεὶ οὗτοι πάν-
τες. *Rhet. Prac.*

whom can that belong to, but to *Agathos* the Tragedian; whom (e) *Lucian* ranks with *Cinyras* and *Sardanapalus*; Do but read *Aristophanes's Theſmophoriazuse*; and you'll see him ridiculed upon that score for some pages together. The Scholiast upon *Βάτραχοι* of

of the same Poet ; Ἀγάθων (says he)
 ἔτος τραγῳδὸς ποιητὴς ἐπὶ μαλακίᾳ διεβίβλητο. Here you see, it is expressly said,
 (f) *Agatho the Tragædian was traduced (f) P. 133.*
as Effeminate. It follows presently in the
 same Scholiast ; Οὗτος ὁ Ἀγάθων κω-
 μωδοποιὸς τῷ Σωκράτει διδασκάλῳ ; where
 we have the very words of *Suidas* applied
 to the Tragædian : ἔτος, *this same Agatho*
was a Comædian, Socrates being his Master :
not another, as the Translators of *Suidas*
 interpolate the Text. But is it true then,
 that our spruce *Agatho* writ Comedies too ?
 Nothing like it ; though the learned
 (g) *Gregorius Gyraldus* affirms it from this (g) *Dialog.*
 very passage. 'Tis a mere oscitation of our *de Poet.*
 Scholiast, and of *Suidas* that gaped after
 him : the occasion and ground of the
 story being nothing but this. *Plato's*
Convivium was in the House of this *Agatho* :
 in the (h) conclusion of which, *Socrates* is (h) P. 336.
 introduced proving to *Agatho* and *Aristo-* τὸν τέχνη
phanes ; *That it belonged to the same Man,* ποιὸν ὄντα
and required the same Parts, to write both καὶ κωμωδο-
Comedy and Tragedy ; and that he that was ποιὸν ἔσθ'.
a skilful Tragædian, was also a Comæ-
dian. Hence have our wise Gramma-
 rians dress'd up a fine story, That *Agatho*
 was a Comædian, and of *Socrates's* teach-
 ing. And now, I hope, I have evident-
 ly proved the thing that I proposed ;

to the utter disgrace of our admired Epistles.

(i) ἢ Μῆ-
τος.

III. *Euripides*, we have seen, did not value one farthing, *what either Agathos or (i) Mesatus said of him*. I would gladly be better acquainted with this same *Mesatus*; for I never once met with him but here in this Letter. He must be a Brother of the Stage too, by the company he is placed in: But what was the matter? Was he so hiss'd and exploded, that he durst never shew his head since? I have a fancy, he was of the same family with (k) *Phalaris's* two Fairy Tragœdians, *Aristolochus* and *Lyfinus*: and that these Letters too are a kin to those of the Tyrant. But, perhaps, you'll say, this *Mesatus* is but a fault in the Copies. It may be so: and I could help you to another Tragœdian of those times, not altogether unlike him; one *Melitus*, the same that afterwards accused *Socrates*; who was likely enough to hate *Euripides*, that was the Philosopher's friend. Or I could invent some other medicine for the place: but let those look to that, that believe the Epistles true, or think them worth the curing.

(k) Epist.
lxiii, &
xcvii.

The very Learned Defender of the Epistles, one of a singular Industry and a most diffuse Reading, has proposed some

Some Objections against the Letters, communicated to him by a private Hand. That private Person, at the request of the Editor, imparted his opinion to him in a very short Letter: to which he had no Answer returned; till he found it, with some surprize, brought upon the stage in (1) print; and his Reasons routed and triumph'd. But let us see if we can rally them again: perhaps they may keep their ground in a second Engagement.

(1) Eurip.
Edit. Cant.
p. 27, &
523.

IV. Our friend *Sabirius Pollo*, to make the whole Work throughout worthy of himself, has directed this same Letter to *Cephisophon*, who was *Euripides*'s Actor for his Plays. For he had often heard of *Cephisophon*; and so he would not let him pass without a share in his Epistles. But he should have minded Time and History a little better, if he hoped to put himself upon Us for the Author he mimic's. 'Tis true, *Cephisophon* and our Poet were once mighty dear acquaintance: but there fell out a foul accident, that broke off the friendship. For *Euripides* caught him Acting for him, not upon the Stage, but in private with his Wife. Which business taking wind abroad, and making a perpetual Jest, was one of the main reasons why he left *Athens* and went to *Macedonia*. And is it likely, after all this, that our Poet

Poet should write a Letter to him, as soon as he got thither? that he should use him as his most intimate Friend, nearer to him than his own Children? I know, there are some so fond of our Epistles, that *they value all this as nothing*. *Cephisophon* is so much in their Books; that whatsoever is said against him, must be calumny and detraction. Give me an Advocate, that will stick close and hang upon a Cause. By being their Editor, he is retain'd for the Letters; and therefore he must not desert his Client. But why shall no Testimony be allowed, that touches *Cephisophon*? Are not (m) *Aristophanes* and his Commentator, and (n) *Suidas* and (n) *Thomas Magister* all lawful and good Evidence? And is there one single Witness against them in his behalf? Not a Writer is now extant, that mentions his name, but what tells the story of him: and if we must not believe them; we shall want new Evidence to prove, there ever was such a Man.

V. In a Disquisition of this nature, an inconsistency in Time and Place is an argument that reaches every body. All will cry out, that *Phalaris, &c.* are spurious, when they see such breaches upon Chronology. But I must profess, I should as fully have believed them so; though

(m) P. 167,
184.

(n) In *Vi-*
ta Eurip.

though the Writers had escaped all mistakes of that kind. For as they were commonly men of small endowments, that affected to make these Forgeries; a great Man disdaining so base and ignoble a work: so they did their business accordingly; and expressed rather themselves, than those they acted. For they knew not how to observe Decorum, in a Quality so different from their own: like the silly Player, that would represent *Hercules*; tall indeed, but slender, without bulk and substance. Let us see the conduct of this Author: In the first Letter, *Archelaus* sends *Euripides* some Money; and our Poet, as if his Profession were like a Monastic Vow of Poverty, *utterly refuses it*. And why, forsooth, does he refuse it? Why, *it was too great a Summ for his condition*. Yes, to be sure; when a Sophist makes a Present, the greatest Summ costs no more than the least. *But it was difficult to be kept, and the fingers of Thieves would itch at it*. Alas for him; with the expence of one Bag, out of many, he might have provided a Strong Box, and new Doors and Locks to his House. But why could he not accept a Little of it? Even (o) *Socrates* himself and *Xenocrates* took a modicum out of Presents, and return'd the rest again. And is a Poet more self-denying,

(o) *Laertius*, in *Socraticis* & *Xenocr.*

denying, than the most mortified of the Philosophers? But the best of all, is, *That Clito the King's chief Minister threatened to be angry with him, if he refused it.* What, could *Clito* expect before-hand, that the Present would be refused? The most sagacious States-man, sure, that ever Monarch was blest with. *Alexander* could not fore-see such a thing; but was mightily surprized, when *Xenocrates* would not receive some Money that he sent him: “(p) What, says he, has *Xenocrates* no Friends to give it to, if he need it not himself?” As for our Poet, he had Friends, I assure you; but all of his own kidney, men of Contentment, that would not finger a penny of it, τὸ αὐταρχεῖς ἡμῶν τε καὶ τοῖς φίλοις παρὲν. What would one give to purchase a Sett of such acquaintance? And yet, I know not how, in the Fifth Letter, their appetites were come to 'em; For in that, *Euripides* himself, from *Archelaus's* Court, shared some Presents among them; and we hear not one word, but that all was well taken.

VI. The rest of this Letter is employed in begging pardon (q) for the two Sons of a Pellæan old fellow, who had done something to deserve Imprisonment. And the Third and Fourth are Common Places of Thanks for granting this request. Now, besides that

(p) Plut.
Apoph.

(q) Πελ-
λαῖος γῆ-
ρῶν.

that the whole Business has the Air and Visage of Sophistry ; for this same is a mighty Topic too in *Phalaris's* Epistles : 'tis a plain violation of good Sense, to petition for a Man without telling his Name : as if *Pella* the royal City had no Old Man in it but one. How can such an Address be real ? But to this they give a double Answer ; *That a Sophist, if this was one, could not be at a loss for a Name : he might easily have put one here ; as hereafter he names Amphias, Lapretes and others.* But the point is not, what he *might* have done, but what he *has* done. He *might* have named some other Poet at *Atkens*, and not *Agatho* that was then in *Macedonia*. All those mistakes and blunders of *Phalaris* and the rest *might* easily have been avoided, had the Writers had more History and Discretion. (r) But he had writ a Letter (r) Πρότερον ἐπιστολὴν λαμβάνοντες before this about the same business ; and there we must suppose he had mention'd his name. This indeed would be something, if it would carry water. But though the Sophist has told you so ; do not rashly believe him. For it is plain, that pretended Letter must have been sent to *Archelaus*, before this vast Present came from him. Why then did not the same Messenger that brought the Money, bring the

the Grant too of his Petition? Would the King, that did him this mighty Honour and Kindness, deny him at the same time that small and just Request? For the crime of those Prisoners was surely no hainous business. Had it been a design to assassinate the King, he would never have interceded for them. The Charge against them was a venial fault: or were it the blackest accusation, their Innocence at least would clear them: for our Poet himself tells us, (s) *They had done no body any wrong.*

(s) Οὐδὲν
ἀδικεῖν ἐ-
οίκαν.

VII. The Second Epistle is to *Sophocles*, whom he makes to be shipwrack'd at the Island *Chios*; the Vessel and Goods being lost, but all the Men saved. That *Sophocles* was at *Chios*, we are informed by (t) *Ion Chius* the Tragædian; who relates a long conversation of his there. If our Author here means the same Voyage, as probably he does; he is convicted of a cheat. For (u) then *Sophocles* was Commander of a Fleet with *Pericles* in the *Samian War*; and went to *Chios*, and thence to *Lesbos*, for auxiliary Forces. But our Mock-*Euripides* never thinks of his publick Employment; but advises him to return home at his leisure; as if it had been a Voyage for Diversion. *Tes*, says his Advocate; *but why might he not be at Chios another*

(t) Athen.
XIII, 603.

(u) Ibid.
& Thucyd.
I, 75.

another time, though no body speak of it, about private Affairs? Yes; why not, indeed? For *Sophocles* was so (w) courteous and good-natur'd a Man, that, to do our Letter-monger a kindness, he would have gone to every Island in the *Archipelago*. But 'tis hard though, that a good Ship must be lost, and our Poet swim for't, to oblige the little Sophist. For I fear the Vessel was cast away, purely to bring in (x) the great loss of *Sophocles's Plays*. Alas! alas! Could he not go over the water, but he must needs take his Plays with him? And must *Euripides*, of all men, lament the loss of them; whose own Plays must, probably, have truckled to them at the next Feast of *Bacchus*? Must *Euripides*, his Rival, his Antagonist, tell him, (y) That his Orders about family affairs were executed: as if He had been employ'd by him, as Steward of his Household?

(w) *Ion Chius, ib. Aristoph. Ranis.*

(x) *Ἡ δὲ τὰ δεινὰ συμφορὰ*

(y) *τὰ οἴκοι ἱδρὺς καὶ ἄλλων ὅν τινα*

VIII. The Fifth Letter is a long Apology for his going to *Macedonia*. "Can they think, says he, that I came hither for love of Money? I should have come then, when I was younger; and not now, to lay (z) my bones in a barbarous Countrey, and make *Archelaus* richer by my Death." I observed it, as no small mark of a Sophist, That our Author

(z) *Ἰνα ἐν βαρβάρῳ γῇ ἀποθῶμαι*

fore-

foretells, he was to die in *Macedonia*; where, we know, he was worried to death by a pack of Dogs. But what wonder, say they, if an Old Man of Seventy predict his own death? I do not question, but our Poet might presage himself to be Mortal. But 'twas an odd guess to hit upon the time and place, when and where he was to die. For, what ground was there to be so positive? The Letter, we see, carries date just after his arrival at Court? He had, as yet, had very short trial, whether all things would continue to his liking. And we have no reason to suppose, that he came thither for good and all; never to see *Athens* again. Might he not, by some accident, or supplanted by some rival, lose the King's favour? Or, was he sure His life would last as long as his own? 'Twas a violent death, and not mere Age and Craziness, that took our Poet away at last: and he knew *Sophocles* to be then alive and hearty and making of Plays still; that was Fourteen years older than himself. In these circumstances to be so positive about his dying there, was a Prophecy as bold as any of the *Pythian Oracle*. But, say they, he gives a hint too, that *Archelaus* might be deposed: which a Sophist would not say, because it never came to pass. That was true
and

and came to pass every day, that he might be deposed: and he does not suggest, that it actually would be so; for he expressly says, (a) *God would always stand by the King, and support him.* But indeed, as they interpret a passage there; it looks as if he had foreboded real Mischief; Οὐδ' ἀνίστη, ὅτι οἱ χεῖλαι ὁ καὶ εὖ εἰς ἀνθρώπων εὐεργισίαν, ἀνεδεῖς φρεσὶ ἡδὴ. Which last words they translate, *ubi jam destitutus fueris & abdicatus*, "when you are deserted and deposed." But with all due submission, I will assume the freedom of changing the version. For ἀνεδεῖς and φρεσὶ belong to the word καὶ εὖ, and not to Archelaus: and the distinction is to be put thus; ὅτι οἱ χεῖλαι ὁ καὶ εὖ εἰς ἀνθρώπων εὐεργισίαν ἀνεδεῖς, φρεσὶ ἡδὴ; *Tempus ad exercendam benignitatem concessum*; "You will not grieve, that the time is gone past recalling, which was granted you by God to do good to Mankind in." This, I suppose, is now clear enough; and Archelaus is in no danger of being deposed by this sentence. But let us examine our Author's next words; (b) *To make Archelaus richer by my death.* A very good Thought indeed, and worthy of Euripides. But pray what could the King get by his death? Would the Poet be compell'd to make him his

(a) Παρά-
σαι μὲν εἰς
ὁ θεός, καὶ
εἴησε) καὶ
τόπιν.
(b) ἵνα
πλεονα-
ρχελάω
καταλίποι-
μεν χρή-
ματα.

I Heir;

Heir ; as some were forced by the *Roman* Emperors ? Or, would the King seize upon his Estate, and defraud the true Inheritor ? If the Poet had such suspicions as these, he would never have gone to him. But though he had left all to him at his death ; what would the King have been richer for him ? For surely *Euripides*, having settled affairs at home, carried no great Stock with him to *Macedonia* ; unless he thought *Archelaus* would make him pay for his Board. He might well expect to be maintain'd by the King's (d) Ep. v. Liberality ; (c) as he found it in the Event. The King therefore, were he his sole Heir, would only have received again, what himself had given before. Nay, even a great part of that had been lost beyond recovery. For our Poet, by the very first Messenger, had packt more away to *Athens*, than *Archelaus* had given him, than all that he carried with him could amount to ; perhaps, than all he was worth before.

IX. But he has more still to say to those, that blamed him for leaving *Athens*. " If

(d) Τὸν αὐτὸν ἄνθρωπον πλεῖστον. " Riches (says he) could draw me to *Macedonia* ; why did I refuse (d) these (e) Νέοι τε καὶ μέσοι τῶν ἡλικίων. " very same Riches ; when I was (e) young, or middle-aged ; and while my Mother was alive ; for whose sake alone, if

" at

"at all, I should have desired to be
 "rich?" He alludes here to the First
 Letter, (and perhaps to others now lost,) where he refuses an ample Summ of
 Money sent him by *Archelaus*. Alas, poor
 Sophist! 'twas ill luck he took none of the
 Money, to Fee his Advocates lustily: for
 this is like to be a hard brush. For how
 could the Poet, while young, or middle-
 aged, refuse Presents from *Archelaus*? since, (f) *Diod.*
 according (f) to most Chronologers, he *Sicul. &*
 was about Seventy; and, by the most fa- *alii apud*
 vourable account, above Sixty; when *Athen. l.v.*
Archelaus came to the Crown. *p. 217.*

X. But what a dutiful Child had Mother
Clito the Herb-woman? For her sake alone,
 her Son *Euripides* could wish to be Rich;
 to buy her Oil to her Sallads. But what
 had the Old Gentleman the Father done,
 that he wishes nothing for His sake? And
 how had his (g) three Sons offended him, (g) *Suidas,*
 that They have no share in his good *Tho. Magi-*
 wishes? 'Tis a fine piece of conduct, *ster, &c.*
 that our Sophist has shewn. He had read
 something of our Poet's Mother; for she
 was famous in old Comedy for her Lettuce
 and Cabbage: but having heard nothing
 of his Sons; he represents him through
 all his Letters, as if he had no Children.
 As here, the only motive to desire Wealth,
 is his care of the *Old Woman*: and when

he is supposed to be dead, all his concern is only for his *Friends*. In the First Letter,

(h) Ἡμῶν
τε καὶ τοῖς
φίλοις.

(h) He and his *Friends* are such contented men, that they refuse the royal Gift. Not a word of the three young Sparks; who, 'tis hard to think, were so self-denying. In the Fifth, he keeps none of the King's Presents by him, but sends all away to *Athens*, to be shared among

(i) τοῖς
ἐταίροις καὶ
συνήδοις.

his (i) *Friends* and Companions. How, again, would the young Gentlemen look, to be forgot thus by their own Father? If it be suspected, in favour of the Letters, that the Sons might be all dead before; I can soon put a stop to that, from a good Evidence, *Aristophanes*; who, in a Play made (k) the very Year of our Poet's death, mentions the Sons as then alive.

(k) Βα-
λεχτοί, p.
184. Edit.
Basil.

XI. The *Romans* may brag as much as they please of *Mecænas* and others: but of all Patrons of Learning, *Archelaus* of *Macedonia* shall have My commendations. Within two or three days after *Euripides*'s arrival,

(l) Ep. v.

he makes him a Present of (l) *Forty Talents*. Which was a greater Summ of Money than our Poet could ever have raised before; though all that he had should have been sold four times over. The Great

(m) Plut.
Themist.

Themistocles (m) was not worth Three Talents, before he meddled with Public Affairs: and (n) Two Talents was thought a good

(n) Terent.
Heaut.

a good Portion for a substantial Man's Daughter. *Alexander the Great*, when he was Lord of the World, sent *Xenocrates* the Philosopher a Present of Thirty Talents; or, as others say, Fifty; which (o) *Cicero* calls a vast Summ, especially for those times. But *Alexander's* natural Munificence was stimulated and exalted to that extraordinary Act of Bounty, out of a peak (p) he had to *Aristotle*. How generous then, nay, how profuse was *Archelaus*; that out of his little and scanty Revenue could give as much, as his great Successor in the midst of the *Persian* Treasures? But all this is spoil'd again; when we consider, 'tis a Sophist's Present: who is liberal, indeed, of his Paper Notes, but never makes solid Payment.

And now, I suppose, it will be thought no great matter, whether *Sabirius Pollo*, as *Apollonides* affirms, or any other unknown Sophist, have the Honour of the Epistles. I will take my leave of Him and Them; after I have done the same kindness to *Apollonides*, that I did to *Sabirius*. For as I read the name of the one, Σαβίριος Πολλίων, instead of Σαβίριος Πόλλων: so, for Ἀπολλωνίδης ὁ Κηφεύς, I dare make bold to substitute Ἀπολλωνίδης ὁ Νικαεύς. The former was never heard of but here. This latter is men-

(o) *Cicero*,
Tusc. v.

Pecunia
temporibus
illis, Athe-
nis prefer-
tim, maxi-
ma.

(p) *Laert.*
in Arist.

tion'd by *Laertius*, *Harpocraton* and others. He writ several Books, and dedicated one of them (q) to *Tiberius*. The time therefore agrees exactly with this emendation; for living in that Emperor's days, he might well cite a *Roman* Author *Sabidius Pollio*. But to take away all manner of scruple; this very Book *About Falsified History* is ascribed to *Apollonides Nicenus* by (r) *Ammonius*; Ἀπολλωνίδης, says he, ὁ Νικαεὺς ἐν τῷ τρίτῳ βιβλίῳ κατεψευσμένων; just as the Writer of *Aratus's* Life says; Ἀπολλωνίδης ὁ Κηρεὺς ἐν τῷ ὅσδῳ βιβλίῳ κατεψευσμένης Ἱστορίας.

(q) *Laert.*
in *Timone.*

(r) v. *Kæ-*
Joianus.
De Differ.
Vocab.

OF

ÆSOP'S FABLES.

I Could easily go on, and discover to you many more Impostures of this kind, The Epistles of *Anacharsis*, *Heraclitus*, *Democritus*, *Hippocrates*, *Diogenes*, *Crates*, and others. But perhaps I may be exhorted hereafter to put this Dissertation into *Latin*, with large Additions: till which time I will adjourn the further Discourse upon those several Authors; and proceed now to the last thing propos'd, *The Fables of Æsop*.

And

And here I am glad to find a good part of the Work done ready to my hand. For Monsieur *Bachet S. de Meziriac*, has writ *The Life of Æsop*, in French: which Book, though I could never meet with it, I can guess from the great Learning of the Author, known to me by his other Works, to have in a manner exhausted the Subject. *Vavassor* too, *De Ludicra Dictione*, ascribes the present *Fables* to *Maximus Planudes*, and not to *Æsop* himself. See also a great deal upon this Head in the late *Historical Dictionary* of Mr. *Baile*. All which make me look upon Sir *W. T.*'s mighty Commendation of the *Æsopian Fables* now extant, which is the occasion of this Treatise, to be an unhappy Paradox; neither worthy of the great Author, nor agreeable to the rest of his excellent Book. For if I do not much deceive my self, I shall soon make it appear, That of all the Compositions of the *Æsopic Fables*, these that we have now left us, are both the Last and the Worst. Though I do not intend a set Discourse; but only a few loose things, that I fancy may have escaped the Observation of Others.

I. 'Tis very uncertain, if *Æsop* himself left any *Fables* behind him in writing: the Old Man in (s) *Aristophanes* learn'd his

(s) In *Vespis*, p. 357.

his Fables in Conversation, and not out of a Book :

Αἰσωπικὸν γελοῖον ἢ Συβαριτικόν
 ὃν ἑμαυτοὶ ἐν ταῖς συμποσίαις —

(t) In Avibus, p. 387.

There's another (t) passage in the same Poet, Οὐδ' Αἰσωπὸν πεπαιγμένον ; which

(u) Παπῆ-
 φα.

(u) Suidas, and from him Erasmus, Scaliger, &c. affirm to be used proverbially ; *You have not read so much as Æsop*, (spoken of Ideots and Illiterates.) From whence one might conclude, that Æsop wrote his own Fables, which were in every bodies hands. But it plainly appears from the Poet himself, that it is not a Proverbial Saying : For when One had said, *He never heard before, that Birds were older than the Earth* ; the Other tells him, *He is unlearned, and unacquainted with Æsop* ; who said, " That the Lark was the first of Things ; and she, when her Father died (after he had laid five days unburied, because the Earth was not yet in being) at last buried him in her own Head." Now, what is there here like a Proverb ? But pray take notice, that this Fable is not extant in our present Collection ; a good testimony, that Ours are not of the Phrygian's own Composing.

I will

I will mention another place of our Poet ; that I may, on this occasion, correct a gross Error of the Scholiast. 'Tis extant in *Vespis*, p. 330.

[λοῖον.
Οἱ δὲ λέγουσι μῦθους ἡμῶν, οἱ δὲ Αἰσώπῃ τι γε-

Where he interprets Αἰσώπῃ γελοῖον ; of one Æsop a ridiculous Actor of Tragedy. But our Scholiast himself is more ridiculous : if it was He that writ this ; and not some trifler, that foisted it in among the other's Annotations. For there was no Æsop a Greek Actor in the days of Aristophanes : he mistakes him for the famous Æsop in Cicero's time, an Actor of Tragedy on the Roman Stage ; and far from being ridiculous :

Quæ gravis Æsopus, quæ doctus Roscius egit.

But the Æsop meant by our Poet is the Phrygian himself, whose Fables were called *Jests*, Γελοῖα : so in the other passage, already cited, Αἰσωπικὸν γελοῖον.

Hesychius, Αἰσώπῃ γελοῖα ἔτις ἔλεγον τὰς Αἰσώπῃ μῦθους. (w) Dion Chrysostom, speaking of our Æsop, Ἡνεύχοντο αὐτὸν, says he, ἡδόμενοι ὅτι τὰ γελοῖα ἢ τοῖς μῦθοις.

Avienus, in his Preface ; Æsopus, responso Delphici Apollinis monitus, RIDICULA orsus est.

(w) Orat.
lxxii. p.
631.

(x) Plato
in Phædone.
Plutarch.
de Aud.
Poet.
Laert. in
Socrat.

II. The first, that we know of, who essayed to put the *Æsopic Fables* into Verse, was (x) *Socrates* the Philosopher. *Laertius* seems to hint, that he did but one Fable; and that with no great success; the beginning of it was this:

Αἰσωπὸς ποτ' ἔλεξε Κορίνθιον ἄνδρ' ἐμμεσι,
Μὴ κρίνεν ἀρετῶν λαοδίκῳ σοφίῃ.

'Tis observable again, that *Socrates* does not say, he made use of a *Book of Fables*: but, *I wrote*, says he, ὧν ἠπιστάμην, *those that I knew, and that I could first call to mind*. And this Fable too does not appear in our present Collection; if we may gather so much, from his naming the *Corinthians*.

(y) Laert.
in Demet.

III. After *Socrates's* time, (y) *Demetrius Phalereus* made Ἀδῶν Αἰσωπείων Συναγωγαίς, *Collections of Æsopian Fables*: which, perhaps, were the first in their kind, committed to writing; I mean, in form of a Book. These seem to have been in Prose: and some, perhaps, may imagine, that they are the same that are now extant. I wish they were; for then they would have been well writ, with some Genius and Spirit. But I shall demonstrate Ours to be of a Modern Date; and the Composition it self speaks too loud, that it is not *Demetrius's*.

IV. After

IV. After him, there was some body, whose name is now lost, that made a new Edition of the *Fables* in Elegiac Verse ; I find no mention of them, but in *Suidas* ; who cites them often under the name of Μῦθοι, or Μυθικά. I will set down a few Fragments of them ; both to shew that they belong to the *Æsopic Fables*, which has not yet been observed, that I know of ; and to enable you to judge, whether, if we could change our modern Collection for these, we should not get by the bargain.

(2) Τάνακ' αὖτις ἰδίῳ ὅπως δύνω.

(2) *Suidas*
in Δύη.

This belongs to the Fable about the Two Bags that every Man carries ; one before, where he puts other men's faults ; another behind him, where he puts his own. This is mention'd by *Catullus*, *Horace*, *Phædrus*, *Galen*, *Themistius*, *Stobæus*, &c. and it is a Blot upon our Modern Sett, that there it is wanting.

(a) Αἰπεινᾷς ἐλαταῖς ἔρισεν βάτος· ἥ μὲν εἶπε
καὶ ναῦς ἢ νῆς (b) τεμνομένη τέλειον.

(a) *Id.* in
Αἰπεινή.

(b) *vulgo*
τεμνομένη
νῆς.

And,

Αἰπεινῷ ἐλάτῳ ἐρὶς ὥρεσεν αἰσὺλα φάσγαν.

And,

[θυμῷ

(c) Οὐδὲ οἱ εἰδ' αἰδῶν ἄδ' ἐπ' ἀλγιστὶς, ἐνεκα
ἔμπλιν

(c) *Id.* in
Ἀδῶν.

And,

And,

(d) Id.
Aκνηδής.

(d) Πικρὴ μέντε λύκοισιν, ἀτὰρ χιμαίροισιν

[ἀκνηδής.]

Some of them, it seems, were all Hexameters :

(*) Id.
Συρ. &
Schol. Ari-
stoph. p.
220.(*) Ὅδι συρλαῶν ὅπῃ περὶ
Ὅσεα κέντρά τε νῶτα καὶ ἀγκύλα γυῖα κιάδῃ.

'Tis an easie matter to find what Fables these pieces relate to ; and I think they are all extant in the present Collection.

(e) Suidas
in Βάβριος.

V. This, you see by this Specimen, was no contemptible Author : and after him came one *Babrius*, that (e) gave a new Turn of the Fables into Choliambics. No body, that I know of, mention him ; but *Suidas*, *Avienus*, and *Jo. Tzetzes*. There's one *Gabrius*, indeed, yet extant, that has comprized each Fable in four sorry Iambics. But our *Babrius* is a Writer of another Size and Quality ; and were his Book now extant, it might justly be opposed, if not preferred, to the *Latin* of *Phædrus*. There's a whole Fable of his yet preserved at the end of *Gabrius*, of the *Swallow and the Nightingale*. *Suidas* brings many Citations out of him ; all which shew him an excellent Poet : as this of the *Sick Lion*,

(f) Suidas
in Ἀδμ.

— (f) οἷός τις νέσσω
Κάμινον ἐβέβλην, ἐκ ἀληθὲς ἀδμαίνων :

And

And that of the Bore,

Φρίξας δὲ χαίτῳ (h) ἔκδορε φωλάδ' ὁ κοίτης : (h) *Suidas*
in ἔκδορε.

And a great many others.

VI. I need not mention the *Latin Writers* of the *Æsopian Fables*; *Phædrus*, (h) *Julius Titianus*, and *Avienus*; the two first in Iambic, the last in Elegiac: but I shall proceed to examine those *Greek ones* now extant, that assume the name of *Æsop* himself. There are two parcels of the present *Fables*; the one, which are the more ancient, CXXXVI in number, were first publisht out of the *Heidelberg Library*, by *Neveletus*, A. D. MDCX. The Editor himself well observed; That they were falsly ascribed to *Æsop*, because they (i) mention holy Monks. To which I will add another remark; That there is a sentence out of *Job*, (k) *Τυμνοὶ γὰρ ἦλθομεν οἱ πάντες, γυμνοὶ ἐν ἀπελευσόμεθα*; *Naked we all came, and naked shall we return*. But because these two passages are in the *Epimythion*, and belong not to the Fable it self; they may justly be supposed to be Additions only, and Interpolations of the true Book. I shall therefore give some better Reasons, to prove they are a recent Work. That they cannot be *Æsop's* own, the CLXXXI Fable is a demonstrative proof.

(h) *Ausonius*, Ep. xvi.

(i) *Φιλερήμεοις χρεὶν Μοναχοῖς*, Fab. 152.

(k) See *Job* i. 21.

proof. For that is a story of *Demades* the Rhetor, who lived above cc years after our *Phrygian's* time. The cxciii is, about *Momus's* Carping at the Works of the Gods. There he finds this fault in the Bull; *That his Eyes were not placed in his Horns, so as he might see where he pusht.*

(l) In *Nigrinus*.

But (l) *Lucian* (speaking of the same Fable) has it thus; *That his Horns were not placed right before his Eyes.* And

(m) De *Part. Anim.* l. iii. p. 54.

(m) *Aristotle* has it a third way; *That his Horns were not placed about his Shoulders, where he might make the strongest push; but in the tenderest part, his Head.* Again, *Momus* blames this in the Man; *That his Phœves did not hang on the out-side of him, so as his Thoughts might be seen: but in*

(n) In *Hermetimo*.

(n) *Lucian*, the fault is; *That he had not a Window in his Breast.* I think it probable from hence, that *Æsop* did not write a Book of his Fables: for then there would not have been such a difference in the telling. Or, at least, if these that are now extant were *Æsop's*; I should guess from this specimen, that *Lucian* had the better on't, and beat him at his own play.

VII. But that they are recenter than even *Babrius*, who is himself one of the latest Age of good Writers, I discovered by this means. I observed in 'em several passages, that were not of a piece with

with the rest ; but had a turn and composition plainly Poetical : as in the CCLXIII Fable, which begins thus ; Ὀν @ πατήσας σιόλοπα χωλός ἐστίν. This, I saw, was a Choliambic Verse ; and I presently suspected, that the Writer had taken it out of *Babrius*. And I was soon confirmed in my judgment by this (o) fragment of ^{(o) Suidas} his, that belongs to the same Fable : ^{in Κρησίας,}

Ὁ δ' ἐκλυθεὶς πόνων τε κᾶνίας πάσης,
Τὸν κνηκίαν χάσκοντα λακτίσας φεύγει.

For in the Fable in Prose there are these words ; Ὁ ὄν @ ἔλατθεις τὸν πόνον, ἐπὶ τ' ἄλκον κακόντα λακτίσας φεύγει. Whence it evidently appears, that the Author of that Parcel, which was published by *Neveletus*, did nothing else but epitomize *Babrius*, and put him into Prose. But I will give you some further proofs of it. The CCLXI begins thus ; Ὀν @ τις ἐπιθεὶς ἔβανον ἦγε. Which, at the first reading, one perceives to be part of a Scazon : and thus it is in a ^{(p) Suidas} (p) fragment of *Babrius* : ^{in Κωμῶν.}

Ὀν @ τις ἐπιθεὶς ἔβανον εἶχε κομήτης.

In the CLVI, about the Fox with the Fire-brand ; Ταύτῳ δ' αἰμῶν εἰς τὰς ἀρέρας τῆ βαλβύλ @

βαλόντα ὠδήγει. Who does not discover here a Scazon of Babrius?

Εἰς τὰς ἀρέσας τὸ βαλόντα ὠδήγει.

The CCXLIII is a manifest turning out of Choliambics into Prose; for the whole is made up either of Pieces or entire Verses:

— ἡλὶς πλέον λάμπει.

And,

*Ανέμω ὅ σὺρρέυσαντα, ὠδὸς ἐσβέδῃ.

And,

*Ἐκ δευτέρου δ' ἀπὸ τῶν τῶν —

And,

— φαῖνε λείχνη καὶ σήρα,
τῶν ἀσέρων τὸ φέγγος ἐποῖ ἐκλείπει.

In the CCXCIII, there are these remnants of Babrius:

Πόση γὰρ ὀλκή τ' ἔμουν αἶμα περὶ δῆσιν.

And,

*Ἔσαι μάγειρα, ὅς με συντόμως δύσει.

And,

— καὶ πάλιν κερῆ με, καὶ σώσει.

The

The CLXV begins thus ; Ἀνὴρ μεσσηπολῖος
 δύο ἐρωμένους εἶχεν ὧν ἡ μὲν μία νεάνις, ἡ δὲ
 ἄλλη πρεσβύτις : which I suppose to have
 been in *Babrius* thus :

Ἀνὴρ μεσσηπολῖος δύο ἐρωμένους εἶχεν,
 ἧν ἡ μία νεάνις, ἡ δὲ πρεσβύτις.

Or, ὧν ἡ μὲν ἦν ν.

In all these passages here are most visible
 footsteps by which we may trace our
 Imitator : but generally he has so dis-
 guised the Fables, that no body can find
 they ever belong'd to *Babrius*. In the
 CCXLV, about the Priests of *Cybele*, there's
 nothing but a short dry Story, and no
 reliques of a Verse. But there's a noble
 fragment of *Babrius* belonging to the
 same Fable, which I will here set down,
 both to correct it, (for he that has given
 it us, (q) has printed it false,) and to shew
 you how much we have lost :

(q) *Natal.*
Com. l. ix.
c. 5.

Γάλλοις ἀγροῖταις εἰς τὸ κοινὸν ἐπαράθῃ

Ὅν τις ἐκ εὐμοιρῶν, ἀλλὰ δυσδαίμων :

Ὅστις φέρη πτωχοῖσι καὶ πανέργοισι

Πένης ἄκος δίδης τε, καὶ κακῶ τέχνῳ.

Οὗτοι δὲ κίχλω πάντα ἐξ ἔδης κώμῳ

Περίοντες ἐλέγοντο τίς γὰρ ἀγροίκων

Οὐκ οἶδεν Ἀττίν λευκόν, ὥς ἐπιδόθῃ ;

Τίς ἐκ ἀπαρχῆς ὁσπρίων τε καὶ σιτῶν

Ἀλὼ φέρων δίδωσι τυμπάνῳ Πείῃς.

K

VIII. Thus

VIII. Thus I have proved one Half of the *Fables* now extant, that carry the name of *Æsop*, to be above a Thousand Years more recent than He. And the other Half, that were public before *Neveletus*, will be found to be yet more modern, and the latest of all. That they are not from *Æsop*'s own Hand, we may know from the LXX, *Of the Serpent and the Crab-fish*: which is taken from a *Scolion* or Catch, much older than *Æsop*, that is extant in

(r) Lib. xv. (r) *Athenæus*, and must be corrected thus:
c. 15.

Ὁ καρκίνος ὦδε ἔφα, χαλᾷ τ' ὄφιν λαβών.
Εὐδύν, χρὴ ἔταμεν ἔμεν, καὶ μὴ σκολιὰ φεγεῖν.

Jan VI (p)
xi. l. mo

And there is great reason to believe, that they were drawn up by *Planudes*, one of the Later Greeks, that translated into his native Tongue *Ovid's Metamorphoses*, *Cato's Distichs*, *Cæsar's Commentaries*, and *Macrobius*. For there is no Manuscript any where, above CCC years old, that has the *Fables* according to that Copy. Besides that there are several passages, that betray a modern Writer; as in the LXXVII, *Βέταλις*, a *Bird*; and XXXIX, *Βένευρον*, a *Beast*; both unknown to all ancient Authors: and in the CXXIX, *βοῶν ἐν τῇ καρδίᾳ*, *Crying in his heart*, a manifest Hebraism, in imitation of *Eccles. xi. 1.*

ἔπουν

ἔκον ἐν τῇ καθεστῇ μς. The LXXV, about the *Æthiopian*, is taken almost word for word out of the vi of *Aphthonius* the Rhetorician; who made an Essay upon some *Æsopic Fables*, that is yet extant. The iv, as appears from the last sentence of it, is a Paraphrase on the CCLXXXIV of *Neveletus's Parcel*; which *Parcel*, as I have proved above, are a Translation of *Babrius*: and particularly in this very Fable there are footsteps of his Verses;

κατῆλθεν εἰς βαδὺν κρημνόν.

And,

μελένβει, καὶ βαδὺν ἐξήτει.

This Collection therefore is more recent than that Other; and coming first abroad with *Æsop's Life*, writ by *Planudes*, 'tis justly believed to be owing to the same Writer.

IX. That Idiot of a Monk has given us a Book, which he calls *The Life of Æsop*, that, perhaps, cannot be match'd in any Language, for Ignorance and Nonsense. He had pick'd up two or three true stories, That *Æsop* was Slave to one *Xanthus*, (s) carried a Burthen of Bread, conversed (s) *Eurus* with *Cræsus*, and was put to death at *Delphi*: but the Circumstances of these, and all his other Tales, are pure Invention.

*

K 2

He

(o) Σάμ-
ιος ὁ Φι-
λόσοφος.

(u) Plu-
tarch. in
Conviv.

(w) Suidas
in Aἰσ. &
Ἀναβιω-
σαν. Schol.
Aristoph.
p. 357, &
387.

He makes *Xanthus*, an ordinary *Lydian* or *Samian*, to be a (t) *Philosopher*: which word was not heard of in those days, but invented afterwards by *Pythagoras*. He makes him attended too, like *Plato* and *Aristotle*, by a Company of Scholars, whom he calls Σχολαστικοί: tho' the word was not yet used in that sense, even in *Aristotle's* time. 'Twas the (u) King of *Æthiopia's* Problem to *Amasis* King of *Ægypt*, To drink up the Sea: but *Planudes* makes it a Wager of *Xanthus* with one of his Scholars. To say nothing of his Chronological Errors, Mistakes of a Hundred or Two Hundred years: Who can read, with any patience, that silly Discourse between *Xanthus* and his Man *Æsop*; not a bit better than our *Penny-Merriments*, printed at *London-Bridge*?

X. But of all his injuries to *Æsop*, that which can least be forgiven him, is, the making such a Monster of him for Ugliness: an Abuse, that has found credit so universally; that all the modern Painters, since the time of *Planudes*, have drawn him in the worst Shapes and Features, that Fancy could invent. 'Twas an (w) old Tradition among the *Greeks*, That *Æsop* revived again, and lived a second life. Should he revive once more, and see the Picture before the Book that carries his Name; could he think it drawn for Himself? or for the Monkey,

Monkey,

Monkey, or some strange Beast introduced
 in the *Fables*? But what Revelation had
 this Monk about *Æsop's* Deformity? For
 he must learn it by Dream and Vision, and
 not by ordinary methods of Knowledge.
 He lived (x) about Two Thousand Years (x) A. D.
 after him: and in all that tract of time, MCCCLXX
 there's not one single Author that has given
 the least hint, that *Æsop* was ugly. What
 credit then can be given to an ignorant
 Monk, that broaches a new Story after so
 many Ages? In *Plutarch's Convivium* our
Æsop is one of the Guests with *Solon* and
 the other Sages of *Greece*: there is abun-
 dance of Jest and Raillery there among
 them: and particularly upon *Æsop*:
 but no body drolls upon his ugly Face;
 which could hardly have escaped, had
 he had such a bad one. Perhaps you'll
 say, it had been rude and indecent, to
 touch upon a natural Imperfection. Not at
 all, if it had been done softly and jocosely.
 In *Plato's Feast*, they are very merry upon
Socrates's Face, that resembled old *Silenus*:
 and in this, they twit *Æsop* for having
 been a Slave: which was no more his
 Fault, than Deformity would have been.
Philostratus has given us, in Two Books,
 a Description of a Gallery of Pictures;
 (y) one of which is *Æsop* with a Chorus (y) P. 735.
 of Animals about him. There he is
 repre-

represented smiling and looking towards the ground, in a posture of Thought; but not a word of his Deformity; which, were it true, must needs have been touch'd on, in an account of a Picture. The Athenians set up a noble Statue to his Honour and Memory:

(2) Phæ-
drus, l. xi.
utr.

(2) *Æsopo ingentem Statuam posuere Attici,
Servumque collocarunt æterna in basi;
Patere honoris scirent ut cuncti viam,
Nec generi tribui, sed virtuti gloriam.*

But had he been such a Monster, as *Platitudes* has made of him; a Statue had been no better than a Monument of his Ugliness: it had been kinder to his Memory, to have let that alone. But the famous *Lysippus* was the Statuary that made it. And must so great a Hand be employed to dress up a Lump of Deformity? *Agathias* the Poet has left us an

(a) Anthol.
lib. iv. Eίς
Φίλοσ.

(a) Epigram upon that Statue:

Εὖ γε ποιῶν, Λύσιππε γέρον, Σικυώνιε πλάστᾳ,
Δέουλον Αἰσώπῃ σῆσας τῷ Σαμῖ, &c.

How could He too have omitted to speak of it, had his Ugliness been so notorious? The Greeks have several Proverbs about Persons deformed; Θερόσιτων ἑλέμια,
Εἶδεχθῆς

Εἰδὲχθ' ὁ Κροῦδῆς, &c. Our Æsop, if so very ugly, had been in the first rank of them; especially when his Statue had stood there, to put every body in mind of it. He was a great Favourite of Cræsus King of *Lydia*; who employ'd him, as his Embassador to *Corinth* and *Delphi*. But would such a Monster, as *Planudes* has set out, be a fit Companion for a Prince; or a proper Embassador; to be hooted at by all the Boys, where-ever he came? *Plutarch* represents him as a polite and elegant Courtier; rebuking *Solon* for his gruff and clownish behaviour with *Cræsus*; telling him, he must converse with Princes, (b) ἢ ὡς ἡδέστα, ἢ ὡς ἡνίκστα, either agreeably, (b) *Plut.* or not at all. Now, could either such a in *Solone*, Station, or such a Discourse besit Æsop; if he was truly that Scare-crow, as he is now commonly painted? But I wish I could do that justice to the Memory of our *Phrygian*; to oblige the Painters to change their Pencil. For 'tis certain, he was no Deformed Person; and 'tis probable, he was very Handsom. For whether he was a *Phrygian*, or, as others say, a *Thracian*; he must have been sold into *Samos* by a Trader in *Slaves*. And 'tis well known, that that sort of People commonly bought up the most Beautiful they could light on; because they would yield the

the most Profit. And there is mention of two Slaves, Fellow-Servants together, *Æsop* and *Rhodopis* a Woman; and if we may guess him by his Companion and (b) *Contubernalis*, we must needs believe him a Comely Person. For (c) that *Rhodopis* was the greatest Beauty of all her Age: and even a Proverb arose in Memory of it;

(c) Pliny
xxxvi, 12.
(d) Herodo-
tus. Suidas.
Strabo.

Ἄπανθ' ὄμοια, καὶ Ῥοδῶπις ἡ καλὴ.

F I N I S.

E R R A T A

Page 48. l. 17. r. Παῖδες; p. 66. l. 14. r. very well resolv'd;
p. 80. l. ult. r. Ten years; p. 90. l. 22. r. gives a reason;
p. 93. l. 29. r. of that Philosopher; p. 124. marg. r. γέρον;
p. 127. marg. r. ἰδῷ.

either,
if we
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