

A week's conversation on the plurality of worlds / Tr. from the last edition, wherein are ... new observations on several discoveries which have been made in the heavens. By William Gardiner.

Contributors

Fontenelle, M. de (Bernard Le Bovier), 1657-1757
Gardiner, William, 1867-1941

Publication/Creation

London : C. Hitch, 1757.

Persistent URL

<https://wellcomecollection.org/works/dn4nfpyc>

License and attribution

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.

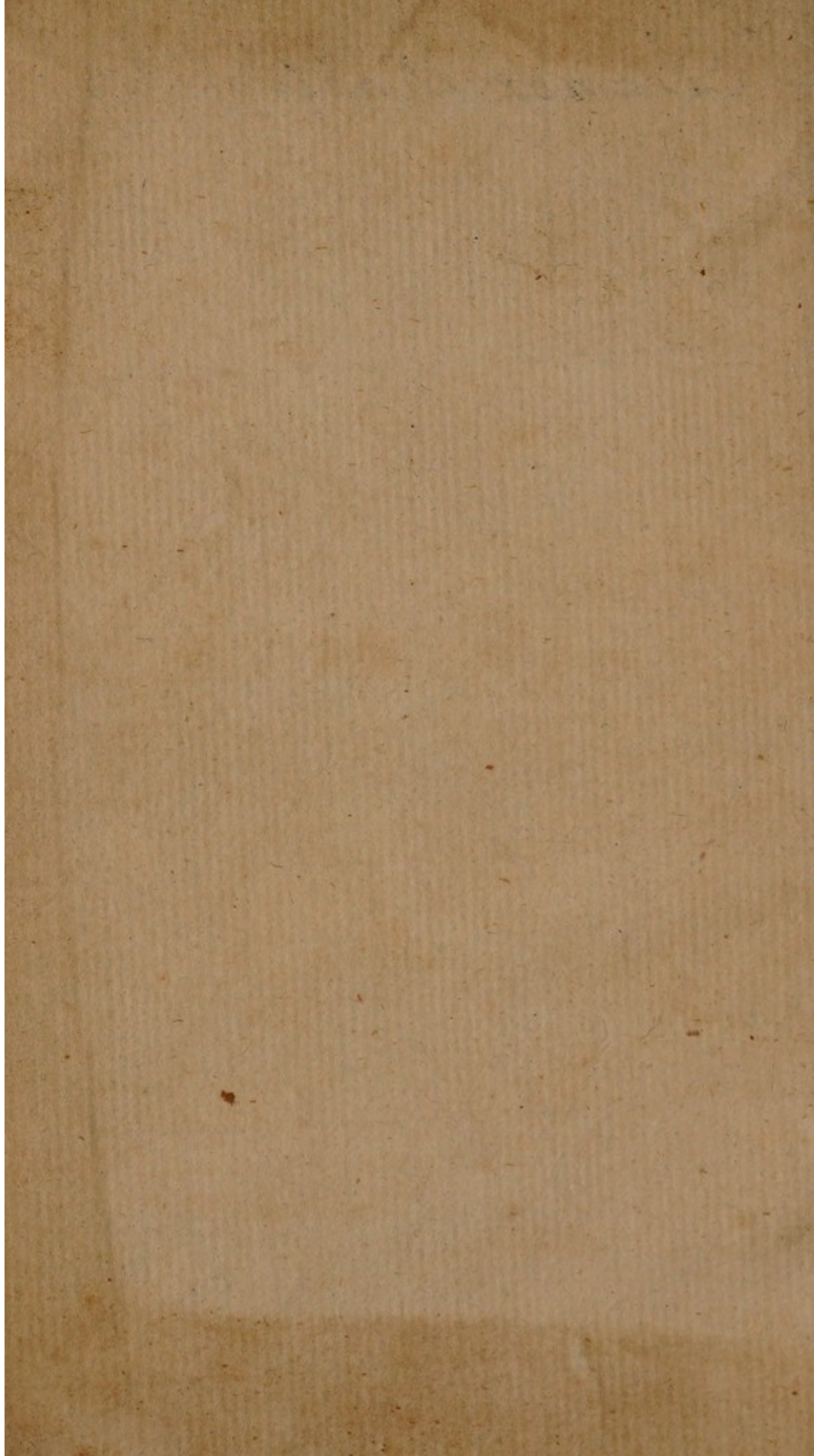


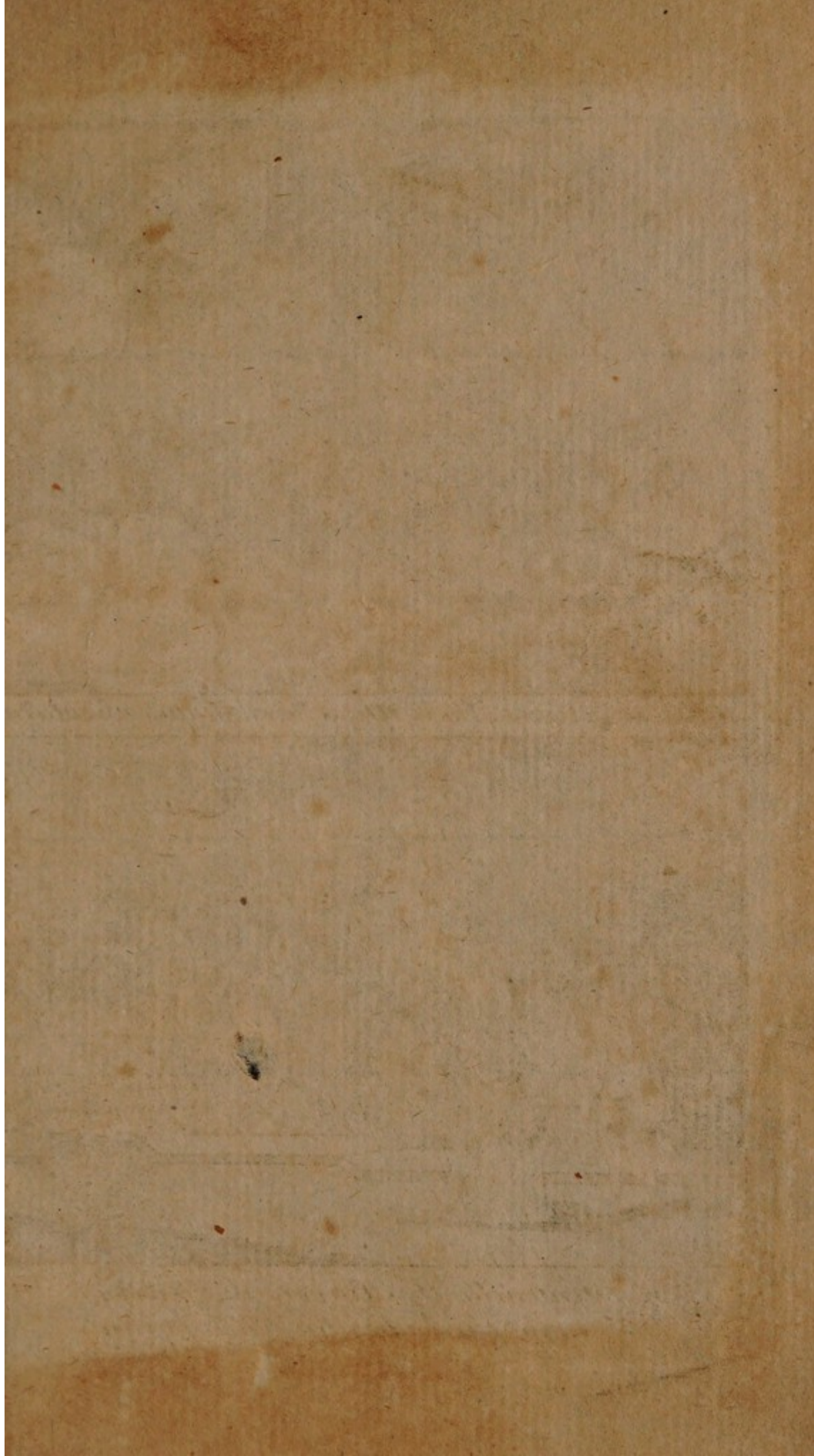
Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>

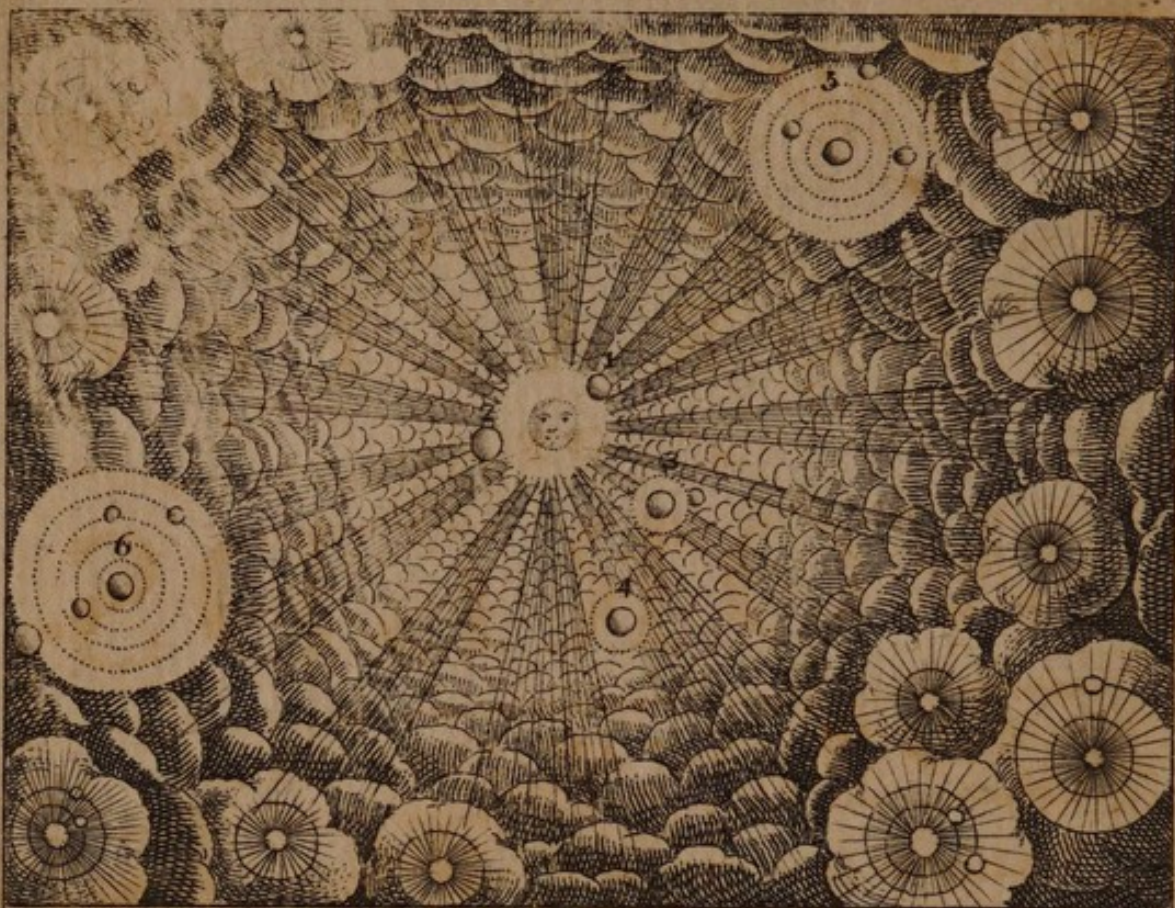


22, 983/A

Eleanor Martin Jun^r







1 Mercury. 2 Venus, 3 The Earth. 4 Mars, 5 Jupiter, 6 Saturn.



B. Colloc.

*Great Fontenelle! the Heavens did Descry,
And taught the Ladies his Philosophy.*

A
Week's Conversation
ON THE
PLURALITY
OF
WORLDS.

By Monsieur DE FONTENELLE.

Translated from the last Edition, wherein are many
Improvements; and New Observations on several
Discoveries which have been made in the HEAVENS.

By WILLIAM GARDINER, Esq;

THE FOURTH EDITION.

To which is added,

Mr. ADDISON'S DEFENCE
OF THE
NEWTONIAN PHILOSOPHY.

L O N D O N:

Printed for C. HITCH and L. HAWES, in *Pater-*
Noster-Row; and J. HODGES, at the *Looking-Glass*,
facing *St. Magnus Church*, on *London-Bridge*, 1757.
(Price 2s. 6d.)



WEEK'S CONVERSION

WORLD'S

By MONTAGU DE FOOTE

Translated from the last edition, which was
revised and has been published in several
languages, and has been translated into
HEAVENLY

By WILLIAM CAMPBELL, Esq.

The London Edition

To which is added

MR ADDISON'S DEFENCE

OF THE

NEW YORK PATENT

LONDON

Printed by C. Smith and J. Hays, in Town

St. Paul, and J. Hays, in the City of

London, at the Sign of the

(Printed in 1844)



P R E F A C E.

I AM pretty much in the same CASE with CICERO, when he undertook to write of Philosophical Matters in the Latin Tongue, there being, then, no Books upon that Subject, but what were in Greek: He was told, that such an Attempt would be useless; because, those who were Lovers of Philosophy, would rather take the Pains to search for it in Greek Writers, than make use of Latin ones, which treated of it, but at second Hand; and that those who had no Relish for this Science, would never trouble their Heads with either Greek or Latin. To these Objectors, he answered, it would happen quite otherwise; for, says he, the great Ease People

A 3

will

will find in reading Latin Books, will tempt those to be Philosophers who are none, and they who already are Philosophers, by reading Greek Books, will be very glad to see how the Subject is handled in Latin.

CICERO might with good Reason answer as he did, because the Excellency of his Genius, and the great Reputation he had acquired, warranted the Success of all he wrote: But in a Design, not much unlike his, I am far from having those Grounds of Confidence which he had. My Purpose is to discourse of Philosophy, but not directly in a Philosophical Manner; and to raise it to such a Pitch, that it shall not be too dry and insipid a Subject to please Gentlemen; nor too mean and trifling to entertain Scholars. Should I be told (as Cicero was) that such a Discourse as this, would not please the Learned, because it cannot teach them any Thing; nor the Illiterate, because they will have no Mind to learn; I will not answer as he did: It may be, endeavouring to please every Body, I have pleased no Body; now, to keep a Medium betwixt two Extreams,

P R E F A C E. iii

tréams, is so very difficult, that, I believe, I shall never desire to put myself a Second Time to the like Trouble.

If I should acquaint Those who are to read this Book, and have any Knowledge of Natural Philosophy, that I do not pretend to Instruct, but only to Divert them; by presenting to their View, in a gay and pleasing Dress, what they have already seen in a more grave and solid Habit: Not but They, to whom the Subject is New, may be both Diverted and Instructed: The first will act contrary to my Intention, if they look for Profit, and the last, if they seek for nothing but Pleasure.

I have chosen that Part of Philosophy which is most likely to excite Curiosity; for I think nothing concerns us more, than to enquire how this World, which we inhabit, is made; and whether there be any other Worlds like it, which are also inhabited as This is? But after all, it is at every Body's Discretion, how far they will run their Disquisitions: Those

who have any Thoughts to lose, may throw them away upon such Subjects as these; but, I suppose, such as can employ their Time better, will not be at so vain and fruitless an Expence.

In these Discourses, I have introduced a LADY, to be instructed in Things of which she never heard; and I have made use of this Fiction, to render the Book the more acceptable, and to give Encouragement to Gentlewoman, by the Example of one of their own Sex, who without any supernatural Parts, or Tincture of Learning, understands what is said to her; and without any Confusion, rightly apprehends what Vortexes and other Worlds are: And why may not there be a Woman like this imaginary Marchioness, since her Conceptions are no other than such as she could not chuse but have?

To penetrate into things either obscure in themselves, or but darkly expressed, requires deep Meditation, and an earnest Application of the Mind; but here, nothing

P R E F A C E. v

ing more is requisite than to read, and to imprint an Idea of what is read, in the Fancy, which will certainly be clear enough. I shall desire no more of the Fair Sex, than that they will peruse this System of Philosophy, with the same Application that they do a Romance or Novel when they would retain the Plot, or find out all its Beauties. It is true, that the Ideas of this are less familiar to most Ladies, than those of Romances, but they are not more obscure; for at most, twice or thrice thinking, will render them very perspicuous.

I have not composed an airy System, which has no Foundation at all: I have made use of some true Philosophical Arguments, and of as many as I thought necessary; but it falls out very luckily in this Subject, that the Physical-Ideas are in themselves very diverting; and as they convince and satisfy Reason, so at the same Time they present to the Imagination a Prospect which looks as if it were made on purpose to please it.

When I meet with any Fragments which are not of this kind, I put them into some pretty strange Dress: Virgil has done the like in his Georgicks? when his Subject is very dry, he adorns it with pleasant Digressions: Ovid has done the same in his Art of Love; and though his Subject be of itself very pleasing, yet he thought it tedious to talk of nothing but Love. My Subject has more need of Digressions than his, yet I have made use of them very sparingly, and of such only, as the natural Liberty of Conversation allows: I have placed them only where I thought my Readers would be pleased to meet with them; the greatest Part of them are in the Beginning of the Book, because the Mind cannot at first be so well acquainted with the principal Ideas which are presented to it; and, in a Word, they are taken from the Subject itself; or, as near to it, as is possible.

I have related nothing concerning the Inhabitants of the several Worlds, which may seem fabulous, or chimerical; but have said whatever may be reasonably thought

thought of them; and the Visions which I have added, have some real Foundation; what is true, and what is false are mingled together, but so as to be easily distinguished: I will not undertake to justify so fantastical and odd a Composition, which is the principal Point of the Work, and yet, for which, I can give no very good Reason.

There remains no more to be said in this Place, to a sort of People, who perhaps will not be easily satisfied, though I have good Reasons to give them; but, that the best which can be given will not satisfy them. These are the scrupulous Persons, who imagine, that the placing Inhabitants any where, but upon the Earth, will prove dangerous to Religion: I know how excessively tender some are in religious Matters, and therefore I am very unwilling to give any Offence, in what I publish, to People whose Opinion is contrary to that I maintain: But Religion can receive no Prejudice by my System, which fills an Infinity of Worlds with Inhabitants, if a little Error of

the Imagination be but rectified. When it is said the Moon is inhabited, some presently fancy that there are such Men there, as ourselves; and Priests without any more ado, think him an Atheist, who is of that Opinion. None of Adam's Posterity, cry they, ever travelled so far as the Moon; nor were any Colonies ever planted in that Region. I grant it. The Men in the Moon are not the Sons of Adam: And here again Theology would be puzzled, if there should be Men any where, who never descended from him. To say no more, this is the great Difficulty to which all others may be reduced: To clear it by a larger Explanation, I must make use of Terms which deserve greater Respect, than to put into a Treatise, so far from being serious as this is. But perhaps there is no need of answering the Objection, for it concerns no Body but the Men in the Moon; and I never yet affirmed there are Men there; if any ask what the Inhabitants are, if they be not Men? All I can say is, that I never saw them; and it is not because I have seen them, that I speak of them: Let
none

none however think, that I say there are no Men in the Moon, purposely to avoid the Objection made against me; for it appears it is impossible there should be any Men there, according to the Idea I have framed of that infinite Diversity and Variety, which is to be observed in the the Works of Nature; this Idea runs through the whole Book, and cannot be contradicted by any Philosopher: Nay, I believe, I shall only hear this Objection started by such as shall speak of these Discourses, without having read them. But is this a Point to be depended on? No, on the contrary, I should more probably fear, that the Objection might be made to me from many Passages.

The Reader will find in this Edition, besides many Improvements interspersed in the Body of the Work, one New Conversation, in which I have put together those Reasonings, which I had omitted in the foregoing ones; and have subjoined some Late Discoveries in the Firmament, several of which have never yet been made Publick.

FONTENELLE.

T H E
C O N T E N T S.

I*ntroduction to the CONVERSATIONS concerning the PLURALITY of WORLDS, with the Marchioness of G***** to Monsieur L*****.*

The FIRST EVENING.

That the EARTH is a PLANET, which turns on itself and round the SUN.

Page 1

The SECOND EVENING.

That the Moon is an Habitable World.

p. 36

The THIRD EVENING.

Particulars concerning the WORLD in the MOON, and Proofs of the other PLANETS being Habitable.

p. 70

The

The CONTENTS.

The FOURTH EVENING.

Particulars *of the* WORLDS *of* Venus *of*
Mercury, *of* Mars, *of* Jupiter, *and*
of Saturn. p. 100

The FIFTH EVENING.

Shewing that the fixed Stars are so many
Suns, every one of which gives Light
to a World. p. 133

The SIXTH EVENING.

New Observations *confirming the prece-*
ding Ones, And some farther Dis-
coveries made in the Heavens. p. 165

VERSES, *sent with this Book to*
Mrs. OLDFIELD. Written by Mrs.
Centlivre. p. 193

A Defence of the New Philosophy.
By JOSEPH ADDISON, Esq; p. 194

To

THE CONTENTS
THE FOURTH EDITION
TO MONSIEUR L****

TO give you, *Sir*, a particular Detail how I passed my Time in the Country, with the Marchioness of G***** would make a large Volume; and what is yet worse, a Volume of *Philosophy*: Whereas the Entertainments you expect are of another kind, as Balls, Parties at Play, or Hunting, instead of which you must take up with *Vortexes*, *Planets*, and *New Worlds*; these were the Subject of our Conversation. Now, as you have the Happiness to be a Philosopher, one Entertainment is the same to you as another. And I fancy, you will be pleased, that I have brought over the Marchioness to our Party; we could not have gained a more considerable Person, for Youth and Beauty are ever inestimable: If *Wisdom* would appear with Success to Mankind, think you she could

TO MONSIEUR L****

could do it more effectually than in the Person of this Lady? And yet was her Company but half so agreeable, I am persuaded all the World would run mad after *Wisdom*. But, tho' I tell you all the Discourse I had with the Lady, you must not expect Miracles from me. It is impossible, without her Wit, to express her sentiments, in the same manner she delivered them. For my Part, I think her very learned, from the great Disposition she has to Learning. It is not poring upon Books that makes a Man a Scholar. I know many who have done nothing else, and yet I fancy are not one Tittle the wiser: But perhaps you expect, before I enter upon my Subject, I should describe the Situation, and Building of the Marchioness's Seat; many great Palaces have been turned inside outward upon far less Occasion: But I intend to save you and myself that labour; let it suffice, that I tell you, I found no Company with the Lady; this I was not at all displeased at; the first two Days drained me all the News I brought from *Paris*;
what

TO MONSIEUR L****

what I now send you is *Astronomical*
Conversation, which I will divide into
so many Parts, as we were Evenings
together.



CON-



CONVERSATIONS

ON THE

Pluraliy of Worlds.

The FIRST EVENING.

*That the Earth is a Planet, which turns
on itself, and round the Sun.*

ON E Evening after Supper,
we went to take a Turn in
the Park; the Air, from the
Heat of the preceding Day,
was extremely refreshing;
the Moon about an Hour high, and
her Lustre, between the Trees, made
an agreeable Mixture of Light and
Shade,

2 *The Plurality of Worlds.*

Shade; the Stars were arrayed in all their Glory, and not a Cloud appeared throughout the Hemisphere. I was musing on this awful Prospect---but who can long contemplate on the Moon or Stars in the Company of a pretty Woman? I am much mistaken if that is a Time for Contemplation: Well Madam, *says I*, to the Marchioness, is not the Night as pleasant as the Day? The Day, *replied she*, like a Fair Beauty, is clear and dazzling; but the Night, like a Brown one, more soft and moving, You are generous Madam, *answered I*, to prefer the Brown, who have all the Charms that belong to the Fair: But, is there any Thing more beautiful in Nature than the Day? The Heroines of Romances are generally fair; and that Beauty must be perfect, which has all the Advantages of Imagination. Tell me not, *says she*, of perfect Beauty; nothing can be so that is not moving. But since you talk of Romances, why do Lovers in their Songs and Eligies address themselves to the Night? It is the Night, Madam, *replied I*, that crowns

crowns their Joys, and therefore deserves their Thanks. But it is the Night, *answered she*, that hears their Complaints, and how comes it to pass, the Day is so little trusted with their Secrets? I confess, Madam, *says I*, the Night has somewhat a more melancholy Air than the Day; we fancy the *Stars* march more silently than the *Sun*; and our Thoughts wander with the more Liberty, whilst we think all the World at Rest but ourselves: Besides, the Day is more uniform; we see nothing but the Sun, and one Light in the Firmament; whilst the Night shews us Variety of Objects, and gives us Ten Thousand Stars, which inspire us with as many pleasant Ideas. *She replied*, what you say is true, I love the *Stars*; there is somewhat charming in them, I could almost be angry with the *Sun* for effacing them. And I cannot, *says I*, pardon him, for keeping all those **WORLDS** from my Sight: What **WORLDS**, *says she*, looking earnestly upon me, do you mean?

I beg

4 *The Plurality of Worlds.*

I beg your Pardon, Madam, *replied I*, you have put me upon my Folly, and I begin to rave: What Folly, *answered she*, I discover none? Alas, *says I*, I am ashamed, I must own it, I have had a strong Fancy that every *Star* is a *World*: I will not swear that it is true, but must think so, because it is so pleasant to believe it; it is a Fancy come into my Head, which is very diverting. If your Folly be so diverting, *says the Marchioness*, pray make me sensible of it; provided the Pleasure be so great, I will believe as much of the Stars as you would have me. I fear, Madam, *replied I*, it is a Diversion you will not relish; it is not like reading one of *Moliere's* Plays; it is a Pleasure rather of the *Fancy* than of the *Judgment*. I hope, *answered she*, you do not think me incapable of it; teach me your *Stars*, I will shew you the contrary. No, no, *says I*, it shall never be said I was talking *Philosophy* at Ten o'Clock at Night, to the most amiable Creature in the Universe; find your *Philosophers* somewhere else.

But

But vain were my Excuses; who could resist such Charms? I was forced to yield, and yet I knew not where to begin; for to a Person who understands not any thing of *Natural Philosophy*, you must go a great Way about to prove that the *Earth* may be a *Planet*; the *Planets* so many *Earths*; and all the *Stars* distinct Worlds; however, to give her a general Notion of *Philosophy* at last I resolved on this Method, Madam, *says I*, all Philosophy is founded upon these two Propositions. 1. *That we are too short-sighted*; or, 2. *That we are too curious*; for if our Eyes were better than they are, we should soon see whether the *Stars* were *Worlds* or not; and if, on the other hand, we were less curious, we should not care whether the *Stars* are *Worlds* or not, which I think is much to the same Purpose. But the Business is, we have a mind to know more than we see: And again, if we could discern well what we do see, it would be too much known to us; but we see Things quite otherwise than they are. So that your true Philosopher will

6 *The Plurality of Worlds.*

will not believe what he does see, and is always conjecturing at what he doth not; which I think is a Life not much to be envied: Upon this I fancy to myself, that *Nature* very much resembles an *Opera*; where you stand, you do not see the *Stage* as it really is, but as it is placed with Advantage, and all the *Wheels* and *Movements* hid, to make the Representation the more agreeable: Nor do you trouble yourself how, or by what Means the Machines are moved, tho' certainly an Engineer in the Pit is affected with what does not touch you; he is pleased with the Motion, and is demonstrating to himself on what it depends, and how it comes to pass. This Engineer is like a Philosopher, tho' the Difficulty be greater on the Philosopher's Part, the Machines of the Theatre being not near so curious as those of *Nature*, who disposes her *Wheels* and *Springs* so much out of Sight, that we have been a long while guessing at the Movement of the Universe. Let us imagine, some of the ancient Sages to be at an Opera, such as *Pythagorus*, *Plato*, or *Aristotle*, and all the Wise Men who have made
such

such a Noise in the World, for these many Ages: We will suppose them at the Representation of PHAETON, where they see the aspiring Youth lifted up by the Winds, but do not discover the Wires by which he mounts, nor know they any Thing of what is done behind the Scenes. Would you have all the Philosophers own themselves to be stark Fools, and confess ingenuously they do not know how it comes to pass: No, no, they are not called *Wise Men* for nothing; tho' let me tell you, most of their Wisdom depends upon the Ignorance of their Neighbours. Every Man presently give his Opinion, and how improbable soever, there are Fools enough of all Sorts to believe them: One tells you *Phaeton* is drawn up by a hidden magnetic Virtue, no matter where it lies; and perhaps the grave Gentleman will take Pet, if you ask him the Question. Another says, *Phaeton* is composed of certain Numbers that make him mount; and after all, the Philosopher knows no more of those Numbers than a sucking Child does of

8 *The Plurality of Worlds.*

Algebra: A third tells you, *Phaeton* has a secret Love for the Top of the Theatre, and, like a true Lover cannot be at rest out of his Mistress's Company, with an hundred such extravagant Fancies, that a Man must conclude the old Sages were very good Banterers: But now comes Monsieur *Descartes*, with some of the Moderns, and they tell you *Phaeton* ascends, because a greater Weight than he descends; so that now we do not believe a Body can move without it is pushed and forced by another Body, and, as it were, drawn by Cords, so that nothing can rise or fall, but by the Means of a Counterpoise; to see Nature then, as she really is, one must stand behind the Scenes at the Opera. I perceive, says the Lady, Philosophy is now become very mechanical, Yes, Madam, replied I, so mechanical, that I fear we shall quickly be ashamed of it; they will have the World to be in Large, what a Watch is in Small, that is very regular, and depends only upon the just Disposition of the several Parts of the Movement.

ment. But pray tell me, Madam, had you not formerly a more sublime Idea of the Universe? Do not you think then that you honoured it more than it deserved? For most People have the less Esteem for it, since they have pretended to know it. I am not of their Opinion, *says she*; I value it the more since I know it resembles a Watch; and the more plain and easy the whole Order of Nature seems, to me it appears to be the more admirable.

I do not know, *answered I*, who has inspired you with these solid Notions, but I am certain there are few who have them besides yourself: People generally admire what they do not comprehend; they have a Veneration for Obscurity, and look upon Nature, as a kind of Magic, while they do not understand her; and despise her below Le-gerdemain, when once they are acquainted with her; but I find you, Madam, so much better disposed, that I have nothing to do but to draw the Curtain, and shew you the World. That noble Expanse which appears farthest from

10 *The Plrrality of Worlds.*

the Earth (where we reside) is called the *Heavens*, that Azure Firmament where the Stars are fastened like so many Nails, (and are called *fixed*, because they seem to have no other Motion than that of their Horizon, which carries them with itself from East to West.) Between the Earth and this great Vault (as I may call it) hang, at different Heights, the *Sun*, and the *Moon*, with the other *five* Stars, *Mercury*, *Venus*, *Mars*, *Jupiter*, and *Saturn*, which we call the Planets, not being fastned to the same Heaven, and having very unequal Motions, have divers Aspects and Positions: Whereas the *fixed Stars*, in respect to one another, are always in the same Situation: For Example, the *Chariot*, which you see is composed of these *seven Stars*, has been, and ever will be as it now is, tho' the *Moon* is sometimes farther from it; and so it is with the rest of the Planets. Thus Things appeared to the old *Chaldean* Shepherds, whose great Leisure produced these first Observations, which have since been the Foundation of Astronomy;

my; which Science had its Birth in *Chaldea*, as Geometry sprung from *Egypt*, where the Inundation of the *Nile* confounding the Bounds of the Fields, occasioned their inventing more exact Measures to distinguish every one's Land from that of his Neighbour. So that *Astronomy* was the *Daughter* of *Idleness*, *Geometry* the *Daughter* of *Interest*; and if we did but examine *Poetry*, we should certainly find her the *Daughter* of *Love*.

I am glad, *says the Lady*, I have learned the *Genealogy* of the *Sciences*, and am convinced I must stick to *Astronomy*, my Soul is not mercenary enough for *Geometry*, nor is it tender enough for *Poetry*; but I have as much Time to spare as *Astronomy* requires; besides, we are now in the Country, and lead a kind of Pastoral Life, all which suits best with *Astronomy*. Do not deceive yourself, *Madam*, *replied I*, it is a true Shepherd's Life to talk of the Stars and Planets: See if they pass their Time so in *Astrea*. That sort of Shepherd's-Craft, *answered she*, is too dangerous

12 *The Plurality of Worlds.*

for me to learn; I love the honest *Chaldeans*, and you must teach me their Rules, if you would have me improve in their Science. But let us proceed; When they had placed the Heavens in the Disposition you tell me, pray, what is the next Question? The next, *says I*, is the disposing the several Parts of the Universe, which the Learned call, *making a System*; but before I expound the first System, I would have you observe, we are all naturally like the *Athenian-Idiot*, who fancied all the Ships that came into the *Pyreum* Port, belonged to him: Nor is our Folly less extravagant, we believe all Things in Nature designed for our Use; and do but ask a *Philosopher*, to what Purpose there is that prodigious Company of fixed Stars, when a far less Number would perform the Service they do us? He answers coldly, they were made to please our Sight. Upon this Principle they imagined the Earth rested in the Center of the Universe, while all the Celestial Bodies (which were made for it) took the Pains to turn round to give
Light

Light to it. They placed the *Moon* above the *Earth*, *Mercury* above the *Moon*, after *Venus*, the *Sun*, *Mars*, *Jupiter*, *Saturn*; above all these they set the *Heaven of fixed Stars*, the *Earth* was just in the Middle of those Circles which contain the Planets, and the greater the Circles were, they were the farther distant from the *Earth*, and by consequence the farthest Planets took up the most Time in finishing their Course; which in Effect is true; But why, *says the Marchioness* (interrupting me) do you dislike this *System*: It seems to me very clear and intelligible. However, *replied I*, Madam, I will make it plainer; for should I give it you as it came from *Ptolemy* its Author, or some others who have since studied it, I should frighten you, I fancy, instead of diverting you. Since the Motions of the Planets are not so regular, but that sometimes they go faster, sometimes slower, sometimes are nearer the *Earth*, and sometimes farther from it; the Ancients invented I do not know how many Orbs or Circles, involved one within another, which

14 *The Plurality of Worlds.*

they thought would salve all Objections; this Confusion of Circles was so great, that, at the Time, when they knew no better, a certain King of *Castile*, a great Mathematician, (but not much troubled with Religion) said, That, *had God consulted him when he made the World, he would have told him how to have framed it better.* The Saying was very *Atheistical*, and no doubt the Instructions he would have given the Almighty, were the suppressing those Circles with which he had clogged the Celestial Motions, and the taking away two or three superfluous Heavens, which were placed above the fixed Stars; for the Philosophers, to explain the Motion of the Celestial Bodies, had above the uppermost Heaven (which we see) found another of Crystal, to influence and give Motion to the inferior Heavens; and where-ever they heard of another Motion, they presently clapped up a Crystal Heaven, which cost them nothing. But why, *says the Lady*, must their Heaven be of Crystal, would nothing else serve as well? No, no *replied*
I,

I, nothing so well; for the Light is to come thro' them, and yet they are to be solid. *Aristotle* would have it so, he had found Solidity to be one of their Excellencies, and when he had once said it, no Body would be so rude as to question him. But it seems there were Comets much higher than the Philosophers expected, which as they passed along, broke the Crystal Heavens, and confounded the Universe. But to make the best of a bad Market, they presently melted down their broken Glass, and to *Aristotle's* Confusion, made the Heavens fluid; and by the Observations of these latter Ages, it is now out of Doubt, that *Venus* and *Mercury* turn round the *Sun*, and not round the *Earth*, according to the Ancient System, which is every where exploded, and all the Authorities not worth a Rush. But that which I am going to lay down, will salve all, and is so clear, that the King of *Castile* himself may spare his Advice. Methinks, answered the *Marchioness*, your Philosophy is a kind of Out-cry, where he that offers to do the Work

16 *The Plurality of Worlds.*

cheapest, carries it from all the rest. This, *says I*, is very true, Nature is a great Housewife, she always makes use of what costs least, let the Difference be ever so inconsiderable; and yet this Frugality is accompanied with an extraordinary Magnificence, which shines thro' all her Works; that is, she is magnificent in the Design, but frugal in the Execution, and what can be more Praise-worthy, than a great Design accomplished with a little Expence? But in our Ideas we turn Things topsy-turvy, we place our Thrift in the Design, and are at Ten times more Charge in Workmanship than it requires; which is very ridiculous. Imitate Nature then, *replied she*, in your System, and give me as little trouble as you can to comprehend you. Madam, *says I*, fear it not, we have done with our Impertinences: Imagine then a German called COPERNICUS confounding every Thing, tearing in Pieces the beloved Circles of Antiquity, and shattering their Crystal Heavens like so many Glass Windows; seized with the noble Rage of Astronomy,

nomy, he snatches up the *Earth* from the Center of the Universe, sends her packing, and places the *Sun* in the Center, to which it did more justly belong; the *Planets* no longer turn round the *Earth*, nor inclose it in the Circles they describe; if they give us Light, it is but by Chance, and as they meet us in their Way: All now goes round the *Sun*, even the *Earth* herself; and *Copernicus*, to punish the Earth for her former Laziness, makes her contribute all he can to the Motion of the Planets and Heavens; and now deprived of all the Heavenly Equipage with which she was so gloriously attended, she has nothing left her but the *Moon*, which still turns round about her: Fair and softly, *says the Marchioness*, I fancy you yourself are seized with the Noble Fury of *Astronomy*; a little less Rapture, and I shall understand you better. The *Sun*, you affirm, is in the Center of the Universe, and is immoveable; *Mercury*, *says I*, follows next, he turns round the Sun, so that the Sun is in the Center of the Circle wherein *Mercury* moves;

18 *The Plurality of Worlds.*

above *Mercury*, is *Venus*, who turns all round the Sun; after, comes the Earth, which being placed higher than *Mercury* and *Venus*, makes a greater Circle round the Sun than either of them; at last comes *Mars*, *Jupiter* and *Saturn*, in the same Order I name them, so that *Saturn* has the greatest Circle round the Sun, which is the Reason he is longer in making his Revolution than any of the other Planets. You have forgot the *Moon*, says the Marchioness. We shall quickly find her again, replied I; the *Moon* turns round the *Earth*, and does not leave her, but as the *Earth* advances in the Circle, which she describes about the *Sun*; and if the *Moon* turns round the *Sun*, it is because she will not quit the *Earth*, I understand you, answered she, and I love the *Moon* for staying with us when all the other Planets abandon us; nay, I fear your *German* would have willingly taken her away too if he could; for in all his Proceedings, I find he had a great spite to the *Earth*. It was well done of him, says I, to abate the Vanity of Mankind, who
had

had taken up the best Place in the Universe; and it pleases me to see the Earth in the Crouds of the Planets. Sure, *answered she*, you do not think their Vanity extends itself so far as Astronomy! Do you believe you have humbled me, in telling me the *Earth* goes round the *Sun*? For my part I do not think myself the worse for it. I confess, Madam, *replied I*, it is my Belief, that a fair Lady would be much more concerned for her Place at a Ball, than for her Rank in the Universe; and the Precedence of two Planets will not make half such a Noise in the World, as that of two Ambassadors; however, the same Inclination which reigns at a Ceremony, governs in a System; and if you love the uppermost Place in one, the Philosopher desires the Center in the other; he flatters himself that all Things were made for him, and insensibly believes a Matter of pure Speculation to be a Point of Interest. This is a Culumny, *says she*, you have invented against Mankind; why did they receive this System if it was so erroneous? I know not, *answered I*,

20 *The Plurality of Worlds.*

I, but I am sure *Copernicus* himself distrusted the Success of his Opinion; it was a long Time before he would venture to publish it; nor had he done it then, without the Importunity of his Friends. But do you know what became of him? The very Day they brought him the first printed Sheet of his Book, he died; foreseeing, that he should never be able to reconcile all the Contradictions, and therefore very wisely slipped out of the Way. I would be just to all the World, *says the Lady*, but it is hard to fancy we move, and yet find we do not change our Place; we perceive ourselves in the Morning where we lay down at Night: Perhaps you will tell me the whole Earth moves---Yes, certainly *adds I*; it is the same Case as if you fell asleep in a Boat upon the River, when you wake you find yourself in the same Place, and the same Situation, in respect to all the Parts of the Boat. It is true, *replied she*, but there is a great Difference, when I wake I find another Shore, and that shows me, *my Boat has changed its Place.* But
it

it is not the same with the Earth, I find all Things as I left them. No, no *says I*, there is another Shore too; You know that beyond the Circles of the *Planets* are *fixed Stars*, there is our Shore, I am upon the *Earth*, and the *Earth* makes a great Circle round the *Sun*; I look for the Center of the Circle and see the *Sun* there, then I direct my Sight beyond the *Sun* in a right Line, and should certainly discover the *fixed Stars* which answer to the Sun, but that the Light of the Sun effaces them: But at Night I easily perceive the *Stars* that corresponded with *him* in the Day, which is exactly the same Thing; if the *Earth* did not change its Place in the Circle where it is, I should see the *Sun* always against the same *fixed Stars*; but when the *Earth* changes its Place, the *Sun* must answer to *other Stars*, and there again is your Shore, which is always changing. And seeing the *Earth* makes her Circle in a Year, I see the *Sun* likewise in the Space of a Year answer successively to the whole Circle of the *fixed Stars*, which

22 *The Plurality of Worlds.*

which Circle is called the *Zodiac*; I will draw you the Figure of it, if you please, on the Sand? It is no matter, *replied the Lady*, I can do well enough without it; besides, it will give an Air of Learning to my Park, which I would not have in it: For I have heard of a certain Philosopher, who being shipwrecked upon an unknown Island, seeing several Mathematical Figures traced on the Sea shore, cryed out to those who followed him, *Courage, my Companions, the Isle is inhabited, behold the Footsteps of Men.* But you may spare your Figures, such Footsteps are not decent here.

I confess, Madam, *added I*, the Footsteps of Lovers, would better become this Place; that is, your Name and Cypher cut on the Trees by your Adorers. Tell me not, *says she*, of Lovers and Adorers, I am for my beloved *Sun* and *Planets*. But how comes it to pass, that the *Sun*, as to the *fixed Stars*, compleats his Course but in a Year, and yet goes over our Heads every Day? Did you never, *replied I*, observe a Bowl on the Green? It runs towards the Jack, and
at

at the same Time turns very often round itself, so that the Parts which were above are below, and those which were below are above; just so it is with the *Earth*, at the same Time that she advances on the Circle, which in a Year's Space she makes round the *Sun*, in 24 Hours she turns *round herself*; so that in 24 Hours every part of the *Earth* loses the *Sun*, and recovers him again, and as it turns towards the *Sun*, it seems to rise, and as it turns from him, it seems to fall. It is very pleasant, *says she*, that the *Earth* must take all upon herself, and the *Sun* do nothing: And when the *Moon*, the other *Planets*, and the *fixed Stars* seem to go over our Heads every 24 Hours, you will say, That too is only Fancy? Mere Fancy, Madam, which proceeds from the same Cause, for the *Planets* compleat their Courses round the *Sun* at unequal Times, according to their unequal Distances; and that which To-day we see answer to a certain Point in the *Zodiac*, or *Circle* of the *fixed Stars*, To-morrow will answer to another Point, because it is advanced on its own Circle,

24 *The Plurality of Worlds.*

as well as we are advanced upon ours: We move, and the *Planets* move too, but with more or less Rapidity than we do; this puts us in different Points of Sight in respect to them, and makes us think their Courses irregular; but there is no Occasion of discoursing to you on that Head; it is sufficient to inform you that what seems irregular in the Planets, proceeds only from our Motion, when in Truth they are all very regular. I will suppose them so, *says the Lady*, but I would not have their Regularity put *the Earth* to so great Trouble; methinks you exact too much Activity from so ponderous a Mass. But, *says I*, had you rather that the Sun and all the Stars, which are vast great Bodies, should in 24 Hours make a prodigious Tour round the Earth; and that the fixed Stars, which are in a Circle of infinite Extent, whose Movement is always extremes, should run in a Day, 300,000,000 of Leagues, and go farther than from hence to *China* in the Time that you could say, *Away quick to China*, as they needs must, if the *Earth* did not turn
round

round itself every 24 Hours? To say the Truth, it is much more reasonable to think that she should make the Tour, which at most is not above 9000 Leagues; you perceive plainly, that to set 9000 Leagues, against 300,000,000 is no trifling Difference. Oh, *says she*, the *Sun* and the *Stars* are all Fire, their Motion is not very slow; but the *Earth* I fancy, is a little unwieldy. That, *replied I*, signifies nothing; for what think you of a First Rate Ship, which carries 150 Guns, and above 3000 Men, besides great Quantities of Merchandize? One Puff of Wind, you see, sets her a sailing, because the Water is liquid, and being easily seperated, very little resists the Motion of the Ship; or if she lie in the Middle of a River, she will without Difficulty drive with the Stream, because there is nothing to oppose her Course. So the *Earth*, tho' never so weighty, is as easily borne up by the Celestial Matter, which is a thousand Times more fluid than the Water, and fills all that great Space where the Planets float; for how else
would

26 *The Plurality of Worlds.*

would you have the Earth fastned to resist the Motion of the Celestial Matter, and not be driven by it? You may as well fancy a little Block of Wood can withstand the Current of a River. But pray, *says she*, how can the Earth, with all its Weight, be borne up by your Celestial Matter, which must be very light, because it is so fluid? It does not argue, *answered I*, that what is most fluid, is most light: For what think you of the great Ship I mentioned just now, which with all its Burthen is yet lighter than the Water it floats on? I will have nothing to do with the great Ship, *says she*, with some Warmth, and I begin to apprehend myself in some Danger upon such a Whirligig as you have made of the Earth. There is no Danger *replied I*; but, Madam, if your Fears increafe, we will have the Earth supported by four Elephants, as the *Indians* believe it. Hey Day, *cryed she*, here is another System; however, I love those People for taking Care of themselves, they have a good Foundation to trust to, while we *Copernicans* are a little

little too venturous with the Celestial Matter; and yet I fancy, if the *Indians* thought the *Earth* in the least Danger of sinking, they would double their Number of Elephants.

They do well, *says I*, laughing at her Fancy; who would sleep in Fear? And if you have occasion for them To-night, we will put as many as you please in our System, we can take them away again by Degrees, as you grow better confirmed. I do not think them very necessary, *replied she*, I have Courage enough to turn. You shall turn with Pleasure, Madam, *says I*, and shall find delightful Ideas in this System. For Example, sometimes I fancy myself suspended in the *Air*, without any Motion, while the *Earth* turns round me in 24 Hours; I see I know not how many different Faces pass under me, some White, some Black, and some Tauny; sometimes I see Hats, and sometimes Turbants; now Heads with Hair, and then bald Pates; here I see Cities with Steeples, some with Spires and Crescents, others with Towers of
Porcelain,

28 *The Plurality of Worlds.*

Porcelaine, and, anon, great Countries with nothing but Huts; here I see vast Oceans, and there most horrible Defarts; in short, I discover the infinite Variety which is upon the Surface of the Earth.

I confess, *says she*, 24 Hours would thus be very well bestowed, so that in the Place where we are now, I do not mean in the *Park*, but we will suppose ourselves in the Air, other People continually pass by who take up our Place, and at the End of 24 Hours we return to it again.

Copernicus himself, *answered I*, could not have comprehended it better: First then we might see the *English* passing by us, up to the Ears in Politicks, yet settling the Nation no better than we do the *World* in the *Moon*; then follows a great Sea, and there perhaps some Vessel, not near in that Tranquillity as we are; then come some of the *Iroquois* going to eat a Prisoner for their Breakfast, who seems as little concerned as his Devourers. After appear the Women of the Land of *Jesso*, who spend all their Time in dressing Provisions

sions for their Husbands, and painting their Lips and Eye-brows Blue, only to please the greatest Brutes in the World, Then the *Tartars* going devoutly on Pilgrimage to their Great *Prefter John*, who never comes out of a Gloomy Apartment all hung with Lamps, by the Light of which they pay their Adoration to him: Then the fair *Circassians*, who make no Scruples of granting every thing to the first Comer, except what they think essentially belongs to their Husbands: Then the Inhabitants of little *Tartary*, going to steal Concubines for the *Turks* and *Persians*; and at last, our own dear Countrymen, it may be in some Points, as ridiculous as the best of 'em.

This, says the *Marchioness*, is very pleasant; but, to imagine what you tell me, tho' I were *above*, and saw all this, I would have the Liberty to hasten or retard the Motion of the *Earth*, according as the Objects pleased me more or less; and I assure you I should quickly send packing the *Politicians* and *Man-eaters*, but should have a great
Curiosity

30 *The Plurality of Worlds.*

Curiosity for the fair *Circassians*; for me-thinks they have a custom very particular. But I have a Difficulty to solve, and you must be serious. As the *Earth* moves, the Air changes every Moment, so we breathe the *Air* of another Country. Not at all, *replied I*, for the *Air* which encompasses the *Earth*, does not extend above a certain Height, perhaps 20 Leagues; it follows us and turns with us: Have you not seen the Labours of the *Silk-Worm*, the Shells which those little Insects imprison themselves in, and weave with so much Art and Closeness; but yet their Covering is of a Down very loose and soft: So the *Earth* which is solid, is covered from the Surface 20 Leagues upwards with a kind of Down, which is the *Air*, and like the *Shell* of the *Silk-Worm* turns at the same Time. Beyond the *Air* is the *Celestial Matter*, incomparably more pure and subtle, and much more agitated than the *Air*.

Your Comparison, *says she*, is somewhat low, and yet what Wonders are wrought, what Wars, what Changes
in

in this *little Shell*? It is true, *replied I*, but Nature takes no Notice of such minute particular Motions, but drives us along with the general Motion, as if she were at Bowls.

Methinks, *says she*, it is very ridiculous to be upon a Thing that turns, and be in all this Perplexity, and yet not be well assured that it does turn; and to tell you the Truth, I begin to distrust the Reasons you give, why we should not be sensible of the *Motion* of the *Earth*; for is it possible there should not be some little Mark left, by which we might perceive it?

All Motions, *replied I*, the more common and natural howsoever are the less perceptible, and this holds true even in Morality; the Motion of *Love* is so natural to us, that for the most part we are not sensible of it, and we believe we act by other Principles. Ah! *says the Marchioness*, now are you Moralizing, to a Question of *Natural-Philosophy* which is running wide of the Argument: But enough, this Lecture

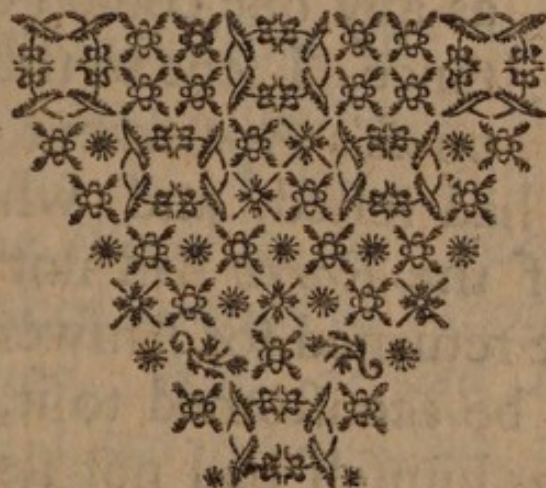
C

32 *The Plurality of Worlds.*

ecture is sufficient for the first Time; let us now depart and meet here again To-morrow, You with your Systems, and I with my Ignorance.

In returning back to the Castle, that I might say all I could on the Subject, I told her of a third System, invented by *Ticho-Brabè*, who had fixed the *Earth* in the Center of the *World*, turned the *Sun* round the *Earth*, and the rest of the *Planets* round the *Sun*; for since the New Discoveries, there was no Way left to have the *Planets* turn round the *Earth*. But the *Lady*, with the quickest Apprehension, *replied*, she thought this too affected a System, that among so many great Bodies, the *Earth* only should be exempted from turning round the *Sun*; that it was improper to make the *Sun* turn round the *Earth*, when all the *Planets* turn round the *Sun*; and that tho' this Scheme was to prove the Immobility of the *Earth*, yet she thought it very improbable: So we resolved to stick to *Copernicus*, whose Opinion we thought most uniform, probable,

probable, and diverting. In a Word,
the Simplicity of his System convinces
us; and the Boldness of it surprizes
with Pleasure.





The SECOND EVENING.

That the Moon is an Habitable World.

THE next Morning, as soon as any one could get Admittance, I sent to the Marchioness's Apartment, to know how she had rested, and whether the *Motion* of the *Earth* had not disturbed her? She returned for Answer, that she began to be accustomed to it, and that *Copernicus* himself had not slept better. Soon after, there came some Neighbours to Dinner, who staid with her till the Evening, according to a tiresome Rural Custom; nay, and they were very obliging in going then, for the Country likewise gives a Privelege of extending their Visit to the next Morning, if they are so disposed, and have not the Conscience to break up. The Lady and myself, finding ourselves at Liberty, in the Evening, went again to the Park, and immediately fell upon
our

our Systems: She so well retained what I told her the Night before, that she desired I would proceed, without any Repetition. Well, Madam, *says I*, since the *Sun*, which is now immoveable, has left off being a *Planet*, and the *Earth* which turns round him is now become *one*, you will not be surprized when you hear that the *Moon* is an *Earth* too, and a habitable World. I confess, *says she*, I have often heard talk of the *World* in the *Moon*, but I always looked upon it as Visionary, and mere Fancy. And, *replied I*, it may be so still; I am in this Case, as People in a Civil War, where the Uncertainty of what may happen, makes them hold Intelligence with the opposite Party, and correspond with their very Enemies; for tho' I do verily believe the *Moon* is inhabited, I live civilly with those who do not believe it; and I am (like some honest Gentlemen in Point of Religion) still ready to embrace the prevailing Opinion, but till the Unbelievers have a more considerable Advantage, I declare for the Inhabitants of the *Moon*.

Suppose

36 *The Plurality of Worlds.*

Suppose there had never been any Communication between *Paris* and *St. Dennis*, and one who was never beyond the Walls of this City, saw *St. Dennis* from the Towers of *Notre-Dame*; you ask him if he believes *St. Dennis* is inhabited as *Paris* is? He presently answers boldly, No; for, *says he*, I see very well the People as *Paris*, but those at *St. Dennis* I do not see at all, nor did I ever hear of any there: It is true, you tell him, that from the Towers of *Notre-Dame*, he cannot perceive any Inhabitants of *St. Dennis*, because of the Distance; but all that he does discover of *St. Dennis*, very much resembles what he sees at *Paris*, the Steeples, Houses, and Walls, so that it may very well be inhabited at *Paris* is. All this signifies nothing, my Cockneigh still maintains that *St. Dennis* is not inhabited, because he sees no Body there. The *Moon* is our *St. Dennis*, and every one of us, like this *Parisian* Cockneigh, who never went out of his own City.

You are too severe, *says she*, upon your Fellow Citizens; we are not all
sure

sure so silly as the Cockneigh; since *St. Dennis* is just like *Paris*, he is a Fool if he does not think it inhabited: But the *Moon* is not at all like the *Earth*. Take care what you say, Madam, replied *I*, for if the *Moon* resembles the *Earth*, you are under a Necessity to believe it inhabited. If it be so, says *she*, I own I cannot be dispensed from believing it; and you seem so confident of it, that I fear I must, whether I will or no. It is true, the two *Motions* of the *Earth*, (which I could never imagine till now) do a little stagger me as to all the rest; but yet, how is it possible the *Earth* should enlighten as the *Moon* does, without which they cannot be alike? If that be all, adds *I*, the Difference is not great; for it is the *Sun* which is the sole Fountain of Light; that Quality proceeds only from him; and if the *Planets* give Light to us, it is because they first receive it from the *Sun*; the *Sun* sends Light to the *Moon*, and she reflects it back on the *Earth*; the *Earth* in the same Manner receives Light from the *Sun*, and sends it to the

38 *The Plurality of Worlds.*

Moon; for the Distance is the same between the *Earth* and the *Moon*, as between the *Moon* and the *Earth*.

But, *says the Marchioness*, is the *Earth* as fit to send back the Light of the *Sun* as the *Moon* is? You are altogether for the *Moon*, *said I*; she is much obliged to you; but you must know that Light is made up of certain little Balls, which rebound from what is solid, but pass thro' what admits of an Entrance in a right Line, as Air into Glass: So that what makes the *Moon* enlighten us, is that she is a firm and solid Body, from which the little Balls rebound; and we must deny our Senses, if we will not allow the *Earth* the same Solidity: In short, the Difference is how we are seated; for the *Moon* being at so vast a Distance from us, we can only discover her to be a Body of Light, and do not perceive that she is a great Mass, altogether like the *Earth*: Whereas on the contrary, because we are so near the *Earth*, we know her to be a great Mass, proper for the furnishing Provision for Animals;

mals; but do not discover her to be a Body of Light, for want of the due Distance: It is just so with us all, *says the Lady*, we are dazzled with the Quality and Fortune of those who are above us, when did we but examine Things nicely, we should find ourselves upon a Level.

It is the very same Thing, *says I*. We would judge of all Things, but yet stand in the wrong Places; we are too near to judge of ourselves, and too far off to know others: So that the true Way to see Things as they are, is to stand between the *Moon* and the *Earth*; to be purely a Spectator of this World, and not an Inhabitant. I shall never be satisfied, *says she*, for the Injustice we do the *Earth*, and the too favourable Opinion we have of the *Moon*, till you assure me that the *Inhabitants* of the *Moon* are as little acquainted with their own Advantages, as we are with ours; and that they take our *Earth* for a *Planet*, without knowing theirs is one too. Do not doubt it, *answered I*, we appear to them to perform very regularly our

40 *The Plurality of Worlds.*

Function of a Planet: It is true, they do not see us make a Circle round them, but that is no great Matter. That Half of the *Moon* which was turned towards us at the Beginning of the World, has been turned towards us ever since; and those Spots in her, which we have fancied look like a Face, with Eyes, Nose and Mouth, are still the same, and if the other opposite Half should appear to us, we should, no doubt, fancy another Figure, from the different Spots that are in it: Not but that the *Moon* turns upon herself, and in the same Time that she turns round the *Earth*, that is in a Month; but while she is making that Turn upon herself, and that she should hide a Cheek, for Example, and appear somewhat else to us, she makes a like Part of her Circle round the *Earth*, and still presents to us the same Cheek; so that the *Moon*, who in respect of the *Sun* and *Stars*, turns round herself, in respect of us does not turn at all; they seem to her to rise and set in the Space of fifteen Days; but for our *Earth*, it
appears

appears to her to be held up in the same Place of the Heavens. It is true, this apparent Immobility is not very agreeable to a Body which should pass for a *Planet*, but it is not altogether perfect; the *Moon* has a kind of trembling, which causes a little Corner of her Face to be sometimes hid from us, and a little Corner of the opposite Half appears; but then, upon my Word, she attributes that Trembling to us, and fancies that we have in the Heavens the Motion of a *Pendulum*, which vibrates to and fro.

I find, *says the Marchioness*, the *Planets* are just like us; we cast that upon others which is in ourselves. Says the *Earth*, *It is not I that turn, it is the Sun*. Says the *Moon*, *it is not I that shake, it is the Earth*; the World is full of Error: But I would not advise you, *Madam*, to undertake the reforming it; you had better convince yourself of the entire Resemblance of the *Earth* and the *Moon*: Imagine then these two great Bowls suspended in the Heavens; you know that the *Sun* always inlightens the one Half of a Body that is

C 6

round;

42 *The Plurality of Worlds.*

round, and the other Half is in the Shadow; there is then one Half of the *Earth*, and one Half of the *Moon*, which is inlighten'd by the *Sun*; that is, one Half, which is Day, and the other Half, which is Night. Observe also, that as a Ball has less Force after it has been struck against a Wall, and rebounds to the other Side, so is Light weakned when it is reflected. The pale Light, which comes to us from the *Moon*, is the very Light of the *Sun*, but it cannot come to us from the *Moon*, but by Reflexion; it has lost much of the Force and Lustre it had when it came directly from the *Sun* upon the *Moon*; and that bright Light, which shines directly upon us from the *Sun*, and which the *Earth* reflects upon the *Moon*, is as pale and weak when it arrives there; so that the Light which appears to us in the *Moon*, and inlightens our Nights, is the part of the *Moon* which has Day; and that part of the *Earth* which has Day, when it is opposite to the Part of the *Moon* which has Night, gives Light to it: All depends upon this, how the
Moon

Moon and the *Earth* beheld one another. At the Beginning of the Month we do not see the *Moon*, because she is between the *Sun* and us; that Half of her which has Day, is then turned towards the *Sun*; and that Half which has Night, is turned towards us; we cannot see it then, because it has no Light upon it; but that Half of the *Moon* which has Night, being turned to that Half of the *Earth* which has Day, sees us without being perceived, and we then appear to them, just as the full *Moon* does to us; so that, as I may say, the Inhabitants of the *Moon* have then a full *Earth*; but the *Moon* being advanced upon her Circle of a Month, comes from under the *Sun*, and begins to ture towards us a little Corner of that Half which is Light, which is, the Crescent; then those Parts of the *Moon* which have Night do not see all that Half of the *Earth* which has Day; we are then in the Wain to them.

I understand you perfectly, *says the Marchioness*, without Hesitation, I can comprehend the rest at Pleasure, and I
have

44 *The Plurality of Worlds.*

have nothing to do but think a Moment, and bring the *Moon* upon her Circle of a Month. I see, in general, that the *Inhabitants* of the *Moon* have a Month quite contrary to us; when we have a full *Moon*, their Half of the *Moon* which is light, is turned to our Half of the *Earth* which is dark; they do not see us at all, and they have then a *New Earth*; this is plain. I would not stand the Reproach of requiring a long Explication of so easy a Point: But now tell me, how come the *Eclipses*? You may easily guess that, *Madam*, when it is new Moon, she is between the *Sun* and *Us*, and all her dark Half is turned towards us who have Light, that obscure Shadow is cast upon us: If the *Moon* be directly under the *Sun*, that Shadow hides him from us, and at the same Time obscures a Part of that Half of the *Earth* which is light, this is seen by that Half of the *Moon* which is dark; here then is an *Eclipse* of the *Sun* to us during our Day, and an *Eclipse* of the *Earth* to the *Moon* during her Night. When it is full *Moon*, the *Earth* is between

tween her and the *Sun*, and all the dark Half of the *Earth* is turned towards all the light Half of the *Moon*; the Shadow then of the *Earth* casts itself towards the *Moon*, and if it falls on the *Moon*, it obscures that Light-Half which we see, which then has Day, and hinders the *Sun* from shining on it: Here then is an *Eclipse* of the *Moon* to us during our Night, and an *Eclipse* of the *Sun* to the *Moon* during her Day: But the Reason that we have not *Eclipses* every Time that the *Moon* is between the *Sun* and the *Earth*, or the *Earth* between the *Sun* and *Moon*, is because these *three* Bodies are not exactly placed in a right Line, and by Consequence that which should make the *Eclipse*, casts its Shadow a little beside that which should be obscured.

I am greatly surprized, *says the Marchioness*, that there should be so little Mystery in *Eclipses*, and that the whole World should not know the Cause of them. They never will, *said I*, as some Folks go about it. In the *East Indies*, when the *Sun* and the *Moon* are
in

46 *The Plurality of Worlds.*

in *Eclipse*, they believe a certain *Dæmon*, who has black Claws, is seizing on those *Planets* with his Talons; and during that Time, the Rivers are covered with the Heads of *Indians*, who are up to the Neck in Water, because they esteem it a very devout Posture, to implore the *Sun* and *Moon* to defend them against the Devil. In *America* they are persuaded that the *Sun* and the *Moon*, when *Eclipsed*, are angry: And what is it they will not do to be reconciled with them? The *Greeks*, who were so refined a People, believed the *Moon* was then enchanted, and that the Magicians forced her to descend from Heaven, and shed a malignant Juice on the Plants; nay, what a Panick were we in, not many Years ago, at an *Eclipse* of the *Sun*, when People hid themselves in Cellars, and all the Philosophers, who treated of its Cause, could not persuade them to come out till the *Eclipse* was over?

In good Truth, *says the Lady*, it is scandalous for Men to be such Cowards, there ought to be a Law made to prohibit

bit

bit the Discourfing of *Eclipses*, that we might not call to Mind the Follies which have been occafioned thereby. Your Law then, *fays I*, muft abolifh even the Memory of every Thing, and forbid us to fpeak at all; for I know nothing in the World which is not a Monument of the Folly of Man.

But what do you think, *adds ſhe*, of the *Inhabitants* of the *Moon*, are they as fearful of an *Eclipse* as we are? It would be a very good Jeſt to fee the *Indians* there up to the Neck in Water; that the *Americans* ſhould believe the *Earth* angry with them, the *Greeks* fancy we were bewitched, and would deſtroy their Plants; in ſhort, that we ſhould cauſe the ſame Conſternation among them, as they do among us. Why not, Madam, I do not at all doubt it; why ſhould the People in the *Moon* have more Wit than we? What Right have *they* to fright us, and not we *them*? For my part, *continued I laughing*, I believe, that ſince a prodigious Company of Men have been, and ſtill are, ſuch Fools to adore the *Moon*,
there

48 *The Plurality of Worlds.*

there certainly are People in the *Moon*, who worship the *Earth*, and we really are upon our Knees the one to the other. But sure, *says she*, we do not pretend to send any *Influences* to the *Moon*, and to give a Crisis to her Sick; if the People have any Wit in those Parts, they will soon destroy the Honour we flatter ourselves with, and, I fear, we shall have the Disadvantage.

Madam, *says I*, pray fear not that, do you think we are the only Fools of the Universe? Is it not common for Ignorance to spread itself every where? It is true, we can only guess at the Folly of the People in the *Moon*, but I no more doubt it, than I do the most authentic News that comes from thence. What authentic News comes from thence, *says she*? That which the learned bring us, *replied I*, who travel thither every Day with their Tubes and Telescopes; they will tell you of their Discoveries, of Lands, Seas, Lakes, high Mountains, and deep Abysses

Indeed, *answered she*, I fancy they may discover Mountains and Abysses, because

because of the remarkable Inequality; but how do they distinguish Lands and Seas? Very easily, Madam, for the Waters letting part of the Light pass thro' them, send back but a very little, so that they appear afar off like so many dark Spots; whereas the Lands being solid, reflect the whole Light, and appear to be more bright and shining. The Illustrious Monsieur *Cassini*, a most compleat *Astronomer*, has discovered in the *Moon* something which Divided, then Re-united, and sunk in a kind of Well: We may very probably suppose this was a River. Nay, they pretend to be so well acquainted with the several Places, that they have given them all Names; one they call *Copernicus*, another *Archimedes*, and a third *Galileus*; there is the *Caspian-Sea*, the *Black-Lake*, the *Porphirite Mountains*; in short, they have published such exact Descriptions of the *Moon*, that a mere Almanack-maker will be no more to seek there, than I am in *Paris*.

I must own then, *says the Marchioness*, they are very exact; but what
they

50 *The Plurality of Worlds.*

they say to the Inside of the Country, I would very fain know? It is impossible, *replied I*; the most learned Astronomers of our Age cannot inform you. You must ask *Astolfo* this Question, who was carried into the *Moon* by St. *John*. I am going to tell you one of the agreeable Follies of *Ariosto*, which I am sure you will be well pleased to hear: I must confess he had better have let St. *John* alone, whose Name is so worthy of Respect; but it is a Poetical License, and must be allow'd. The Poem, which is call'd ORLANDO FURIOSO, is dedicated to a Cardinal, and a great Pope has honoured it with his Approbation, which is prefixed to several of the Editions: This is the ARGUMENT.

Orlando, *Nephew to Charlemagne, runs mad, because the fair Angelica prefers Medore to him. Astolfo, a Knight-Errant, finding himself one Day in the Terrestrial Paradise, which was upon the Top of a very high Mountain, where he was carried by his flying Horse, meets St. John there, who tells him, if*
he

he would have Orlando cured, he must make a Voyage with him into the Moon. Astolfo, who had a great Mind, to see New Countries, did not stand much upon Intreaty; there immediately came a fiery Chariot. which carried the Apostle and the Knight, up into the Air; Astolfo being no great Philosopher, was surprized to find the Moon so much bigger than it appeared to him when he was upon the Earth; to see Rivers, Seas, Mountains, Cities, Forests; nay, what would surprized me too, Nymphs hunting in those Forests; but that which appeared most remarkable, was a Valley where you might find any Thing that was lost in our World, of what Nature soever; Crowns, Riches, Fame, and an Infinity of Hopes; the time we spend in Play, and in searching for the Philosopher's Stone, the Alms we give after our Death, the Verses we present to great Men and Princes, and the Sight of Lovers.

I do not know, says the Marchioness, what became of the Sighs of Lovers in Ariosto's Time, but I fancy there are very few of them ascend to the Moon
in

52 *The Plurality of Worlds.*

in our Days. Ah, Madam, *replied I*, how many does your Ladyship, send thither every Day? Those that are addressed to you will make a considerable Heap; and I assure you the *Moon* keeps all safe that is lost here below: Yet I must tell you, *Ariosto* does but whisper it; tho' every Thing is there, even the *Donation of Constantine*; (the Popes having pretended to be Masters of *Rome* and *Italy*, by Virtue of a *Donation* which the Emperor *Constantine* made *Silvester*; and the Truth of it is, no Body knows what is become of it:) But what do you think is not to be found in the *Moon*? *Folly*: All that ever was upon the *Earth* is kept there still; but in lieu of it, it is not to be imagined how many *Wits* (if I may so call them) that are lost here, are got up into the *Moon*, they are so many Phials full of a very subtile Liquor, which evaporates immediatly, if it be not well stopped; and upon every one of these Phials the Names are written to whom the *Wits* belong: I think *Ariosto* has heaped them upon one another

a little confusedly, but for Order's sake we will fancy them placed upon Shelves in a long Gallery; *Astolfo* wondered to see several Phials full inscribed with the Names of Persons whom he thought considerable for their Wisdom. To confess the Truth, I begin to fear, since I have entertained you with these Philosophical and Poetical Visions, mine there is not very empty; however, it is some Consolation to me, that while you are so attentive, you have a little Glass full, as well as your humble Servant: The good Knight found his own Wits among the rest, and with St. *John's* Leave, snuffed it all up his Nose, like so much *Hungary* Water; but *Ariosto* said he did not carry it far, it returned again to the *Moon* a little after.

*The Love of one fair Northern Lass,
Sent back his Wit unto the Place it was.*

Well, he did not forget *Orlando's* Phial, which was the Occasion of his Voyage; but he was curiously plagued
to

54 *The Plurality of Worlds.*

to carry it, for the *Hero's* Wits were naturally very heavy, and there did not want one Drop of it: To conclude, *Ariosto*, according to his laudable Custom of saying whatever he pleases, addresses himself to his Mistress in very beautiful Verses.

*Fair Mistress, who for me to Heav'n shall fly,
To bring again from thence my wand'ring Wit?
Which I still lose, since from that piercing Eye
The Dart came forth that first my Heart did hit
Nor of my Loss at all complain would I,
Might I but keep that which remaineth yet:
But if it still decrease, within short Space,
I doubt I shall be in Orlando's Case.*

*Yet, well I wot where to recover mine,
Tho' not in Paradise, nor Cynthia's Sphere,
Yet doubtless in a Place no less Divine,
In that sweet Face of yours, in that fair Hair,
That ruby Lip, in these two Star-like Eyn,
There is my Wit, I know it wanders there,
And with my Lips, if you would give me leave,
It there would search, I thence would it receive.*

[Sir J. Harrington, Translation.

Is not this very merry? To reason like *Ariosto*, the safest Way of losing our Wits, is, to be in Love; for you see they do not go far from us, we may recover them again at our Lips; but when we lose them by other Means, as for Example, by Philosophizing, they are gone with a Jerk into the Moon, and there is no coming at them again when we would. However, *says the Marchioness*, our Phials have an honourable Station among the Philosophers, among whom it is Forty to One, but Love fixes our Wits on an Object we cannot but be ashamed of: But to take away mine entirely, pray tell me very seriously, if you believe there are any *Men* in the *Moon*, for methinks hitherto you have not been very positive: For my part, *says I*, I don't believe there are *Men* in the *Moon*; do but observe how much the Face of Nature is changed between this and *China*; other Visages, Shapes, Manners; nay, almost other Principles of Reason; and therefore between *Us* and the

D Moon

58 *The Plurality of Worlds.*

Moon the Alteration must be much more considerable. In the Lands that have been lately discovered, we can scarce call the Inhabitants Men, they are rather Animals in Human Shape, and that too sometimes very imperfect, almost without Human Reason; he therefore who will travel to the *Moon*, must not expect to find *Men* there.

What sort of People are they then, *says the Lady*, with an Air of Impatience? Troth, Madam, *replied I*, I do not know; for put the Case that we ourselves inhabited the *Moon*, and were not Men, but rational Creatures; could we imagine, do you think, such fantastical People upon the Earth, as Mankind is? Is it possible we should have an Idea of strange a Composition, a Creature of such foolish Passions, and such wise Reflections? Allotted so small a Span of Life, and yet pursuing Views of such Extent? So learned in Trifles, and so stupidly ignorant in Matters of the greatest Importance? So much concerned for Liberty, and yet such great Inclinations

Inclinations to Servitude? So desirous of Happiness, and yet so very incapable of obtaining it? The People in the *Moon* must be wise indeed to suppose all this of us. But do not we see ourselves continually, and cannot so much as guess how we were made? So that we are forced to say the Gods when they created us were drunk with *Nectar*; and when they were sober again, could not chuse but laugh at their own Handy-work. Well, well, *says the Marchioness*, then we are safe enough; the *Inhabitants* of the *Moon* know nothing of *Us*, but I could wish we were a little better acquainted with *them*; for it troubles me that we should see the *Moon* above us, and yet not know what is done there. Why, *says I*, are not you concerned for that Part of the *Earth* which is not yet *discovered*? What Creatures inhabit it, and what they do there? For we and they are aboard the same Ship; they possess the Prow, and we the Poop, and yet there is no manner of Commu-

60 *The Plurality of Worlds.*

nication between us; they know not at one End of the Vessel, who lives, or what is done at the other; and you know what passes in the *Moon*, which is another great Ship, sailing in the Heavens at a vast Distance from us.

Oh, *says she*, as for the *Earth*, I reckon it *All* as good as *discovered*, and can guess at the People, tho' I never heard a Word of them. It is certain they *All* very much resemble us, and we may know them better, whenever we will. Let them stay where they are. It is only going to see them; but we cannot get into the *Moon* if we would, so that I despair of knowing what they do there. You will laugh at me, *says I*, if I should answer you seriously; perhaps I may deserve it, and yet, I fancy, I can say a great deal in Defence of a Whim that is just now come into my Head; nay, to use the Fool's best Argument, *I will lay a Wager* I will make you own (in spite of Reason) that one of these Days there may be a Communication between the *Earth* and the *Moon*,

Moon, and who knows what great Advantages we may reap by it? Do but consider *America* before it was discovered by *Columbus*, how profoundly ignorant where those People; they knew nothing at all of Arts and Sciences they went naked, had no other Arms but Bows and Arrows, and did not apprehend they might be carried by Animals; they looked upon the Sea as a wide Space, not for the Use of Men, but thought it was joined to the Heavens, and beyond it was nothing: It is true, after having spent whole Years in hollowing the Trunks of great Trees with sharp Stones, they put themselves to Sea in these Trunks, and floated from Land to Land, as the Wind and Waves drove them; but how often was their Trough overfet, and they forced to recover it again by swimming? So that (except when they were on Land) it might be said they were continually swimming: And yet had any one but told them of another kind of Navigation, incomparably more perfect and

62 *The Plurality of Worlds.*

useful than their own, that would easily convey over that infinite Space of Water, that they might stop in the middle of the Waves, and in some Sense command the Winds, and make their Ship sail fast, or slow, as they pleased; in short, that this impassable Ocean should be no Obstacle to their conversing with another different People; do you think they would have believed you? And yet at last that Day is come; the unheard of, and most surprizing Sight appears; enormous Bodies, with white Wings, are seen to fly upon the Sea; to vomit Fire from all Parts; and to cast on their Shores, an unknown People, scaled over with Iron; who dispose and govern Monsters as they please, carry Thunder in their Hands, and destroy whoever resists them: From whence came they? Who brought them over the Sea? Who gave them the Disposal of the Fire of Heaven? Are they Gods? Are they the Off-spring of the Sun? For certainly they are not Men.

We

We think ourselves oblig'd, in Justice to the Memory of Monsieur *Fontenelle*, to observe in this place, that Mr. *Dryden*'s celebrated Description of a SHIP was taken from our Author; the *Plurality of Worlds* being written by him, and translated by Mrs. *Behn*, some Years before the *Indian Emperor* was brought upon the Stage.

Compare *Guyomar*'s Description with *Fontenelle*, as it here follows:

*The Object I could first distinctly view,
Was tall strait Trees which on the Waters flew,
Wings on their Sides instead of Leaves did grow,
Which gather'd all the breath the winds could blow
And at their Roots grew floating Palaces,
Whose out-blow'd Bellies cut the yielding Seas.
All turn'd their Sides, and to each other spoke,
I saw their Words break out in Fire and Smoke.
Sure 'tis their Voice that thunders from on high,
Or these the younger Brothers of the Sky.*

64 *The Plurality of Worlds.*

Do but consider, Madam, the Surprise of the *Americans*, there can be nothing greater; and after this, will any one say there shall never be a Communication between the *Moon* and the *Earth*. Did not the *Americans* believe there would ever be any between them and *Europe*, till they saw it? It is true, you must pass this great Space of Air and Heaven, which is between the *Earth* and the *Moon*; but did not those vast Seas seem at first as impassable to the *Americans*? You rave, I think, *says she*. Who denies it, Madam? *said I*. Nay, but I will prove it, *replies she*; I do not care for your bare owning it: Did you not own the *Americans* were so ignorant, that they had not the least Conception of crossing the Sea; but we, who know a great deal more than they, can imagine and fancy the going thro' the Air, tho' we are assured it is not to be done. It is somewhat more than Fancy, *replied I*, when it has been already practised; for several have found the secret of fasten-
ing

ing Wings, which bear them up in the Air, to move them as they please, and to fly over Rivers, and from Steeple to Steeple; I cannot say indeed they have yet made an *Eagle's* Flight, or that it does not cost now and then a Leg or an Arm to one of these *New-Birds*; but this may serve to represent the first Planks that were launched on the Water, and which were the beginning of Navigation; there were no Vessels then thought of to sail round the World in, and yet you see what great Ships are grown, by little and little, from those rude Planks. The *Art of Flying* is but newly invented; it will improve by degrees, and in time grow perfect; then we may fly as far as the *Moon*. We do not yet pretend to have discovered all Things, or that what we have discovered can receive no Addition; and therefore, pray let us agree, there are yet many Things to be done in the Ages to come. Were you to live a Thousand Years, *says the Marchioness*, I can never believe you will fly, but you

66 *The Plurality of Worlds.*

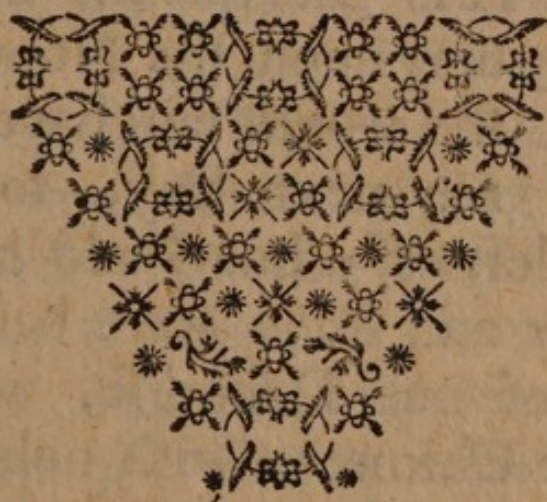
must endanger your Neck, I will not, *replied I*, be so unmannerly as to contradict a fair Lady; but tho' we cannot learn the *Art* here, I hope you will allow they may fly better in the *Moon*; is no great matter whether we go to them, or they come to us, we shall then be like the *Americans*, who knew nothing of Navigation, and yet there were very good Ships at the other End of the World. Were it so, *says she*, in a Sort of a Passion, the *Inhabitants* of the *Moon* would have been here before now. All in good Time, *says I*; the *Europeans* were not in *America* till about 6000 Years; so long were they in improving Navigation to the Point of crossing the Ocean. The *People* in the *Moon* have already made some short Voyages in the Air; they are exercising continually, and by Degrees will be more expert, and when we see them, God knows how we shall be surprized. It is unsufferable, *says she*, you should banter me at this rate, and justify your ridiculous Fancy by such false Reasoning.

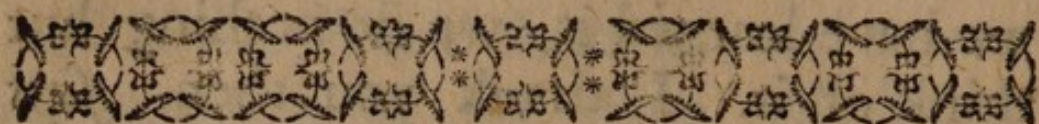
ing. I am going to demonstrate, *says* I that you reproach me very unjustly: Consider, Madam, that the World is unfolded by degrees; for the Ancients were very positive, that both the *Torrid* and *Frigid-Zones* were not habitable, by Reason of their excessive Heat and Cold; and in the Time of the *Romans*, the general Map of the World was but very little extended beyond that of their own *Empire*; which, tho' in one Respect, expressed much Grandeur; in another Sense, was a Sign of as great Ignorance; however, there were Men found both in very hot and in very cold Countries, so that you see the World is already increased; after this, it was thought that the *Ocean* covered the whole *Earth*, except what was then discovered: There was no Talk of the *Antipodes*, nor so much as a Thought of them, for who could fancy their Heels at Top, and their Heads at Bottom? And yet, after all their fine Reasoning, the *Antipodes* were discovered: Here is now another

68 *The Plurality of Worlds.*

half of the World starts up, and a new Reformation of the Map, Methinks this, Madam, should restrain us, and teach us not to be so positive in our Opinions, the World will unfold itself more to us hereafter; we shall then know the *People* of the *Moon*, as well as we do now the *Antipodes*; but all Things must be done in Order, the whole Earth must be discovered; and till we are perfectly acquainted with our own Habitation, we shall never know that of our Neighbours. Without fooling, *says the Marchioness*, looking earnestly upon me, you are so very profound in this Point, that I begin to think you are in Earnest, and believe what you say. Not so neither, *says I*, but I would shew you, Madam, how easy it is to maintain a Chimerical Notion, that may perplex a Man of Understanding, but never convince him; there is not any Argument so perswasive as Truth, which has no need to exert all its Proofs, but enters naturally into our Understanding; and when once

we have learned it, we do nothing but think of it. I thank you then, *says she*, for imposing on me no longer; for I confess your false Reasoning *disturbed* me, but now I shall sleep very *quietly*, if you think fit to retire for To-night.





The THIRD EVENING.

*Particulars concerning the WORLD in
the MOON, and Proofs of the other
PLANETS being habitable.*

THE *Marchioness* was so intent upon the Notions, that she would fain have engaged me next Day, to proceed where I left off; but I told her, since the *Moon* and *Stars* were become the Subject of our Discourse, we should trust our Chimeras with nobody else; at Night, therefore, we went again into the Park, which was now wholly dedicated to our learned Conversation.

Well, Madam *says I*, I have great News for you; that which I told you last Night, of the *Moon's* being *inhabited*, may be otherwise now. There is a new Fancy got into my Head, which puts those People in great Danger.

ger, I cannot *says her Ladyship*, suffer such *Whims* to take Place. Yesterday you were preparing me to receive a Visit from the *Lunarians*, and now you would insinuate there are no such Folks. You must not trifle with me thus; once you would have me believe the *Moon* was *inhabited*; I surmounted that Difficulty, and do now believe it. You are a little too nimble, did not I advise you never to be intirely convinced of Things of this Nature, but to reserve Half of your understanding free and disengaged, that you might admit of a contrary Opinion, if there should be Occasion. I care not for your Suppositions, *says she*, let us come to Matter of Fact. Are we not to consider the *Moon* at *St. Dennis*? No, *says I*, the *Moon* does not so much resemble the *Earth*, as *St. Dennis* does *Paris*: The *Sun* draws *Vapours* from the *Earth* and *Exhalations* from the *Water*, which mounting to a certain Height in the Air, do there assemble, and form the *Clouds*; these uncertain *Clouds* are driven

ven

72 *The Plurality of Worlds.*

ven irregularly round the *Globe*, sometimes shadowing one Country, and sometimes another; he then who beholds the *Earth* from afar off, will see frequent Alteration upon its Surface, because a great Country overcast with *Clouds*, will appear dark or light, as the *Clouds* stay, or pass over it; he will see the *Spots* on the *Earth* often change their Place, and appear or disappear as the *Clouds* remove; but we see none of these *Changes* wrought upon the *Moon*, which would certainly be the same, were there but *Clouds* about her; yet on the contrary, all her *Spots* are *fixed* and *certain*, and her light Parts continue wherethey were at first, which indeed is a great Misfortune; for by this Reason, the *Sun* draws no *Exhalations* or *Vapours* above the *Moon*; so that it appears she is a *Body* infinitely more hard and solid than the *Earth*; whose subtile Parts are easily seperated from the rest, and mount upwards as soon as Heat put them in Motion: But it must be a Heap of Rock and Marble,
where

where there is no Evaporation; besides *Exhalations* are so natural and necessary where there is *Water*, that there can be no *Water* at all, where there is no *Exhalation*; and what sort of Inhabitants must those be, whose Country affords no Water, is all Rock, and produces nothing? This is very fine *says the Marchioness*, you have forgot since you assured me, we might from hence distinguish *Seas* in the Moon. Pray what is become of your *Caspian Sea*, and your *Black Lake*? All Conjecture, Madam, *reply'd I*, tho' for your Ladyship's Sake, I am very sorry for it, for those dark Places we took to be *Seas*, may perhaps be nothing but large Cavities it is hard to guess right at so great a Distance. But will this suffice then, *says she*, to extirpate the People in the *Moon*? Not altogether, *replied I*, we will neither determine *for* nor *against* them. I must own my Weakness, (if it be one) *says she*, I cannot be so perfectly undetermined as you would have me to be, but must believe
one

74 *The Plurality of Worlds.*

one Way or other; therefore, pray fix me quickly in my Opinion, as to the *Inhabitants* of the *Moon*; preserve or annihilate them, as you please; and yet methinks I have a strange Inclination for them, and would not have them destroyed, if it were possible to save them. You know *says I*, Madam, I can deny you nothing; the *Moon* shall be no longer a Desert, but to do you Service, we will re-people her. Since to all Appearance the Spots in the *Moon* do not change, I cannot conceive there are any Clouds about her, that sometimes obscure one part, and sometimes another, yet this does not hinder. but that the *Moon* sends forth Exhalations and Vapours. The Clouds, which we see in the Air, are nothing but exhalations and Vapours, which at their coming out of the Earth, were separated into such minute Particles, that they could not be discerned; but as they ascend higher, they are condensed by the Cold, and by the Re-union of their Parts, are rendered visible; after which

which they become great Clouds, which fluctuate in the Air, their improper Region, till they return back again to us in Rain: however, these Exhalations and Vapours sometimes keep themselves so dispersed, that they are imperceptible; or if they do assemble, it is in forming such subtile Dews, that they cannot be discerned to fall from any Cloud. Now, as it seems incredible the *Moon* should be such a Mass, that all its Parts are of an equal Solidity, all at Rest one with another, and all incapable of any Alterations from the Efficacy of the *Sun*; I am sure we are yet unacquainted with such a Body: Marble itself is of another Nature, and even that which is most solid, is subject to Change and Alteration; either from the secret and invisible Motion it has within itself, or from that which it receives from without: It may so happen that the Vapours which issue from the *Moon*, may not assemble round her in Clouds, and may not fall back again in Rain, but only in Dews. It is
sufficient

76 *The Plurality of Worlds.*

sufficient for this, that the Air with which the *Moon* is surrounded (for it is certain *She* is so, as well as the *Earth*) should somewhat vary from *our* Air, and the Vapours of *Moon* be a little different from those of the *Earth*) which is very probable. Hereupon the Matter being otherwise disposed in the *Moon* than on the *Earth*, the Effects must be different; tho' it is of no great Consequence whether they are or no; for from the Moment we have found an inward Motion in the Parts of the *Moon*, or one produced by foreign Causes, here is enough for the new Birth of its Inhabitants, and a sufficient and necessary Fund for their Subsistence. This will furnish us with Corn, Fruit, Water, and what else we please; I mean according to the Custom or Manner of the *Moon*, which I do not pretend to know; and all proportioned to the Wants and Uses of the Inhabitants, with whom, I own, I am as little acquainted.

That

That is to say, *replied the Marchioness*, you know all is very well, without knowing how it is so; which is a great deal of Ignorance founded upon a very little Knowledge; however, I comfort myself, that you have restored the *Moon* her Inhabitants again, and have enveloped her in an Air of her own, without which a Planet would seem to me but very naked.

It is these *two* different Airs, *Madam*, that hinder the Communication of the two Planets; *if* it was only *flying*, as I told you Yesterday, who knows but we might improve it to Perfection, tho' I confess there is but little Hopes of it; the great Distance between the *Moon* and the *Earth* is a Difficulty not easily to be surmounted; yet were the Distance but inconsiderable, and the *two* Planets almost contiguous, it would be still impossible to pass from the *Air* of the one, into the *Air* of the other: The *Water* is the *Air* of *Fishes*, they never pass into the *Air* of the *Birds*, nor the *Birds* into the *Air* of the *Fish*;
and

78 *The Plurality of Worlds.*

and yet it is not the Distance that hinders them, but both are imprisoned by the Air they breathe in; we find *our* Air consists of thicker and groffer Vapours than the Air of the *Moon*. So that one of her Inhabitants arriving at the Confines of our World, as soon as he enters our Air, will inevitably drown himself, and we shall see him fall dead on the Earth.

I should rejoice, *says the Marchioness*, to see a Wreck of a good Number of these *Lunar* People; how pleasant would it be to behold them lie scattered on the Ground, where we might consider at our Ease, their extraordinary Figures? But, *replied I*, suppose they could swim on the outward Surface of our Air, and be as curious to see us, as you are to see them; should they angle, or cast a Net for us, as for so many Fish, would that please you? Why not, *says she*, smiling? For my part I would go into their Nets of my own Accord, were it but for the Pleasure of seeing such strange Fishermen.

Consider,

Consider, Madam, you would be very sick, when you were drawn to the Top of our Air, for there is no Respiration in its whole Extent, as may be seen on the Tops of some very high Mountains: And I admire that they who have the Folly to believe that *Fairies*, whom they allow to be corporeal, and to inhabit the most pure and refined Air; do not tell us that the Reason why they give us such short and seldom Visits, is, that there are very few among them who can dive; and those that can, if it be possible to get thro' the thick Air where we are, cannot stay half so long in it, as your diving Fowls can in the Water. Here then are natural Barricades, which defend the Passage out of *our* World, as well as the *Entrance into the Moon*; and as we can only guess at that World, let us fancy all we can of it. For Example, I will suppose that we may there see the Firmament, the Sun, and the Stars, of another Colour than what they are here; all these appear to us thro' a kind

80 *The Plurality of Worlds.*

a kind of natural Opticks, which change and alter the Objects. These Spectacles, as we may call them, are our Air, mixed as it is with Vapours and Exhalations, and which does not extend itself very high. Some of our modern Philosophers pretend, that of itself it is Blue, as well as the Water of the Sea, and that this Colour neither appears in the one nor in the other, but at a great Depth; the Firmament, say they, where the fixed Stars are placed, has no peculiar Light of its own, and by Consequence must appear Black; but we see it thro' the Air, which is Blue, and therefore to us it appears Blue; which, if so, the Beams of the Sun and Stars cannot pass thro' the Air without being tinged a little with its Colour, and losing as much of their own; yet, were the Air of no Colour it is very certain, that thro' a great Mist the Light of a *Flambeaux* at some Distance appears Red, tho' it be not its true natural Colour. Our Air is nothing but a great Mist, which changes the true Colour
both

both the Sky, Sun, and Stars, it belongs only to the Celestial Matter to bring us the Light and Colours as they really are, in all their Purity; so that since the Air of the *Moon* is of another Nature than *our* Air, or is diversified by another Colour, or at least is another kind of Mist, which varies the Colours of the *Celestial Bodies*; in short, as to the *People* of the *Moon*, their Spectacles, through which they see every Thing, are changed.

If it be so, *says the Marchioness*, I prefer *this* Abode before *that* of the *Moon*; I cannot believe the *Celestial Colours* are so well mixed as they are here; for Instance, let us put *Green* Stars on a *Red* Sky, they cannot be so agreeable as Stars of *Gold* on an *Azure* Firmament. One would think, Madam, you was chusing a Petticoat, or a Suit of Knots; but, believe me, *Nature* does not want *Fancy*; leave it to her to chuse *Colours* for the *Moon*, and I will engage they shall be well sorted; she will not fail to vary the Prospect of the Universe, at every different Point

E of

82 *The Plurality of Worlds.*

of Sight and the Alteration shall always be very agreeable.

I know very well, *says the Marchioness*, her Skill in this Point; she is not at the Charge of changing the *Objects*, but only the *Optics*, and has the Credit of this great Variety, without being at any Expence; with a *Blue* Air, she gives us a *Blue* Firmament; and perhaps with a *Red* Air, she gives to the *Inhabitants* of the *Moon* a *Red* Firmament, and yet still it is but the same Firmament; nay, I am of Opinion, she has placed this Sort of Spectacles in our Imagination, thro' which we see all Things, and which to every particular Man change the *Objects*. *Alexander* looked on the Earth as a fit Place to establish a great Empire, it seemed to *Celadon* a proper Residence for *Astræa*, and it appeared to a *Philosopher*, a great Planet in the Heavens, covered with Fools; I do not believe the Sights vary more between *Earth* and the *Moon*, than they do between the Fancies of *two* different *Men*.

This

This Change in our Imaginations, *says I*, is very surprizing; for they are still the same Objects, tho' they appear different; when in the *Moon* we may see other Objects we do not see *here*, or at least, not see all *there*, we do see *here*; perhaps, in that Country they know not any thing of the Dawn and the Twilight, before the Sun rises, and after the Sun sets; the Air which *encompasseth*, and is *above* us, receives the Rays, so that they cannot strike on the Earth; and being gross, stops some of them, and sends them hither, tho' indeed they were never naturally designed us; so that the Day-break, and the Twilight, are a Favour which Nature bestows on us; they are Lights which do not fall to our Share, and which she gives us over and obove our Due; but in the *Moon*, where the *Air* is apparently more pure, and therefore not so proper to send down the Beams it receives from the Sun before his rising, and after his setting, these poor Wretches have not that *Light of Grace* (as I may call it) which growing larger by Degrees,

84 *The Plurality of Worlds.*

does more agreeably prepare them for the Arrival of the Sun; and which growing weaker, and diminishing by Degrees, does insensibly prepare them for the Sun's Departure: But they are in a profound Darkness, where a Curtain (as it were) is drawn all on a sudden, their Eyes are immediately dazzled with the whole Light of the Sun, in all its Glory and Brightness; so likewise, they are on a sudden enveloped with utter Darkness; the Night and the Day have no Medium between them, but they fall in a Moment from one Extreme into the other. The *Rainbow* likewise is not known to the Inhabitants of the *Moon*, for if the Dawn is an Effect of the Grossness of the Air and Vapours, the *Rainbow* is formed in the Clouds, from whence the Rain falls; so that the most beautiful Things in the World, are produced by those Things which have no Beauty at all. Since then there are no Vapours thick enough, nor no Clouds of Rain about the *Moon*, farewell Dawn, adieu Rainbow: What must Lovers do for Similies to compare their
their

their Mistresses to, in that Country, when such an inexhaustible Fund of Comparisons is taken from them?

Nay, I shall never lay the Loss of their Comparisons much to Heart, *says the Lady*, and I think them well enough recompensed for the Loss of our Dawn, and Rainbow; for by the same Reason they have neither Thunder nor Lightning, both which are formed in the Clouds: How glorious are their Days, the Sun continually shining? How pleasant their Nights, when not the least Star is hid from them? They never here of Storms or Tempests, which seem plain Effects of the Wrath of Heaven. Do ye think then they stand in need of our Pity? You are describing the *Moon*, *says I*, like an enchanted Island; but do you think it is so pleasant to have a scorching Sun always over our Heads, where the Days are 15 Times as long as ours, and not the least Cloud to moderate its Heat? Tho' I fancy it is for this Reason that Nature has made great Cavities in the Moon; we can discern them easily with our Telescopes,

86 *The Plurality of Worlds.*

for they are not Mountains, but so many Wells or Vaults in the Middle of a Plain; and how can we tell but the *Inhabitants* of the *Moon*, (being continually broiled by the excessive Heat of the Sun) retire into those great Wells; perhaps, they live no where else, and it is there they build them Cities; for we still see in the Ruins of Old *Rome*, that *Part* of the City which was under Ground, was almost as large as *That* which was above. We need but take that *Part* away, and the rest would remain like one of these *Lunar Towns*; the whole People reside in Wells, and from one Well to another there are subterraneous Passages for the Communication of the Inhabitants. I perceive, *Madam*, you laugh at me, and you are welcome; but to be free with your Ladyship, the Ridicule turns more against you than *me*: For you believe the *People* in the *Moon* must live upon the Surface of their Planet, because we do so upon *Ours*, but the contrary is evident; for as we dwell upon the Superficies of *our* Planet, they cannot dwell upon the Super-

Superficies of *Theirs*; if Things differ so much in This World, what must they do in Another?

It is no matter, *says the Lady*, I can never suffer the *Inhabitants* of the *Moon* to live in perpetual Darkness. You will be more concerned for them, *Madam*, when I tell you that one of the ancient Philosophers long since discovered the *Moon* to be the Residence of Blessed Souls, departed out of this Life, and that all their Happiness consisted in hearing the *Music* of the *Spheres*, which is made by the Motion of the *Celestial-Bodies*: And that Philosopher pretending to know exactly all they do there, he tells you, that when the *Moon* is obscured by the Shadow of the *Earth*, they no longer hear the heavenly Harmony, but howl like so many Souls in Purgatory; so that the *Moon* taking Pity on them, makes all the Haste she can to get into the Light again. Methinks then, *says the Marchioness*, we should now and then see some of these Blessed Souls arrive here from the *Moon*, for certainly they are sent to us; and be-

88 *The Plurality of Worlds.*

tween the *two* Planets, some think, there is a sufficient Provision made for the Felicity of Souls, by their Transportation into a new World, I confess indeed, *says I*, it would be very pleasant to see *New Worlds*; such a Voyage tho' but in Imagination, is very delightful; but what would it be in Reality. It would be much better certainly than to go to *Japan*, which at best, is but crawling from one End of the Globe to the other, and after all, to see nothing but Men. Well then, *says she*, let us travel over the Planets as fast as we can; what should hinder us? Let us place ourselves at all the different Prospects, and from thence consider the Universe. But first, have we any more to see in the *Moon*? Yes, Madam, *replied I*, our Description of *that* World is not entirely exhausted; you cannot but remember that the *two* Movements, which turn the *Moon* on herself and about us, being equal; the *One* always presents to our Eyes that Part, of which the *Other* must consequently deprive us; and so she always to us wears the same Face:
We

We have then but one Moiety of her which looks on us, and as the *Moon* must be supposed *not to turn on her own Center*, in respect to us, that Moiety which sees us always, and that which never sees us, remains fixed in the same Point of the Firmament. When it is Night with her, and her Nights are equal to 15 of our Days, she at first sees but a little Corner of the Earth enlightened, after that a larger Spot, and so almost by hourly Gradations, spreads her Light till it covers the whole Face of the Globe; whereas these same Changes do not appear to us to affect the *Moon*, but from one Night to another, because we lose her a long Time out of our Sight. I would give any Thing that I could possibly fathom the awkward Reasonings of the Philosophers of their World, upon our Earth's appearing immoveable to them, when all the other Celestial Bodies rise, and set over their Heads, within the Compass of 15 Days. It is plain they attribute this Immobility to her Bigness, for she is 40 Times larger than the *Moon*; and

90 *The Plurality of Worlds.*

when their Poets have a mind to extol indolent Princes, I doubt not but they take care to compare their Inactivity to this Majestic Repose of the *Earth*. However, this Opinion is attended with one Difficulty; they must very sensible perceive in the *Moon*, that our *Earth* turns upon her own Center. For Instance, imagine that *Europe*, *Asia*, and *America* present themselves one after another to them in Miniature, and in different Shapes and Figures, almost as we see them upon Maps. Now this Sight must be a Novelty to such Travellers as pass from that Moiety of the *Moon* which *never* sees us, to that which *always* does. Good God! How cautious would they be of believing the Relation of the first Travellers, who should speak of it after their Return to that great Country, to which we are so utterly unknown? Now I fancy, *says the Marchioness*, that they make a Sort of Pilgrimage from one Side of the Country to the other, for their Discoveries in *our World*; and that there are certain

Hon-

Honours and Privileges assigned to such as have once in their Lives had a View of our gross Planet. At least, *replied I*, those who have had this a View, obtained the Priviledge of being better lighted, during their Nights; the Residence in the other Moiety of the *Moon* must of Necessity be much less commodious in that Respect. But let us continue the Journey we proposed to take, *Madam*, from one Planet to another, for we have now had a pretty curious Survey of the *Moon*.

As we leave the *Moon*, on that Side next the *Sun*, we see *Venus*, which puts me again in mind of St. *Dennis*, *Venus*, turns upon herself, and round the *Sun*, as well as the *Moon*; they likewise discover by *their* Telescopes, that *Venus*, like the *Moon* (if I may speak after the same Manner) is sometimes *New*, sometimes *Full*, and sometimes in the *Wane*, according to the different Situations she is in, with Respect of the *Earth*.

The *Moon*, to all Appearance, is *Inhabited*, Why should not *Venus* be so too? You are so full of your *Whys*, and

your *Wherefores*, says the *Marchioness*, interrupting me, that I fancy you are sending Colonies to All the *Planets*. You may be certain, *Madam*, that is my Intention, and I see no Reason to the contrary; we find that *All the Planets* are of the same Nature, *All* Obscure Bodies, which receive no Light but from the *Sun*, and then send it to one another; their Motions are the same, so that hitherto they are alike; and yet, if we are to believe that these vast Bodies are *not* Inhabited, I think they were made but to little Purpose: Why should Nature be so partial, as to except *only* the *Earth*? But let who will say the contrary, I must believe the *Planets* are Peopled as well as the *Earth*. I find, says the *Lady*, you have been very well confirmed in your Notions this pretty while: It was but some Moments since, that the *Moon* was a Desert, and you were in no Concern at it; and at this Instant, I see you would be in a violent Passion, if any one should presume to say, that *all* the *Planets* are not as well stocked with *Inhabitants* as the *Earth*.

Earth. It is true, *Madam*, at the Instant you surprized me with your Objections, if you had disputed with me, the *Inhabitants* of the *Planets*, I should not only have maintained their Existence, but perhaps likewise have treated on the Creation. We have our Seasons of Credulity, and I never believed these Things more firmly than at that Juncture: And even now, and when my Senses are somewhat cooler on the Matter, I cannot help thinking it would be strange that the *Earth* should be so well Peopled, and the *other Planets* not Inhabited at all: For do you believe we discover (as I may say) all the *Inhabitants* of the *Earth*? There are as many Kinds of *invisible*, as *visible* Creatures; we see from the *Elephant* to the very *Pismire*, beyond which our Sight fails us, and yet counting from that Minute Creature, there are an Infinity of lesser Animals, which would be imperceptible, without the Aid of Glasses. We see with Magnifying Glasses that the least Drop of Rain-Water, Vinegar, and all other
Liquids,

94 *The Plurality of Worlds.*

Liquids, are full of little *Fishes*, or *Serpents*, which we could never have suspected there; and Philosophers believe that the Acid Taste of these Liquids, proceeds from a Sharpness issued thro' the forked Stings of these Animals lodged under their Tongues. And therefore, by mixing certain Things with any one of these Liquors, and exposing them in the *Sun*, or letting them stand and corrupt, will produce a new Species of little Animals.

Some even of the most solid Bodies, are nothing but an immense Swarm of imperceptible Insects, who find for their respective Motions as much Room and Liberty as they require. *A Mulberry-Leaf* is a Little-World, inhabited by Multitudes of these invifible *Worms*, which, to them, is a Country of vast Extent. What Mountains, what Abyffes are there in it? The Insects on one Side of this Leaf, know no more of their Fellow Creatures on the other, than you and I can tell what they are now doing at the *Antipodes*: Does it not appear therefore, more reasonable, that
a great

a great Planet should be inhabited? In the hardest Stones, for Example, in Marble, there are an Infinity of *Worms*, which fill up the *Vacuums*, and feed upon the Substance of the Stone; fancy then Millions of living Creatures to subsist many Years on a Grain of Sand; so that were the *Moon* but one continued Rock, I would sooner allow her to be knawed by these invifible Mites, than not to be inhabited: In short every Thing is animated; imagine then those Animals which are yet undiscovered, and add Them and These which are but lately discovered, to what we have always seen, and you will find the *Earth* swarm with Inhabitants, and that Nature has so liberally furnished it with Animals, that she is not at all concerned for our not seeing above one half of them: Why then should Nature, which is fruitful to an Excess here, be so very sterile in the rest of the Planets, as to produce no living Things in them? I must own, *says the Marchioness*, you have convinced my Reason, but you have confounded my
Fancy

96 *The Plurality of Worlds.*

Fancy, with such Variety, that I cannot imagine how Nature, which abhors Repetition, should produce so many different Kinds. There is no need of Fancy, *Madam*, do but trust your Eyes, and you will easily perceive how Nature diversifies in these several Worlds.

All Human Faces, in general, are of the same Model; and yet the *Europeans* and the *Africans* have *two* particular Moulds, nay, commonly every Family has a different Aspect, what Secret then has Nature to shew so much Variety in the single Face? Our World, in respect of the Universe, is but a little Family, wherein every Face has some Resemblance to each other; in another Planet, is another Family, whose Faces have a different Air and Make; the Difference too increases with the Distance, for whosoever should see an *Inhabitant* of the *Moon*, and an *Inhabitant* of the *Earth*, would soon perceive they were nearer Neighbour than *one* of the *Earth*, and *one* of *Saturn*: Here, for Example we have the Use of Voice; in another World,

World, they *ſpeak* by *Signs*; and, at a greater Diſtance they *do not ſpeak at all* here our Reaſon is formed by Experience, in the *next* World, Experience contributes but little towards Reaſon; and, in the next to that, Old Men know no more than Children. Here we are troubled more with what is to come, than with what is paſt. In the *next* World they are more troubled for what is paſt, than what is to come; and farther off, they are not concerned with either, which, by the bye, I think, is much the better: Here, it is thought we want a *Sixth* Senſe, that would teach us many Things, of which we are now ignorant; this *Sixth* Senſe is apparently in another World, where they want *one* of the *Five* which we enjoy; nay, perhaps there is a much greater Number of Senſes, but in the Partition we have made of them with the Inhabitants of the other Planets, there are but *Five* fallen to our Share, with which we are well contented, for want of being acquainted with the reſt: Our Sciences have Bounds, which the Wit of Man
they

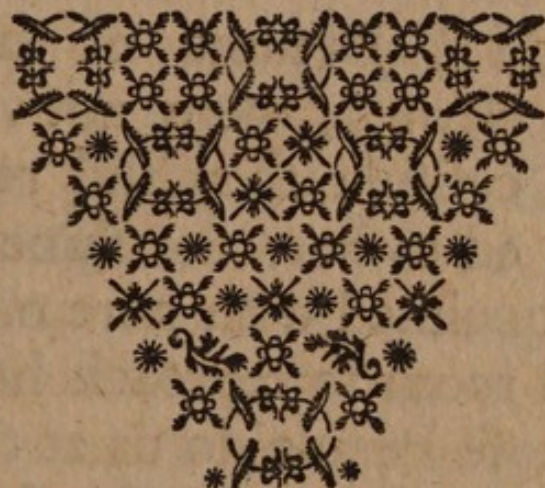
98 *The Plurality of Worlds.*

could never pass; there is a Point where they fail us on a sudden, the rest is reserved for other Worlds, where somewhat which we know, is unknown to them. This Planet enjoys the Pleasures of Love, but lies desolate in several Places by the Fury of War; in another Planet they enjoy perpetual Peace, yet in the midst of that Peace, know not any thing of Love, and Time lies on their Hands; in a Word, that which Nature practises *here in little*, in distributing her Gifts among Mankind; she does *at large in other Worlds*, where she makes use of that admirable Secret she has to diversify all Things, and at the same Time makes them equal, by compensating for the Inequality.

But it is not time, *Madam*, now to be serious, how will you dispose of all these Notions? Trouble not yourself, *says she*, Fancy is a great Traveller; I already comprehend *all these Worlds*, and form to myself their different Characters and Customs; some of them, I assure you, are very extraordinary; I see, at this Moment, a Thousand various

ous

ous Figures, tho' I cannot well describe them. O leave them, *says I*, to your Dreams, we shall know To-morrow whether they represent the Matter faithfully, and what they have taught you, in Relation to the *Inhabitants* of any of the *Planets*.





The FOURTH EVENING.

PARTICULARS of the WORLDS of
Venus, of Mercury, of Mars, of
Jupiter, and of Saturn.

THE Dreams of the *Marchioness*, were not very successful; they still represented to her, the same Objects we are acquainted with here on *Earth*; and I had room to reproach her Ladyship, as those People do us at the Sight of our regular Pictures, who themselves make only wild and grotesque Paintings. *Well*, say they, *This is only an Imitation of Men, there is no manner of Fancy in it.* We were therefore forced to conclude ourselves ignorant, what sort of Inhabitants all these *Planets* had, and content ourselves only to guess at them, and continue the Voyage we had begun thro' these several Worlds.

We

We were come to *Venus*, and I told her, that Planet certainly turned on *itself*, tho' no Body could tell in what Time, and consequently were ignorant how long her Day lasted; but her Year was composed of 8 Months, because it is in that Time she turns round the *Sun*; and seeing *Venus* is 40 Times less than the *Earth*, the *Earth* appears (to them in *Venus*) to be a Planet 40 Times bigger than *Venus* appears to us on the *Earth*; and as the *Moon* is 40 Times lesser than the *Earth*, so she seems to be just of the same Magnitude, to the *Inhabitants* of *Venus*, as *Venus* seems here to us.

I see then, says the Lady, that the *Earth* is not to *Venus*, what *Venus* is to the *Earth*; I mean, that the *Earth* is too big to be the Mother of Love, or the *Shepherd's-Star* to *Venus*; but the *Moon*, which appears to *Venus* of the same Bigness which *Venus* appears to us, is assigned to be the Mother of Love, and *Shepherd's-Star* to *Venus*; for such Names are only proper for a little brisk airy Planet, bright, and
 shining

102 *The Plurality of Worlds.*

shining as the Goddess herself. O, blessed *Moon*, how happy art thou to preside over the Amours of those Inhabitants of *Venus*, who must be such Masters of Gallantry! O, doubtless, says *I*, the very common People of *Venus* are all *Celadons* and *Sylvanders*, and their most trivial Discourses are infinitely finer than any in *Clelia*. Their very Climate inspires Love: *Venus* is much nearer than the *Earth* is to the *Sun*, from whence she receives a more vigorous and active Influence.

I find, says the *Marchioness*, it is easy enough to guess at the Inhabitants of *Venus*; they resemble what I have read of the *Moors* of *Granada*, who were a little black People, scorched with the *Sun*, witty, full of Fire, very amorous, much inclined to Music and Poetry, and ever inventing Masques and Tournaments in Honour of their Mistresses. Pardon me, *Madam*, says *I*, you are little acquainted with this Planet; *Granada* in all its Glory, was a perfect *Greenland* to it; and your gallant *Moors*, in Comparison with that
People

People, were as stupid as so many *Laplanders*.

But what do you think then of the Inhabitants of *Mercury*? They are yet nearer the *Sun*, and are so full of Fire, that they are absolutely mad; I fancy they have not any Memory at all, no more than most of the *Negroes*; that they make no Reflections, and what they do is by sudden Stars, and perfect Hap-hazard; in short, *Mercury* is the *Bedlam* of the Universe; the *Sun* appears to them much greater than it does to us, because they are much nearer to it than we; it sends them so vast and strong a Light, that the most glorious Day here, would be no more with them, than a declining Twilight: I know not, whether they can distinguish Objects; but the Heat to which they are accustomed, is so excessive, that they would be starved with Cold in the Torrid Zone; their Year is but three Months, and we know not the exact Length of their Day, because *Mercury* is so little, and so near the *Sun*;

104 *The Plurality of Worlds.*

Sun; it is (as it were) lost in his Rays, and is very hardly discovered by the Astronomers; so that they cannot observe how it moves on its Center; but because it is so small, they fancy it compleats its Motion in a little Time; so that by Consequence, the Day there is very short, and the *Sun* appears to them like a vast fiery Furnace, at a little Distance, whose Motion is prodigiously swift and rapid: This is so much the better for them, since it is evident they must long for Night; and during their Night, *Venus* and the *Earth* (which must appear considerably large) give Light to them: As for the other Planets which are beyond the *Earth*, towards the Firmament, they appear less to the Inhabitants of *Mercury*, than they do to us here, and they receive but little Light from them, perhaps none at all; the fixed Stars likewise seem to them less, and some of them totally disappear; which, were I there I should esteem a very great Loss. I should be very uneasy to see this
large

large *Convex* Studded with but few *Stars*, and those of the least Magnitude and Lustre.

What signifies the Loss of a few fixed Stars? *says the Lady*; I pity them for the excessive Heat they endure; let us give them some Relief, and send *Mercury* a few of those refreshing Showers, which continue, sometimes, four Months together, in the hottest Countries, during their greatest Extremity. Your Fancy is good, *Madam*, *replied I*, but we will relieve them another way: In *China* there are Countries which are extreamly hot by their Situation; yet, in *July* and *August* are so cold, that the Rivers are frozen; the Reason is, they are full of *Salt-Petre*, which being exhaled in great Abundance, by the excessive Heat of the *Sun*, makes a perfect Winter at *Midsummer*. We will fill the little Planet with *Salt-Petre*, and let the *Sun* shine as hot as he pleases. And yet after all, who knows but the Inhabitants of *Mercury* may have no Occasion either for Rain, or *Salt-Petre*? If it

106 *The Plurality of Worlds.*

is a certain Truth, that Nature never gives Life to any Creature, but where that Creature may live; then thro' Custom, and Ignorance of a better Life, those People may live happily.

After *Mercury*, comes the *Sun*; but there is no Possibility of Peopling it, nor any Room left for a Wherefore. By the *Earth* which is inhabited, we judge that other Bodies of the same Nature may be likewise inhabited: But the *Sun* is a Body not like the *Earth*, or any of the Planets; the *Sun* is the Source or Fountain of Light, which thro' it is sent from one Planet to another, and receive several Alterations by the way, yet all originally proceeds from the *Sun*: He draws from himself that precious Substance which he emits from all Sides, and which reflects when it meets with a solid Body, and spreads from one Planet to another those long and vast Trains of Light which cross, strike thro', and intermingle in a thousand different Fashions and make (if I may so say) the richest Tissues in the World. The *Sun* likewise

wife is placed in the Center, from whence with most Convenience, he may equally distribute and animate by his Heat; it is then a particular Body, but what kind of Body has often puzzled better Heads than mine. It was thought formerly a Body of pure Fire, and that Opinion passed current till the Beginning of this Age; when they perceived several Spots on its Surface. A little after they had discovered *new* Planets, (as we shall presently hear of) these some said were the Spots; for those Planets moving round the *Sun*, when they turned their Dark half to us, must necessarily hide Part of it; and had not the Learned with these pretended Planets made their Court before to most of the Princes in *Europe*, giving the Name of this Prince to One, and of that Prince to another Planet, I believe they would have quarrelled who should be Master of these Spots, that they might have named them as they pleased.

I cannot approve that Notion; it was but the other Day, *says she*, you

108 *The Plurality of Worlds.*

were describing the *Moon*, and called several Places by the Names of the most famous Astronomers. I was pleased with the Fancy; for since the Princes have seized on the Earth, it is fit the Philosophers (who are as proud as the best of them) should reserve the Heavens for themselves, without any Competitors. O, *answered I*, trouble not yourself, the Philosophers make the best Advantage of their Territories, and if they part with the least star, it is upon very good Terms; but the Spots on the Sun are fallen to nothing, is now discovered that they are not Planets, but Clouds, Streams, or Drops, which rise upon the *Sun*, sometimes in a great Quantity, sometimes in a less; sometimes they are dark, sometimes clear, sometimes they continue a great while, and sometimes they disappear as long. It seems the *Sun* is a liquid Matter, some think of melted Gold, which seems to boil over continually, and by the Force of its Motion, casts the Scum or Drops on its Surface, where it is consumed, and others rise.

Imagine

Imagine then what strange Bodies these are, when some of them are as big as the *Earth*: What a vast Quantity must there be of this melted Gold, and what must be the Extent of this great Sea of Light and Fire which they call the *Sun*? Others say, the *Sun* appears thro' their Telescopes, full of Mountains, which vomit Fire continually, and are joined together like Millions of *Ætnas*. Yet there are those who say these burning Mountains are pure Vision, caused by a Fault in the Optics; but what shall we credit, if we must distrust our Telescopes, to which we own the Knowledge of so many new Objects? But let the *Sun* be what it will, it cannot be at all proper for Habitation; and what Pity that is, for how pleasant would it be? You might then be at the Center of the Universe, where you would see all the Planets turn regularly about you; but now we are only possessed with extravagant Fancies, because we do not stand in the proper Place; there is but one Place in the World where the Study or

110 *The Plurality of Worlds.*

Knowledge of the *Stars* is easily obtained, and what Pity it is there is no Body there. You forget yourself sure, *says she*, were you in the *Sun* you would see nothing, neither *Planets* nor *fixed Stars*; does not the *Sun* efface all? So that could there be any Inhabitants there, they might justly think themselves the only People in Nature.

I own my Mistake, *Madam*; I was thinking of the Situation of the *Sun*, and not of the Effect of its Light: I thank you for your Correction; but must take the Freedom to tell you, that you are in an Error, as well as myself; for where there Inhabitants in the *Sun*, they would not see at all, either they could not bear the strength of its Light, or for wants of a due Distance, they could not receive it; so that Things well considered, all the People there must be stone blind; which is another Reason why the *Sun* cannot be inhabited; but let us pursue our Voyage. We are now arrived at the Center, which is always the Bottom, or lowest Place of what is round;
if

if we go on, we must ascend; then we shall find *Mercury*, *Venus*, the *Earth*, the *Moon*, all the *Planets* we have already visited; the next is *Mars*, who affords nothing curious that I know off; his Days is not quite an Hour longer than ours, but his Year is twice as long; he is a little less than the *Earth*, and the *Sun* seems not altogether so large and so bright to him, as it appears to us. But let us leave *Mars*, he is not worth our Stay: But what a pretty Thing is *Jupiter*, with his Four *Moons*, or Yeomen of the Guard; they are Four little Planets which turn round him, as our *Moon* turn round us. But why, *says the Marchioness*, interrupting me, must there be Planets to turn round other Planets, that are no better than themselves? I should think it would be more regular and uniform, that all the Planets, small and great, without any Distinction, should have one and the same Motion round the *Sun*.

Ah, Madam, *says I*, if you did but know what *Descartes's* Whirlpools or

112 *The Plurality of Worlds.*

Vortexes were (whose Name is terrible, but their Idea pleasant) you would not be of that Opinion. Why, *says she*, smiling, must my Head turn round to comprehend them, or must I become a natural Fool to understand the Mysteries of Philosophy? Well, let the World say what it will, go on with your Whirlpools. I will, *says I*, and you shall see the Whirlpools are worthy of these Transports: That then which we call a Whirlpool, or Vortex, is a Mass of Matter, whose Parts are separated, or detached from one another, yet have all one uniform Motion; and at the same time, every one is allowed, or has a particular Motion of its own, provided it follows the general Motion: Thus a Vortex of Wind, or Whirlwind, is an Infinity of little Particles of Air, which turn round all together, and involve whatever they meet with. You know the Planets are borne up by the Celestial Matter, which is very subtile and active; so that this great Mass, or Oceans of Celestial Matter, which flows

as

as far as the *Sun* to the *fixed Stars*, turns round, and bears the Planets along with it, making them all turn after the same Manner round the *Sun*, who possesses the Center; but in a longer, or a shorter Time, according as they are farther or nearer in Distance to it: There is not any Planet next the *Sun*, which does not turn, but he turns on himself, because he is just in the Middle of this Celestial Matter; and you must know, by the way, that were the *Earth* in his Place, it must turn on itself, as the *Sun* does. This is the great *Vortex*, of which the *Sun* is Lord; yet at the same time, the Planets make little peculiar *Vortexes*, in Imitation of that of the *Sun*; each of them in turning round the *Sun*; does at the same time turn round *itself*, and makes a certain Quantity of Celestial Matter turn round it likewise, which is always prepared to follow the Motion, which the Planet gives it, provided it is not diverted from its general Motion, this then is the particular *Vortex* of the Planet, which

F 5

pushes

114 *The Plurality of Worlds.*

pushes it as far as the Strength of its Motion reaches: And if by chance a lesser Planet falls into the *Vortex* of a greater Planet, it is immediately borne away by the greater and is indispensably forced to turn round, tho' at the same time, the great Planet, the little Planet, and the *Vortex* which encloses them, all turn round the *Sun*: It was thus at the Beginning of the World, when we made the *Moon* follow us, because she was within the Reach of our *Vortex*, and therefore wholly at our Disposal: *Jupiter* was stronger, or more fortunate than We, he had Four little Planets in his Neighbourhood, and he brought them all Four under his Subjection; and no doubt, We, tho' a principal Planet, had the same Fate, had we been within the Sphere of his Activity; he is 90 Times bigger than the *Earth*, and would certainly have swallowed us in to his *Vortex*; we had then been no more than a *Moon* in his Family, but now we have one to wait on us; so that

that you see the Advantage of Situation, often decides all our good Fortune.

But pray, *says she*, who can assure us we shall continue as we do now? If we should be such Fools as to go near *Jupiter*, or be so ambitious as to approach us, what will become of us? For if (as you say) the Celestial Matter is continually under this great Motion, it must needs agitate the Planets irregularly; sometimes drive them together, and sometimes separates them. Luck is all, *says I*, we may win as well as lose; and who knows, but we might bring *Mercury* and *Venus* under our Government; they are little Planets and cannot resist us; but in this particular, *Madam*, we need neither hope, nor fear; for the Planets keep within their own Bounds, and are obliged, as the Kings of *China* were formerly, not to undertake new Conquests. Have you not seen when you put Water and Oil together, the Oil swims a Top; and if to these two Liquors, you add a very little more, the Oil bears it up, and it will not sink to the Water: Put

116 *The Plurality of Worlds.*

an heavier Liquor, of a just Weight, and it will pass thro' the Oil, which is too weak to sustain it, and sink till it comes to the Water, which is strong enough to bear it up; so that in this liquid, composed of two Liquors, which do not mingle, two Bodies of an equal Weight, will naturally assume two different Places; the one will never ascend, the other will never descend; if we put still other Liquors, which do not mingle, and throw other Bodies on them, it will be the same Thing: Fancy then that the Celestial Matter which fill this great *Vortex*, has several resting Places, one by another, whose Weight are different, like that of Oil, Water, and other Liquors; the Planets too are of a different Weight, and consequently every Planet settles in that Place which has a just Strength to sustain and keep it equilibrate; so, you see, it is impossible it should ever go beyond.

I very well apprehend, *says the Marchioness*, that these Weights keep their Stations regularly. Would to God,

God, our World were as well regulated, and every one among us knew their proper Place. I am not now in any Fear of being over-run by *Jupiter*; and since he lets us alone in our *Vortex*, with our Moon, I do not envy him the Four which he has. Did you envy him, *replied I*, you would do him wrong, for he has no more than what he has occasion for; at the Distance he is from the *Sun*, his *Moans* receive, and send him but a very weak Light; it is true, that as he turns upon himself in 10 Hours, his Nights, by Consequence, are but 5 Hours long; so one would think there is no great Occasion for *Four* Moons, but there are other Thing to be considered. Here, under the Poles, they have 6 Months Day, and 6 Months Nights, because the Poles are the two Extremities of the Earth, the farthest removed from those Places where the *Sun* is over them, in a Perpendicular Line. The *Moon* seems to keep almost the same Course as the *Sun*, and if the Inhabitants of the Pole see the *Sun* during one half of his Course

118 *The Plurality of Worlds.*

Course in the Year, and during the other half do not see him at all; they see the *Moon* likewise during one half of her Course of a Month; that is, she appears to them 15 Days, but they do not see her during the other half. *Jupiter's* Year is as much as 12 of ours, so that there must be *two* opposite Extremities in that *Planet*, where their Night and their Day are 6 Years each. A Night 6 Years long, is a little disconsolate, and it is for that Reason, I suppose they have four *Moons*; that which (in regard to *Jupiter*) is uppermost, finishes its Course about him in 17 Days, the *Second* in 7, the *Third* in 3 Days and an half, and the *Fourth* in 42 Hours; and tho' they are so unfortunate as to have 6 Years Night, yet their Course being exactly divided into Halves, they never pass above 21 Hours, wherein they do not see at least the last *Moon*, which is a great Comfort in so tedious a Darknes; so that be where you will, these four *Moons* are sometimes the prettiest Sight imaginable; sometimes they rise all *Four* together, and then
seperate

seperate according to the Inequality of their Course : sometimes they are all in their Meridian, ranged one above another ; sometimes you see them at equal Distances on the Horizon ; sometimes when *Two* rise, the other *two* go down. O, how I should like to see their perpetual Sport of Eclipses ; for there is not a Day passes, but they eclipse the *Sun*, or one another ; and they are so accustomed to these Eclipses in that *Planet*, that they are certainly Objects of Diversion, and not of Fear, as with us.

Well, *says the Marchioness*, I hope you will People these Four *Moons* tho' you say they are but little secondary *Planets*, appointed to give Light to another *Planet* during its Night. Do not doubt it, *replied I*, these *Planets* are not a Jot the worse to be inhabited, for being forced to turn round another *Planet* of greater Consequence. I would have then *says she*, the People of these Four *Moons* to be so many Colonies under *Jupiter's* Government, they should if it were possible, receive their
Laws

120 *The Plurality of Worlds.*

Laws and Customs from him, and consequently pay him a kind of Homage, and not view his great *Planet* without Deference. Would it not be convenient too, *says I*, that they should send Deputies with Addresses to him, to assure him of their Fidelity ; for he has certainly a more absolute Command over his *Moon*, than we have over *Ours*, tho' his Power, after all, is but imaginary, and consists chiefly in making them afraid ; for that *Moon* which is nearest to him, sees that he is 360 Times bigger than our *Moon* appears to us ; for in Truth, he is so much bigger than she ; he is also much nearer to them, than our *Moon* is to us, which makes him appear the greater ; so that this formidable *Planet* hangs continually over their Heads, at a very little Distance ; and if the *Gauls* were afraid heretofore, that the Heavens would fall on them, I think the Inhabitants of that *Moon* may well be apprehensive that *Jupiter* will at some Time or other overwhelm them. I fancy, *says the Lady*, they are possessed with that Fear, because

because they are not concerned at Eclipses: Every one has their peculiar Folly; we are afraid of Eclipse, and they, that *Jupiter* will fall on their Heads. It is very true, *says I*, the Inventer of the *third* System I told you of the other Night, the famous *Tycho-Brabè*, (one of the greatest Astronomers that ever lived) did not apprehend the least Danger from an Eclipse, when every Body else was under the greatest Consternation; but what Apprehensions do you think he entertained instead of them? This great Man was so unaccountably superstitious, that if an *Hare* did but cross him, or an *Old Woman* bolt upon him at his first coming out, he instantly looked upon his Journey to be Ominous shut himself up for that Day, and would not be concerned in the least Business. It would be very unreasonable, *replied she*, after such a Man could not redeem himself from the Fear of *Eclipses*, without falling into some other Whimsy as troublesome, that the Inhabitants of that *Moon* of *Jupiter*, whereof we were talking, should come off upon easier Terms:

122 *The Plurality of Worlds.*

Terms: But we will give them no Quarters; they shall come under the general Rule, and if they are free from *one* Error, shall fall into *another*, to put them upon an Equivalent: But as I do not trouble myself, because I cannot guess what the *next* Error may be, pray clear up one more Difficulty to me, which has given me some Pain for several Minutes. Tell me, if the *Earth* be so little in Comparifon of *Jupiter*, whether his *Inhabitants* do discover us? Indeed, I believe not, *says I*, for if we appear to him 90 Times less than he appears to us, judge you if there be any Possibility: Yet this we may reasonably conjecture, that there are Astronomers in *Jupiter*, who after they have made the most curious Telescopes, and taken the clearest Night for their Observations may have discovered a little *Planet* in the Heavens, which they never saw before; if they publish their Discovery, most People know not what they mean or laugh at them for Fools; nay, the Philosophers themselves will not believe them, for fear of destroying their own
Opinions,

Opinions ; yet some few may be a little curious, they continue their Observations, discover the little *Planet* again, and are now assured it is no Vision ; then they conclude it has a Motion round the *Sun*, and after a thousand Observations, find that it compleats this Motion in a Year ; and at last, (thanks to the Learned) they know in *Jupiter* that our *Earth* is a World ; every Body runs to see it at the End of a Telescope, tho' it appears so *small*, as to be scarcely *discernible*.

It must be pleasant, *says she*, to see the Astronomers of both *Planets*, leveling their Tubes at one another, and mutually asking, *What World is that ? What People inhabit it ?* Not so fast neither, *replied I*, for tho' they may from *Jupiter*, discover our *Earth*. yet they may *not* know *Us* ; that is, they do not in the least suspect it is *Inhabited* ; and should any one there, chance to have such a Fancy, he might be sufficiently ridiculed, if not prosecuted for it ; for my part, I believe they have Work enough to make Discoveries on
their

124 *The Plurality of Worlds.*

their own *Planet*, not to trouble their Heads with *ours*. It is so large that if they have any such Thing as Navigation, their *Christopher Columbus* could never want Employment; why I warrant you, they have not yet discovered the hundredth Part of their *Planet*. But if *Mercury* is so *small*, they are all (as it were) near Neighbours, and it is but taking a turn to go round that *Planet*, But if we do not appear to them in *Jupiter*, they cannot certainly discover *Venus* and *Mercury*, which are much *less* than the *Earth*, and at a greater Distance; but in lieu of it, they see *Mars*, their own Four *Moons*, and *Saturn* with his; this I think is Work enough for their Astronomers, and Nature has been so kind to conceal from them the rest of the Universe.

Do you think it a Favour then, says *she*? Yes certainly, replied *I*, for there are 16 *Planets* in this great *Vortex*: Nature saves us the Trouble of studying the Motions of them *All*, and shows us but 7, which I think is very obliging, tho' we know not how to
value

value the Kindness, for we have recovered the other 9 which were hid from us, and so render the Science of Astronomy much more difficult than Nature designed it.

If there are 16 Planets, *says the Marchioness*, Saturn must have 5 Moons. It is very true, *replied I*, and 2 of these 5 are but lately discovered; but there is somewhat that is more remarkable, since *his* Year makes 30 of *Ours*, and there are consequently in him some Countries, where there Night is 15 Years long; what can you imagine Nature has invented to give Light, during a Night so dreadful? Why, she has not only given *Saturn* five Moons, but she has encompassed him round with a great Circle or Ring; this being placed beyond the Reach of the Shadow, which the Body of that *Planet* casts, reflects the Light of the *Sun* continually on those Places where they cannot see the *Sun* at all.

I protest, *says the Marchioness*, this is very surprizing, and yet all is contrived

126 *The Plurality of Worlds.*

trived in such great Order, that it is impossible not to think, but Nature took Time to consider the Necessities of all animate Beings, and that the disposing of these *Moons* was not a Work of Chance; for they are only divided among those *Planets* which are farthest distance from the *Sun*, the *Earth*, *Jupiter*, and *Saturn*; indeed it was not worth while to give any to *Mercury* or *Venus* they have too much Light already; and they account their Nights (as short as they are) a greater Blessing than their Day. But pray, why has not *Mars* a *Moon* too? It seems he has none, tho' he is much farther than the *Earth* from the *Sun*, It is very true, *says I*, no doubt but he has other Helps, tho' we do not know them. You have seen the *Philosophers*, both liquid and dry, how it receives and imbibes the Rays of the *Sun*, and what a great Light it will cast in a dark Place; Perhaps *Mars* has many great high Rocks which are so many Natural *Phosphorus's*, which in the Day-time take in a certain provision

Provision of Light, and return it again at Night, What think you, *Madam*, is it not very pleasant, when the *Sun* is down, to see those lighted Rocks, like so many glorious Illuminations, made without any Art, and which can do no manner of Hurt by their Heat? Besides, there is a Species of *Birds* in *America*, which reflect such a Light, that, you may read by it in the darkest Night; and who knows but *Mars* may have great Flocks of these Birds, that as soon as it is Night, disperse themselves into all Parts, and spread from their Wings a New Day.

I am not at all contented, *says she*, either with your *Rocks*, or your *Birds*; it is a pretty Fancy indeed, but it is a Sign that there should be *Moons* in *Mars*, since Nature has given so many to *Saturn* and *Jupiter*, and if all the other *Worlds* that are distant from the *Sun*, have *Moons*, why should *Mars* only be excepted? Ah, *Madam*, *says I*, when you are a little more dipped in Philosophy, you will find Exceptions
in

128 *The Plurality of Worlds.*

in the very best System; there are always some Thing that agree extreamly well, but then there are others which do not accord at all, those you must leave as you found them, if ever you intend to make an End: We will do so by *Mars*, if you please, and say no more of him, but return to *Saturn*. What do you think of this great Ring, in the Form of a Semi-Circle, that reaches from one End of the Horizon to the other, which reflecting the *Light* of the *Sun*, performs the Office of a continual *Moon*? And must we not inhabit this Ring to, *says she*, smiling? I confess, *says I*, in the Humour I am in, I could almost send Colonies every where; and yet I cannot well plant any there, it seems so irregular a Habitation; but for the five little *Moons*, they cannot chuse but be inhabited; tho' some think this Ring is a Circle of *Moons*, which follow close to one another, and have an equal Motion; and that the five little *Moons* fell out of this Circle; how many Worlds are there

there then in the *Vortex* of *Saturn*? But let it be how it will, the People in *Saturn* lives very miserably: It is true, this *Ring* gives *Light* to them, but it must be a very poor one, when the *Sun* seems to them but a little pale *Star*, whose *Light* and *Heat* cannot but be very weak at so great a Distance; they say *Greenland* is a perfect *Bagnio*, in Comparison of this *Planet*, and that they would expire with *Heat* in our coldest Countries.

You give me, *says she*, such an Idea of *Saturn*, as makes me shake with Cold, and that of *Mercury*, puts me into a Fever. It cannot be otherwise, *replied I*, for the two *Worlds*, which are the Extremities of this great *Vortex*, must be opposite in all Things. They must then, *says she*, be very wise in *Saturn*, for you told me they were all Fools in *Mercury*. If they are not wise, *says I*, yet they have all the Appearances of being very flegmatic: They are People that know not what it is to laugh, they take a Day's time to answer the least Question you can ask

G

them;

130 *The Plurality of Worlds.*

them; and are so very grave, that were *Cato* living among them, they would think him a *Merry-Andrew*.

It is very odd to consider, *says she*, that the Inhabitants of *Mercury* are all Life, and the Inhabitants of *Saturn* quite contrary; but among *Us*, some are brisk, and some are dull; it is, I suppose, because our *Earth* is placed in the Middle of the other *Worlds*, and so we participate of both Extreams, there is no fixed or determinate Character; some are made like the Inhabitants of *Mercury*, others like those of *Saturn*; we are a Mixture of the several Kinds which are found in the rest of the *Planets*. Why, *says I*, do not you approve of the Idea? Methinks it is pleasant to be composed of such a fantastical Assembly, that one would think we were collected out of different *Worlds*; we need not travel Abroad, when we see the other *Worlds* in Epitome at Home.

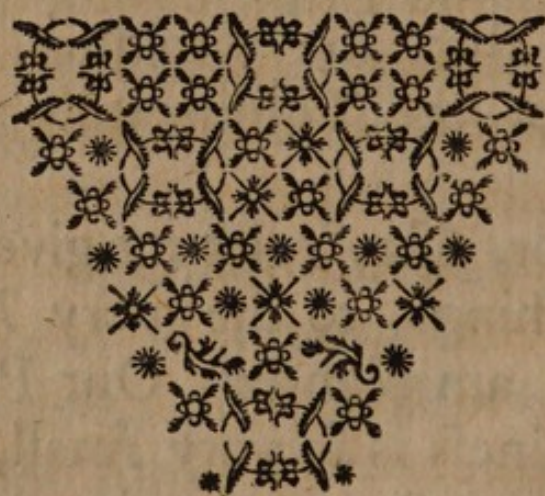
I am sure, *says the Marchioness*, we have one great Convenience in the Situation of our World; it is not so hot

as *Mercury* and *Venus*, nor so cold as *Jupiter* or *Saturn*; and our Country is so temperately placed, that we have no Excess either of Heat or Cold. I have heard of a Philosopher, who gave Thanks to Nature that he was born a *Man*, and not a *Beast*, a *Greek*, and not a *Barbarian*; and for my Part, I render Thanks that I am seated in the mildest Planet of the Universe, and in one of the most temperate Regions of that Planet. You have more Reason, *says I*, to give Thanks that you are Young, and not Old; that you are Young and Handsome, not Young and Homely; that you are Young, Handsome, and a *French* Woman, and not Young, Handsome, and an *Italian*; these are more proper Subjects for your Thanks, than the Situation of your *Vortex*, or the Temperature of your Country.

Pray Sir, *says she*, let me give Thanks, for all Things, to the very *Vortex* in which I am planted: Our Proportion of Happiness is so very small, that we should not lose any, but improve continually

132 *The Plurality of Worlds.*

nually what we have, and be grateful for every Thing, tho' ever so common or inconsiderable. If nothing but exquisite Pleasure will serve us, we must wait a long time, and be sure to pay too dear for it at last. I wish, *says I*, that Philosophy was the Pleasure you propose, that when you think of *Vortexes*, you would not forget an humble Servant of your Ladyship's. I esteem it a Pleasure, *answered the Lady*, while it diverts me with something new, but no longer. I will engage for it till Tomorrow, *replied I*, for the *fixed Stars* are superior to whatever you have yet seen.





The FIFTH EVENING.

*Shewing that the fixed Stars are so many
Suns, every one of which gives Light
to a World.*

THE *Marchioness* was very impatient to know what would become of the *fixed Stars*; are they peopled, *says she*, as the *Planets* are, or are they not inhabited at all, or in short, what shall we do with them? You may soon guess, *says I*, the *fixed Stars* cannot be less distant from the *Earth* than Fifty Millions of Leagues; nay, if you anger an Astronomer, he will set them farther. The Distance from the *Sun* to the farthest *Planet*, is nothing in Comparison of the Distance from the *Sun*, or from the *Earth*, to the *fixed Stars*, it is almost beyond Arithmetic. You see their Light is bright and shining, and did
G 3 they

134 *The Plurality of Worlds.*

they receive it from the *Sun*, it must needs be very weak, after a passage of Fifty Millions of Leagues; then judge how much it is wasted by Reflexion, for it comes back again as far to us; so that forwards and backwards, here are an Hundred Millions of Leagues for it to pass, and it is impossible it should be so clear and strong as the Light of a *fixed Star*, which cannot but proceed from itself; so that in a Word, all the *fixed Stars* are luminous Bodies in themselves, and so many *Suns*.

I perceive, *says the Marchioness*, where you would carry me; you are going to tell me, that if the *fixed Stars* are so many *Suns*, and our *Sun* the Center of a *Vortex* which turns round *him*, why may not every *fixed Star* be the Center of a *Vortex* that turns round the *fixed Star*? Our *Sun* enlightens the *Planets*; why may not every *fixed Star* have *Planets* to which they give Light? You have said it, *replied I*, and I will not contradict you.

But you have made the Universe so large, *says she*, that I know not where
I am

I am, or what will become of me; what is it all to be divided into *Vortexes* confusedly, one among another? Is every *Star* the Center of a *Vortex*, as big as ours? Is that vast Space which comprehends our *Sun* and *Planets*, but an inconsiderable Part of the Universe? And are there as many such Spaces, as there are *fixed Stars*? I protest it is dreadful, the Idea confounds and overwhelms me. And for my part, *replied I*, it gives me Satisfaction; when the Heavens were a little blue Arch, stuck with *Stars*, methought the Universe was too strait and close, I was almost stifled for want of Air; but now it is enlarged in Heighth and Breadth, and a Thousand and a Thousand *Vortexes* taken in; I begin to breathe with more Freedom, and think the Universe to be incomparably more magnificent than it was before. Nature has spared no Cost, even to Profuseness, and nothing can be so glorious, as to see such a prodigious Number of *Vortexes*, whose several Centers are possessed by a particular *Sun*, which makes the very

136 *The Plurality of Worlds.*

Planets turn round it. The Inhabitants of a *Planet* of one of these innumerable *Vortexes*, behold on all Sides these luminous *Centers* of the *Vortex*, with which they are encompassed; but perhaps they do not see the *Planets*, who receiving but a faint Light from their *Sun*, cannot send it beyond their own *World*.

You present me with a Prospect of so vast a Length, that no Eye can reach to the End of it: I plainly see the Inhabitants of the *Earth*, and you have made me discover those who dwell in the *Moon*, and in other *Planets* of our *Vortex*; these Inhabitants indeed I can conceive pretty plainly, but I do not see them so clearly as those of the *Earth*: After these, we come to the Inhabitants of the *Planets* which are in the other *Vortexes*, but they are sunk into so great a Depth, that tho' I do all I can to see them, yet I must confess I can hardly perceive them; by the Expression you make use of in mentioning them, they seem to be almost annihilated; you ought then to call them the
Inhabi-

Inhabitants of *one* of those innumerable *Vortexes*: We ourselves, for whom the same Expression serves, must confess, that we scarce know where we are, in the Midst of so *many* Worlds; for my own Part, I begin to see the *Earth* so minutely small, that I believe from henceforward, I shall never be concerned at all for any Thing; that we so eagerly desire to make ourselves Great, that we are always designing, always troubling and harassing ourselves, is certainly because we are ignorant what these *Vortexes* are; but now I hope my new Lights will in Part justify my Laziness, and when any one reproaches me with my Indolence, I will answer, *Ab, did you but know what the fixed Stars are!* It was not fit, *says I*, that *Alexander* should know what they were for a certain Author *, who maintains that the *Moon* is inhabited, very gravely tells us, that *Aristotle* (from whom no Truth could be long concealed) must necessarily be of an Opinion, backed with so much Reason; but yet he never durst acquaint *Alexander* with the Secret,

138 *The Plurality of Worlds.*

cret, lest he should run mad with Despair, when he knew there was another World which he could not conquer. With much more Reason then was this Mystery of *Vortexes* and *fixed Stars*, kept secret in *Alexander's* Time, for tho' they had been known in those Days, yet it had been but an ill Way of making one's Court, to have said any thing of them to that ambitious Prince; for my Part, I that know them, am not a little troubled to find myself not a Jot the wiser for all the Knowledge I have of them; the most they can do, according to your Way of Reasoning, is but to cure People of their Ambition, and their unquiet restless Humour, which are Diseases I am not at all troubled with; I confess I am guilty of so much Weakness, as to *be in Love with what is Beautiful*; that is my Distemper, I am confident the *Vortexes* can never cure it: What if the *other* Worlds render *ours* so very little? They cannot spoil fine Eyes, or a pretty Mouth, their Value is still the same, in spite of all the Worlds that can possibly exist.

This

This *Love*, replied the *Marchioness*, laughing, is a *strange Thing*; let the *World* go how it will, it is never in *Danger*; there is no *System* can do it any harm. But, tell me freely, is your *System* true? Pray do not conceal any Thing from me; I will keep your Secret very faithfully; it seems to have for its Foundation, but a slight Probability, which is, that if a *fixed Star* be in itself a *luminous Body*, like the *Sun*, then by Consequence, it must, as the *Sun* is, be the *Center* and *Soul* of a *World*; and have its *Planet^s* turning round about it: But is there an absolute Necessity it must be so? Hear me, *Madam*, says I, since we are in the Humour of mingling light Gallantries, with a serious Discourse, I must tell you, that in *Love* and the *Mathematics*, People reason much alike: Allow ever so little to a *Lover*, yet presently after you must grant him more; nay, more and more; which will at last go a great way: In like manner, grant but a Mathematician one minute Principle, he immediately draws a Consequence from

140 *The Plurality of Worlds.*

it, to which you must necessarily assent; and from this Consequence another, till he leads you so far (whether you will or no) that you have much ado to believe him. These two Sorts of People, Lovers and Mathematicians, will always take more than you give them. You grant, that when two Things are like one another in all visible Respects; it is possible they may be like one another in those Respects which are not visible, if you have not some good Reason to believe otherwise: Now this way of arguing have I made use of. The *Moon*, says I, is inhabited, because she is like the *Earth*; and the other *Planets* are inhabited, because they are like the *Moon*; I find the *fixed Stars*, to be like our *Sun*, therefore I attribute to them what is proper to Him: You are now going too far to be able to retreat, therefore you must go forward with a good Grace. But, says the *Lady*, if you build upon this Resemblance, or Likeness, which is between our *Sun* and the *fixed Stars*, then, to the People of another great *Vortex*,
our,

our *Sun* must appear no bigger than a small *fixed Star*, and can be seen only when it is Night with them, Without doubt, *Madam*, says I, it must be so: Our *Sun* is much nearer to us, than the *Suns* of other *Vortexes*, and therefore its Light makes a much greater Impression on our Eyes than theirs do: We see nothing but the Light of our own *Sun*; and when we see Him, it darkens and hinders us from seeing any other Light; but in another great *Vortex*, there is another *Sun*, which rules and governs; and, in his Turn extinguishes the Light of our *Sun*, which is never seen there but in the Night, with the rest of the other *Suns*; that is, the *fixed Stars*; with them our *Sun* is fastened to the great arched Roof of Heaven, where it makes a Part of some *Bear* or *Bull*: For the Planets which turn round about it, (our *Earth* for Example) as they are not seen at so vast a Distance, so no Body will so much as dream of them: All the *Suns* then are *Day-Suns* in their own *Vortexes*, but *Night-Suns* in other *Vortexes*:

142 *The Plurality of Worlds.*

texes: In his own World or Sphere, every *Sun* is single, and there is but *one* to be seen; but every where else, they serve only to make a Number. May not these Worlds, *replied she*, notwithstanding this great Resemblance between them, differ in a Thousand other Things; for tho' they may be somewhat alike in one Particular, they may greatly differ in Others.

It is certainly true, *says she*; but the Difficulty is to know wherein they differ. One *Vortex* has many *Planets* that turn round about its *Sun*, another *Vortex* has but few: In one *Vortex*, there are inferior or less *Planets*, which turn about those that are *greater*; in another, perhaps, there are no inferior *Planets*; here, all the *Planets* are got round about the *Sun*, in form of a little Squadron; beyond which, is a large void Space, which reaches to the neighbouring *Vortexes*: In another Place, the *Planets* take their Course [towards the outside of their *Vortex*, and leave the middle void. There may be *Vortexes* also quite void, without any *Planets*

nets at all ; others may have their *Sun* not exactly in their Center ; and that *Sun* may so move, as to carry its *Planets* along with it : Some may have *Planets*, which in regard of their *Sun*, ascend, and descend, according to the Change of their Equilibration, which keeps them suspended, In short, *what Variety can you wish for?* But, I think, I have said enough for a Man that was never out of his own *Vortex*.

It is not so much, *replied the Marchioness*, considering what a *Multitude of Worlds there are* ; what you have said is sufficient for *five* or *six*, and from hence I see Thousands.

What would you say, *Madam*, if I should tell you, there are many more *fixed Stars* than those you see ? And that an infinite Number are discovered with Glasses, which are not perceptible to the naked-Eye, and that in one single Constellation, where perhaps we count 12 or 15, there are as many to be found as usually appear in the whole Hemisphere.

I submit

144 *The Plurality of Worlds.*

I submit. *says she*, and beg your Pardon: You quite confound me with *Worlds* and *Vortexes*. O, *Madam*, I have a great deal more to tell you, *replied I*, you see that *Whiteness* in the Sky, which some call the *Milky-Way*; can you imagine what that is? Why, it is nothing but an Infinity of small Stars, not to be seen by our Eyes, because they are so very little; and they are sown so thick, one by another, that they seem to be one continued *Whiteness*: I wish you had a Glass, to see this *Ant-Hill* of Stars, and this *Cluster* of *Worlds*, if I may so call them: They are in some Sort like the *Maldivy-Island*: Those twelve-thousand *Banks* of *Sand*, seperated only by narrow *Channels* of the *Sea*, which a Man may as easily leap over as a *Ditch*: So near together are the *Vortexes* of the *Milky-Way*, that I presume, the *People* in *one* World, may talk, and shake Hands with those of *another*; at least I believe the *Birds* of *one* World, may easily fly into the *other*; and that *Pigeons* may be trained up to carry Letters,

ters, as they do in the *Levant*. These *little* Worlds are excepted out of that general Rule, by which one *Sun* in his own *Vortex*, as soon as he appears, effaces the Light of all other foreign *Suns*: If you were in one of these little *Vortexes* of the *Milky-Way*, your *Sun* would not be much nearer to you, and consequently, would not make any much more sensible Impression on your Eyes, than a Hundred-Thousand other *Suns* of the neighbouring *Vortexes*: You would then see your Heaven shine bright with an infinite Number of Fires, close to one another, and but a little distance from you; so that tho' you should lose the Light of your own particular *Sun*, yet there would still remain visible *Suns* sufficient beside your own, to make your Night as light as Day, at least, the Difference would hardly be perceived; for the Truth is, you would never have any Night at all: The Inhabitants of these Worlds, accustomed to perpetual Brightness, would be strangely astonished, if they should be told that there are a miserable
ble

146 *The Plurality of Worlds.*

ble Sort of People, who, where they live, have very dark Nights, and when it is Day with them, they never see more than one *Sun*; certainly they would think Nature had very little Kindness for us, and would tremble with Horror, to think what a sad Condition we are in.

I do not ask you *says the Marchioness*, whether in those Worlds of the *Milky-Way*, there are any *Moons*; I see they would be of no Use to those principal *Planets* which have no Night, and move in Spaces too strait and narrow to cumber themselves with the Baggage of inferior *Planets*: Yet pray take Notice, that by your liberal Multiplication of Worlds, you have started an Objection, not easily answered: The *Vortexes* whose *Suns* we see touch the *Vortex* in which we are; and if it be true, that *Vortexes* are round, how then can so many Bowls or Globes, all touch a single one? I would fain know how this may be done, but cannot reconcile it to myself.

Madam,

Madam, says I, you shew a great deal of Wit, in raising this Doubt, and likewise in not being able to resolve it, for, in itself, the Thing seems extreamly difficult; and, as you state the Question, no Answer can be given to it; and he must be a Fool, who goes about to find Answers to Objections which are unanswerable. If our Vortex had the Form of a Dye, it would have 6 Squares, or flat Surfaces, and would be far from being round; and upon every one of these Squares, might be placed a Vortex of the same Figure; but if instead of these 6 Squares, it had 20, 50, or 1000; then might a 1000 Vortexes be placed upon it, one upon every Flat; and, you know very well, that the more flat Faces any Body has on its Outside, the nearer it approaches to Roundness, just as a Diamond cut Facewise on every Side, if the Faces be very many and little, it will look as round as a Pearl of the same Bigness: It is in this manner, that the Vortexes are round; they have an infinite Number of
Faces

148 *The Plurality of Worlds.*

Faces on their Outside, and every one of them has upon it another *Vortex*; these Faces are not all equal and alike; but here, some are greater and there some less: The least Faces of our *Vortex*, for Example, answer to the *Milky-Way*, and sustain all those little Worlds. When two *Vortexes* are supported by the two next Flats on which they stand, if they leave beneath any void Space between them, as it must often happen, Nature, who is an excellent Housewife, and will not suffer any Thing to be useless, presently fills up this void Space with a small *Vortex* or two, perhaps with 1000, which never incommode the others, and become 1, 2, or 1000, Worlds more; so that there may be many more Worlds than our *Vortex* has flat Surfaces to bear them. I will lay a Wager, that tho' these *little* Worlds were made only to be thrown into the Corners of the Universe, which otherwise would have been void and useless; and tho' they are unknown to other Worlds which they

they touch, yet they are well satisfied with being what they are : These are the *little* Worlds, whose *Suns* are not to be discovered but with a Telescope, and whose Number is prodigious : To conclude, all these *Vortexes* are joined to one another in so admirable a Manner, that every one turns round about his own *Sun*, without changing Place ; every one has such a turn as is most easy, and agreeable to its own Situation : They take hold of one another, like the Wheels of a Watch, and mutually help each other's Motion : And yet it is certain that they act contrary to one another. Every World, as some say, is like a Foot-ball, made of a Bladder, covered with Leather, which sometimes swells of its own Accord, and would extend itself, if it were not prevented. But this swelling World being pressed by the next to it, returns to its first Figure ; then swells again, and is again depressed ; and some affirm, that the Reason why the *fixed Stars* give a twinkling and trembling Light, and some-

150 *The Plurality of Worlds.*

sometimes seem not to shine at all, is because their *Vortexes* perpetually push and press our *Vortex*, and ours again continually repulses theirs.

I am in love with these Fancies, *says Madam*, and pleased with the Foot-Balls, which swell every Moment, and sink again; and with these Worlds, which are continually striving and pushing one another: But above all, I am pleased to see how this jostling keeps up the Trade of Light, which is certainly the only Correspondence that is between them.

No, no, *Madam*, *says I*, Light is Not their sole Commerce; the neighbouring Worlds sometimes pay Visits to us, and that in a very magnificent and splendèd Manner: *Comets* arrive from thence, adorned with bright shining Hair, Venerable Beards, and Majestic Tails; these, *say the Marchioness*, are Ambassadors, whose Visits may be well spared, since they serve only to fright us. They scare only Children, *says I*, with their extraordinary Train; but

but, indeed, the Number of such Children is now a-days very great. *Comets* are nothing but *Planets* which belong to a neighbouring *Vortex*, they move towards the Outside of it; but perhaps this *Vortex* being differently pressed by those *Vortexes* which encompass it Above, it is rounder than Below, and the lowest Part is still towards us. These *Planets* which have begun to move in a Circle Above, are not aware, that Below their *Vortex* will fail them, because it is, as it were, broken. Therefore, to continue the circular Motion, it is necessary that they enter into another *Vortex*, which we will suppose is ours, and that they cut thro' the Out-sides of it. They appear to us very high and are much higher than *Saturn*; and according to our System, it is absolutely necessary they should be so high, for Reasons that do not signify any Thing to our present Subject. From *Saturn* downwards to the other Side of our *Vortex*, there is a large void Space without any *Planets*. Our Adversaries often

152 *The Plurality of Worlds.*

ten ask us, to what Purpose this void Space serves? But let them not trouble themselves any more, I have found a Use for it. It is the Apartment of those strange *Planets*, which come into our World.

I understand you, *says she*, we do not suffer them to come into the *Heart* of our *Vortex*, among our own *Planets*, but we receive them as the *Grand Seigneur* does the Ambassadors who are sent to him; he will not shew them so much respect as to let them reside within the Walls of *Constantinople*, but consigns them one of the Suburbs of the City: *Madam, says I*, we, and the *Ottomans* agree likewise in this, that as they receive Ambassadors, but never send any, so we never find any of our *Planets* into the Worlds that are next us.

By this, *says she*, it appears that we are very proud; however, I do not yet very well know what I am to believe. These foreign *Planets* with their Tails and their Beards have a terrible
Count-

Countenance, it may be they are sent to affront us; but ours that are of another Make, if they should get into other Worlds, are not so proper to make People afraid.

Neither their Beards, nor Tails, Madam, *says I*, are real; only *Phænomena*, mere Appearances. These foreign Planets differ in nothing from ours; but entring into our *Vortex*, they seem to us to have Tails or Beards, by a certain Sort of Illumination which they receive from the *Sun*, and which has not been yet well explained. But it is certain, that is but a kind of Illumination, and when I am able, I will tell you how it is done. I wish then, *says she*, that our *Saturn*, would go take a Tail and a Beard in another *Vortex*, and fright all the Inhabitants of it. Then I would have him come back again, leaving his terrible Accoutrements behind him, and taking his usual Place amongst our other Planets, fall to his ordinary Business. It is better for him, *says I*, not to go out of our

H *Vortex.*

154 *The Plurality of Worlds.*

Vortex. I have told you how rude and violent the Shock is, when two *Vortexes* juttle one another, a poor *Planet* must needs be terribly shaken, and its Inhabitants in no better Condition. We think ourselves very unhappy when a *Comet* appears, but it is the *Comet* which is in an ill Case, I do not believe that, *says she*, it brings all its Inhabitants with it in very good Health; there can be nothing so diverting as to change *Vortexes*, We that never go out of our own Sphere, lead but a dull Life; if the *Inhabitants* of a *Comet* had but the Wit to foresee the Time when they are to come into our World, they who had already made the Voyage, could tell their Neighbours before-hand what they would see, and could inform them, that they would discover a *Planet* with a great *Ring* about it, meaning our *Saturn*; they would also say, you shall see *another Planet* which has four *little* ones to wait on it; and perhaps some of them, resolving to observe the very Moment
of

of their Entrance into our World, would presently cry out, *A new Sun, a new Sun*, as Sailors use to cry *Land, Land*.

You have no Reason then, *says I*, to pity the Inhabitants of a *Comet*, yet I suppose you will think their Condition lamentable, who inhabit a *Vortex* whose *Sun* comes in Time to be quite extinguished, and consequently who live in eternal Night. How *cried the Marchioness*, can *Suns* be extinguished? Yes, without doubt, *says I*, for People some thousand Years ago saw *fixed Stars* in the Sky, which are now no more to be seen; These were *Suns* which have lost their Light, and certainly there must be a strange Defolation in their *Vortexes*, and a general Mortality over all the Planets, for what can People do without a *Sun*? This is a dismal Fancy, *says the Lady*, I would not, if I could help it, let it come into my Head. I will tell you, if you please, *replied I*, what is the Opinion of Learned Astronomers as to this Particular: They

156 *The Plurality of Worlds.*

think that the *fixed Stars* which have disappeared, are not quite extinguished, but that they are half *Suns*, that is, they have one half Dark, and the other half Light, and turning round upon their own Axis or Center, they sometimes shew us their Light Side, and afterwards turning to us their Dark one, we see them no more. To oblige you, *Madam*, I will be of this Opinion, because it is not so harsh as the other, tho' I cannot make it good but in relation to some certain *Stars*, because as *Huygens* has lately observed, those *Stars* have their regulated Times of Appearing, and Disappearing, otherwise there could be no such Thing as half-*Suns*. But what shall we say of *Stars*, which totally disappear, and never shew themselves again after they have finished their Course of turning round upon their own Axis? You are too just, *Madam*, to oblige me to believe that *Stars* are half-*Suns*. However, I will try once more what I can do in favour of your Opinion: The *Suns* are not extinct, they

they are only sunk so low into the immense Depth of Heaven, that we cannot possibly see them; in this Case, the *Vortex* follows his *Sun*, and all is well again. It is true, that the greatest Part of the *fixed Stars* have not this Motion, by which they remove themselves so far from us, because at other Times they might return again nearer to us, and we should see them sometimes bigger, and sometimes less, which never happens. But we will suppose that none but the little, light, and most active *Vortexes*, which slip between the others, make certain Voyages, after which they return again, while the main Body of *Vortexes* remain unmoved. It is likewise very strange that some *fixed Stars* shew themselves to us, and take up a great deal of Time in appearing, and disappearing, and at last, totally and entirely disappear. Half-*Suns* would appear again at their fixed and regulated Time. But *Suns*, which should be sunk low into the Depths of Heaven, would disappear but once, and not appear again

158 *The Plurality of Worlds.*

for a vast Space of Time. Now, *Madam*, declare your Opinion boldly: Must not these *Stars*, of necessity be *Suns*, which are so much darkned, as not to be visible to us, yet afterwards shine again, and at last are wholly extinct? How can a *Sun*, *says the Marchioness*, be darkned and quite extinguished, when it is in its own Nature a Foundation of Light? It may be done, *Madam*, *says I*, with all the Ease in the World, if *Descartes's* Opinion be true, that our *Sun* has *Spots*; now whether these *Spots* be Scum, or thick Mists, or what you please, they may thicken and unite, till at last they cover the *Sun* with a Crust, which daily grows thicker and then farewell *Sun*. We have hitherto escaped pretty well; but it is reported, that the *Sun* for some whole Years together has looked very pale; for Example, the Year after *Cæsar's* Death; it was this Crust that then began to grow, but the Force of the *Sun* broke thro', and it was dissipated; had it continued, we had been all a lost People.

People. You make me tremble, *replied Madam*, and now I know the fatal Consequences of the *Sun's* Paleness, I believe, instead of going every Morning to the Glass, to see how I look myself, I shall cast my Eyes up to Heaven, to see whether or no the *Sun* looks pale. O! *Lady*, says I, there is a great deal of Time required to ruin a World. I grant it, says *she*, yet it is but Time that is required. I confess it, *Madam*; all this immense Mass of Matter which composes the Universe, is in perpetual Motion, no Part of it excepted; and since every Part is moved, you may be sure that Changes must happen sooner or later; but still in Times proportioned to the Effect. The Ancients were merry Gentlemen, to imagine that the *Celestial Bodies* were in their own Nature unchangeable, because they observed no Alteration in them; but they did not live long enough to confirm their Opinion by their own Experience; they were Boys in Comparison of us. Give me leave,

160 *The Plurality of Worlds.*

Madam, to explain myself by an Allegory: If *Roses*, which last but a *Day*, could write *Histories*, and leave *Memoirs* one to another, and if the first *Rose* should draw an exact Picture of his *Gardener*, and after 15,000 *Rose-Ages*, it should be left to other *Roses*, and so on still to those that should succeed, without any Change in it; should the *Roses* hereupon say, *We have seen every Day the same Gardener, and in the Memory of Roses, none ever saw any Gardener but this; he is still the same he was, and therefore certainly He will die, as We do, for there is no Change at all in him.* Would not these *Roses*, *Madam*, talk very foolishly? And yet there would be more Reason in their Discourse, than there was in what the Ancients said concerning *Celestial Bodies*; and tho' even to this very Day there should appear no visible Change in the Heavens, and the Matter of which they are made, should have all the Signs of an Eternal Duration, without any Change; yet I would

would not believe them unchangeable, till I had the Experience of many more Ages, Ought *we*, whose Lives are but a *Span long* to make our Continuance the mensurate Duration of any other *Being*? It is not so easy a Matter to be Eternal: To have lasted many Ages of Men, one after another, is no Sign of Immortality. Truly, *says the Marchioness*, I find these Worlds are far from being able to pretend to it; I will not do them so much Honour, as to compare them to the *Gardener*, who lived so much longer than the *Roses*: I begin to think them like the *Roses* themselves, which Blow one Day, and Die the next: For now I understand, that if old *Stars* disappear, new *ones* will come in their Room, because every Species must preserve itself. No Species, *Madam*, *says I*, can totally perish; some perhaps will tell you that such new *Stars* are *Suns*, which return to our Sight again, after they have been a long Time hid from us, in the Profundity of Heaven: Others may tell you they are *Suns*

162 *The Plurality of Worlds.*

cleared from that thick Crust, which once covered them: If I should think all this possible, yet I likewise believe that the Universe may be framed in such a Manner, that from Time to Time it may produce New *Suns*; why may not that Matter which is proper to make a *Sun*, be dispersed here and there, and gather itself again at long run, into one certain Place, and lay the Foundation of a New World? I am very much inclined to believe such New Productions, because they suit with that Glorious and Admirable Idea which I have of the Works of Nature. Can we think that All-wise Nature knows no more than the Secret of making Herbs and Plants live and die by a continual Revolution? I am verily perswaded, and are not you so too, *Madam*, that Nature, without much Cost or Pains, can put the same Secret in Practice upon the Worlds? I now find, *says she*, the Worlds, the *Heavens*, and *Celest-*

Celestial Bodies so subject to change, that I am come to myself again. To recover ourselves the better, *replied I*, let us say no more of these Matters. We are arrived at the very Roof and Top of all the Heavens; and to tell you whether there be any *Stars* beyond it, you must have a more able Astronomer than I am; you may place *Worlds* there, or no *Worlds*, as you please: It is the Philosopher's Empire to describe those vast invisible Countries, which *are*, and are *not*, or are such as he pleases to make them: It is enough for me to have carried your *Mind*, as far as you can see with your Eyes.

Well now, *says the Marchioness*, I have the whole *System* of the *Universe* in my Head; how learned am I become? Indeed, *Madam*, *says I*, you are pretty knowing, and with this Advantage, either of believing, or disbelieving any Thing I have said; all the Recompence I

164 *The Plurality of Worlds.*

desire for the Pains I have taken, is,
*that you would never look upon the
Sun, the Heaven, or the Stars, with-
out Thinking on Me.*



The



The SIXTH EVENING.

New Observations *confirming the Preceding Ones.* And some farther Discoveries made in the HEAVENS.

IT is so long, since the Marchioness of G**** and I, had any *Discourse* concerning the *Planetary Worlds*, that we began to question whether we had ever had any on that *Subject*. When I went one Day to visit her, I came in just as two very polite Gentlemen had taken their Leaves of her. Well! *says Madam*, the very Moment she perceived me, you see who have honoured me with a Visit; and, I protest, it has given me some room to suspect that it has been in your Power to impose upon my Judgment. I should be very proud, *replied I*, if I could flatter myself with such a Power, because I look upon it to be the hardest Task any one could attempt. As hard as it is, *says she*, I am afraid you have
done

166 *The Plurality of Worlds.*

done it. I do not know how it came about, but our Conversation turned up-
on the *Plurality of Worlds* with my
two Friends who are just gone: I am
not certain, but they might introduce
the Discourse with a malicious Design.
I made no Scruple to tell them directly,
that all the *Planets* were *Inhabited*;
one of them replied, he was very well
satisfied I did not believe a Word of it;
and I, with all the Simplicity imagine-
able, maintained, that it was my real
Opinion; he still looked upon it as a
Piece of Diffimulation, designed to
divert the Company: And I thought,
what made him so positive that I did
not believe my own Sentiments, was,
that he had too high an Opinion of me
to conceive that I could entertain so ex-
travagant a Notion. As for the other
Gentleman, who had not altogether
that Esteem for me, he took me at my
Word. For God's sake, why did you
put a Thing in my Head, which People
that value me cannot think I maintain
seriously? Nay, Madam, *says I*, but
why

why would you attempt to maintain any serious Position among a Set of People, who, I am sure, never entered into a Way of Reasoning which had the least Cast of Seriousness? We should not affront the Inhabitants of the Planets so highly; but content ourselves with being a little select Number of *Advocates* for them, and not communicate our *Mysteries* to the *Vulgar*. How! *says the Marchioness*, do you call my two last Visitants the *Vulgar*? They may have Wit enough, *says I*, but they never Reason at all. And your Reasoners, who are a severe Set of People, will not make any Difficulty of sorting them with the *Vulgar*. On the other Side, these Men of Fire revenge themselves by ridiculing the Reasoners; and think it is a very just Principle in Nature, that every Species despises what it wants. It were right, if it was possible, to conform ourselves to every Species; and it had been much better for you to have rallied on the Inhabitants of the Planets with your two Friends,

168 *The Plurality of Worlds.*

Friends, because they are better at Rail-
lery than Reasoning, which they never
make Use of: You had then come off
with their joint Esteem; and the Pla-
nets had not lost a single Inhabitant by
it. Would you have had me sacrifice
the Truth to a Jest! *says she*: And is
that all the Conscience you have? I
own, *answered I*, that I have no great
Zeal for these kind of Truths, and I
will sacrifice them with all my Soul to
the least Conveniencies of Company.
For Instance, I see what is, and always
will be, the Reason, why the Opinion
of the *Planets* being Inhabited, is not
thought so *probable* as it really is: The
Planets always present themselves to
our View as Bodies which emit Light;
and not at all like great Plains and
Meadows. We should readily agree
that Plains and Meadows were Inha-
bited; but for luminous Bodies to be
so too, there is no Ground to believe
it. Reason may come and tell us over
and over, that there are Plains and
Meadows in these *Planets*, but Reason
comes

comes a Day too late; one Glance of our Eyes has had its Effect before her, we will not hear a Word she says, the *Planets* must be luminous Bodies, and what Sort of Inhabitants should they have, our Imagination of Course would presently represent their Figures to us? It is what she cannot do, and the shortest Way is to believe there are no such beings. Would you have me, for the Establishments of these Planetary People, whose Interests are far from touching me, go to attack those formidable Powers, called Sense and Imagination? It is an Enterprize would require a good Stock of Courage, and we cannot easily prevail on Men, to substitute their Reason in the Place of their Eyes. I sometimes meet with reasonable People enow, who are willing, after a thousand Demonstrations, to believe that the *Planets* are so many *Earths*: But their Belief is not such as it would be, if they had not seen them under a different Appearance; they still remember the first Idea they entertained,

tertained, and they cannot well recover themselves from it. It is these kind of People, who, in believing our Opinion, seem to do it a Courtesy, and only favour it for the Sake of a certain Pleasure which its Singularity gives them.

Well, *says the Marchioness*, interrupting me, and is not this sufficient for an Opinion, which is but barely *probable*? You would be very much surprized, *says I*, if I should tell you, *probable* is a very modest Term. Is it simple *probable* that there ever was such a Man as *Alexander* the Great? you hold it very *certain* that there was, and upon what is this certainty founded? Because you have all the Proofs which you could desire in a *like Matter*? and there does not the least Subject for Doubt present itself, to suspend or arrest your Determination? for you never could see this *Alexander*, and you have not one *Mathematical* Demonstration that there ever was such a Man. Now what would you say if the Inhabitants of the Planets were almost in the very
same

same Case? We cannot pretend to make you see them, and you cannot insist upon the Demonstration here, as you would in a *Mathematical* Question; but you have all the Proofs you could desire in our World. The entire Resemblance of the *Planets* with the *Earth* which is inhabited, the Impossibility of conceiving any other Use for which they were created, the Fecundity, and Magnificence of Nature, the certain Regards she seems to have had to the Necessities of their Inhabitants, as [in giving *Moons* to those *Planets* remote from the *Sun*, and more *Moons* still to those yet more remote; and what is still very material, there are all Things to be said on *one* Side, and nothing on the *other*; and you cannot comprehend the least Subject for a Doubt, unless you will take the Eyes and Understanding of the *Vulgar*. In short, supposing that these Inhabitants of the *Planets* really exist, they could not declare themselves by more Marks, or Marks more sensible; and after this
you

172 *The Plurality of Worlds.*

you are to consider whether you are willing not to take their Case to be more than purely probable. But you would not have me, *says she*, look upon this to be as certain as that there was such a Man as *Alexander*? Not altogether, Madam, *says I*, for tho' we have as many Proofs touching the Inhabitants of the *Planets*, as we can have in the Situation we are, yet the Number of these Proofs is not great. I must renounce these Planetary Inhabitants, *says her Ladyship*, interrupting me, for I cannot conceive how to rank them in my Imagination; there is no absolute Certainty of them, and yet there is more than a Probability; so that I am confounded in my Notions. Ah, Madam, *says I*, never put yourself out of Conceit with them for that; the most common and ordinary Clocks shew the Hours, but those are wrought with more Art and Nicety which shew the Minutes. Just so your ordinary Capacities are sensible of the Difference betwixt a simple Probability, and an evident

evident Certainty ; but it is only your fine Spirits that discern the exact Proportions of Certainty or Probability, and can mark, if I may use the Phrase, the Minutes in their Sentiments. Now place the Inhabitants of the *Planets* a little below *Alexander* ; yet above many other Historical Facts which are not so clearly proved : I believe this Position will do. I love Order, *says she*, and you oblige me in thus ranging my Ideas for me : But pray, why did not you take this Care before ? Because, *says I*, should you believe the Inhabitants of the *Planets* either a little more or less than they deserve, there will be no great Damage in it. I am sure that you do not believe the *Motion* of the *Earth* so fully as it ought to be believed ; and have you much Reason to complain on that Score ? O ! For that matter, *replied she*, I have discharged myself very well, you have nothing to reproach me with on that Account, for I firmly believe that the *Earth* turns. And yet, *says I*, Madam, I have not
given

174 *The Plurality of Worlds.*

given you the strongest Reasons in proving it. Ah! Traytor, *she cryed*, to make me believe Things upon feeble Proofs: Then you did not think me worthy of believing upon substantial Reasons? I only proved Things, *says I*, upon little plausible Reasons, and such as were adapted to your peculiar Use: Should I have conjured up as strong and solid Arguments, as if I had been to attack a Doctor in the Science? Yes, *says she*, pray take me for a Doctor from this Moment, and let me have your full Demonstrations of the *Earth's* moving.

With all my Heart, *says I*, Madam, and I own the Proof pleases me strangely, perhaps because I think it was of my own finding; yet it is so good and natural, that I must not presume positively to have been the Inventor of it: It is most certain, that if a learned Man was puzzled, and desired to make Replications to it, he would be obliged to declaim at large, which is the only Method in the World to confound a
learned

learned Man. We must grant, that all the *Celestial Bodies*, in 24 Hours, turn round the *Earth*, or that the *Earth* turning on itself, imparts this Motion to all the *Celestial Bodies*. But that they really have this Revolution in 24 Hours round the *Earth*, is a Matter which has the least Probability in the World, tho' the Absurdity does not presently appear to our View. All the Planets certainly make their great Revolution about the *Sun*; but these Revolutions of theirs are unequal, according to the Distances of the respective *Planets* from the *Sun*; for the most remote Ones make their Course in a longer Time, which is most agreeable to Nature: The same Order is observed among the little secondary Planets in turning about a great one. The four *Moons* of *Jupiter*, and the five of *Saturn*, make their Circles in more or less Time round their great Planet; according as they are more or less remote. Besides, it is certain that the Planets have Motions upon their own Centers,
and

176 *The Plurality of Worlds.*

and these Motions likewise are unequal; we cannot tell well how to account for this Inequality, whether it proceeds from the different Magnitudes of the Planets, or on the different Swiftness of the particular *Vortexes* which inclose them, and the liquid Matters in which they are sustained; but, in short, the Inequality is most undoubted; and such is the Order of Nature in general, that whatever is common to many Things, is found at the same Time to vary in some different Particulars.

I understand you, *says the Marchioness*, interrupting me, and I think, there is a great deal of Reason in what you say; I am entirely of your Mind, if the *Planets* turned about the *Earth*, they would do it in unequal Spaces of Time, according to their Distances, as they do about the *Sun*: Is not that the Meaning of what you were saying? Exactly, *Madam, says I*, their unequal Distances, with respect to the *Earth*, as well as in all their other *Motions*. And the
fixed

fixed Stars which are at such a prodigious Distance from us, and so much elevated above every Thing that can take a general Motion round us, at least which are situated in a Place whence this Motion should be very much weakned, would there not be a very great Probability that they did not turn at all about us in 24 Hours, as the *Moon* does who is so near us? And should not *Comets*, which are Strangers in our *Vortex*, and which run Courses so different one from the other, and with such unequal Rapidity, be excused from turning round us in the same Space of 24 Hours? But no Matter, *fixed Stars*, and *Comets*, and all must turn round the *Earth* in 24 Hours; yet, if there were some Minutes Difference in these Motions, we might be contented; and they all must make them with the most or rather the only exact Equality which is in the World, and not one Minute more or less allowed. In Reality, this Matter is strangely to be suspected.

O! says the *Lady*, since it is possible that this grand Equality should be only

I in

178 *The Plurality of Worlds.*

in our Imagination, I am entirely convinced it is derived only from thence. I am very well pleased, that any Position, which is against the Genius of Nature, should fall entirely upon ourselves, and that she should stand discharged, tho' at our Expence. For my Part, *says I*, I am such a Foe to a perfect Equality, that I cannot even allow, all the Turns which the Earth every Day makes on herself, should be precisely in 24 Hours, and always equal one to another; I should be very much inclined to think that there are Variations. Variations! cried the *Lady*, why, do not our Pendulums mark an entire Equality? O, *says I*, to your Pendulums I must object, for they cannot be altogether just; and sometimes when they are, in shewing us that one Circuit of 24 Hours, is longer or shorter than another, we should rather be inclined to believe them irregular, than to suspect the Earth of any Irregularity in her Revolutions. What a complaisant Respect is this we have for her, I would no more depend on the *Earth*, than on

a *Pendulum*! And the very same Casualties almost which will disorder the one, will make the other irregular! Only, I believe, there must be more Time allowed for the *Earth*, than a *Pendulum*, to be visibly put out of Order; and that is all the Advantage we can give on her Side. But might she not by Degrees draw nearer to the *Sun*? And there finding herself in a Situation, where the Matter is more agitated, and the Motion more rapid, she will in less Time make her double-Revolution both about the *Sun* and herself; so consequently her Years and Days will be much shortned, but not to be perceived, because we must still go on to divide the Year into 365 Days, and the Days into 24 Hours: So that without living longer than we now do, we shall live more Years; and on the other Hand, as the *Earth* withdraws from the *Sun*, we shall live fewer Years than we do now, and yet have our Lives of the same Extent. There is a great deal of Probability, says she, that whenever it falls out thus, long Successions

cessions of Ages will make but very little Variation. I agree with you, Madam, *replied I*, the Conduct of Nature is very nice, and she has a Method of bringing about all Things by Degrees, which are not sensible, but in very obvious and easy Changes: We are scarce able to perceive the Change of the Seasons, and for some others which are made with a certain Deliberation, they do not fail to escape our Observance. However, all is in a perpetual Rotation, and not so much as the Lady's Face in the *Moon*, which was discovered with Telescopes, within these 40 Years, but what is grown considerably old. She had a good tolerable Countenance, but now her Cheeks are sunk, her Nose grown long, and her Chin and Forehead meet, so that all Graces are vanished, and Age has made her a terrible Spectacle.

What a Story do you tell, says the *Lady*, interrupting me! It is no Imposition, *Madam, replied I*, they have perceived in the *Moon* a particular Figure, which had the Air of a Woman's Head

Head jutting out of Rocks, and it is owing to some Changes that have happened there. Some Pieces of Mountains have mouldered away, and left us to discover three Points, which can only serve to make up the Forehead, Nose, and Chin, of an old Woman. Well, *says she*, but do not you think it is some Destiny that had a particular Spite to Beauty? And very justly was this Female-Head, which she would attack above all the *Moon*. Perhaps in Recompence, *replied I*, the Changes which happen upon our *Earth*, dress out some Face, which the *People* in the *Moon* see; I mean something like what we conceive a *Face* in the *Moon*; for every one bestows on Objects those Ideas of which they themselves are full. Our Astronomers see on the Surface of the *Moon*, the Faces of Women, and maybe, if the Ladies were to make their Speculations, they would discern the Physiognomy of fine Men. For my Part, *Madam*, I do not know whether I should not fancy your Ladyship's Charms there. I protest, *says she*, I cannot

182 *The Plurality of Worlds.*

cannot help being obliged to any one who should find me there. But to come back to what you were mentioning just now: Do any considerable Changes affect the Earth? In all Appearance they do, *replied I*: Old Fables tell us, that *Hercules* split asunder with his Hands, the two Mountains, called *Calpe* and *Abila*, which stand betwixt *Afric* and *Spain*, stopped the Ocean from flowing there, and that immediately the Sea rushed with Violence over the Land, and made that great Gulph which we call the *Mediterranean*. Now this is not only fabulous, but a History of those remote Times, which has been disguised, either from the *Ignorance* of the *People*, or thro' the *Love* they had for the *Marvellous*, the two most ancient Frailties of Mankind. That *Hercules* should seperate two Mountains with his two Hands, is absolutely incredible; but that in the Time of one *Hercules*, or other, for there were 50 of that Name, the Ocean should force down two Mountains, not so strong as others in the World, perhaps

haps thro' the Assistance of some Earthquake, and so take his Course betwixt *Europe* and *Afric*, gives me no manner of Pain to believe What a notable Spot might the *Lunar-Inhabitants* all of a sudden discover on our Earth; for you know, *Madam*, that Seas are Spots. It is no less than the common Opinion, that *Sicily* was separated from *Italy*, and *Cyprus* from *Syria*: There are sometimes new Islands formed in the Seas: Earthquakes have swallowed up Mountains, others have rose and altered the Course of the Planets. The *Philosophers* give us Apprehensions, that the Kingdoms of *Naples* and *Sicily*, which are Countries founded upon great subterranean Vaults, full of Sulphur, will one Day sink in, when those Vaults shall no longer be able to resist the Flames which they contain, and at this Time exhale at those Vent-holes the Mouth of *Vesuvius* and *Ætna*. Is not here enough to diversify the Sight which we give to the *People* in the *Moon*?

184 *The Plurality of Worlds.*

I had much rather, *says the Marchioness*, that we had disgusted them with the same Object always, than diverted them with the swallowing up of Provinces.

I do not know, *replied I*, if within this little Time there have not been several burnt up in *Jupiter*. What, Provinces burnt up in *Jupiter*? *crys she*, upon my Word, that would be considerable News. Very considerable, *says I, Madam*: We have remarked these 20 Years in *Jupiter* a long Trail of Light, more glaring than the rest of that Planet's Body. We have, here, had Deluges, perhaps they may have suffered great Conflagrations in *Jupiter*: How do we know to the contrary? *Jupiter* is 90 Times bigger than the *Earth*, and turns on his own Center in 10 Hours, whereas we do not turn in less than 24, which implies that his Motion is 216 Times stronger than ours. May it not be possible, that in so rapid a Circulation, its most dry and combustible Parts should take fire, as we see the Axle-trees in Wheels, from the Rapidity

Rapidity of their Motion, will break out into Flames? But however it is, this Light of *Jupiter* is by no means comparable to another, which in all Probability is as ancient as the World, and yet we have never seen it. How does a Light order it to be concealed, *says she*; there must be some singular Address to compass that Point.

This Light, *replied I*, never appears but at Twilight, which is often strong enough to drown it; and even when Twilight suffers it to appear, either the Vapours of the Horizon rob us of it, or it is so very faint, and hardly to be perceived, that for want of Exactness in our Knowledge we mistake it for the Twilight. But, in short, they have of late Years with much Certainty distinguished it; and it has been for some Time the Delight of the Astronomers, whose Curiosity wanted to be roused by some Novelty, and they could not well have been more touched, if they had discovered some new secondary Planets. The two latter *Moons* of *Saturn*, for Instance, did not ravish

I 5

them

186 *The Plurality of Worlds.*

them to that Degree which the Guards or *Moons* of *Jupiter* did: But now we are fully accustomed to it; we see, one Month before, and after, the Vernal Equinox, when the *Sun* is set and the Twilight over, a certain whitish Light resembling the Tail of a Comet. We see the same before *Sun* rise, and before the Twilight, towards the Autumnal Equinox; and towards the Winter Solstice we see it Night and Morning, except at these Times it cannot, as I but now observed, disengage itself from the Twilights which are too strong and lasting; for we suppose it to be a continued Light, and in all Probability it is so. We have begun to conjecture that it is produced from some prodigious Quantity of Matter crouded together, which circles round the *Sun* to a certain Extent: The greatest Part of his Rays pierce thro' this gross Circuit, and come down to us in a right Line; but some resting on the inner Surface of this Matter, are from thence reflected to us, and come with the direct Rays, or else we cannot have them either Morning or Evening. Now as these reflected Rays,
are

are shot from a greater Height than those which are direct, we must consequently have them sooner, and keep them longer.

On this Foot, I must acquiesce in what I have already mentioned, that the *Moon* must have no Twilight for want of being surrounded by such a gross Air as the *Earth*. But she can be no Loser; her Twilights will proceed from that kind of gross Air which surrounds the *Sun*, and reflects his Rays on Places which his direct ones cannot reach. But pray let me know, says the *Marchioness*, are not the Twilights settled for all the Planets, who will not need every one to be clothed with a distinct gross Air, because that which surrounds the *Sun* alone, may have one general Effect for all the *Planets* in the *Vortex*? I am mighty willing to think, Dame-Nature, agreeable to that Inclination which I know she has to Oeconomy, and good Management, should make that single Means answer her Purpose: Yet, replied I, notwithstanding this supposed Oeconomy, she must have,

108 *The Plurality of Worlds.*

with Respect to our *Earth*, two Causes for Twilight; one whereof, which is the thick Air about the *Sun*, will be wholly useless, and can only be an Object of Curiosity for the Students of the *Observatory*; but not to conceal any Thing, it is possible that only the *Earth* sends out from herself Vapours and Exhalations gross enough to produce Twilights, and that Nature had Reason to provide, by one general Means, for the Necessities of all the other *Planets*, which are, if I may so say, of a purer Mold, and their Evaporations consequently more subtle. We are perhaps, among all the Inhabitants of the *Worlds* in our *Vortex*, the only Persons who required to have a more gross and thick Air given us to breathe in. With what Contempt would the Inhabitants of the other Planets consider us, if they knew this?

They would be out in their Reasoning, *says the Marchioness*, we are not to be despised for being enveloped with a thick Air, since the *Sun* himself is so surrounded. Pray tell me, is not this
Air

Air produced by certain *Vapours*, which you have formerly told me issued from the *Sun*, and does it not serve to break the first Force of his Rays, which had else probably been to Excess? I conceive that the *Sun* may be veiled by Nature, to be more proportioned to our Use. Well, *Madam*, replied I, this is some small *Introduction* to a *System* which you have very happily started. We may add, that these Vapours produce a kind of *Rain*, which falling back upon the *Sun*, may cool and refresh it, as we sometimes throw Water into a Forge, when the Fire is too fierce. There is not any thing but what we may imagine, to assist Nature's Address, but she has another kind of Address very particular, which is to conceal herself from us, and we should not willingly be confident that we have found out a Method of acting on her Designs in it: In case of New Discoveries, we should not be too importunate in our Reasonings, tho' we are always fond enough to do it; and your *true Philosophers* are like *Elephants*, who

as they go, never put their second Foot to the Ground, till their first be well fixed. The Comparifon feems the more rational to me, *fays ſhe*, as the Merit of thoſe two Species of Animals, *Elephants* and *Philofophers*, does not at all conſiſt in exterior Agreements. I am willing to miſtake the Judgment of both; now teach me ſome of the latter Discoveries, and I promiſe you not to make any raſh Systems.

I will tell you *Madam*, replied I, all the News I know from the Firmament, and I believe the freſheſt Advices you can have. I am ſorry they are not as ſurprizing and wonderful, as ſome Obſervations which I read the other Day in *An Abridgment of the CHINESE ANNALS*. Written in *Latin*. Thoſe People ſee *Thousands of Stars* at a Time, *fall* from the *Sky* into the *Sea*, with a prodigious Noiſe, or are diſſolved, and melt into Rains; and theſe are Things which have been ſeen more than once in *China*. I met with this Obſervation at two ſeveral Times, pretty diſtant from each other without reckoning a certain

certain *Star* which goes *Eastward*, and bursts like a Squib, always with a great Noise. It is great Pity that these Kinds of *Phænomena* should be reserved for *China* only, and that our Part of the Globe should never have their Share of these Sights. It is not long, since all our Philosophers were of Opinion, that they might affirm on good Grounds, that the *Heavens* and all the *Celestial Bodies* were incorruptible, and therefore incapable of Change; and yet at the same Time, there were some Men in the other Part of the *Earth* who saw Stars *dissolve* by *Thousands*, which must produce a very different Opinion. But, *says the Marchioness*, did we ever hear it allowed that the *Chinese* were such great Astronomers? It is true, we did not, *says I*, but the *Chinese* have an Advantage from being divided from us by such a prodigious Tract of *Earth*, as the *Greeks* had over the *Romans*, by being so much prior in Time: Distances of every Sort pretend a Right of imposing on us. In Reality, I think still more and more, that there is a certain

Genius

Genius which has never yet been out of the Limits of *Europe*, or at least not much beyond them; perhaps he may not be permitted to spread over any great Extent of the Earth at once, and that some Fatality prescribes him very narrow Bounds. Let us indulge him whilst we have him; the best of it is, he is not link'd to the Sciences and dry Speculations, but launches out with as much Success into Subjects of Pleasure, in which Point I question whether any People equal us. These are such Topics, Madam, as ought to give you Entertainment, and compleat your whole *System of Philosophy*.





V E R S E S,

*Sent with this BOOK to Mrs.
OLDFIELD, by Mrs. CENT-
LIVRE.*

P*lurality of Worlds!* such Things may be!
But I am best convinc'd by *what I see:*
Yet tho' *Philosophers* these *Schemes* pursue,
And *fancy'd Worlds* in ev'ry *Planet* view,
They can but guess at *Orbs* above the *Skies*,
And *darkly* paint the *Lakes* and *Hills* that *rise*;
But *CUPID*, skill'd in *Mysteries* profound,
Points where more *Certainty* of *Worlds* abound
Bright *Globes* that strike the *Gazer* with
Surprize,
For *they* are *Worlds* of *Love*, and in *OPHELIA's*
Eyes.

A N



A N
O R A T I O N,
I N
D E F E N C E
O F T H E
N E W P H I L O S O P H Y .

S P O K E N

In the THEATRE at Oxford, July 7, 1693,
by Mr. ADDISON.

Done from the *Latin* Original.

✱✱✱ O W long, Gentlemen of
✱✱✱ H ✱✱✱ University, shall we slavish-
✱✱✱ ly tread in the Steps of the
✱✱✱ Ancients, and be afraid of
being wiser than our Ance-
stors? How long shall we religiously
worship the Triflings of Antiquity, as
some do old Wives Stories? It is indeed
shameful, when we survey the *great*
Ornament of the present Age *, to
transfer our Applauses to the Ancients,
and

* NEWTON.

and to take Pains to search into Ages
past for Persons fit for Panegyrick.

The ancient Philosophy has had
more allowed than it could reasonably
pretend to, how often has SHELDON'S
Theatre rung with *Encomia* on the
Stagyrite, who, greater than his own
Alexander, has long, un-opposed, tri-
umphed in our School-Desks, and had
the whole World for his Pupils. At
length rose CARTESIUS, a happier
Genius, who has bravely asserted the
Truth against the united Force of all
Opposers, and has brought on the Stage
a new Method of philosophizing. But
shall we stigmatize with the Name of
Novelty that Philosophy, which, tho'
but lately revived, is more ancient than
the *Peripatetic*, and as old as the Mat-
ter from whence it is derived. A great
Man indeed He was, and the only one
we envy FRANCE *. He solved the
Difficulties of the Universe, almost as
well as if he had been its Architect.
He destroyed those Orbs of Glass, which
the Whims of Antiquity had fixed
above,

* *Des Cartes.*

196 *Mr. ADDISON's Defence*

above, brought to light that Troop of Forms till then unknown, and has almost extinguished the Element of Fire; nay, he with so much Clearness traced out the whole Mass of Matter, as to leave no occult Quality untouched. This Philosopher scorned to be any longer bounded within the Straights and Crystalline Walls of an *Aristotelic* World; no, his Delight is to search the Regions above, to discover new Suns, and new Worlds, which lay hid among the Stars; his Satisfaction is to view that large Kingdom of Air amidst the unfixed Stars, and Lands that pass the Milky Way, and more accurately measure this vast Machine, a Machine fit for Mankind to philosophize on, and worthy of the Deity, that first framed it.

Here we have not only new Heavens opened to us, but we look down on our Earth; this Philosophy affords us several Kinds of Animals; where, by the Help of Microscopes, our Eyes are so far assisted, that we may discern the Productions of the smallest Creatures,
while

while we consider with a curious Eye the animated Particles of Matter, and behold with Astonishment, the reptile Mountains of living Atoms. Thus are our Eyes become more penetrating by modern Helps, and even that Work which Nature boasts for her Master-Piece, is rendered more correct and finished. We no longer pay a blind Veneration to that barbarous *Peripatetic* Jingle, those obscure Scholastic Terms of Art, once held as Oracles, but consult the Dictates of our own Senses, and by late invented Engines force Nature herself to discover plainly her most hidden Recesses.

By the Help of Instruments like these, that Air, which a bountiful Nature has indulged us, we as often as we please, by the Force of Art abridge other Animals of, and keep them in our Pneu-matick Pumps, from its common Benefit. What a Pleasure is it to see the fruitless Heavings of the Lights, to exhaust their Lives, and by a most artful Sort of Theft rob them of their Breath? From this nothing is safe, nothing so long

long lived, which gradually does not languish, and fall dead without a Wound. A divine Piece of Art this, and worthy its Author *, who in the Conduct of his Life, and the Force of his Arguments, has so nobly honoured our Nation, and the New Philosophy, one who for this Reason too deserves never to want the Benefit of his own Air, or that he, who has so often deprived other Animals of their Life, should ever breathe out his own.

On no such Grounds, as these has ARISTOTLE built his Philosophy, who from his own Brain furnished out all his Rules of Arts and Sciences, and left nothing untouched on, nothing unregarded but *Truth*. If therefore he precipitated himself into the River *Euripus*, because he could not understand its Ebb and Flow, by the same Logic he might at his first Entrance on Philosophy have destroyed himself; and we may fairly doubt, in which of the Elements he ought to have perished.

After ARISTOTLE's Fate amidst the Waves of *Euripus*, a new Race of *Peripatetics* started up, even worse than their Founder, who handed their Philosophy to After-ages in so thick an Obscurity, that it has preserved it from the Satire and Ridicule of all Mankind, as understood by very few. Some there are to be found, who spend there Time amidst the Rubbish which these Commentators have filled the World with, and pore more than once on these God-like Treasures of Learning, and stick to them to no other Purpose, unless to shew the World the vast Pains they take to be deceived. Can there be a more pleasant Sight than to see these wise Champions wrangling with each other? The one, armed with Propositions and Syllogisms, attacks his Antagonist in the same Armour: Both Bell-weatheres grow angry, and storm, fond of a Victory, which is worth but a Trifle, when obtained: Each, with all his Might, darts out his Barbarisms at the other, they entangle themselves in their Follies, and as neither knows
how

200 *Mr. ADDISON's Defence, &c.*

how to extricate himself, they found to a Retreat, and when all the Ammunition is spent on both Sides, they think fit to keep Silence.

Thus far, Gentlemen, and no farther launches out the ancient Philosophy: Let us therefore sentence for ever this Troop of Commentators, to be tied up in Chains and Libraries, Food only for Moths and Worms, and there let them quietly grow Old, free from the Sight of any Reader.

Joseph Addison.

F I N I S.



