



The title-page of Boyle's privately-printed *Some Receipts of Medicines* (1688). Photograph of the currently lost British Library copy, from a negative preserved among the papers of Dr R. E. W. Maddison at the University of Kent at Canterbury.

THE WORKS OF  
ROBERT BOYLE

Edited by  
Michael Hunter and  
Edward B. Davis

VOLUME II

*The Christian Virtuoso*  
and other publications of 1687-91



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## V

	Weight In Air in Gr.	In Water in Grains.	Proportion.
<i>Vitrum Antimoni per se</i> . . . . .	357½	282½	4 <sup>76</sup> / <sub>100</sub> to 1.
<i>Vitriol Engl. a very fine piece</i> . . . . .	1093	512	1 <sup>89</sup> / <sub>100</sub> to 1.
<i>Unicorn horn a piece</i> . . . . .	407	195	1 <sup>97</sup> / <sub>100</sub> to 1. /

## POSTSCRIPT.

When I began to send the Essay, called, *Mediana Hydrostatica*, to the Press, and drew up the foregoing Preface to it, I intended it should in the same Book or Volume, be accompany'd by another Help or two, to explore, and Improve the *Materia Medica*. But when the Essay it self, and the annex'd Epistle about a previous Exploration of Ores had been Printed off; I could not but perceive, that the Bulk of those two Tracts so far exceeded what I expected, that if I subjoyned what I at first designed to add to it, it would prove a mis-shapen Book, and inconvenient to be open'd, wherefore it seem'd expedient to divide the whole intended Work into two Volumes or Tomes, whereof that had already past the Press, should make the first, which that it might be the sooner serviceable should forthwith come abroad by it self, and the Second should consist partly of the other Papers abovemention'd, as relating to the *Materia Medica*, and partly, of a Supplement to the first Tome, containing divers Historical *Paralipomena*, that by mistake were omitted, and are fit to be there supply'd out of a fuller Copy, then that which by an Oversight was made use of at the Press.

FINIS. /

THE  
Christian Virtuoso:

SHEWING,

That by being addicted to *Experimental Philosophy*, a Man is rather Assisted, than Indisposed, to be a *Good Christian*.

The First Part.

By the Honourable Robert Boyle,  
Fellow of the ROYAL SOCIETY.

To which are Subjoyn'd,

I. A Discourse about the Distinction, that represents some Things as *Above Reason*, but not *Contrary to Reason*.

II. The first Chapters of a Discourse, Entituled, *Greatness of Mind promoted by Christianity*.

By the same AUTHOR.

1690-1

THE  
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That by being addicted to *Experimental Philosophy*, a Man is  
rather assisted, than indisposed, to be a *Good Christian*.

*The First Part.*

SIR,

I perceive by what you intimate, that your Friends, Dr. W. and Mr. N. think it very strange, that I, whom they are pleas'd to look upon as a diligent Cultivator of *Experimental Philosophy*, should be concern'd / Embracer of the *Christian Religion*; tho' divers of its Articles are so far from being Objects of Sense, that they are thought to be above the Sphere of Reason. But, tho' I presume they may find many Objects of the like wonder, among those with whom I am compriz'd by them, under the name of the *New Virtuosi*; and among These, they may meet with divers persons more able than I, to ease them of their wonder; yet, since they are pleas'd by singling me out, as it were to challenge me to do it, I shall endeavour to make them think it at least less strange, That a great Esteem of Experience, and a high Veneration for Religion, should be compatible in the same person. Wherefore I shall not deny, that I am now and then busied in devising, and putting in practice, Tryals of several sorts, and making Reflections upon them: And I own too, that (about natural things) I have a great Reverence for Experience, in comparison of Authority; But withal, I / declare, that to embrace Christianity; I do not think I need to recede from the value and kindness I have for *Experimental Philosophy*; any thing near so far as your Friends seem to imagin. And I hope it will appear, that, if the Experimental way of Philosophising I am addicted to, have any things in it that dispose a man to assent to the Truth, and live according to the Laws, of the Christian Religion; those few things are more than countervail'd by the peculiar Advantages, that it affords a Man of a well-dispos'd mind, towards the being a good Christian.

I said, a man of a *well-dispos'd mind*; that is, one, that is both docile, and inclin'd to make pious applications of the Truths he discovers; because such a

\* It is not clear who 'Dr W' and 'Mr N' were meant to represent: see Introductory Note.

Qualification of Mind. I hope, God, through his Goodness, has vouchsaf'd me: and the occasion given by your friends to the following Discourse, relating peculiarly to me, a personal account of my Opinions, and reasons of them, ought to / suffice. And 'twill be *ex abundanti*? (as they speak,) if my Discourse be found, as it often will be, to extend much farther. Which Reflection, I desire you would frequently have in your thoughts, to prevent mistaking the Design of the following Epistle.

I doubt not, but the Popular Prejudices, that I perceive your two Friends, among many others more devout than well-inform'd Persons, have entertain'd, will make them think, that what I have now deliver'd needs good proof, and perhaps better than it is capable of. And therefore I hope you will easily allow me the liberty; I am going to take, of briefly premising some things; to clear the way for the principal Points, design'd to be discours'd of in this Letter.

I know you need not be told, that the Philosophy which is most in request among the modern *Virtuosi*, and which by some is call'd the *New*, by others the *Corpuscularian*, by others the *Real*, by others (tho' not so properly) the *Atomical*, and by others again / the *Cartesian*, or the *Mechanical Philosophy*; is built upon two foundations, *Reason* and *Experience*. But it may not be impertinent to observe to you, that although the Peripatetic, and some other Philosophies, do also pretend to be grounded upon Reason and Experience; yet there is a great difference betwixt the use that is made of these two Principles, by the School-Philosophers, and by the *Virtuosi*. For those, in the framing of their System, make but little use of Experience, contenting themselves for the most part to employ but few and obvious Experiments, and vulgar Traditions, usually Uncertain, and oftentimes False; and superstrucing almost their whole Physics upon *Abstracted Reason*; by which, I mean, The rational Faculty endowed but with its own Congenit or Common Notions and *Idea's*, and with Popular Notices; that is, such as are common among men, especially those that are any thing Learned. But now, the *Virtuosi* I speak of, and by whom, in this whole / Discourse, I mean those, that Understand and Cultivate Experimental Philosophy, make a much greater and better use of Experience in their Philosophical Researches. For they consult Experience both frequently and heedfully; and, not content with the *Phænomena* that Nature spontaneously affords them, they are solicitous, when they find it needful, to enlarge their Experience by Tryals purposely devis'd; and ever and anon Reflecting upon it, they are careful to Conform their Opinions to it; or, if there be just cause, Reform their Opinions by it. So that our *Virtuosi* have a peculiar Right to the distinguishing Title that is often given them, of *Experimental Philosophers*.

I can scarce doubt, but your Friends have more than once oblig'd you to take notice, of the Prophane Discourses and Licentious Lives of some *Virtuosi*, that boast much of the Principles of the New Philosophy. And I deny

not, but that, if the knowledge of Nature falls into the hands / of a Resolved Atheist, or a Sensual Libertine, he may misemploy it to Oppugn the Grounds, or Discredit the Practice, of Religion. But it will fare much otherwise, if a deep insight into Nature be acquir'd by a man of Probity and Ingenuity, or at least free from Prejudices and Vices, that may indispose him to entertain and improve those Truths of Philosophy, that would naturally lead him to Sentiments of Religion. For, if a Person thus qualify'd in his Morals, and thereby dispos'd to make use of the knowledge of the Creatures to confirm his Belief, and increase his Veneration, of the Creator, (and such a Person I here again advertise you, and desire you would not forget it, I suppose the *Virtuoso* this Paper is concern'd in, to be) shall make a great progress in Real Philosophy; I am perswaded, that Nature will be found very Loyal to her Author, and in stead of Alienating his Mind from making religious Acknowledgments, will furnish him with weighty and uncommon / Motives, to conclude such Sentiments to be highly rational and just. On which occasion, I must not permit that judicious Observation of one of the first and greatest Experimental Philosophers of our Age, (Sir Francis Bacon) That God never wrought a Miracle to convince Atheists; because in his Visible Works he had plac'd enough to do it, if they were not wanting to themselves. The Reason he gives for which Remark, I shall confirm, by observing, that 'tis intimated in a passage of St. Paul, asserting both that the *invisible things of God are clearly seen from the Creation of the World*, as Tokens and Effects, (as I remember the Particle *εἶδη* in the *Greek* doth elsewhere signify,) and that his Divinity and Eternal Power may be so well understood by the things that are made, that the Gentiles, who had but the Light of Nature to lead them to the acknowledgment of the true God, were Excuseless, for not being brought by / that Guide to that Acknowledgment.

And indeed, the Experimental Philosophy giving us a more clear discovery, than Strangers to it have, of the divine Excellencies display'd in the Fabric and Conduct of the Universe, and of the Creatures it consists of, very much indisposeth the mind, to ascribe such admirable Effects to so incompetent and pitiful a Cause as Blind Chance, or the tumultuous Justings of Atomical Portions of senseless Matter; and leads it directly to the acknowledgment and adoration of a most Intelligent, Powerful and Benign Author of things, to whom alone such excellent Productions may, with the greatest Congruity, be ascrib'd. And therefore, if any of the Cultivators of Real Philosophy pervert it to countenance Atheism, 'tis certainly the fault of the Persons, not the Doctrine; which is to be judg'd of by it's own natural Tendency, not by the ill Use that some bad Men may make of it; especially if the prevailing Persons are but / pretenders to the Philosophy they misemploy; which Character will perhaps be found to belong to most, if not all, the

\* Rom. i. 20.

† Francis Bacon, *De augmentis scientiarum* (1623), iii. 2.

‡ Rom. i.

\* 'from abundance.'

Atheistical and Prophane Men, the Objection means. For most of these do as little understand the Mysteries of Nature, as believe those of Christianity; and of divers of them it may be truly said, that their Sensuality, and Lusts, and Passions, darken'd and seduc'd their Intellects: Their Immorality was the Original Cause of their Infidelity; nor were they led by Philosophy to Irreligion, but got and perverted some smattering of Philosophy; to countenance the Irreligious Principles, they brought with them to the Study of it.

But all this notwithstanding, I fear, if not foresee, that you will surmise, that the study of Natural Philosophy, how innocent soever it may be *in it self*, will, in *this Libertine City*, engage me to converse with many, who, tho' they pass for *Virtuosi*, are indeed Atheists; whose contagious Company must endanger, if not infect, me. /

This obliges me to tell you, that tho' I have no reason to take it at all unkindly, that you are jealous of me on the score of being Solicitous for my Safety; yet I hope my Danger is not so great as you may apprehend it. For *First*, I must own to you, that I do not think there are so many Speculative Atheists, as Men are wont to imagin. And tho' my Conversation has been pretty free and general among Naturalists, yet I have met with so few true Atheists, that I am very apt to think, that Men's want of due Information, or their uncharitable Zeal, has made them mistake or misrepresent many for Denyers of God, that are thought such, chiefly because they take uncommon Methods in studying his Works, and have other Sentiments of them, than those of vulgar Philosophers. And in the next place I must tell you, that having, through the goodness of God, chosen my Religion, not Inconsiderately, but upon mature Deliberation; I do not find those *Virtuosi*, you call Atheists, / such formidable Adversaries, as those that are afraid to hear them, do, by that Apprehension, appear to think them. And indeed, I have observ'd the Physical Arguments of the Atheists to be but very few, and those far enough from being Unanswerable. And as for the very chief of them, tho' they are wont to puzzle such as are not vers'd in nice Speculations, because they represent the assertion of a Deity, as a Doctrine encumber'd with intricate Difficulties; yet I do not think the Objections solidly ground'd, since the same Difficulties, or others not inferior, may be urg'd against those Hypotheses and Principles, that the Deniers of God do or must admit. And indeed, most of the perplexing Difficulties the Atheists lay so much stress on, do not proceed from any Absurdity contained in the Tenent of the Theists, but from the Nature of things; that is, partly from the Dimness and other Imperfections of our Human Understandings, and partly from the Abstruse Nature, that, / to such Bounded Intellects, all Objects must appear to have, in whose Conception Infinity is involv'd; whether that Object be God, or Atoms, or Duration, or some other thing that is unsearchable. For, however we may flatter our selves, I fear we shall find, upon strict and impartial Tryal, that finite Understandings are not able clearly to resolve such Difficulties, as exact a clear comprehension of what is really Infinite.

But to persue this Discourse would lead us too far. And 'tis more fit, after

so much has been said concerning not only the Design of this Tract, but the New Philosophy, the *Virtuosi*, and my self; to proceed to those more Particular things, that directly tend to the main Scope of our Epistle.

The first advantage, that our Experimental Philosopher, as such, hath towards being a Christian, is, that his course of Studies conduceth much, to settle in his Mind a firm Belief of the Existence, and divers of the chief Attributes, of God: Which Belief, / is, in the order of things, the first Principle of that Natural Religion, which it self is pre-required to Reveal'd Religion in general, and consequently to That in particular, which is embrac'd by Christians.

That the consideration of the Vastness, Beauty, and Regular Motions, of the heavenly Bodies; the excellent Structure of Animals and Plants; besides a multitude of other *Phænomena* of Nature, and the Subserviency of most of these to Man, may justly induce him, as a Rational Creature, to Conclude, That this vast, beautiful, orderly, and (in a word) many ways admirable System of things, that we call the *World*, was fram'd by an Author supremely Powerful, Wise, and Good, can scarce be deny'd by an intelligent and unprejudic'd Considerer. And this is strongly confirm'd by Experience, which witnesseth, that in almost all Ages and Countries, the generality of Philosophers, and contemplative Men, were persuaded of the Existence / of a Deity, by the consideration of the *Phænomena* of the Universe; whose Fabrick and Conduct they rationally concluded could not be deservedly ascrib'd, either to blind Chance, or to any other Cause than a *Divine Being*.

But, tho' it be true, that God *hath not left himself without witness*,<sup>a</sup> even to perfunctory Considerers; by stamping upon divers of the more Obvious Parts of his Workmanship, such conspicuous Impressions of his Attributes, that a moderate degree of Understanding, and Attention, may suffice to make Men acknowledge his Being: Yet, I scruple not to think, That Assent very much inferior to the Belief, that the same Objects are fitted to produce in an Heedful and Intelligent Contemplator of them: For the Works of God are so worthy of their Author, that, besides the Impresses of his Wisdom, and Goodness, that are left as it were upon their Surfaces; there are a great many more curious and excellent tokens, and Effects, of / Divine Artifice, in the hidden and innermost Recesses of them; and these are not to be discovered by the perfunctory looks of Oscitant or Unskilful Beholders; but Require, as well, as Deserve, the most attentive and prying Inspection of inquisitive and well-instructed Considerers. And sometimes in one Creature, there may be I know not how many admirable things, that escape a vulgar Eye, and yet may be clearly discern'd by That of a true Naturalist; who brings with him, besides a more than common Curiosity and Attention, a competent knowledge of Anatomy, Opticks, Cosmography, Mechanics, and Chymistry. But treating elsewhere purposely of this Subject,<sup>b</sup> it may here suffice to say, that

<sup>a</sup> Acts 14, 17.

<sup>b</sup> Probably a reference to Boyle's discussion of the design argument in *Usefulness*, I (1663), above, vol. 3.

God has couch'd so many things in his Visible Works, that the clearer Light a Man has, the more he may discover of their Unobvious Exquiteness, and the more clearly and distinctly he may discern those Qualities that lye more Obvious. And the more wonderful things he / discovers in the Works of Nature, the more auxiliary Proofs he meets with to establish and enforce the Argument, drawn from the Universe and its Parts, to evince *That there is a God: Which is a Proposition of that vast weight and importance, that it ought to endear every thing to us, that is able to Confirm it, and Afford us new Motives to acknowledge and adore the Divine Author of things.*

In reference to this matter, we may confidently say, that the Experimental Philosophy has a great advantage of the Scholastic. For in the Peripatetic Schools, where things are wont to be ascrib'd to certain Substantial Forms, and Real Qualities; (the former of which are acknowledg'd to be very abstruse and mysterious things, and the later are many of them confessedly occult;) the accounts of Natures Works may be easily given in a few words, that are general enough to be applicable to almost all Occasions. But these unstructive Terms do neither oblige, nor conduct, a man / to deeper searches into the Structure of Things, nor the manner of being Produc'd, and of Operating upon one another. And consequently, are very insufficient to disclose the exquisite Wisdom, which the Omniscent Maker has express'd in the peculiar Fabricks of Bodies, and the skillfully regulated Motions of them, or of their constituent Parts: From the discernment of which things, nevertheless, it is, that there is, by way of result, produc'd in the mind of an Intelligent Contemplator, a strong Conviction of the Being of a Divine Opificer, and a just acknowledgement of his admirable Wisdom. To be told, that an Eye is the Organ of Sight, and that this is perform'd by that Faculty of the Mind, which from its Function is call'd *Visive*; will give a Man but a sorry account of the Instruments and Manner of Vision it self, or of the Knowledge of that Opificer, who, as the Scripture speaks, *form'd the Eye*. \* And he that / can take up with this easy Theory of Vision, will not think it necessary to take the pains to dissect the Eyes of Animals, nor study the Books of Mathematicians, to understand Vision; and accordingly, will have but mean thoughts of the Contrivance of the Organ, and the Skill of the Artificer, in comparison of the Ideas that will be suggest'd of both of them to him that, being profoundly skill'd in Anatomy and Opticks, by Their help takes asunder the several Coats, Humours, and Muscles, of which, that exquisite Dioptrical Instrument consists: And having separately consider'd the Figure, Size, Consistence, Texture, Diaphaneity, or Opacity, Situation, and Connexions, of each of them, and their Coaptation in the whole Eye, shall discover, by the help of the Laws of Opticks, how admirably this little Organ is fitted, to Receive the incident Beams of Light, and Dispose them in the best manner possible, for completing the lively Representation of the almost infinitely various Objects of Sight. /

\* Psal. 94. 9.

'Tis easie for Men to say in general Terms, that *the World is wisely form'd*; but I doubt it often happens, that Men confess, that the Creatures are wisely made, rather because upon other grounds they believe God to be a wise Agent, than because so slight an account as the School Philosophy gives of particular Creatures, convinces them of any Divine Wisdom in the Creator. And *tho'* I am willing to grant, that some Impressions of God's Wisdom are so conspicuous, that (as I lately intimated) even a Superficial Philosopher may thence infer, that the Author of such Works must be a wise Agent; yet, *how wise an Agent he has in those Works express'd himself to be, none but an Experimental Philosopher can well discern.* And tis not by a slight Survey, but by a diligent and skilful Scrutiny, of the Works of God, that a Man must be, by a Rational and Affective Conviction, engag'd to acknowledge with the Prophet, that the Author of Nature is *Wonderful / in Counsel, and Excellent in Working*; Isa. xxviii. 29.

II. After the Existence of the Deity, the next grand Principle of Natural Religion, is, the *Immortality of the Rational Soul*; whose genuine consequence is, the Belief and Expectation of a Future and Everlasting State. For this important Truth, divers Arguments may be alledge'd, that may persuade a sober and well-disposed Man to embrace it: But to continue a learned Adversary, the strongest Argument, that the Light of Nature supplies us with, seems to be that which is afforded by the Real Philosophy: For this teacheth us to form true and distinct Notions of the Body, and the Mind; and thereby manifests so great a difference in their Essential Attributes, that the same thing cannot be both. This it makes out more distinctly, by enumerating several Faculties and Functions of the Rational Soul; such as, *To Understand*, and that so, as to form Conceptions of Abstracted things, of Universals, of Immaterial Spirits, and even of that infinitely Perfect One, God himself: And also, *to Conceive*, and Demonstrate, that there are Incommensurable Lines, and Surd Numbers; *to make Ratiocinations*, and both cogent and concatenated Inferences, about these things; *to express their intellectual Notions, pro re natâ*; by words or Instituted Signs; *to other Men: to exercise Free-will about many things; and to make Reflections on its own Acts*, both of Intellect and Will. For these and the like Prerogatives, that are peculiar to the Human Mind, and superior to any thing that belongs to the Outward Senses, or to the Imagination it self, manifest, that the Rational Soul is a Being of an higher Order, than Corporal; and consequently, that the Seat of these Spiritual Faculties, and the Source of these Operations, is a Substance, that being in its own nature distinct from the Body, is not naturally subject to Dye or Perish with it. /

And in reference to this Truth, our *Virtuoso* hath an advantage of a mere School-Philosopher: For being acquainted with the true and real Causes of Putrefaction, and other Physical kinds of Corruption; and thereby discerning, that the things that destroy Bodies, are the Avolation, or other Reces, of some necessary Parts, and such a depraving Transposition of the component

\* By its nature.

Portions of Matter, as is altogether incongruous to the Structure and Mechanical Modification, that is essential to a Body of that Species, or kind, it belongs to: Our Naturalist, I say, knowing this, plainly perceives, that these causes of destruction can have no place in the Rational Soul; which being an Immaterial Spirit, and consequently a Substance not really divisible, can have no Parts expell'd or transpos'd, and so being exempted from the Physical Causes of Corruption that destroy Bodies, she ought to last always. And being a Rational Creature, endow'd with internal Principles of Acting, as appears / in Free-will, she ought to live for ever, unless it please God to annihilate her; which we have no reason to suppose he will do. But on the other side, the Modern Peripateticks (for I question whether *Aristotle* himself were of the same opinion) maintain Substantial Forms, by some of them, say'd *Semi-substantia*\* to which in Apes, Elephants, and others, that pass for ingenious Animals, they ascribe some such Faculties and Functions, as seem to differ but gradually from those of the Rational Soul; and (how innocent soever I grant their Intentions to be) their Doctrine tends much to Enervate, if not quite to Disable, the chief Physical way of Probation, whence the Immortality of Man's Mind is justly inferr'd. For since according to the Peripateticks, substantial Forms, are, as they speak, educ'd out of the Power or Potentiality of the Matter; and do so depend upon it, not only as to Action, but as to Being; that they cannot at all subsist without it: But when the / particular Body (as an Herb, a Stone, or a Bird,) is destroy'd, they perish with it; or, (as some of them scarce intelligibly express the same thing) *fall back into the bosom of the matter*: I think they give great advantage to Atheists, and Cavillers, to impugn the Minds Immortality.

For if to an Ape, or other Brute Animal, there belongs a Being more noble than Matter, that can actuate and inform it, and make it self the Architect of its own Mansion, tho' so admirable as that of an Ape, or an Elephant; if this Being can in the Body it hath fram'd, perform all the Functions of a vegetable Soul; and besides those, See, Hear, Taste, Smell, Imagin, Infer, Remember, Love, Hate, Fear, Hope, Expect, &c. and yet be a mortal thing, and perish with the Body: 'Twill not be difficult for those Enemies of Religion, who are willing to think the Soul Mortal, because their brutish Lives make them wish she were, to fancy, that human Minds are but a somewhat more / Noble, but not for that less Mortal, kind of Substantial Forms; as amongst Sensitive Souls themselves, which they acknowledge to be equally Mortal, there is a great disparity in Degrees, that of a Monkey, for instance, being very far superior to that of an Oyster.

III. The third main Principle of Unreveal'd Religion, and consequently of Reveal'd, (which presupposes Natural Religion, as it's foundation) is a Belief of the Divine Providence. And in this grand Article, as well as in the two foregoing, a Man may be much Confirm'd by Experimental Philosophy; both as it affords him positive Inducements to acknowledge the Article, and

as it shews the great Improbability of the two main Grounds, on one or other of which, (for they are not well consistent) is founded the denial of God's Providence.

A *Virtuoso*, that by manifold and curious Experiments searches deep into the Nature of things, has great and peculiar Advantages, to discover / and observe the excellent Fabrick of the World, as 'tis an immense Aggregate of the several Creatures that compose it; and to take notice in its particular Parts, especially those that are Animated, of such exquisite Contrivances, and such admirable Coordinations, and Subordinations, in reference to each other, as lie hid from those Beholders that are not both Attentive and Skilful. When our *Virtuoso* contemplates the Vastness, scarce conceivable Swiftness, and yet constant Regularity, of the various Motions, of the Sun, Moon, and other Celestial Lights: When he considers *how* the Magnetism of the Earth makes its Poles constantly look the same way, notwithstanding the Motions of its fluid *Vortex*; *how* by daily turning about its own Center in four and twenty hours, it receives as much Light, and benefit from the Sun, and all the glorious Constellations of the Firmament, as if they, with all the vast heavenly Region they belong to, mov'd about it in the same time; *how* / by its Situation among them, it enjoys the regular Vicissitudes of Day and Night, Summer and Winter, &c. *how* the several Parts of the Sublunary World are mutually subservient to one another, and most of them (one way or other) Serviceable to Man; *how* excellently the Bodies of Animals are Contriv'd, *what* various and congruous provision is made for differing Animals, that they may subsist as long as they should, according to the Institution of Nature, by furnishing them, according to their respective Natures, *some* with Strength to take their Food by force, *others* with Industry to procure it by Subtily; *some* with Arms, as Horns, Hoofs, Scales, Tusks, Poysons, Stings, &c. to Defend themselves, and Offend their Enemies; *some* with Wings or swiftness to fly from Dangers; *some* with Foresight to prevent them; *some* with Craft, and perhaps strange Fetches of it, to Elude them; *how* being distinguish'd into two Sexes, each of these is furnish'd with apposite Organs, for the / propagation of the Species, and with skill and kindness to nourish and train up their young ones, till they can shift for themselves; *how* admirable, and indeed astonishing, a process is gone through in the formation of the *Fetus*, especially of a Human one; *how* divers Animals are endowed with strange Instincts, whose Effects sometimes seem much to surpass those of Reason it self; tho' they are superadd'd to the Mechanical Structure of the Animal, and argue a respect to things very remote from it, either in time, place, or both, and perhaps also to the Grand Fabrick or System of the World, and the general Oeconomy of Nature. When, as I was saying, a Philosopher duly reflects on these things, and many others of the like import, he will think it highly rational to infer from them these three Conclusions.

First, That a Machine so Immense, so Beautiful, so well contriv'd, and, in a word, so Admirable, as the World, cannot have been the effect of mere / Chance, or the Tumultuous Jostlings and Fortuitous Concourse of Atoms,

\* Literally 'semi-substances'; but it is not clear to whom Boyle here refers.

but must have been produc'd by a Cause, exceedingly Powerful, Wise, and Beneficent.

Secondly, That this most Potent Author, and (if I may so speak) Officer of the World, hath not Abandon'd a Masterpiece so worthy of him, but does still Maintain and Preserve it; so regulating the stupendously swift Motions of the great Globes, and other vast Masses of the Mundane Matter, that they do not, by any notable Irregularity, disorder the grand System of the Universe, and reduce it to a kind of Chaos, or confus'd State of shuffl'd and depriv'd things.

Thirdly, That as it is not above the Ability of the Divine Author of things, though a single Being, to Preserve and Govern all his Visible Works, how great and numerous soever; so he thinks it not Below his Dignity and Majesty, to extend his Care and Beneficence to particular Bodies, and even to the meanest Creatures; / providing not only for the Nourishment, but for the Propagation, of Spiders and Ants themselves. And indeed, since the Truth of this Assertion, *That God governs the World he has made*, would appear (if it did not by other Proofs) by the Constancy, and Regularity, and astonishingly rapid Motions of the vast Coelestial Bodies, and by the long Trains of as Admirable, as Necessary, Artifices, that are employ'd to the Propagation of various sorts of Animals, (whether Viviparous, or Oviparous;) I see not why it should be deny'd, that God's Providence may reach to his particular Works here below, especially to the noblest of them, *Man*; since most of those Learned Men that deny this, as derogatory to God's Majesty and Happiness, acknowledge, that at the first *Creation*, or (if they dislike that term) *Formation* of things; the great Author of them must not only have extended his Care, to the grand System of the Universe in general, but allow'd it to descend so low, as to / contrive all the Minute, and various Parts, (and even the most homely ones) not only of Greater and (reputedly) more perfect Animals, as Elephants, Whales, and Men; but such Small and Abject Ones, as Flies, Ants, Fleas, &c. Which being manifestly propagated by Eggs laid by the Female, cannot reasonably be thought the off-spring of Putrefaction. Whence I gather, as from matter of fact, that to be concern'd for the welfare, even of particular Animals; as it is agreeable to God's All-pervading Wisdom, and exuberant Beneficence; so (whatever Men's Vanity may make them surmise) it is not truly derogatory to his adorable Greatness and Majesty.

And on this occasion, I shall add, that *since* Man is the noblest of God's visible Works; *since* very many of them seem made for his Use; *since*, even as an Animal, he is (as the Psalmist truly speaks) *wonderfully made*, and *curiously*, or *artificially wrought*; and *since* God has both given him a / Rational Mind, and endow'd it with an Intellect, whereby he can Contemplate the Works of Nature, and by them acquire a Conviction of the Existence, and divers Attributes, of their supremely perfect Author; *since* God hath planted Notions and Principles in the Mind of Man, fit to make him sensible, that he

ought to Adore God, as the most Perfect of Beings, the Supreme Lord and Governor of the World, the Author of his own Nature, and all his Enjoyments: *Since* all this, I say, is so, Natural Reason dictates to him, that he ought to express the Sentiments he has for this Divine Being, by Veneration of his Excellencies; by Gratitude for his Benefits; by Humiliation, in view of his Greatness, and Majesty; by an Awe of his Justice; by Reliance on his Power, and Goodness, when he duly endeavours to serve and please him; and, in short, by those several Acts of Natural Religion, that Reason shews to be Suitable, and therefore Due to those several Divine Attributes / of his, which it has led us to the knowledge of.

And here I shall take leave to add, that, from the *Cartesian* Principles, (which you know are embrac'd, by a great part of the Modern *Virtuosos*) I think, I may draw a double Argument for Divine Providence.

For *first*, according to the *Cartesians*, all Local Motion (which is, under God, the grand Principle of all Actions among things Corporeal) is Adventitious to Matter; and was at first produc'd in it, and is still every moment Contin'd and Preserv'd immediately by God: Whence may be infer'd, that he Concurs to the Actions of each particular Agent, (as they are Physical;) and consequently, that his Providence reaches to all and every one of them.

And *secondly*, the same *Cartesians* believe the Rational Soul to be an Immaterial Substance, really distinct and separable from the Body;<sup>b</sup> Whence I infer, that the Divine Providence extends to every particular Man; / since when ever an *Embryo*, or little Human Body form'd in the Womb, is, by being duly Organiz'd, fitted to receive a Rational Mind, God is pleas'd to Create one, and Unite it with that Body. In which Transaction, there seems to me a necessity of a direct and particular intervention of the Divine Power; since I understand not, by what Physical Charm or Spell an Immaterial Substance can be allur'd into this or that Particular *Embryo*, of many that are at the same time fitted to receive a Human Soul; nor by what merely Mechanical Ty, or Band, an Immaterial Substance can be so durably (perhaps for 80 or 100 Years) joy'n'd and united with a Corporeal, in which it finds no Parts, that it has Organs to take hold of, and to which it can furnish no Parts to be fasten'd upon by them. Nor do I better conceive, how a mere Body can produce Pain, Pleasure, &c. by its own mere Action, or rather Endeavour to act, on an Immaterial Spirit: Nor will the force of / all that has been said for God's Special Providence, be eluded, by saying, with some Deists, that after the first formation of the Universe, all things are brought to pass by the Settled Laws of Nature. For tho' this be confidently, and not without colour, pretended; yet, I confess, it does not satisfie me. For, beside the insuperable difficulty there is, to give an Account of the first formation of things, which many (especially *Aristotelian*) Deists will not ascribe to God; and besides that

<sup>a</sup> Descartes, *Principia philosophiae* (1644), ii. 23-5.

<sup>b</sup> As expressed in, for example, Descartes, *Discours de la méthode* (1637), iv. *Principia philosophiae* (1644), I. 8.

\* Psalm 138. 14, 15. [sic: in fact, the reference should be to Psalm 139.]



the Laws of Motion, without which the present State and Course of things could not be maintain'd, did not necessarily spring from the Nature of Matter, but depended upon the Will of the Divine Author of things: Besides this, I say, I look upon a Law, as a Moral, not a Physical, Cause, as being indeed but a Notional thing, according to which, an intelligent and free Agent is bound to regulate its Actions. But inanimate Bodies are utterly incapable of Understanding what a Law is, or what / it injoins, or when they act conformably or unconformably to it; and therefore the Actions of Inanimate Bodies, which cannot incite or moderate their own Actions, are produc'd by real Power, not by Laws; tho' the Agents, if Intelligent, may Regulate the Exertions of their Power by settled Rules.

*IV* I have taken notice of two other Accounts, upon which the Experimental Knowledge of God's Works, may, in a well-dispos'd Mind, conduce to establish the Belief of his Providence; and therefore, tho' I shall not dwell long upon them, I must not altogether pretermitt them.

First then, when our *Virtuoso* sees how many and how various, and oftentimes how strange, and how admirable Structures, Instincts, and other Artifices, the wise Opificer hath furnish'd, even Brutes and Plants withal, to purchase and assimilate their Food, to defend or otherwise secure themselves from hostile things, and (to be short) to maintain their Lives, and / propagate their *Species*; it will very much conduce to persuade him, that so *Wise* an Agent, who has at Command so many differing and excellent Methods and Tools, to accomplish what he designs; and does oftentimes actually employ them, for the preservation and welfare of Beasts, and even of Plants, can never want Means to compass his most wise and just Ends, in relation to Mankind; being able, by ways that we should never dream of, to execute his Menaces, and fulfil his Promises. But of these rare Structures, Instincts, and other Methods, and, if I may so style some of them with Reverence, Stratagems and Fetches of Divine Skill, that God is pleas'd to employ in the conduct of the visible World, especially Animals, I have already elsewhere purposely discours'd; and therefore shall now proceed, and observe, in the second place, That, when we duly consider the very differing ends, to which many of God's particular Works, especially those that are Animated, / seem design'd, in reference both to their own Welfare, and the Utility of Man; and with how much *Wisdom*, and, I had almost said, *Care*, the glorious Creator has been pleas'd to supply them with means admirably fit for the attainment of these respective ends; we cannot but think it highly probable, That so *Wise*, and so Benign a Being, has not left his noblest visible Creature, *Man*, unfurnish'd with means to procure his own Welfare, and obtain his true End, if he be not culpably wanting to himself. And *since* Man is endowed with Reason, which may convince him, (of what neither a Plant, nor Brute Animal is capable of knowing, namely) that God is both his Maker, and his

continual Benefactor; *since* his Reason likewise teacheth him, That upon both those accounts, besides others, God may justly expect and require Worship and Obedience from him; *since* also the same Rational Faculty may persuade him, That it may well become the Majesty and Wisdom of / God, as the Sovereign Rector of the World, to give a Law to Man, who is a Rational Creature, capable of Understanding and Obeying it, and thereby Glorifying the Author of it; *since*, (farthermore) finding in his own Mind (if it be not depriv'd by Vice, or Lusts) a Principle that dictates to him, That he owes a Veneration, and other suitable Sentiments, to the Divinely Excellent Author of his Being, and his continual and munificent Benefactor; *since*, on these scores, his Conscience will convince him of his Obligation to all the Essential Duties of natural Religion; and *since*, lastly, his Reason may convince him, That his Soul is Immortal, and is therefore Capable, as well as Desirous, to be everlastingly Happy; after it has left the Body; he must in reason be strongly inclin'd to wish for a Supernatural Discovery of what God would have him Believe and Do. And therefore if, being thus prepared, he shall be very credibly inform'd, That God hath actually been pleas'd to / Discover, by Supernatural Revelation, (what, by Reason, without it, he can either not at all, or but rovingly, guess at) what kind of Worship and Obedience will be most acceptable to him; and to encourage Man to both these, by explicit Promises of that Felicity, that Man, without them, can but faintly hope for, he would be ready then thankfully to acknowledge, That this way of proceeding beseems the transcendent Goodness of God, without derogating from his Majesty and Wisdom. And by these and the like Reflections, whereof some were formerly intimated, a Philosopher, that takes notice of the wonderful Providence, that God descends to exercise for the welfare of Inferiour and Irrational Creatures, will have an advantage above Men not vers'd in the words and course of Nature, to believe, upon the Historical and other Proofs that Christianity offers, That God has actually vouchsafed to Man, his noblest, and only rational visible / Creature, an explicit and positive Law, enforc'd by Threatning severe Penalties to the Stubborn Transgressors; and Promising, to the sincere Obedyers, Rewards suitable to his own Greatness and Goodness. And thus the Consideration of God's Providence, in the conduct of things corporal, may prove, to a well dispos'd Contemplator, a Bridge, whereon he may pass from Natural to Reveald Religion.

I have been the more particular and express, in what I have said about Divine Providence, because I did not find other Writers had made it needless for me to do so. And I dwell the longer upon the Existence of the Deity, and the Immortality of the Soul, that I might let you see, That I did not speak Groundlessly or Rashly, but that I had consider'd what I said, when I asserted, That the Experimental Philosophy might afford a well dispos'd *Mind* considerable Helps to Natural Religion. I find my self therefore now at Liberty to / proceed to farther Considerations, and represent to you, That

*V* Another thing, that disposes an Experimentarian Philosopher to embrace Religion, is, That his *Genius* and Course of Studies accustoms him

\* Probably a reference to Boyle's discussion of the design argument in *Final Causes* (1688), above, pp. 130ff.

to value and delight in abstracted Truths: by which Term, I here mean such Truths, as do not at all, or do but very little, gratifie Mens Ambition, Sensuality, or other Inferiour Passions and Appetites. For, whereas the Generality of those that are averse from Religion are inclin'd to be so, upon This account, (among Others) That they have a Contempt or Undervaluation of all Truths, that do not gratifie their Passions or Interests; He that is addicted to Knowledge Experimental, is accusom'd both to Peruse, Esteem, and Relish many Truths, that do not delight his Senses, or gratifie his Passions, or his Interests, but only entertain his Understanding with that Manly and Spiritual Satisfaction, that is naturally afforded / it by the attainment of Clear and Noble Truths, which are its genuine Objects and Delights. And tho' I grant, that the Discoveries made by the help of Physical or Mechanical Experiments, are not, for the most part, of Kin to Religion; yet, besides that some of them do manifestly conduce to Establish or Illustrate Natural Theology; which is that, (as, tho' not'd already, deserves to be Inculcated) which Reveald Religion, and consequently that of Christians, must be Founded on, or must Suppose: Besides this, I say, we may argue *à fortiori*, That he, that is accusom'd to prize Truths of an Inferiour kind, because they are Truths, will be much more dispos'd to value Divine Truths, which are of a much higher and nobler Order, and of an Inestimable and Eternal Advantage.

VY. There is another thing, that is too pertinent to the main Scope of this Discourse to be here pretermitted: and it is, That both the Temper of Mind, that makes a Man most proper / to be a *Virtuoso*, and the Way of Philosophising, he chiefly employ's, conduce much to give him a sufficient, and yet well ground'd and duly limited, Docility; which is a great Disposition to the Entertainment of Reveald Religion. In the Vulgar and Superficial Philosophy, wherein a Man is allow'd to think, that he has done his part well enough, when he has ascrib'd things to a Substantial Form, or to Nature, or to some Real Quality, whether Manifest or Occult, without proving that there are such Causes, or intelligibly declaring; How they produce the *Phænomena*, or Effects refer'd to them: in this Philosophy, I say, 'tis easie for a Man to have a great Opinion of his own Knowledge, and be puff'd up by it. But a *Virtuoso*, that cannot satisfie Himself, nor dares pretend to satisfie Others, till he can, by *Hypotheses* that may be understood and prov'd, declare intelligibly the *manner* of the Operation of the Causes he assigns, will often find it so Difficult a Task / to do so, that he will easily discern, that he needs further Information, and therefore ought to seek for it where 'tis the most likely to be had; and not only to Admit, but Welcome it, if he finds it. Besides, the Ligtious Philosophy of the Schools seldom furnishes its Disciples with better than Dialectical or Probable Arguments, which are not proper, either fully to satisfie the Person that employ's them, or leave his Adversary without any Answer, Plausible at least, if not full as Probable as the Objection; upon which account, men that have more Wit than sincere Love of Truth, will be able to dispute speciously enough, as long as they have a mind to do so. And as such slippery Arguments are not able to Convince

even Him that employs them, if he be a Man of Judgement; so, if he deals with a witty Adversary, they will leave him able to Elude any Arguments of the like nature, with which he shall be press'd. And in effect we see, That in the Aristotelian Philosophy there / are divers Questions, such as, *whether the Elements retain their distinct Nature in a mixt Body? whether the Celestial Orbs are mov'd by Intelligence?* to omit many others, which are as it were *stated Questions*; and as they have been disputed from age to age, are like to continue Questions for many more, if that Philosophy shall last so long. But a *Virtuoso*, that is wont in his Reasonings to attend to the Principles of Mathematicks, and sound Philosophy; and to the clear Testimonies of Sense, or well verifi'd Experiments, acquires a Habit of discerning the Cogency of an Argument, or way of Probation; and easily discerns, That Dialectical Subtilties, and School Tricks, cannot shift off its force, but finds more Satisfaction in Embracing a Demonstrated Truth, than in the vain Glory of Disputing suttily against it.

VII. Another thing that may dispose a studious Searcher of Truth, (not by Speculations only; but) by Experiments, for Theology is, that his / Inquisitiveness, and Course of Studies, makes him both Willing and Fit to search out and discover Deep and *Unobvious Truths*. I have with trouble observ'd, That the greater part of the Libertines we have among us, being Men of *Platè's* humor, (who, when he had scornfully ask'd *what is truth?* would not stay for an Answer) do, with great Fastidiousness, decline the Study of all Truths that require a Serious and Settled application of Mind. These Men are, for the most part, a sort of Superficial and Desultory Wits, that go no further than the Out side of things, without penetrating into the Recesses of them; and being easily tir'd with contemplating *one*, pass quickly to *another*; the Consideration whereof they, with the same Lightness, forsake. And upon this account, among others, it is, that this sort of Men, tho' often much applauded by others, because the Most are but Superficial, as well as They, do almost as seldom make good Philosophers, as good Christians. For / tho' all the good Arguments, that may be brought to evince the Truth of Natural (and Reveald) Religion, be not Abstruse; yet *some of the chief ones*, especially those that prove the Existence and Special Providence of God, and the Souls Immortality, are, if not of a Metaphysical, yet at least of a Philosophical, nature; and will scarce be clearly understood, and duely relish'd, but by a Person capable of, and somewhat accusom'd to, Attentive and Lasting Speculations, (as in another Paper has been more fully declar'd.)\* But now, a Man addict'd to prosecute Discoveries of Truths, not only by Serious Mediation, but by intricate and laborious Experiments, will not easily be deterr'd from effectually prosecuting his End, by the Troublesomeness or Difficulties that attend the clearing of those Notions, and Matters of Fact, whereon Solid

\* About Some Causes of Atheism. [This work is referred to in various of Boyle's inventories; see below, vol. 14, pp. 339ff. Various fragments of it survive among the Boyle Papers, and an edition by J. J. Macintosh is forthcoming.]

\* John 18. 38.

Arguments for Natural, or Reveald, Religion, are founded; how remote soever those Truths / may be from vulgar Apprehensions. In short, whereas a Superficial Wit, such as is frequently found in Libertins, and often helps to make them such, may be compar'd to an *ordinary Swimmer*, who can reach but such things as float upon the Water; an Experimental Philosopher may be compar'd to a *skillful Diver*, that cannot only fetch those things that lye upon the Surface of the Sea, but make his way to the very Bottom of it; and thence fetch up Pearls, Corals, and other precious things, that in those Depths lye conceal'd from other men's Sight and Reach.

We have already seen, that Experimental Philosophy is, in its own nature, friendly to Religion in general.

Wherefore I shall now add, That the Reverence I pay Experience, especially as it gives both Grounds and Hints to rational Notions and Conclusions, does not a little conduce to the Assent I give to the Truth of the *Christian Religion in particular* /

This excellent Religion is recommended to well disposed Minds, by a greater Number of Prerogatives, and other Arguments, than it were proper for me to insist on in this Discourse: And yet my Design engages me to consider a few of them somewhat particularly.

I. And first, I shall observe, That, whereas the three grand Arguments, that conjointly evince the Truth of the Christian Religion in general, are (at least in my opinion) the Excellency of the Doctrine, which makes it worthy to have proceeded from God; the Testimony of the Divine Miracles, that were wrought to recommend it; the great Effects, produc'd in the World by it. Two of these three Arguments (for the first is of a more Speculative nature) are bottom'd upon *matters of fact*, and consequently are likely to be the most prevalent upon those that have a great Veneration for Experience, and are *duty dispos'd to frame such pious Reflections, as it warrants and leads them / to make*. This last Clause I add, because, though I have formerly more than Intimated something of the like Import, yet 'tis so necessary to my Design that you should take special notice of it, that I must not here omit to advertise you, That, when, in this Discourse, I speak of an Experimental Philosopher, or Virtuoso; I do not mean, either, on this hand, a Libertine, tho' Ingenious; or a Sensualist, though Curious; or, on that hand, a mere Empirick, or some vulgar Chymist, that looks upon nothing as Experimental, wherein Chymistry, Mechanics, &c. are not employ'd; and who too often makes Experiments, without making Reflection on them, as having it more in his aim to Produce Effects, than to Discover Truths. But the Person I here mean, is such a one, as by attentively looking about him, gathers Experience, not from his own Tryals alone, but from divers other *matters of fact*, which he heedfully observes, though he had no share in the effecting them; and / on which he is dispos'd to make such Reflections, as may (unforc'dly) be apply'd to confirm and increase in him the Sentiments of *Natural Religion*, and facilitate his Submission and Adherence to the *Christian Religion*.

An Experimental Philosopher, thus dispos'd, will, with the Divine Assistance, (which he will be careful to Implore) find pregnant Motives to the

Belief of Christianity, in the two last of the three Arguments of its Truth, that I lately propos'd. That which is drawn from the Effects of this Religion in the World, as it is last nam'd, so I shall defer the Consideration of it, till I have treated of the other; namely the Testimony of Divine Miracles, whose Difficulty makes it requisite for us to consider it the more Attentively, and distinctly declare the Grounds, upon which Experience may be esteem'd a good Topick on the present occasion. For the clearing of this matter, I shall represent to you, That the word *Experience* may admit of divers Senses, / whereof one is far more comprehensive than another; and likewise of several Divisions and Distributions. For, besides its more restrained acceptation, it is sometimes set in contra-distinction to *Reason*, so as to comprehend, not only those *Phænomena* that Nature or Art exhibits to our Outward Senses, but those things that we perceive to pass Within our selves; and all those ways of Information, whereby we attain any Knowledge that we do not owe to abstracted Reason. So that, without stretching the Word to the utmost Extent of which 'tis capable, and to which it has been enlag'd; it may be look'd upon as so comprehensive a Term, that I think it may be of some importance to my present design, and perhaps to Theology it self, to propose to you a Distribution of that Term. I shall then take the freedom to enlarge the Signification of the Word beyond its commonest Limits, and divide it, for distinctions / sake, into *Immediate* and *Vitrious* Experience; or rather somewhat less Compendiously, but perhaps more Commodiously, into *Personal, Historical*, and *Supernatural*, (which may be also styl'd *Theological*) referring the First of the three Members of this distribution to *Immediate Experience*, and the two others, to *Vitrious*.\*

I call that *Personal Experience*, which a Man acquires immediately by himself, and accrews to him by his own Sensations, or the exercise of his Faculties, without the Intervention of any external Testimony. 'Tis by this Experience that we know, that the Sun is bright; Fire, hot; Snow, cold; and white; that upon the want of Aliments we feel Hunger; that we *hope* for future Goods; that we *love* what we judge good, and *hate* what we think evil; and discern that there is a great Difference between a Triangle and a Circle, and can distinguish them by it.

By *Historical Experience*, I mean that, which tho' it were personal in / some Other man, is but by his Relation or Testimony, whether immediately or mediately, conveyed to us. 'Tis by this that we know, that there were such

\* MS version of this paragraph has, in its entirety, 'To clear this matter which I think may be of some Importance to Theology, give me leave to propose to you a distribution of Experience that the new will not I hope be found useless. I shall then take the liberty to extend the signification of the word Experience beyond its common Limits, &c. divide it for distinction sake into Personal Historical & Theological' (BP 2, fol. 199).

<sup>1</sup> replacing 'possibly may be' deleted.

<sup>2</sup> followed by 'so' deleted.

<sup>3</sup> followed by 'then distinguish it' deleted.

Men as *Julius Caesar*, and *William the Conqueror*, and that *Joseph* knew that *Pharaoh* had a Dream, which the Egyptian wise Men could not expound.

By *Theological Experience*, I mean that, by which we know what, supposing there is some Divine Revelation, God is pleas'd to relate or declare concerning Himself, his Attributes, his Actions, his Will, or his Purposes; whether immediately, (or without the Intervention of Man) as he sometimes did to *Job* and *Moses*, and Constantly to Christ our Saviour: Or by the *Intervention* of Angels, Prophets, Apostles, or Inspir'd Persons,<sup>b</sup> as he did to the Israelites, and the Primitive Christian Church; and does still to us, by those written Testimonies we call the *Scriptures*.

By *Personal Experience*, we know that there are Stars in Heaven: by *Historical Experience*, we know that there was a new Star seen by *Tycho* and other Astronomers, in *Cassiopea*, in the Year 1572:<sup>c</sup> and by *Theological Experience* we know, that the Stars were made on the Fourth Day of the Creation.

By this you may see, That I do not in this Discourse take *Experience* in the strictest sense of all, but in a greater latitude, for the knowledge we have of any matter of Fact, which, without owing it to Ratiocination, either we acquire by the Immediate Testimony of our Own Senses and other Faculties, or accrewe to us by the Communicated Testimony of Others. And I make the less scruple to take this Liberty, because I observe, that, even in common Acceptation, the word *Experience* is not always meant of that which is *Immediate*, but is often taken in a latitude. As when we say, that Experience teaches us, who perhaps were never / out of *England*, that the Torrid Zone is Habitable, and Inhabited; and persuades learned men, that never had opportunity to make nice *Celestial Observations*, that Stars may be Generated and Perish, or at least begin to Appear, and then Disappear, in the *Celestial Region* of the World: And on this kind of Historical Experience, consisting of the Personal Observations of *Hippocrates*, *Galen*, and other Physicians, transmitted to us, a great part of the Practice of Physick is founded. And the most Rational Physicians reckon upon, as matters of fact, not only what other Physicians have left upon Record, but divers Present things, which themselves can know but by the Relation of their Patients; as, that a Man has a particular Antipathy to such a thing, which the Doctor perhaps judges fit for him to use; or that a Woman with Child longs for this or that determinate thing. And Physicians reduce these and the like matters of fact to *Experience*, as to one of the / two Columns of Physick distinguished from *Reason*.

Since then Learned Men, as well as common Use, confine not the application of the word *Experience* to that which is *Personal*, but employ it in a far greater latitude; I see not, why that, which I call *Theological Experience*, may not be admitted; since the Revelations that God makes concerning what he

<sup>a</sup> Genesis 41, 1-36.

<sup>b</sup> MS has whether immediately as he did to Job & Moses or by the Intervention of prophets... (BP 2, fol. 200).

<sup>c</sup> Tycho Brahe (1546-1601), the Danish astronomer, wrote of his observations of this supernova in *De nova stella* (1573).

has Done, or purposes to Do, are but Testimonies of things, most of them matters of Fact, and all of them such, as, so far forth as they are merely Revelations, cannot be known by Reasoning; but by Testimony: Whose being Divine, and relating to Theological Subjects, does not alter its Nature, tho' it give it a peculiar and supereminent Authority.

Having premis'd and clear'd the propos'd Distribution of *Experience*, it will now be seasonable to consider, how it may be apply'd to the Matters of Fact, that recommend the Credibility of the Christian Religion; and / on this occasion, I shall distinctly offer you my Thoughts, in the two following Propositions.

Prop. I. *We ought to believe divers things upon the information of Experience, (whether Immediate, or Vicarious) which, without that information, we should judge unfit to be believ'd; or antecedently to it, did actually judge contrary to Reason.*

This Proposition may be understood, either of Persons, or of Things, and will hold true, as to both.

And first, as to Persons; if your own Observation of what occurs among Mankind do not satisfy you, that we are oblig'd, after sufficient Tryal, frequently to alter the Opinions, which upon probable Reasons we had before entertain'd, of the Fidelity, or Prudence, or Justice, or Chastity, &c. of this or that Person, I shall refer you to the Records of History, or appeal to the Tribunals of Judges. For both in the one, and / at the other you will find but too many Instances and Proofs from matters of Fact, that Persons look'd on, even by Intelligent Men, as Honest, Virtuous, and perhaps Holy too, have prov'd guilty of Falseness to their Friends, Perfidiousness to their Princes, Disloyalty to their Husbands or Wives, Injustice to their Neighbours, Sacrilege, Perjury, or other Impieties to their God: And in the Courts of Justice, you will find a great part of the Time employ'd to Detect and Punish, not only Civil Transgressions, as Thefts, Cheats, Forgery, False-witness, Adultery, and the like hainous Crimes, perpetrated by those, that, before they were throughly sifed, pass'd for Honest; but you will find Sins against Nature, such as Sodomy, and other unnatural Lusts, the Murders of Parents by their Children, and Innocent Children by their Parents, nay, Self-murder too; tho' this be a Crime, which cannot be acted without a violation of what seems the most Universal and Radicated Law of / Nature, (and is acknowledged so by wicked Men) *Self-preservation*. But it will not be necessary more solicitously to prove, that we ought, upon the Testimony of Experience, to change the Opinions we thought we had rationally taken up of Persons; and therefore I shall now proceed to make good the Proposition, in the Sense I chiefly intended, which is, as it relates to Things.

If Experience did not both Inform and Certify us, Who would believe, that a light black Powder should be able, being duly manag'd, to throw down Stone-Walls, and blow up whole Castles and Rocks themselves, and do those other Stupendous things, that we see actually perform'd by *Gin powder*, made

use of in Ordnance, and in Mines? Who would think that two or three grains of *Opium*, should so stupify a large Human Body, as to force a Sleep, and oftentimes even without That, suspend the sharpest Torments, in the Cholick, Gout, and other the most painful / Diseases, and that in Patients of quite different Ages, Sexes, and Constitutions; in whom also the Diseases are produc'd by Differing, or even by Contrary Causes? Who would believe, that the Poyson adhering to the Tooth of a Mad Dog, tho' perhaps so little as to be scarce discernable by Sense, should be able, after the slight Hurt is quite heal'd, to continue in the warm, and still perspirable, Body of the bitten person, not only for some Days or Months, but sometimes for very many Years? And after, having lurk'd all that while, without giving any trouble to the Patient, should on a sudden pervert the whole Oeconomy of his Body, and put him into a Madness like that of the Dog that bit him, discovering it self by that, as Admirable as Fatal, Symptom of *Hydrophobia*?

But, besides a multitude of Instances that may be given of Truths, that, were it not for *Experience*, we should refuse to believe; because the small Strength of such Agents, seems altogether / disproportionate to the Effects ascrib'd to them: Many other Instances might be alleg'd, wherein we assent to *Experience*, even when its Informations seem contrary to Reason, and that which, perhaps, we did actually and without scruple take to be True.

Since Gravity is the Principle, that determines Falling Bodies to move towards the Center of the Earth; it seems very rational to believe, with the Generality of Philosophers, that therein follow *Aristotle*; That, in proportion as one Body is more heavy than another, so it shall fall to the ground faster than the other: Whence it has been, especially by some of the Peripatetick School, infer'd, that of two Homogeneous Bodies, whereof one does, for Example, weigh ten pounds, and the other but one pound; The former being let fall from the same height, and at the same time, with the latter, will reach the ground ten times sooner. /

But notwithstanding this plausible Ratiocination, *Experience* shews us, (and I have purposely try'd it) that (at least in moderate heights, such as those of our Towers, and other Elevated Buildings) Bodies of very unequal weight, let fall together, will reach the Ground at the same time; or so near it, that 'tis not easy to perceive any difference in the Velocity of their Descent.

'Tis generally taken for granted by Naturalists, as well as others, that Strong and Loud Noises, as they are heard much farther off than Fainter Sounds, so, if the Sonorous Bodies be equally distant from the Ear, the very Strong Sound will arrive much sooner at it, than the other; and yet by the Experiments of the Moderns about the Velocity of Sounds, (in making divers of which, I have endeavour'd to be accurate) it appears, that Weaker Sounds are (at least as to Sense) transmitted through the Air as swiftly as Stronger ones. And indeed, 'tis often observ'd, that when / Cannons and Muskets are

<sup>a</sup> Aristotle, *Physica*, 215a24-30.

<sup>b</sup> Boyle is probably here referring to Mersenne's investigation of the velocity of sound: see his *Nouvum observatorium*... *Tomus III* (Paris, 1647), pp. 126-7.

discharg'd together, the Noises of both arrive also together at the Ear; which would not be, if the Sound of a Cannon were any thing near as much Swifter, as 'tis Louder, than that of a Musket.

It seems irrational to conceive, that a Smaller and Weaker Loadstone, may draw away a piece of Steel from a Larger and Stronger; and yet Experience (which both others and I have made) evinces, that in some cases, this Paradox is a Truth.

It has generally, by Philosophers as well as other Men, been look'd upon as manifest, and consonant to Reason, that Cold condenses Water more or less, according as the degree of the Cold is; and (consequently) that Ice is Water reduc'd into a lesser Volume. But 'tis plain, by Experiments carefully made, (some of which I have elsewhere publish'd)<sup>a</sup> that by Glaciation, Water is rather Expanded; or at least, that Ice takes up more room, than the Water did before / it was Congeal'd. And of this sort of Instances, where we believe, upon the Authority of Experience, things that are contrary to what we should otherwise judge to be a Dictate or Conclusion of Reason; I could add many, if I thought it as needful in this place, as in some other Papers, \* where I have given them already.

And now it will be reasonable to put you in mind, that in one part of the Proposition, hitherto discours'd of, it appears, That I design'd to extend the force of the Arguments, grounded upon Experience, to that which is not Immediate, but Vicarious; that is, not personally *our own*, but *communicated* by others; provided it be competently Attested, and duly Convey'd to Us.

There will need but a little Reflection on what is judg'd reasonable, and freely prais'd, by Philosophers themselves, to justify this Proposition. For how many Conclusions have the / Modern Naturalists admitted, tho' not only Abstracted Reason never led Men to make them, but plausible Arguments, and the Notions and Axioms of the most generally receiv'd Philosophy, were repugnant to them. Thus, That in Heaven it self there should be Generations and Corruptions, was not only Unobserv'd before the time of *Aristotle*, (who thence argues the Incommunicability of Celestial Bodies)<sup>b</sup> but is Contradicted by his Arguments; and yet both many others, and I, have seen great Spots (perhaps bigger than *England*, or than *Europe* it self) Generated and Dissipated on or near the Surface of the Sun; and several of the Modern Philosophers and Astronomers, having never had the good fortune to see any of these, (which indeed of late years have but rarely appear'd) must take these *Phaenomena* upon the Credit of those that have observ'd them. And much more must they do so, who, in spite of the Vulgar Philosophy, which made

\* An Essay of Improbable Truths. [This work does not survive, although it is recorded in Boyle's 'The Order of My Several Treatises and ancillary documents: see below, vol. 14, pp. 331, 335.]

<sup>a</sup> See *Cold* (1665) above, vol. 4, pp. 30ff.

<sup>b</sup> Aristotle, *De generatione et corruptione*, 338a19-338b2; *Physica*, 260a20-266a9; *De plantis*, 1, 2, 87b30; etc. See also the passages in Pseudo-Philo and Cicero cited in *Excellency of Theology* (1674), above, vol. 8, p. 20.

all Comets Sublunary, / believe, there were Coelestial, and perhaps Firmamentary, Comets. For, that they were above the Concave of the Moon's Orb, we must believe upon the affirmation of those that observ'd them, which very few have done themselves. And the height of the famous Comet, or Disappearing Star, in *Cassiopea*, in the Year 1572. whereon so much stress is laid by our Philosophers and Mathematicians, is admitted and urg'd, chiefly upon the belief they have, not only of *Tycho's* Veracity, but his Skill in observing the Motions and *Phaenomena* of that Coelestial Light, and particularly its having no *Parallax*.<sup>a</sup>

In short, the great Architect of Experimental History, Sir *Francis Bacon*, when he divides it but into three parts, assigns the second of them to what he calls *Præter-Generations*;<sup>b</sup> such as Monsters, Prodiges, and other things; which being (as to Us) but Casualties, all those that happen'd in other Times and Places than we have liv'd in, (and those will be confess'd / to be incomparably more than any of us has personally observ'd) we must take upon the Credit of others. And yet These, (vicarious Experiments) by Suggesting new Instances of Nature's Power, and uncommon ways of Working; and by Overthrowing, or Limiting, received Rules and Traditions, afford us a considerable and instructive part of Natural History, without which, it would not be either so Sound, or so Compleat.

*Pop. II.* After what has been hitherto discours'd, it may be, I hope, both seasonable and warrantable to advance to, and assert, our Second Proposition; viz. That we ought to have a great and particular regard to those things that are recommended to our Belief, by what we have reduc'd to Real, tho' Supernatural, Experience.

For, 1. 'Tis manifest, that the most rational Men scruple not to believe, upon competent Testimony, many things, whose Truth did no way appear / to them by the consideration of the nature of the Things themselves; nay, tho' what is thus believ'd upon Testimony be so Strange, and, setting aside that Testimony, would seem so Irrational, that antecedently to that Testimony, the things at last admitted as Truths, were actually rejected as Errors, or judg'd altogether unfit to be Believ'd. And I must here desire you to consider, that the Points wherein Experience over-rules that, which, before it superven'd, was judg'd to be most agreeable to Reason, concern things merely Natural or Civil, whereof Human Reason is held to be a proper Judge: Whereas many of the Points recommended by Supernatural Experience, concern things of a Superior Order; many of which are not to be Adequately estimated by the same Rules with things merely Corporal or Civil; and some of which, as the Essence and manner of Existence, and some peculiar Attributes, of the Infinite God, involve or require such a knowledge of what / is Infinite, as much passes the reach of our limited Intellects.

<sup>a</sup> See above, p. 308

<sup>b</sup> Bacon, *De augmentis scientiarum* (1623), ii. 2.

But this is not all. For, 2. You may consider in the next place, that, whereas tis as Justly as Generally granted, that the better qualify'd a Witness is, in the capacity of a Witness, the Stronger Assent his Testimony deserves; we ought of all the things that can be recommended to us by Testimony, to receive those with the highest degree of Assent, that are taught us by God, by the intervention of those Persons, that appear to have been Commission'd by Him to declare his Mind to Men. For the two grand Requisites of a Witness, being the *knowledge* he has of the things he delivers, and his *fidelity* in truly delivering what he knows; all Human Testimony must on these accounts be inferior to Divine Testimony: Since this (later) is warranted both by the Veracity of God, (which is generally acknowledg'd by those that believe his Existence) and by his boundless Knowledge; which makes / it as impossible he should be Deceiv'd himself, as the other does, that he should Deceive us. And, because that, for the delivery of the Divine Testimony we are speaking of, it has oftentimes pleas'd God, who is a most Free, as well as a most Wise, Agent, to make use of Unpromising Persons as his Instruments; I shall not on this occasion altogether overlook this Circumstance, That an Experimental Philosopher so often encreases his Knowledge of Natural things, by what He learns from the Observations and Practises, even of Mean, and perhaps of Illiterate, Persons, (such as Shepherds, Plowmen, Smiths, Fowlers, &c.) because they are conversant with the Works of Nature; that He is not only Willing to admit, but often Curious to seek for Informations from them, and therefore is not like to find much repugnancy in receiving the Doctrines of Reveald Religion, such as Christianity, if the Teachers of it were honest Men, and had opportunity to know the Truth of the Things they / deliver, tho' they were Fishermen, Tentmakers, or some other Mean Profession.

And indeed, (to enlarge a little upon a Subject that, I fear, has scarce been consider'd) such a person as our *Virtuoso*, will, with both great Willingness, and no less Advantage, Exercise himself in perusing, with great Attention, and much Regard, the Writings of the Apostles, Evangelists, and Ancient Prophets; notwithstanding any Meanness of their First Condition, or of their Secular Employments. And in these Sacred Writings, He will not only readily suffer himself to be instructed in these Grand and Catholick Articles of Religion, which, because of their Necessity or very great Usefulness, are to be met with in many places, and in variety of Expressions, by honest and duly dispos'd Readers: But He will, in stead of Disdaining such Tutors, both Expect, and carefully Strive, to Improve his Knowledge of Divine Things in general, even by those / Hints, and Incidental Passages, that a careless or ordinary Reader would Overlook, or not expect any thing from. For, as the Facundity of the Scriptures is not wont to be enough discern'd, when the Sacred Writers transiently touch upon, or glance at, a great many Subjects, that they do not expressly handle, and that therefore are not vulgarly taken notice of; so the Docility we have ascrib'd to our *Virtuoso*, will make him repose a great deal of Trust in the Testimony of Inspir'd Persons, such as

Christ and his Apostles, about Things of all sorts, either usually taken notice of or not, that relate to Objects of a Supernatural Order, especially if among these, God himself, and his Purposes, be compriz'd, since divers of those things are *not knowable without Revelation*, and others are *best known by it*. And to be allow'd to ground a Belief about such things, on the Relations and other Testimonies of those that were in the Scripture-Phrase, *Eye Witnesses and Ministers* of / the things they speak of,\* will by our *Virtuoso* be justly reputed such an advantage, in order to the Knowledge of things Divine, as the consulting with Navigators and Travellers to *America*, is, to him that is curious to learn the State of that New-world. For an ordinary Sea-man or Traveller, that had the opportunity with *Columbus* to sail along the several Coasts of it, and pass up and down thorow the Country, was able at his return to Inform Men of an hundred things, that they should never have learn'd by *Aristotle's* Philosophy, or *Ptolemy's* Geography; and might not only Acquaint them with divers particulars, consonant to the Opinions which their formerly receiv'd *Physicks* and *Cosmography* did suggest, but also Rectify divers Erroneous Presumptious and Mistakes, which till then they thought very agreeable to the Dictates of those Sciences, and so to Reason. And, as one, that had a candid and knowing Friend intimate with *Columbus*, might better rely / on His Informations about many particulars of the Natural History of those Parts, than on those of an hundred School-Philosophers, that knew but what they learned from *Aristotle*, *Pliny*, *Ælian*, and the like ancient Naturalists; so, and much more, may we rely on the Accounts given us of Theological Things, by the Apostles, and constant Attendants of him that lay in the *Bosom of God his Father*,† and Commission'd them to declare to the World the *Whole Counsel of God*,‡ as far as 'twas necessary for Man to know.

We know, that Fuller-Tryals are allow'd, among Ingenious Men, to rectify the Informations of the more Imperfect Orns; and therefore I shall add, that, tho' the Innate Notions and Sentiments, that Nature gives us of the Attributes and Mind of God, be highly to be priz'd; yet the Informations that Theological Experience affords of those Absurd things, is far more Excellent and Compleat. / For methinks, those great *Depths of Gods* may be compar'd to the Depths of the Ocean. And we know, that in the Sea, there are some Abysses so deep, that the Seaman's Sounding-Lines have never been able to reach to the bottom of them; and where they are not Unfathomable, all we are wont to do by our Soundings, is, to fetch from the bottom some little Gravel, or Mud, or Shells, or some such thing, that sticks to the tallow'd end of the Plummet, and gives us but a very imperfect account of the Bottom, even of the Shallower Parts of the Sea: But if a Skilful Diver be employ'd, he

\* Luke 1. 2.

† John 1. 18.

‡ Act. XX. 27.

§ 1 Cor. II. 10.

\* Pliny, *Natural History*, and Claudius Aelianus, *On the Characteristics of Animals*: see above, p. 287.

will not only tell us, whether the Bottom be Muddy, Gravelly, or Sandy; but will be able to give us a kind of Topography of that Submarine Land, and acquaint us with many Surprising Particulars, that we should never otherwise have Discover'd, or perchance so much as Dream'd of. And peradventure it may be no *Hyperbole* to say, that the / Informations of a Plummet, which reaches not to Some Depths, and brings but a very slender account of Soils that lye in Any, are not more short of those of a Diver, than the Informations Philosophy gives us of some Divine things, are of those compleater Ones that may be had from the Holy Scriptures. And when I remember, how many Opinions about the Submarine Parts, that I, among many other Men, thought Probable, I found cause to Change, upon the Conversation I had with a famous Diver, that sometimes, by the help of an Engine, stay'd several hours at the bottom of the Sea:‡ I find the less Reluctancy, to suffer Opinions about Divine Matters, that before seem'd probable to me, to be Rectify'd by the fuller Discoveries made of those things by the Preachers of the Gospel.

You may find some things applicable to the Confirmation of what has been newly deliver'd, in an Essay, (which you may see when you please) / that considers the Bounds and Use of Experience in Natural Philosophy.‡ Wherefore remembering that, before this late Excursion, I was speaking of Miracles, I shall now resume the Subject, and proceed to tell you, that I have the more insist'd upon the Miracles that may be pleaded to recommend the Christian Religion, because I thought, that an Argument grounded on Them is little less than Absolutely Necessary, to Evince, that any Religion that Men believe to be Supernaturally Reveal'd, and consequently that the Christian, does really proceed from God.

For, tho' the Excellency of the Christian Doctrine, and other concurrent Motives, may justly persuade me, that 'tis *worthy and likely* to be given by God; yet that *de facto* this Doctrine comes from Him by way of Supernatural Revelation, I can scarce be sufficiently Ascertained, but by the Miracles wrought by Christ and his Disciples, to Evince, that the Doctrine they Preach'd, as Commission'd / by God to do so, was indeed His, being, as such, own'd by Him. But these Miracles having been wrought (when 'twas most fit and needful they should be wrought) in the first Ages of the Church; We, that live at so great a distance from them, can have no knowledge of them by our Own Senses, or Immediate Observation; but must Believe them upon the account of the formerly mention'd Historical or *Vitarius Experience*, which is afforded us by the duly transmitted Testimony of those, that were themselves (to speak once more in an Evangelist's phrase) *Eye-Witnesses and Ministers*\* of the things they relate. And since we scruple not to believe such

\* Luke 1. 2.

\* Boyle had cited observations based on conversations with this diver in various earlier works, including *Spring of the Air* (1660), above, vol. 1, pp. 292-4, and *Cosmical Qualities* (1670), above, vol. 9, pp. 347-8.

‡ Material relating to this unpublished treatise by Boyle survives in BP 9.

strange Prodiges, as Celestial Comets, Vanishing and Reappearing Stars, Islands founded by Subterranean Fires in the Sea, Darkenings of the Sun for many months together, Earthquakes reaching above a thousand miles in length, and the like amazing Anomalies of Nature, upon the credit of Human / Histories; I see not, why that Vicarious Experience should not more be trusted, which has divers peculiar and concurrent Circumstances to confirm it, and particularly the Death that most of the first Promulgators cheerfully Suffer'd to Attest the Truth of it, and the Success and Spreading of the Doctrine authoriz'd by those Miracles, and receiv'd chiefly upon their account. To which things, some perhaps would add, that 'tis less incredible, that the *Author of Nature* should, for most weighty purposes, make stupendous Alterations of the course of Nature; than that *Nature herself*, for no such end, should by such Prodiges, as are newly mention'd, as it were, throw her self out of her own Course.

Miracles being so necessary to the establishment of Reveald Religion in general, it may be look'd upon as a farther Disposition in our *Virtuoso* to receive the Christian Religion, that the Philosophy, he cultivates, does much conduce to enable him to judge / aright of those strange things, that are by many Propos'd as Miracles, and Believ'd to be so.

For *first*, the knowledge he has of the Various, and sometimes very Wonderful, Operations of some Natural things, especially when they are skilfully improv'd, and dexterously apply'd by Art, particularly Mathematics, Mechanics, and Chymistry, will qualify him to distinguish between things that are only *strange* and *surprising*, and those that are truly *miraculous*: So that he will not mistake the Effects of Natural Magick, for those of a Divine Power. And by this well-instructed Wariness, he will be able to discover the Subtil Cheats and Collusions of Impostors; by which, not only Multitudes of all Religions, especially Heathen, but even Learned Men of most Religions, for want of an insight into real Philosophy, have formerly been, or are at this day, deluded, and drawn into Idolatrous, Superstitious, or otherwise Erroneous, Tenents or Practices. / And on the *other side*, the knowledge our *Virtuoso* may have of what *cannot* be justly expected or pretended from the Mechanical Powers of Matter, will enable him to discern, that divers things are not producible by Them, without the intervention of an Intelligent Superior Power; on which score he will frankly acknowledge, and heartily believe, divers Effects to be truly Miraculous, that may be plausibly enough ascrib'd to other Causes in the Vulgar Philosophy; where Men are taught and wont to attribute Stupendous unaccountable Effects to Sympathy, Antipathy, *Fuga vacui*,<sup>2</sup> Substantial Forms, and especially to a certain Being presum'd to be almost Infinitely Potent and Wise, which they call *Nature*: For 'This is represented as a kind of Goddess, whose Power may be little less than boundless; as I remember *Galen* himself compares it to that of God, and saith, that He could not do such a thing, because Nature cannot; and Censures *Moses* for speaking as if he / were of another Mind. The whole Passage is so weighty,

that I thought fit to direct you to it in the Margent,<sup>3</sup> tho', to comply with my haste, I forbear to transcribe and descant upon so prolix a *One*, and add to it divers other Passages that I have met with in famous Authors; who, for want of knowing the true Extent of the Powers of Matter and Motion, left to themselves in the Ordinary Course of things, Ascribe to Natural Causes, as they call them, such Effects as are beyond their reach, unless they be Elevated by Agents of a Superior Order.

I know it may be objected, that the hitherto-mention'd Dispositions, that Experimental Knowledge may give a Man, to Admit the Histories of the Miracles recorded in the Gospel; and likewise to Expect, that God will be able to perform the Promises and Menaces that are in his name deliver'd there, may be countervail'd by this, That those, who are so much acquainted / with the Mysteries of Nature, and her various and strange ways of Working, as a *Virtuoso* may well be, may by that Knowledge be strongly tempted to think, that those surprising things that other Men call Miracles, are but Effects of Her Power; the Extent of which, is not easily discern'd by ordinary Men, nor safely defin'd by Philosophers themselves. But this Objection being plausible enough, to make me think it deserv'd to be seriously consider'd, I took an occasion that was once offer'd me, to examine the validity of it in a Paper by it self. And this being at your command, I shall refer you to it. And I hope, that in the mean time it may suffice to say, That to make it reasonable to judge this or that particular Performance, a Supernatural *One*, it is not at all necessary; that it surpass the whole Power of Nature, that is, of Physical Agents; provided, it surpass the power of that Cause, or that complex of Causes, from which, the Effect must in reason, / if it be purely Natural or Physical, be suppos'd to have proceeded. As for instance, That a Fisherman or two should speak other Languages than their own, does not at all exceed the power of Nature, if they employ'd a competent time in learning them. But that a great number of Fishermen, and other Illiterate Persons, should all on a sudden become Linguists, and in an hour's time be able to speak intelligibly to a great number and variety of Nations in their respective Languages, as the New Testament relates, that the Apostles and their Companions did on the day of Pentecost:<sup>4</sup> That gift of Tongues, I say, was an Ability, which in those circumstances of Place, Time, and Persons, wherein 'twas exercis'd, may justly be concluded to have been Supernatural or Miraculous.

I fear you will think, I have dwelt too long upon the Argument for Christianity, drawn from that sort of matters of Fact we call Miracles; tho' / the uncommon way that my Design led me to represent them in, would not permit me to make it out in few words. Wherefore I shall now pass on to another Argument, in favour of the same Religion, that is afforded by Experience, being drawn from the strangely successful Propagation, and the happy

<sup>2</sup> Gal de Usu part. Lib. XI. Cap. XIV [The passage actually comes from *De usu partium*, i. 14: Kühn, iii, 905.]

<sup>3</sup> See Acts II.

<sup>4</sup> Abhorrence of a vacuum.



Effects of Christianity, in the World. But having formerly had occasion to display this Argument in a separate Paper;<sup>a</sup> which you may command a Sight of, if I shall not have time to annex a Transcript of it to the later Sheets of this *First Part* of the present Essay, I will refer you for more ample Proof to That Writing, and content my self in this place briefly to touch some of the Heads, and subjoin a Reflection or two that you will not meet with in that Paper.

<sup>a</sup> This notorious Matter of Fact, that in less than half an Age, the Christian Religion was spread over a great part of the then known World; insomuch, that in a few Years after it / began to be preach'd, the Apostles of the Gentiles could tell the Romans with Joy, that their Faith (*i.e.* profession of the Gospel) *was spoken of throughout the whole World.*<sup>\*</sup> And in the Second Century, Tertullian, and other famous Writers, shew, that the Gospel had already numerous Proselytes, in a great number of different Kingdoms and Provinces.<sup>b</sup> But I forbear to mention, what he and others have magnificently said of the Success of the Gospel, because I had rather refer you to the plain Narratives made of it by Eusebius, Socrates Scholasticus, and other grave Authors;<sup>c</sup> being of opinion, that mere Historians may give to a Philosophical Reader, a more Advantageous *Idea* of that excellent Doctrine, than eloquent Orators, as such, can do. This wonderful quick progress of this Religion being ascertain'd to our *Virtuoso*, by a Thing he is so much sway'd by, as Experience; it does not a little dispose him to Believe the / Truth of so prevalent a Religion. For, *If* he considers the Persons that first promulgated it, They were but half a score of Illiterate Fishermen, and a few Tent-makers, & other Tradesmen. *If* he considers the Means that were employ'd to Propagate this Doctrine, he finds, that they had neither Arms, nor External Power, to Compel Men to receive it; nor Riches, Honours, or Preferments, to Bribe or Allure them to it; nor were they Men of Philosophical Subtily, to intrap or entangle the Minds of their Auditors. Nor did they make use of the pompous Ornaments of Rhetorick, and fetches of Oratory, to inveigle or entice Men; but treated of the most Sublime and abstruse Matters, in a most plain and unaffected Style, as became Lovers and Teachers of Truth. *If* he considers the nature of the Doctrine, that in little time obtain'd so many Proselytes, he will find, that, instead of being suited to the Natural Apprehensions, or the Receiv'd Opinions, of Men; and instead of gratifying / their corrupt Affections, or complying with so much as their Innocentest Interests; it prescrib'd such Mortifications, and such great strictness of Life, and

<sup>\*</sup> Rom. I. 8.

<sup>a</sup> This paper by Boyle does not appear to survive.

<sup>b</sup> On the Christian theologian and apologist, Tertullian, see above, p. 44. His *Apologeticus* (AD 197), a tract addressed to Roman provincial governors and arguing for toleration for Christians, reveals the wide extent of Christianity in the Empire at that time.

<sup>c</sup> Eusebius (c. AD 260-340), Bishop of Caesarea whose *Ecclesiastical History* is a major source for the history of the early Church; Socrates Scholasticus (c. AD 380-450), Greek Church historian, whose *Church History* is meant as a continuation of Eusebius.

high degrees of Virtue, as no Legislator had ever dar'd to impose upon his Subjects, nay, nor any Philosopher on his Disciples. And this Doctrine was propos'd in such a way, and was accompany'd with Predictions of such Hardships and Persecutions, that should in those times be the portion of its sincere Professors, as if the Law-giver had design'd rather to Fright Men from his Doctrine, than Allure them to it; since they could not believe what he said, and foretold, to be true, without believing, that they should be made great Sufferers by that Belief. *If* our *Virtuoso* considers the Opposition made to the Progress of the Gospel, he will find cause to wonder, that it could ever be surmounted. For the Heathens, which made by far the greatest part of the World, were deeply engag'd in Polytheism, Idolatry, / Magical Rites and Superstitions, and almost all kind of Crimes, and some of these were shameless Debaucheries, which oftentimes made a part of their Worship. And the Jews were by the corrupt Leaven of the Pharisees, and the impious Errors of the Sadducees, and the General Mistakes of the Nation about the Person, Office, and Kingdom, of the *Messias*; and by their dotage upon their vain Traditions, and numerous Superstitions, grounded upon them: The Gentiles, I say, and the Jews, who were those that were to be Converted, were, on these and other accounts, highly Indispos'd to be made Proselytes. Especially when they could not own themselves to be such, without exposing their Persons to be hated and despised, their Possessions to be confiscated, their Bodies to be imprison'd and tormented, and oftentimes their Lives to be, in as Ignominious as Cruel ways, destroy'd. And whilst the Secular Magistrates made them suffer all these Mischiefs, the Venerated / Priests; the Subtil Philosophers, and the Eloquent Orators, persuaded the World; that they Deserv'd yet more than they Endur'd; and employ'd all their Learning and Wit to make the Religion Odious and Ridiculous, as well as the Embracers of it Miserable:<sup>a</sup> Accusing the Martyrs, and other Christians, of no less than Atheism, Incest, and the inhuman shedding and drinking the innocent Blood of Infants. These and the like Matters of Fact when our *Virtuoso* reflects on, and considers by what unpromising Means, (as far as they were but Secular) such seemingly insurmountable Difficulties were conquer'd; He cannot but by this Historical Experience be inclin'd to think, that Effects, so disproportionate to the Visible Means, could not be brought to pass without the peculiar Assistance and extraordinary Blessing of God: By whom those successful Preachers avert'd themselves to be Commissionated. For, that the Supernatural help, the Christian Doctrine appears / to have had, was Divine, not Diabolical, will seem evident to our *Virtuoso*, from the Nature, Tendency, and Effects, of the Doctrine it self; which expressly teacheth, that there is but one God; that He alone is to be Worship'd, and not Idols, nor any of the Heathen Demons or Deities, that the Devils are Wicked, Apostate, Malicious, and Miserable Creatures, that are Hated of God, and do extremely Hate Mankind; and that

<sup>a</sup> MS omits 'the Venerated Priests' (BP 7, fol. 184).

<sup>b</sup> MS omits the rest of this sentence (BP 7, fol. 184).

those Vices, as well as Rites of Worship that they have establish'd in the World, were Abominable to God, and would be by degrees Destroy'd by him: As in effect they soon began to be in many places of the World, where the Worshipers of Christ cast the Devil out of His Temples, out of Mens Veneration, & oftentimes out of their Bodies too.

One Circumstance there is of the Propagation of the Gospel, which, tho' it may seem more Extrinsecal than those hitherto mention'd, is yet too considerable to be here pretermitted; / since it is this, That the Quick Spreading and Success of the Christian Doctrine in the World, was Foretold both by the Prophets of the Old Testament, and the Author and promulgators of the New. For it being notorious, that there have been divers Errors and Superstitions, that have with too much Celerity been spread far and wide in the World; either by mere Accidents, (as they were reputed) that were very friendly to them, or by the Industry and Artifices of Men: This, I say, being so, it ought to be no small Satisfaction to Equitable Judges, that the Quick Progress, and Notable Effects, of the Christian Religion, were Foretold, partly by the Ancient Prophets, and partly by the *Messias* and his Apostles. For by these accomplish'd Predictions it may appear, that the wonderful Success of the Gospel was not an Effect of Chance, but was long before determin'd by Divine Providence, as a Work fit to be Dear to God, and to be accomplish'd in a / wonderful way by his Peculiar Assistance, (as will be and by be somewhat more fully declar'd.) That the Triumphs of the Gospel were Foretold by several of the Old Prophets, may appear by their yet Extant Writings; some of which are alleg'd to that purpose, by those Writers of the New Testament, that were endow'd with the same Prophetic Spirit. And if you please to consider the Passages cited in the Margent,\* you will easily grant, that those Ancient Inspir'd Writers foresaw, that in the days of the *Messias*, there should be a great and notable Conversion of the Gentiles of several Nations, to the Worship of the only true God of *Israel*: And *tho'* God did not think fit, that those Predictions, extant in the Gospel, should be so conspicuous and pompously set forth, that speak of the Conversion that should be made, not only of the Heathen World, but (of a more Refractory portion of Mankind) a great part of the Jewish / Nation, to the Christian Doctrine; yet there are divers Passages in the New Testament, that are Real, tho' some of them Unheeded, Prophecies of the wonderful Progress of the Gospel, and the large Extent of the Kingdom of the *Messias*: Thus Christ foretold, that his twelve Apostles should be his Witnesses, not only in *Judaea* and *Samaria*, but to the uttermost parts of the Earth: And, according to the most probable Explication of that Text, in the 24th of St. *Matthew's* Gospel,† which is usually refer'd to the end of the World, but seems rather to respect the Destruction

of Jerusalem; there is a Prediction, that before the End, (of the Jewish Polity, as well as the Mosaical Oeconomy) the Gospel of the Kingdom (of the *Messias*) should be preach'd or proclaim'd in the whole World, (in that Sense of the term World that was then much in use, and was employ'd by the Evangelist / *Luke* to signify the Roman World or Empire.)\* To which may be added, that ten or twelve Fishermen (called the *Apostles*) were sent to Convert all Nations to the Worship of a Crucify'd Person; which would have been a strange Commission to be given such Men at that time, if their Master, who sent them, had not Foreseen the Success, as well as Known the Truth, of the Doctrine he sent them to Preach. The quick Diffusion of the Christian Faith, and the swift Growth of the Christian Church from despicable Beginnings, to a Greatness very Disproportionate to them, are more than intimated, by what Christ says of the Leaven hid in a great quantity of Meal; and of the Mustard Seed that quickly grows (in the hot and fertile Country of *Judaea*) to a wonderful Bigness and Height;‡ since these Passages, that perfunctory Readers look on but as mere Parables, were really Prophecies, that quickly began to be manifestly Fulfilled. And it may bring no / small Authority to the Predictions of the New Testament, that when divers of them were made, there appear'd no Likelihood that they should ever be made good. When a Poor Virgin, that was betroth'd to a Carpenter, confidently pronounces, that *all Ages should call her Blessed*;§ what probability was there, that what she said, should ever come to pass? And when another Private Woman, then living in a Village, had it foretold her, that a censur'd Action of hers should be reported through the whole World, to her great Praise;‡ what sober Man, that were not a Prophet, would venture to lose his Credit, by making such a Promise? And therefore, since we see such unlikely Predictions actually Accomplish'd, it may well convince an unbiass'd Man, that the Authors of them, as well as the ancient Seers, were really endow'd with a truly Prophetic Spirit; and that the Events by That Foretold, / were not Effects of Chance or Policy, but of Divine Providence.

I thought it not improper, to make the mention of these Predictions follow so close the Discourse of the Miracles, because true Prophecies of Unlikely Events, fulfill'd by Unlikely Means, are *supernatural* Things; and, as such, (especially their Author and Design consider'd) may properly enough be reckon'd among *Miracles*. And I may add, that these have a peculiar advantage above most other Miracles, on the score of their Duration: Since the manifest Proofs of the Predictions continue still, and are as visible as the Extent of the Christian Religion; and some of them are still more and more accomplish'd, by the Conversions made of multitudes of Infidels, in several vast Regions of *America*, (to name no other Countries.) So that if we may call some Miracles *transient* ones, such as the Turning Water into Wine at a Wedding—feast in

\* Gen. 49. 11, Isa. 2. 2; Psalm 2. 8; Mal. 1. 11.

† Mat. XXIV. 14.

‡ Acts 1. 8.

\* ἅπασαν τὴν οὐκονομίαν. Luke II. 1.

† Mat. 26. 13.

‡ Matthew 13. 31-3; Mark 4. 30-2; Luke 13. 18-21.

§ Luke 1. 48.

*Cailler*<sup>a</sup> and the Darkening of the Sun, when the Moon was Full, at the Crucifixion / of Christ:<sup>b</sup> Accomplish'd Predictions may be styl'd *permanent* ones; and their difference may be set forth by the differing States of the Mosaic *Manna*: For, tho' both that which fell daily (except on the Sabbath) in the Wilderness, and that which was laid up in a pot before the Testimony, were Supernatural Productions,<sup>c</sup> yet, whereas a portion of the Former outlasted not two or three days, That kept in the pot were preserv'd many Ages, and continu'd to be (as it was foretold it should) a Visible Miracle.<sup>d</sup>

There is another Reason, why the wonderful Propagation of the Gospel should be annex'd to the Argument drawn from Miracles, in favour of the Christian Religion. For the Preachers of it, both Pretended and Appeal'd to Miracles, as Proofs of the Truth of their Doctrine: And if we consider the great Disadvantages they lay under, and the powerful Opposition of all sorts that they met with / and surmounted; it cannot reasonably be thought, that such Unlikely Men should so Successfully preach so Uninviting a Doctrine, unless it were confirm'd by Conspicuous Miracles. Or at least, if so uneasy and persecuted a Religion was propagated without Miracles, that Propagation it self (as one of the Fathers well observes) may justly pass for a Miracle;<sup>e</sup> and be no less fit than another, to Confirm the Religion so admirably Propagated.

The past Discourse has, I hope, manifested, that a *Virtuoso* has some Helps, that other Men, generally speaking, have not, to make him judiciously approve the Arguments for the Truth of the Christian Religion, that are grounded on the Miracles wrought in its favour, and the wonderful Success of it in the World. But, because a Reveald Religion, how true soever it be, can scarce be prov'd but by Moral Demonstrations; and because for this reason, it is not always sufficient, that the Arguments be good in their kind, but there are / some Qualifications requir'd in the Minds of them that are to be Convinc'd by them; I shall now add, that Experimental Philosophy does also Dispose the Minds of its Cultivators to receive due Impressions from such Proofs, as Miracles do, as well as other Topicks, afford the Christian Religion.

Another thing then that qualifies an Experimentalist for the reception of a Reveald Religion, and so of Christianity, is, that an Accustomance of endeavouring to give Clear Explications of the *Phaenomena* of Nature, and discover the weakness of those Solutions that Superficial Wits are wont to make and acquiesce in, does insensibly work in him a great and ingenious *Modesty* of Mind. And on the score of this *Intellectual*, as well as *Moral* Virtue, not only he will be very inclinable, both to Desire and Admit further Information, about things which he perceives to be Dark or Abstruse; but he will

<sup>a</sup> Exod. XVI. 14, 21, 26, 33.

<sup>b</sup> John 2, 1-11.

<sup>c</sup> Matthew 27, 45; Mark 15, 33; Luke 23, 44-5.

<sup>d</sup> MS has 'in a pot in the Tabernacle was supernatural productions' (BP 7, fol. 185).

<sup>e</sup> It is not clear which of the Fathers Boyle here has in mind.

be very unapt to take, for the adequate Standard / of Truth, a thing so Imperfectly inform'd, and Narrowly limited, as his mere or abstracted Reason; (as I think I have elsewhere intimated, that One many call That, which is furnish'd only with its own, either Congenite, or very easily and very early Acquir'd, Notions and *Ideas*, and with Popular Notices.) And tho' a vulgar Philosopher, that allows himself to refer the Obscurest things in nature to Substantial Forms, Real Qualities, Sympathy, Antipathy, and some few other Terms, which, to be employ'd by him, Need not, and perhaps for their darkness Cannot be clearly Understood; and by which he pretends to explain all things in nature; and may indeed explicate one thing as well as another: Tho' (I say) such a Titular Philosopher may presume, that he understands every thing; and may be easily tempted to think, *that* he must not hope, nor desire to learn from less able Men than his first Teachers; and *that* That cannot be *true*, or be *done*, which agrees not with his *Philosophy*; / yet a Sober and Experienc'd Naturalist, that knows what Difficulties remain, yet unsurmounted, in the presumedly clear Conception and Explications even of things Corporeal, will not, by a lazy or arrogant presumption, that his knowledge about things Supernatural is already sufficient, be induc'd to Reject, or to Neglect, any Information that may encrease it.

And this frame of Mind is a very happy one, for a Student in Reveald Theology, where Cautionness is not more Necessary for the avoiding of Errors, than Docility is Advantageous for the Learning of Truth: Since the knowledge and goodness of the Divine Teacher is such, that a Scholar, to improve his Intellect, needs but bring a Mind fitted to receive the genuine Informations, that are more liberally offer'd, (in the Scripture) and will never deceive Him, that employs, together with fervent Prayers, a due Care not to mistake the Meaning of them. /

An assiduous Conversation with the exquisitely Fram'd, and admirably Manag'd, Works of God, brings a Skillful Considerer of them to discover from time to time, so many things to be Feasible, or to be True, whilst he argu'd but upon grounds of incompetently Inform'd Reason, he judg'd False or Unpracticable; *that* little by little he acquires a Habit of receiving some sorts of Opinions, and especially those that seem unfriendly to Religion, but as Probationers, with a disposition to Reform or Discard them upon further Information. And This, as he is resolv'd to Submit to, in case he meets with it, so he is dispos'd to Receive, if not to Expect it, by having often found himself oblig'd, upon subsequent Information, to mend or lay aside his former Opinions, tho' very agreeable to the best Light he had to judge by, when he entertain'd them. As, tho' it seems a visible Truth, that the *Discs* of *Venus* is, in all respects to the Sun, totally Luminous; yet when the Telescope / discovers her to have her Full and her Wane, like the Moon, he will believe this further Observation, against the first made with his Naked Eyes. And indeed, I have sometimes doubted, whether to be vers'd in Mathematicks, and other Demonstrative parts of Philosophy, bring a greater advantage to the Mind, by Accustoming and Assisting it to Examine Strictly

Things propos'd for Truths, and to Evince Strongly the Truths a Man knows, to Others; than by Fitting him to Discern the force of a good Argument, and Submit willingly to Truths clearly evinc'd, how little soever he may have expected to find such Conclusions true. 'Twill not be difficult to apply these Reflections to our present purpose; since there are several passages in the Scripture that sufficiently declare, both that Multitudes persist in a Criminal Infidelity; out of an overwearing Conceit of their own Knowledge, and a readiness to be sway'd / rather by strong Prejudices, than by the strongest Arguments that would remove them; and, that Docility is a very happy disposition to the Entertainment of Reveald Religion: In reference to which, this Qualification will be the more easily found in our *Virtuoso*; because, whereas the things, about which he has been accusom'd to be sensible of his Ignorance, or desire further Instruction, are within the Sphere of Nature, and the Jurisdiction of Philosophy; many of the things that Reveald Religion declares, (such as are the Decrees, the Purposes, the Promises, &c. of God, and his most peculiar manner of Existing and Operating) are things so Sublime and Abstract, that they may well be look'd upon as of an higher Order than merely Physical Ones, and cannot be Satisfactorily reach'd by the mere Light of Nature. 'Tis true, that our Philosopher, because he is so, will examine more strictly, than Ordinary Men are wont or Able to do, the Proofs brought for this or that / propos'd Revelation. But that is no disadvantage to a Supernatural Religion, such as the Christian; if he, as we now suppose it to be, True; and the real Truth about Religion itself, does not require Credulity, but only Docility. And perhaps this matter may be illustrated, by comparing what happens to a Philosopher in the Examen of Opinions, and to a Chymist in that of Metals. For if a Piece of Coin, that Men would have pass for true Gold, be offer'd to an Ordinary Man, and to a Skilful Refiner; *tho'* the latter will examine it more strictly, and not acquiesce in the Stamp, the Colour, the Sound, and other Obvious Marks, that may satisfy a Shopkeeper, or a Merchant; yet when he has try'd it by the Severer ways of Examining, such as the Touchstone, the Cupel, *Aqua-fortis*, &c. and finds it to hold good in those Proofs, he will readily and frankly acknowledge, that 'tis true Gold, and will be more thorowly Convinc'd of it, than the other Person; / whose want of Skill will make him still apt to retain a Distrust, and render him indeed more easy to be Persuaded, but more difficult to be fully Satisfy'd. On the like account, *tho'* our *Virtuoso* will examine with more Strictness and Skill, than Ordinary Men are able, Miracles, Prophecies, or other Proofs, said to be Supernatural, that are alleg'd to Evince a Reveald Religion; yet if the certain and genuine Characters of Truth appear in it, He will be more thorowly Convinc'd of it than a less Skilful Man, whose want of good *Criteria*, (or Touchstones) and Sound Judgment, will incline him to be Diffident, and to be still afraid of having been Impos'd on.

I expect, in the mean time, that you should here Object against what has been said in the later Leaves of the past Discourse, that it hath *degraded* the Human Intellect, by ascribing so much to Experience, Natural or Supernatural, that it has left nothing for Reason to do, unless servilely to Obey. /

But, *tho'* this Objection be plausible, yet the Answer to it will not be very difficult, if the Matter it self be duly consider'd, and Reason be brought to act, even on this occasion, not as an Interested Party, but an Unbias'd Judge.

For we have already shewn, that Rational Philosophers scruple not to Alter or Renounce the Opinions, that Specious Reasons had Suggested to them, when once they either find those Opinions Contradicted by Experience, or meet with other Opinions more Conformable to Experience. And *Aristotle* himself, *tho'* he be accus'd to have, perhaps the first of all the Ancient Naturalists, perverted *Physics*, by wresting them to a compliance with Logical and Metaphysical Fancies; yet even He confesses, not only that in the Science of Nature, Reason ought to comport with the *Phænomena*, and the *Phænomena* with Reason; but that to adhere to plausible Ratiocinations, with the neglect of Sensible Observations, / is a Weakness, or Disease, (*ἀγῶρτία*) of Mind.\* I will not here mention what I say in another Paper, by way of attempt to settle the Bounds of Reason and Experience, in reference to Natural Philosophy;† but it may concern our present Argument, to employ a few Lines in this place, towards the further clearing the lately propos'd Objection. We may observe then, that, whether or no it be True, which is taught by *Aristotle*, and commonly receiv'd in the Schools, that the Understanding is like Blank Paper; and that it receives no Knowledge, but what has been convey'd to it through the Senses:‡ Whether, I say, this be or be not admitted, 'tis plain, that the Notions which are either Congenite with the Understanding, or so easily and early Acquir'd by it, that divers Philosophers think them Innate, are but very few; in comparison of those that are requisite to Judge aright, about any one of a multitude of things, that occur, either in Natural / Philosophy; or Theology. For in the Divine Nature, Power, Wisdom, and other Attributes, there is a Fecundity that has produc'd a World of Contrivances, Laws, and other things, that exceedingly surpass both the Number and Variety, that the dim and limited Intellect of Man could reach to, by framing and compounding *Ideas*, without the assistance of the Patterns, afforded by the Works and Declarations of God.

On the account of the same Prerogative of the Divine Knowledge, it must frequently happen, that the Notions and Opinions, Men take up, of the Works and Mind of God, upon the mere Suggestions of the Abstracted Reason, (if I may so call it) newly spoken of, must not only be almost always very *deficient*, but will be oftentimes very *erroneous*. Of which, we see evident proofs in many of the Opinions of the Old Philosophers; who, tho' Men of strong Natural parts, were misled by what they mistook / for Reason, to maintain such things about the Works and the Author of Nature, as We, who, by the favour of Experience and Revelation, stand in a much clearer Light, know to be False, and often justly think utterly Extravagant.

The Importance of the Subject lately spoken of, and its being too little

\* *Aristotle, Physica, 233a27-4.*

† Probably a reference to the unpublished treatise by Boyle in BP 9 referred to on p. 315, above.

‡ We have not located the place in Aristotle's writings in which this claim is made.

Consider'd, may make it deserve to be Inculcated; and therefore I shall sub-join on this occasion, that That which I have lately call'd *Abstracted Reason*, is but a narrow Thing, and reaches but to a very small share of the Multitude of Things knowable, whether Human or Divine, that may be obtain'd by the help of further Experience, and Supernatural Revelation. This Reason, furnish'd with no other Notices than it can supply it self with, is so narrow and deceitful a Thing, that He that seeks for Knowledge only within Himself, shall be sure to be quite Ignorant of far the greatest part of Things, and will scarce escape / being Mistaken about a good part of Those he thinks he knows.

But, notwithstanding what has been hitherto said, I am far from intending to deny Reason any of its just Prerogatives. For I shew in another Paper, that Experience is but an Assistant to Reason, since it doth indeed supply Informations to the Understanding;<sup>a</sup> but the Understanding remains still the Judge, and has the Power or Right, to Examine and make use of the Testimonies that are presented to it. The Outward Senses are but the Instruments of the Soul, which Hears by the intervention of the Ear, and in respect of which, the Eye it self is but a more Immediate Optical Tube; and the Sense does but Perceive Objects, not Judge of them. Nor do the more wary among the Philosophers, trust their Eye, to Teach them the Nature of the visible Object; but only employ it to Perceive the *Phaenomena* it exhibits, and the Changes that happen to its self by the action of it. And whereas tis / confess'd, that the Sensories may deceive us, if the Requisites of Sensation be wanting; as when a Square Tower appears Round at a great distance, and a Straight Stick half in the Water, appears Crook'd, because of the double *Medium*; tis the part of Reason, not Sense, to Judge, whether none of the Requisites of Sensation be wanting; which (give me leave to add) oftentimes requires, not only Reason, but Philosophy; and then also tis the part of Reason to Judge, what Conclusions may, and what cannot, be safely grounded on the Informations of the Senses, and the Testimony of Experience. So that when tis said, that Experience Corrects Reason, tis somewhat an improper way of Speaking; since tis Reason it self, that, upon the Information of Experience, Corrects the Judgments she had made before.

And this (borrow'd from the foremention'd Paper, because twas never Publish'd) prompts me to illustrate the Use of Reason, by comparing her / to an able Judge, who comes to Hear and Decide Causes in a strange Country. For the General Notions he brings with him, and the Dictates of Justice and Equity, can give him but a very short and imperfect Knowledge of many things, that are requisite to frame a right Judgment; about the Cases that are first brought before him; and before he has heard the Witnesses, he may be very apt to fall into Prejudicate Opinions of things, (whether Persons or Causes.) But when an Authentick and sufficient Testimony has clear'd Things to him, he then pronounces, according to the Light of Reason, he is Master

of; to which, the Witnesses did but give Information, tho' That subsequent Information may have oblig'd him, to lay aside some Prejudicate Opinions he had entertain'd before he receiv'd it. And what is said of *Natural Experience*, in reference to the Understanding, may, with due alteration, be apply'd to *Supernatural Revelation*. For here also the Understanding / is to Examine, whether the Testimony be indeed Divine; and, whether a Divine Testimony ought to be (as It will easily perceive it should) Believ'd, in what it clearly Teaches; to omit other Uses of Reason, (about Theological Matters) which belong not to this place; where it may suffice to have shewn, that Reason is not Degraded from the Dignity that belongs to her, of Perceiving and Judging; tho' she be Obliged by her own Dictates, to take in all the Assistance she can, from Experience, whether Natural, or Supernatural; and by the fuller Accounts of things she receives from those Informations, to Rectify, if need be, her former and less mature Judgments.

In short, Those that cry up Abstracted Reason, as if it were Self-sufficient, exalt it in *Words*; but we that Address Reason to Physical and Theological Experience, and direct it how to Consult them, and take its Informations from them, exalt it in *Effect*; and Reason is much less usefully / serv'd, by the former sort of Men, than by the later; since whilst *those* do but *flatter* it, *these* take the right way to *improve* it.

I hope you will not imagine, that I have, in the foregoing part of this Letter, said all that I could say pertinently. For, being mindful of the Brevity becoming an Epistolary Discourse, I omitted several Arguments, that would have challeng'd their places in a just Treatise; and have but Touch'd upon most of those I have mention'd; tho' Reasonings of this kind are usually like Tapes-try, which loses much by being look'd on whilst the Hangings are Folded up, which should be display'd to their full Dimensions.

But having offer'd you *some* things, which perhaps you have not met with elsewhere; and having, tho' but transiently, *touch'd* upon the Grounds of divers other considerable Arguments; I hope that your Learning and Sagacity, will both Supply what you will discern to have been Omitted, and / Enforce what has been but Intimated; and then I shall not despair, that what I have said may suffice to persuade you, that *Experimental Philosophy* may greatly Assist a well-dispos'd Mind, to yield an Hearty and Operative Assent to the Principles of Religion. I am,

SIR,  
Your most &c.

The End of the First Part. /

<sup>a</sup> A further reference to the treatise mentioned on p. 315.