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GOOD BOARDS.
The Wisdom and Goodness of GOD
in the VEGETABLE CREATION.

Further consider'd in a

SERMON

Preach'd in the

PARISH-CHURCH

OF

St. Leonard Shoreditch,

ON

WHITSON-TUESDAY,

May 15. 1733.

At the ANNIVERSARY LECTURE founded by
Mr. Thomas Fairchild, late of Hoxton, Gardener.

By *JOHN DENNE, D. D. Archdeacon*
of Rochester, and Vicar of the said Parish.

L O N D O N:

Printed for *J. Pemberton,* at the *Golden Buck*
against *St. Dunstan's Church in Fleetstreet. 1733.*

Dene 1593-1762

Delivered at the



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P R E F A C E.



I was at the request of some Friends, to whom I have many obligations, that I undertook, after an application to some of my Brethren, to preach again upon a subject, which had at the first opening of this Lecture exhausted the little store of knowledge I had gleaned up from the experiments and observations of others, who had been more conversant in the Vegetable World than myself. But this Plea availed little with them; their Friendship had given them so favourable an opinion of the Sermon I had published, that they thought it easy for me to furnish out another, judging of my knowledge by their own experience; which teaches them, that Vegetable Nature is capable of affording an infinite variety of curious Observations. But to determine me effectually, they urged one motive of the greatest weight with me, that I should do good by encouraging a scheme then on foot, to make by a voluntary Subscription such an addition to Mr. Fairchild's Legacy, as might perpetuate his excellent Design, and provide somewhat of a recompence to Preachers for their trouble and expence, who should be dispos'd to come from far to put their private stock of Vegetable Riches into one common publick Fund; and thus devote it both to the Glory of their Creator, and the Good of their Fellow-Creatures.

It is with this view likewise that I publish this second Essay on the Wisdom and Goodness of God in the Vegetable Creation; hoping thereby to excite the same Spirit

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in others, that was in the^a Founder of this Lecture, who did according to his ability, when he left the following Legacy in his Will, dated Feb. 21. 1728, and proved Oct. 13. 1729.

*“ Item, I give and bequeath to the Trustees of the
 “ Charity Children of HOXTON and their Successors,
 “ and the Churchwardens of the Parish of St. Leonard
 “ Shoreditch and their Successors, the Sum of twenty-
 “ five Pounds, to be by them placed out at Interest for
 “ the payment of twenty Shillings annually for ever, for
 “ the preaching a Sermon in the said Church of St. Leo-
 “ nard Shoreditch by the Lecturer of the said Parish,
 “ or such other Person as the said Trustees and Church-
 “ wardens, and their Successors shall think proper, in
 “ the Afternoon of the Tuesday in every WHITSON-
 “ Week in each year on the subject following, viz. The
 “ wonderful Works of God in the CREATION: or, On
 “ the Certainty of the Resurrection of the Dead proved
 “ by the certain changes of the Animal and Vegetable
 “ parts of the Creation.*

*“ And in case default be made in preaching the said Ser-
 “ mon at the time aforesaid, then my Will is, that the sum
 “ of twenty-five Pounds shall be forfeited to the Church-
 “ wardens of the Parish of St. Giles Cripplegate, Lon-
 “ don, to be by them and their Successors placed out at in-
 “ terest for the preaching of the said annual Sermon in the
 “ Parish-Church of St. Giles Cripplegate, London, on
 “ the subject and in the manner aforesaid, by such Person
 “ as the said Churchwardens and their Successors shall
 “ think proper.”*

This Legacy, you see, provides but a slender recompence for a Preacher: and even that is likely to be lessen'd or lost, since hitherto the Trustees have not been able to place out the principal Money upon good security, so as to answer the yearly Interest of twenty Shillings.

As I have begun a Preface, it may not be improper for me to mention some few things in regard to the doctrine of the Sermon, which could not so conveniently be brought within it.

As

^a Mr. Fairchild died Oct. 10. 1729.

As all Systems or Hypotheses concerning the Works of Creation and Providence are only human conjectures about the time and manner, in which it has pleased GOD to exert his Wisdom and Power; it matters little which of them are true, so long as they equally tend to promote his Glory. It is allowed by all Philosophers at present, that such imaginary Agents, as an anima mundi, a Plaftick or Spermatick Nature, and the like, ought to be banished out of the world. But then the question is, how must the Course of Nature be carried on? The terms ^a Nature, the Powers, or the Course of it, can in their true meaning signify no more, than that things do ordinarily and frequently come to pass in the material World. But that all the Phænomena therein are mechanical Effects of Matter and Motion is plainly false, nay impossible, if there be any truth in the reasonings or discoveries of modern Philosophy. Experience indeed discovers to us several ^b active Principles, which have the appearance of efficient Causes: and the proper ^c business of natural Philosophy, according to Sir Isaac Newton, is to fix the number of these Principles, to find out without feigning Hypotheses their determinate Powers, to calculate the measure and extent of their various and contrary Forces, and to shew what are the laws, or forms of proceeding, which Corporeal Things punctually and religiously keep to by means of these Principles. But when this is done, we may be, nay, 'tis certain we are at as great a loss as ever, to find out whence these very Principles ^d derive their activity, or to account philosophically

^a *Wollaston's Religion of Nature, p. 86. Clarke and Leibnitz's Papers, p. 351, 353.*

^b *Newton's Opticks, p. 350, 351, 375—377.*

^c *Ditto, p. 344, 377. Principia, Præfat. and p. 484. Pemberton's Introd. §. 15. Wollaston, p. 81.*

^d *By the Terms of gravitating, attracting, repelling, and the like, Philosophers do not now mean to signify any qualities that have a real existence by way of inhering in any subject, or the efficient Causes of bodies tending towards, or flying from each other: but they are mere abstract names to express certain general, extrinsic, and relative effects produced on matter by foreign and unknown Agents.*

cally for the efficient Causes of the properties or influences they seem to have. One thing indeed is certain to a demonstration, that tho' we can go on^c in the "way of Analysis from Compounds to Ingredients, and from Motions to Forces producing them, and in general from Effects to their Causes, and from particular Causes to more general," yet all these intermediate steps must carry us sooner or later^f to ONE supreme, independent, and infinitely perfect BEING, from whom their respective powers originally flow, and on whose pleasure the exercise of them continually depends. But what is more, these active Principles, (if we could fix their number, and ascertain how the Properties and Actions of corporeal things may follow from them) are nevertheless so far from being mechanical in their nature or operation; that if we form a judgment of them from reason and experience, we shall be inclin'd to think, that they cannot be the^g result of any motion or properties originally impress'd upon, or superadded to matter, nor can now be left to themselves to act by virtue of any original powers given by GOD: but must be owing^h to an immaterial and invisible CAUSE, whose influence does at all times mix itself with matter, and operate immediately upon it in a regular and uniform manner, tho' by forces very different, and contrary to each other, thereby preserving the order, and beauty of the World. And what is this CAUSE? but theⁱ preserving and governing Power of GOD himself exerting its^k incessant dominion and influence thro' the whole material Creation,

In other words, they signify the *Phænomena* themselves, and the *Laws* of such tendencies, aversions, or influences, as are discover'd by experience; whatever be, or be not the Cause of them. *Clarke's* 3d Def. of a letter to *Dodwell*, p. 5. 70, 77. His Papers to *Leibnitz*, p. 357. *Newton's Opticks*, p. 350, 375.

^c *Ditto*, p. 380.

^f *Ditto*, p. 344, 379. *Wollaston*, p. 78.

^g *Clarke's B. Lect.* Vol. II. p. 21. *Ditto*, 3d Def. of a lett. to *Dodwell*, p. 53, 70, 75, 79.

^h *Wollaston*, p. 79, 81. *Newton's Opt.* p. 344, 373. *Clarke's* Def. of a lett. to *Dodwell*, p. 13. 3d Def. p. 71, 80.

ⁱ *Ditto*, B. Lect, Vol. II. p. 22. *Bentley* p. 127. *Woodward's Nat. Hist.* p. 52. *Newton's Opt.* p. 379.

^k *Watt's Philos. Ess.* p. 252, 203.

Creation, and producing an infinite variety of effects, either immediately by itself, or mediately, by the ministry of subordinate and intelligent agents. A Scheme, that is most agreeable to all discoveries in natural Philosophy, or revelation, and gives us so just and exalted an Idea of Providence, that there can be no reason to be fond of any Hypothesis, which by resolving all phænomena into mechanism, or into the necessary, unguided motions of matter, or into the absolute efficiency of second Causes, represents GOD to be little more, ever since the first Creation of things than an^d unemployed Spectator of their various effects, never exercising his power unless now and then in an extraordinary and miraculous affair; as if the sole^e Happiness of the Deity consisted in indolence and inactivity: and the ordering the Universe was a troublesome employment, unworthy of, or beneath the dignity of an infinitely perfect Being. But the words of Dr. Clarke are so expressive of my thoughts, and may give such a weight to my opinion, that I can't forbear transcribing them. ^f “ Nor is it less surprizing to find
 “ this assertion again repeated, that after the first Crea-
 “ tion of things, the continuation of the motions of the
 “ heavenly Bodies, and the formation of Plants and
 “ Animals &c. is as mechanical as the motions of a
 “ Clock. Whoever entertains this opinion is (I think) o-
 “ bliged in reason to be able to explain particularly, by
 “ what laws of Mechanism the Planets and Comets can
 “ continue to move in the Orbs they do; and by what Me-
 “ chanical Laws both Plants and Animals are formed,
 “ which, I am fully persuaded is as impossible to make out,
 “ as it would be to shew how the World itself could have
 “ been at first formed by mere Mechanism, without any
 “ intelligent and active Cause. That things could not be
 “ at first produced by Mechanism is expressly allowed:
 “ And when this is once granted; why, after that, so
 “ great concern should be shown to exclude GOD's actual
 “ government of the world, and to allow his Providence

“ to

^d Cudworth, p. 148.

^e Ditto, p. 149, &c.

^f Clarke's and Leibnitz Papers, p. 364.

“to act no further than barely in concurring (as the
 “Phrase is) to let all things do only what they would do
 “of themselves by mere Mechanism; and why it should
 “be thought that GOD is under any obligation or confine-
 “ment either in nature or wisdom, never to bring about
 “any thing in the Universe, but what is possible for a cor-
 “poreal Machine to accomplish by mere mechanick laws
 “after it is once set a going; I can no way conceive. E-
 “specially, ^f since it has been discovered and clearly proved
 “by these, who have made the greatest and truest im-
 “provements in natural Knowledge, that all second Causes
 “(excepting Men and Angels which are free Agents) all
 “other second Causes (as they are usually stiled,) are really
 “no Causes, and have no efficiency at all, but are mere
 “Instruments, by which GOD perpetually acts, and is
 “himself the constant (if not only) Agent, in what we vul-
 “garly call the Course of Nature.”

From these acknowledg'd principles of modern Philosophy,
 I shall only draw these particular Conclusions; that since it
 is highly probable from the discoveries made by Microscopès,
 that all the Seeds of Vegetables are so many Seminal
 Plants, and that these Seminal Plants are organized
 Bodies, which cannot possibly be ^e struck and fashioned by
 matter and motion, nor by any of those active Principles
 above mention'd, according to the common Laws, whereby our
 Experience hitherto shews us that they act, (and to go be-
 yond it is not Philosophy): Why should it be thought a thing
 incredible, that GOD should ^h finish this work of the third
 day in the Week of Creation together with the rest? Why
 is ⁱ it “prodigious and astonishing beyond reasonable belief”
 to produce all the Seeds of Vegetables at once completely
 form'd in miniature, tho' more in number, than the Sand
 on the Sea-shore? since this effect must be equally easy to
 Almighty power, as to bring into being all the Particles of
 Matter, which constitute all corporeal things, however dif-
 ferent in their Nature; or texture, that ever were or shall be in
 the

^f Ditto, Sermons, Vol. I. p. 290.

^e Wollaston, p. 91. Clarke's 2d Def. of a lett. to Dodwell, p. 22.

^h Watts's Ess. p. 202. ⁱ Ditto; p. 308, 310.

the World? The infinite^k divisibility of matter not only reconciles us to this Opinion, but adds to its credibility. Besides^l “ if any thing can be said to be easier, or harder in “ this sort of Almighty work, we may suppose it a more glorious “ difficulty for G O D” to create with exquisite artifice organized particles of matter, than such as are absolutely rude. But further if this one thing be granted, that it is possible for the Seeds of Vegetables to be thus created, we can then account philosophically and by an analogy in nature^m for their nourishment and growth, with every other Change, in an orderly thro’ infinite succession of them; from those obvious Laws of Matter and Motion with which we are acquainted, under the influence of the very same active Principles; which extend in common to all parts of the material Creation, whether animate, or inanimate: and are the visible Means, ⁿ whereby G O D preserves and produces all that Order and Beauty we see in the World. Nature will thus appear^o very simple, and perfectly conformable to it self, thro’out the Universe, and this is the surest Criterion of Truth in any Hypothesis.

Upon the whole, this Hypothesis seems to me at least very rational and philosophical, since it is grounded on experiments, and an analogy in nature, ^p which is the best way of arguing the thing admits of. It cannot but be a more unphilosophical solution to assert, without any experiments, or observa-

^k The incomprehensible Idea of infinite can be no just Objection to our Arguing on this Subject, if they be in themselves *demonstrative* or *probable*. Things are and must be *infinite*, whether or no we apprehend them; and there are many *Demonstrations*, even in *abstract Mathematicks* themselves, which no man who understands them, can in the least doubt of the *certainty* of; which yet are attended with difficult consequences, that cannot be perfectly cleared up; as for instance, those concerning the *infinite Divisibility of Quantity*, and the *Eternity and Immensity of G O D*. Our Reason is able to apprehend clearly the *demonstration* of the existence of these things, tho’ the imagination is not able to comprehend the Ideas of the things themselves. *Watts*, Ess. p. 276, 308. *Clarke’s* 3d Def. of lett. to *Dodwell*, p. 80, &c.

^l *Watts*, p. 207.

^m *Ditto*, p. 212.

ⁿ *Newton’s Opt.* p. 375.

^o *Ditto*, p. 372.

^p *Ditto*, p. 380.

observations to justify the assertions, that ^a GOD “ contrived the Models of every species in his own original Idea, and appointed Under-Agents to copy them; (which in strict propriety of expression is to create individuals by moulding, and forming organized Bodies.) “ That he granted a divine Patent, or gave verbal Orders, or standing Laws to each Creature (tho’ unintelligent) for the sole production of its likeness, and to be fruitful and multiply to all future generations; and “ that he has superadded to the Vegetable World some general, but unknown law, of motion, differing from all others in the Course of Nature, from whence all Vegetables may as well take their Origin, as derive the peculiar spring of their Vegetation; An Hypothesis, which differs very little in my Idea ^r from the exploded doctrines of Plastick and Spermatick Natures, or occult Qualities.

But I forbear to contest any further these speculative Points, since the worthy Person, who thus differs in judgment from me, has (I believe) equally at heart the Glory of GOD. Besides, it is always the duty of good Men not to be dogmatical, much less so uncharitably zealous in defense of their own conceits, as to think more highly of themselves than they ought to think; and it would be unpardonable in them to abuse or even despise others. Wherefore craving the like favour for myself, I submit the following discourse to the judgment of the Publick, after having taken care to support what I have said in it by good Evidence and Authority.

^a Watts Ess. p. 197, 198, 201, 203, 204, 205, 311.

^r Cudworth, p. 147, 151, 154, &c.



GEN. i. 11, 12, 13.

- 11 *And God said, Let the earth bring forth grass, the herb yielding seed, and the fruit-tree yielding fruit after his kind, whose seed is in itself upon the earth: and it was so.*
- 12 *And the earth brought forth grass, and herb yielding seed after his kind, and the tree yielding fruit, whose seed was in itself, after his kind: and God saw that it was good.*
- 13 *And the evening and the morning were the third day.*

IT is one convincing proof of the truth and wisdom of *Moses*, that his *Narrative* of the *Creation* is clear, particular, and full, as well as different from what he could have ^a learn'd in *Egypt* amidst the uncertainties of *Tradition*, the fables of *Poets*, or, what was much the same, the romances of *Philosophers*; nay, even hence (without appealing to the authority of his *Miracles*) there is reason

^a As the *History* of *Moses* is acknowledged to be (excepting *Job*) the most antient book extant, and as such was in great esteem among the *Heathens*; so there is nothing in their fragments relating to the *Creation* of the *World* worth the notice of a wise and learned man,

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son to conclude he wrote it under the direction of the same *Spirit*, whose *Word* first brought this universe out of nothing; and then from a *Chaos* of matter, *without form or order*, erected gradually one complete *Fabrick*, in which (tho' it consist of an infinite variety of parts) there is the most admirable harmony, beauty, and usefulness.

But if this conclusion should be thought too weak, it will gather strength from observing, that his account is not only free from the errors of *fancy, fable, or science falsely so called*: but will stand the test, if it be now examin'd, and compar'd with all the surprising discoveries that have been made in the works of nature, or in the powers of *matter and motion*, by the labours and sagacity of the ablest Philosophers; whose reasonings and experience end in confirming ^a the same plain truth, with which *Moses* begins his history, that *God created the heaven and the earth, and all that in them is*. Besides, his very ^b description of the work is
as

unless he can look upon their *Opinions* to be a corroborating evidence to the *Mosaic* account, when he has been at great pains to strike a few sparks of *light* out of the *darkness*, wherewith fancy, fable and philosophy *falsely so called*, did in process of time cover plain natural truths, matters of fact, or original Revelations. In proof of this I appeal to what has been remark'd and collected on the subject in Bishop *Cumberland's* *Sanchoniatho*, Bishop *Stillingfleet's* *Orig. Sacrae*, Mr. *Shuckford's* Pref. to the 1st Vol. of his sacred and profane History, or in Dr. *Cudworth's* *Intellectual System*, which is an invaluable treasure of the *Philosophy* among the *Ancients*: and what the *wisdom of Egypt* in particular was may be seen pag. 308, &c. But little truth can we expect among the *Heathens*, if we consider, that for many ages they had neither *Chronology*, nor *History*, nor *Philosophy*, but such as was mixed with *poetical* fancies and fables. *Newton's* Chronol. p. 44, 45. *Bentley's* B. Lect. p. 115.

^a The Reader will find it worth his while to look into Sir *Isaac Newton's* thoughts on this subject in his *Opticks*. 2d Edit. 8vo. p. 375, 378.

^b The majestic simplicity of *Moses's* expressions is admir'd by a *Pagan* writer on sublime eloquence: Ταύτην καὶ ὁ Ἰουδαίου Θεολογίας, ὈΥΧ ἂν ἸΥΧΑΝ ἀντὶ ἐπεσθῆ ἢ ὡς Θεοῦ δὴναται καὶ ἡ ΑΣΙΑΝ ἐχάρισα, καὶ ἔσπευα: "Εἶπεν ὁ Θεός:" Τῆ: "καὶ ἐποίησεν καὶ ἐποίησε καὶ ἐποίησε καὶ ἐποίησε. *Dion. Longinus*, §. 9. And a
modern

as just and sublime, as it could have been, if we suppose him inspir'd to convey the clearest Idea men can have of the majesty and perfection of almighty power in the *supreme cause* of all things; as that his *word* flies in a moment thro'out infinite space, and produces therein, *according to the good pleasure of his will*, all possible variety of beings. ^a He *speaks*, and it is *done*: he *commands*, and it *stands fast*, till the bonds of union are dissolved by the *breath of his mouth*.

The *Mosaic History* of the *Creation* would indeed in every part of it open a large, and delightful field of contéplation to minds philosophically and religiously dispos'd. Nay, some who have thoroughly studied the *Book of Nature* have profess'd it very reasonable to believe, that besides preserv'ing true Religion and Virtue in an idolatrous and wicked world, (which was the principal Design of the sacred Writings) there are providentially *treasur'd up* ^b such hints and notices, as will help and strengthen the reasonings of a Philosopher about *natural*, as well as *moral* Truths: or at least, that after all his conjectures, or experience, there will appear in many places so manifest a resemblance, and exact agreement with modern improvements, as to evince, that ^c *Moses* often used a *philosophical* propriety of expression in his *history*, and that whoever recedes from

modern writer, Mr. *Addison*, who had as fine a Taste as any man of the beauties of *antient* eloquence, and Poetry, justifies this *Observation*, and adds to it, that *there are many other Passages in Scripture, which rise up to the same majesty, where this subject is touched upon; and without assistances from Heathen Writers, who are strangers to the Wonders of Creation.* Spectat. N^o. 389.

^a *Psalms* xxxiii. 6, 9. 2 *Esar.* vi. 43.

^b *Burner's Theory*, Fol. 1691. p. 4, 5, 62, 63. *Woodward's Nat. Hist.* the *Preface*, and p. 245, 276. *Nieuentyt's Rel. Philos. Preface.* §. 31, 33. *Whiston's Astron. Princip. of Rel.* p. 139. *Dr. Clarke's Sermon.* Vol. I. p. 289.

^c *Philo's Character of Moses* in this particular is very remarkable, Μωσῆς ὁ καὶ φιλοσοφίας ἐπ' αὐτὴν ἐδάσασ ἀρόπητος, καὶ χεῖροῦ μοῖς τὰ πλά, καὶ ὤρει κῆκατα τῷ τ' φύσως ἀναδρεχθεῖς, ἔβρω. *De mundi opif.* p. 2.

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from his account of the *Creation* or *Deluge*, recedes from *Nature*, and matter of *Fact*.

My Text is, I think, a remarkable Instance of this kind, and I shall quote no more; believing that most of you, who make it your business, or your pleasure to converse with the vegetable World, would have me to confine my discourse on this occasion to the Subject it affords: for if you conceive the full import of the Words, and then look back by imagination to the scene *Moses* describes, you will see at one view all *kinds* of *Herbs*, *Plants*, and *Trees*, that are to be found, not in any particular Country, or Climate, but over the face of the whole Earth, springing up together into being, arrayed in all their glory, and growing within the compass of *one* day unto perfection; and even then stored with *Seeds* sufficient to produce their *like* thro' all successive ages of the world.

The very thing itself speaks the *wisdom*, *power*, and *goodness* of that one self-existent, supreme, and perfect Being, whom *Moses* calls G O D: however to do justice to the *Founder* of this *Lecture*, and to answer, as far as I am able, the expectations of my audience, I shall point out some undeniable Marks of divine *wisdom* and *power*. *First* (1) in *creating*, and *secondly* (2) in *preserving* the *Vegetable* World: and *thirdly* (3) I shall shew, that every thing therein is in reality, what *Moses* assures us, G O D *saw* it to be G O D.

I. As to the *first* Head. That the *whole* World, as well as this *part* of it could not be the effect of *blind chance*, nor of any *absolute necessity* in it's nature, nor have existed from *Eternity* by an infinite series of *causes* and effects, without any first original, and independent cause; but must proceed from the Will, and operation of a *Being* necessarily existent, but perfectly free, who has herein exerted infinite *wisdom* and *power*, is a truth that has been made so plain, even to demonstration,

tion, upon principles of the best and wisest *Philosophy*^a, that I shall say nothing upon these *general* topicks, nor upon the *particular* Structure of *Vegetables*; which is admirable for a diversity, and curiosity of workmanship, for a just proportion and connexion of parts, and for a conspiring harmony, and fitness in all of them to answer the ends, and purposes of their creation; because I have spoken my thoughts fully on this subject in a Sermon, that was preach'd^b and publish'd at the opening of this *Lecture*.

The Question I shall now chuse to treat of is this, whether ALL SEEDS of *Grass*, *Herbs*, and *Trees* were brought at once by the *Word* of *God* into being upon the *third* day of the *Mosaic* Creation: and then wrapped up and joyn'd so closely together as not to be separated and unfolded, till their *Creator* at times pre-determin'd in the course of his Providence should put them into such State and Circumstances, as that these Cabinets of wonderful Workmanship should be open'd, impregnated with life, and grow to visible perfection according to certain, uniform and fixed laws, to which he has been pleas'd to subject matter and motion in *Vegetables*. This seems to be the opinion of the sacred Historian, for he could scarce chuse Words more expressive of it, when he tells us, that the Earth brought forth grass, and herb yielding Seed, and the Fruit-Tree yielding fruit, whose SEED was in ITSELF after his Kind.

But

^a Those who want any satisfaction as to these points will find an entire one in the reasonings of Dr. Clarke and Dr. Bentley in their Boyle's Lectures, in Dr. Cudworth's Intellect. System, Mr. Wollaston's Relig. of Nature, and Sir Isaac Newton's Opticks, p. 344. 375---377. 379. who demonstrates the same Truths in the general Scholium to his Principia; and Professor Cotes after doing the like in his excellent Preface declares, CAECUM esse oportet, qui ex optimis & sapientissimis rerum structuris non statim videat Fabricatoris omnipotentis infinitam Sapientiam & bonitatem, INSANUM, qui profiteri nolit.

^b May 19. 1730.

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But if we do not look upon this, as an inspir'd truth, yet the conjectures of some *antient*^a Philosophers supported by the real discoveries of the *moderns*^b have set upon it all the marks of human probability; for, where our *Eyes* fail us, if we call in the help of Art, and take the Microscope, we shall discern, that the *Seeds* of many *Vegetables* are *real* and *perfect* Plants in *Embryo*, having in them the *original Stamina* of that very *Body*, which afterwards strikes down it's roots into the Earth, shoots into a perpendicular *Stem*, spreads forth its branches, and grows up unto maturity, and perfection. In many *Seeds*, I say, all this appears in miniature; but then as it is *thro' a glass darkly*, we must wait for clearer evidence, till *God* removes us into another world, where probably all *Imperfection* shall be *done away*, and our very senses shall be so glorified, as to see the inmost Constitution of things: However from what we *now* see, and know *in part*, we may conclude by an *c* *analogy* of reasoning, (which is the best on the works of Nature and Providence) that all *Vegetables* are in this respect alike, and have within them their proper *Seeds*. By which means it is, that the several *Species* of them are kept distinct without confusion thro' a diversified regularity: and the *Individuals* of each *Tribe* or *Family*, however numerous, do still preserve as marvellous a resemblance in the texture of their parts, as if they were all made together, and cast in one, and the same Mould; they thrive and grow by the same kind of Nourishment, and bring forth the same kind of flowers and fruit.

More-

^a *Philo. Jud. de Opif. mundi*, p. 8, 9. *Diog. Laert. in Zeno*, p. 199. *Stobæi Eclóg. Phys. l. i. c. 14, 15*. *Cic. de Nat. Deor. l. 2. c. 22, 32*. *Senec. Nat. Quæst. l. 3. c. 29*. *Lucret. l. i. v. 150, &c. 222. l. 2. v. 61, 201*. ^b *Miscell. Cur. Vol. I. p. 145, &c. Behtley, p. 159, &c. Nieuentyt, Cont. XXIII. §. 3, &c. Woollaston's Relig. Nat. p. 91. Hales's Statick. Vol. i. Pref. p. 2. B. 321, 348.*

^c How far *Analogy* is the great Rule of Probability in things which sense cannot discover, may be seen in *Locke's Essay*, B. IV. Chap. 16. §. 12. *Woollaston's Rel. of Nat. p. 81.* and *Pemberton's View, p. 25.*

Moreover, since the largest Trees spring from *Seeds* no bigger, and often less than those of many Shrubs and Herbs, one cannot better account ^a for the different growth, dimension and stature of each *Species*, or *individual*, than by supposing their *Original Stamina* were not made capable of like extension. But what is more observable, and experience puts past dispute is this ^b, that there is no such thing as *equivocal* Generation, either in the *Animal*, or *Vegetable* World, and that the *Sun* with all the *Elements*, in conjunction with the skill of *Man*, or the powers of *Mechanism*, as exercised in the course of Nature, have never yet been able to produce any *new* Species, nor has any *old* one been lost, altho' *Individuals* may have been improved or varied by an artificial bettering of Soils; or what oftener happens, be hurt and blemished by unnatural motions, or mixtures, whence it becomes highly probable, that *God* created together all the *Seeds* of *Vegetables*, that ever were, or shall be in the world, and thereby ^c determin'd their *Number* as well as *Kind*, unto the very end of it. To strengthen this it may be added, that in every *Species* there is a wonderful provision made, not for creating new Seed, but for conveying and depositing what they have already within themselves, in a place most safe and proper for keeping and nourishing and cherishing it, till it is alive, and can shift for itself. But to sum up all, since ^d *organized* Bodies (as all *Vegetables* have) must be fashion'd as it were at one Stroke un-

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^a Bentley, p. 141. Clarke's Boyle's Lect. Vol. II. p. 329.

^b Bentley, p. 113, 145, 151, 182. Clarke ditto, Vol. I. p. 95. Wollaston, p. 91.

^c Ditto, p. 84, 90. What more *natural* Cause can be assign'd for that strict numerical proportion, which is kept up between Males and Females among *Animals*, than that God form'd the *Seeds* of all together at the first in this proportion. This therefore is most likely to be true of *Vegetables*, which resemble *animals* in many respects. Motte's Abridgment of the Philosoph. Transact. Vol. II. p. 231. Cudworth, p. 690.

^d Bentley, p. 132. Cheyne's Philos. Princip. p. 131. Wollaston, p. 91. Cudworth, p. 163.

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to perfection, and cannot be patch'd up by piecemeal, or come together by any gradual natural progress; is it not very probable, according to the obvious sense of the *Mosaic History*, that all *Vegetables* ^c are parts of one coæval System, and were form'd in embryo in their respective *Seeds* by the almighty Creator on the *third day* who may thus in strictest propriety be said to have given ^f to every seed his own body, in perfect miniature?

But if it should be ask'd, *how may this thing be?* I might answer by another question, how can it be otherwise, according to any known qualities of matter and motion? Behold, says ^g *Job*, *GOD is great and we know him not*; he is, and must be alike *incomprehensible* in his *Works*, as in his *Nature*, and the most enlarged understanding cannot *find out* the least and meanest of them unto *perfection*. Our Ignorance herein is uniform, and the same on every subject; so that the difficulty of conceiving how any thing may be, which is not impossible, can be no just objection to the truth of matters of fact, when discover'd by experience, or revelation: Nor is that *difficulty* so great in the fact now before us upon this hypothesis as any other. Sir *Isaac Newton*, who saw as far as any man, into the powers of *GOD* and *Mechanism* lays it down for the most probable truth ^f that “ *GOD* in the beginning form'd matter in solid, massy, hard, impenetrable, moveable
“ Particles of such sizes and figures, and with such
“ other properties, as most conduc'd to the end
“ for which he form'd them. And these primitive
“ particles are so very hard, as never to wear, or
“ break in pieces; no ordinary power being able to
“ divide what *GOD* himself made one in the first
“ Creation. While the particles continue entire, they
“ may compose bodies of one and the same nature and
“ texture in all ages; and therefore that nature may
“ be

^c *Millar's Dict.* under *Seed*. *Miscell. Curios.* Vol. I. p. 145.

^f *1 Cor.* xv. 38.

^g *Job* xxxvi. 26. xxxviii. 5.

^h *Newton's Opticks*, p. 375, 377. *Stobæi Eclog. Physic.* cap. xiv.

“ be lasting, the changes of corporeal things are to be placed only in the various separations, and new associations of these permanent Particles.” If this be probable, why is it less so to suppose, that G O D did form together the *Seeds* of all future *Vegetables*, and preservesⁱ them from corruption and dissolution, till his providence shall bring them forth into a visible state of life at proper times and seasons, according to those general Laws, by which he is pleased to govern matter and motion in what we call the *Course of Nature*? The numberless multitude of *Seeds*, however astonishing, ought to be no objection; since it is equally easy to produce them at once, as all the primigenial Particles of matter which constitute all bodies that ever were or shall be in the world. The Microscope discovers to us in the *Seed* the future *Vegetable* complete in all its parts, and helps us to see millions of perfect *Animals*, which at their largest growth are not discernible by the naked Eye. But Reason will pursue these discoveries thro’ an infinite divisibility of matter, and demonstrate to us^k, that every Particle within these *Vegetables* or *Animals* is made up of more real parts, than we can count, or apprehend to be in the whole Universe: and therefore each Individual is capable of containing as many *seeds* within itself, as can be requisite to propagate its species thro’ all generations. This is indeed a prodigious scheme of things: but consider what a Being G O D is, and that all his works are of a piece, and bear upon them a distinguishing stamp of infinite wisdom and power^l.

How

ⁱ When *Seeds* are born, the *Earth* is so form’d, as to be a safe repository, as well as natural nurse to them. *Millar’s Dict.* unde *Seed*.

^k Dr. *Nieuwentyt’s* 25th Contemplation on these Subjects will be very pleasing to the *Religious Philosopher*: and if he have both inclination and skill to dive farther into the depths of divine wisdom and power, he may consult *Newton’s Opticks*, p. 327, 342. *Clarke’s Notes on Robault*, l. 1. c. 9. *Wollaston*, p. 80, 81, 96. *Locke’s Essay*, B. 2. c. 23. §. 23; 26.

^l *Isa.* xxxvii. 7.

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However the time or manner of creating *Vegetables* are points of no great consequence to the main subject of this discourse; it is enough for me, that they are in being, and could never come into it, unless GOD be giving daily proofs of that *Creative Power*, which we according to reason and Scripture-history suppose him to have exercised but once, in the beginning of this world; it being demonstrable that *matter and motion*, however influenc'd by any *active Principles* hitherto discover'd, can never be sufficient of themselves^m to produce *organized Bodies*, and such are all the *Seeds* of plants and animals, whereby they convey to other individuals a specific likeness. Nay, tho' a tolerable account could be given how *Animals* and *Vegetables* do live and grow, yet their life and growth must be accounted for from such *active* and *contrary Principles*, as cannot be theⁿ effects of mere matter and motion, however modify'd, compounded, or directed. These *Principles*, and their *Effects*, must at least speak the will, design, and power of a first and supreme Mover in their œconomy and disposition, even tho' it be possible for them afterwards to perform what we see regularly done in the *course of nature*, either by any delegated powers, or by observing certain laws originally, and inviolably established for their future conduct; which, in strict reasoning, and a philosophical propriety of expression, is to make them intelligent Agents. But the truth seems to be (without any figure of speech) that these *active Principles* are very disproportionate, and unequal to their pretended effects; and we know so little, after all our pains, and numerous experiments to analyse Nature, of the true springs which carry on its various movements, that the most sagacious and penetrating Philosopher must recur to the exploded doctrine of *occult* qualities, or take up
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^m *Vid.* pag. 8. *Clarke's B. Lect.* Vol. I. p. 94, 95.

ⁿ *Newton's Opticks*, Q. 1. 31. p. 375, &c.

with *romantic* conjectures, unless he will religiously account these *moveable Powers*, or *nominal Causes*, to be no more than *means*, *instruments*, or rather *real effects* of G O D's superintendent and active *Providence*^o; which thus concurs either by its own immediate influence, or by intelligent Agents, who are his *Ministers*, in regulating the various and innumerable combinations of *Matter* and *Motion* by certain general Laws, so as to produce that astonishing circulation of intermediate causes and effects, which is necessary to preserve not only the *Vegetable*, but all other parts of the universe, in a wonderful Order and Beauty. But the particular proof of this is the business

II. Of my *second* head. And without such a *Providence* it is not possible from all the known principles of philosophy to tell how the SEED *springeth, groweth up, and bringeth forth fruit of itself*. For at what time soever we suppose *seeds* to be formed, yet as they have within them the entire *stamina* of that individual herb, plant, or tree they afterwards produce: so the great mystery, or miracle of Vegetation, will be just the same, as if *Vegetables* had originally, as *Moses* seems to intimate, all their future SEEDS, or *seminal Plants*, *within themselves*, and only waited that *due season*, which was predetermin'd by their *Creator* for the *yielding* of them up, and forming those peculiar Bodies, into which every respective *Seed* will unfold itself by *growth*. But in order to these purposes, how elaborate and, in fact, astonishing is the ^p apparatus, that is always made by

^o *Clarke's B. Lect. Vol. II. p. 22. Sermons, Vol. I. p. 290.*

^p The Curious will find pleasure and improvement in reading the Opinions of those *Virtuosi*, who have taken pains to discover the *Mechanism* and *Uses* of all the parts that make up the *bloom* and *flowers* of *Vegetables*. *Hales, Vol. I. p. 355. Motte's Abridgment of the Philosoph. Transact. Vol. II. p. 293, &c.* But these Opinions are all collected in the Dictionaries of Mr. *Chambres* and Mr. *Mil-ler*, under *Plants, Flowers, and Generation*.

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by the G O D of *Nature*, or his *Providence*. A common eye may be so struck with the gay, beautiful, and ornamental attire of blooming and flowering *Vegetables*, as to look for nothing more, (and indeed these are lovely and inimitably curious): but a Philosopher, who pries into the secrets of nature, will soon discover, that G O D has *created* even them *Male* and *Female*, and that he has so wisely and *wonderfully made* them, as that the very *dust* they shed, which was once thought an *excrement*, is in truth a *congeries* of *seminal plants*; and that their *bloom* and *flowers*, tho' of infinite variety, are yet, *in all their glory*, but means to *propagate* their *kind*, to bring proper nourishment to the *infant-fruit*, to protect and cherish the *seed* it has within, and to convey the first enlivening principle to the *Fœtus* where-with it is impregnated. Nor do these ever fade, or fall away and desert their charge, till they have done all that is requisite to give its constituent particles ^a a just degree of cohesi^on, to provide safe repositories, and proper coverings, and ^r to store them well with *oil* and *sulphur*, which will preserve it all winter against the injuries of piercing cold; and be likewise very active for its good, when the genial warmth of the *Sun*, or *artificial Fires*, shall join their powers to ferment it into Life. But when it is alive; how and whence does it receive that prodigious ^s force, which is necessary to open its strong holds, to expand all its minute vessels, tho' closely rolled up, to enable the first shooting radicle with all its tender Fibres to penetrate deep into the earth, to ~~push a~~ ^t perpendicular stem directly upwards into the air, to spread wide its branches, and by degrees to augment every part, till the whole be grown to its natural size? I should indeed have first observ'd, that in the Embryo-state, a singular

^a *Ray's Wisd. of God*, p. 120, 123. *Hales*, Vol. I. p. 349, 355.

^r *Ditto*, p. 320, &c. p. 356, &c.

^s *Ditto*, p. 95, 107, 345, 349. *Cic. de Senect.* c. 15. §. 51. *Sec. nec. Nat. Quæst.* l. 2. c. 6.

^t *Chambers* under *Perpendicularity*.

singular and providential care is taken to ^v *make the seed prosperous*, ^x by preparing the crude, nay, noxious juices of the earth into proper food and nourishment: and then bringing it in a quantity just sufficient for its small demands; whereas it flows afterwards more abundantly, so as to answer its greatest wants. A demonstration this, that the most scanty supplies argue no lack of bounty in the Author of Nature; but are a wise provision made on purpose by him, that *young Vegetables* be not kill'd with kindness, as *human Infants* too often are.

But as a due quantity ^y of *Heat* is no less requisite than *Nourishment* to *vegetable Life*, Providence has contrived a gradual increase and decrease of it by a change of *Climates* and *Seasons*. Each *Climate* opens different scenes of nature to our view, and has its *vegetable* productions and curiosities *peculiar* to itself; so *peculiar*, that if they be transplanted out of it, and you employ all the art and expence you can to *naturalize* them, by giving them the most hospitable, generous and friendly entertainment: yet they are still *Exoticks*; they cannot forget their native Country, nor enjoy themselves in a state of Banishment from that *Sun*, which inspired them with life, and can alone preserve it in health and vigor. But in the same *Climate* there is a *season* to all *Vegetables*, wherein they spring up, live, and die in an orderly ^z *Succession* throughout the year; being so ^a fram'd, that some will endure and flourish thro' the starving cold of winter, and others bear up
their

^v Zech. viii. 12.

^x Hales, Vol. I. p. 341, 354, &c.

^y *Miscellan. Curios.* Vol. I. p. 238, &c. *Fire* was in the opinion of the *Stoics* so useful and necessary an element, that they made it to be the *natural* cause of intellectual, animal, and vegetable life. *Cic. Academ.* I. 12. *de Nat. Deor.* I. 9. II. 10, 22. III. 14. *de Fin.* IV. 5. Mr. Hales too looks upon the *Sun*, as the *kindly natural genius of Vegetation*. Vol. I. p. 358.

^z Woodward, p. 267, &c.

^a Hales, Vol. I. p. 328, 348, 360, &c.

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their heads, and look *green* under the ^b *burning heat* of the *Dog-days* Sun. But then considering all together, at how convenient a distance is the *Sun* ^c fixed, whilst the *Earth* goes round it with such different motions and inclinations, as to make all parts enjoy a proper share of its Blessings in their turn, to create an useful variety of ^d *Seasons*, and thereby to declare to *all Nations* the *manifold* wisdom and goodness of their Creator and Governor? And whenever these *Seasons* in any Climate deviate far to any extreme of hot or cold, wet and dry, ^e *Grass*, *Herbs* and *Trees* soon feel the judgment of heaven, and become sickly, fade, and die.

But in whatever *Climate*, or *Season*, Seeds are sown or planted, yet they will not come up and grow, if the *Soil* be not proper for them. How provident therefore has the Author of Nature been ^f in mixing the constituent parts of vegetative matter (wherein there must be an unconceivable variety) in so wise a manner, and in such exact proportions, as that the Surface of the Earth should for the most part be every where of such a temper and composition, as will serve in all climates and seasons to be a common Fund of Nourishment to *Vegetables* of all the different kinds, nay to furnish the very many and different Ingredients that go to the support and increase of the various parts of individuals in each Species? Hence it is, that those *Vegetables* which
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^b There is a wonderful provision for furnishing plants within the *Tropicks* with constant and plentiful supplies of moisture; for as the *Heat* of the *Sun* is there most violent, so its influence is the stronger to penetrate into the Earth, to raise greater quantities of moisture from greater depths, to convey it with more force into the roots, and to carry it up from thence into all parts of the highest *Trees*. *Hales*, Vol. I. p. 64, &c. Vol. II. p. 259. *Woodward*, p. 154.

^c *Bentley*, Serm. VIII. *Gurdon's B. Lect.* p. 284. *Clarke's Serm.* Vol. I. p. 284. *Cheyne's Princip.* p. 254, &c. 262.

^d *Gen.* viii. 22. *Cic. de Nat. Deor.* l. 2. c. 19. *Minut. Fel.* c. 17.

^e *Miscell. Curios.* p. 240. *Hales*, Vol. I. p. 323, 361. 2 *Esd.* viii.

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^f *Miller's Dict.* under *Earth*. *Miscell. Curios.* Vol. I. p. 227. *Moreton's Nat. Hist.* p. 29, 57. *Nieuentyt, Cont.* xx. §. 6.

are of universal benefit to Mankind, are fertile to a Miracle in almost every Soil. But nevertheless there are peculiar, and as it were specific Soils to suit peculiar Plants, and to make them flourish^b like a Rose-Plant in Jericho, a Palm-Tree in Engaddi, a Cypress-Tree in Hermon, a Cedar in Libanus, an Oak in England, or the Lily in Guernsey. Like^c as the Field is, so must be the Seed; and if its ingredients are not proper for it either in degree or kind, the Root will be kill'd with famine, or if a Plant spring up, it will soon wither away for lack of nourishment, or be stinted in its natural growth, or bring no fruit to perfection. Not but that any Soil, however rich and good will become of little use^d without due culture, nay, the most fruitful Land may in tract of time^e be turned into barrenness, and will seldom for a long while together produce the same kinds of Vegetables. Crops^f must be changed and the ground lie fallow, till it can recruit its natural strength; ^g till the Air have fertilized it, till^h the Clouds have dropped fatness, and both together have enriched it with a new fund of matter of the same kind with the first; unless the wants of men require more haste, and their industry shall bring a plentiful quantity of proper Manure. And whence does that Manure arise? observe the Providence of G O D. Why? fromⁱ Vegetables themselves; which tho' they rot and seem to perish, yet the dung and compost they make is a legacy sufficient for their numerous posterity to live upon. When they have answered all the ends of their own being, it is better for them to be dissolved, and die^k, that they may re-
vive

^b *Ecclus* xxiv. 13, 14.

^c 2 *Esd.* ix. 17.

^d *Hales*, Vol. I. p. 363.

^e *Columella*, l. 2. c. 1.

^f *Miscell. Curios.* Vol. I. p. 229.

^g *Hales*, Vol. I. p. 365.

^h *Psalms* lxx. 9, 11. *Woodward*, p. 46, 127. *Hales*, Vol. I.

p. 324. Vol. II. p. 271.

ⁱ *Hales*, Vol. I. p. 364, &c. *Miscell. Cur.* p. 230. *Woodward*, p. 127. *Moreton*, Nat. Hist. p. 32. Whence is it that Woods grow and flourish for ages without any manure, but from the annual falling of their leaves, which is a never-failing supply of nourishment?

^k *John* xii. 24.

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vive in their offspring, and *bring forth much Fruit*: it is better, that their *glory* should be turned into dung, and thus nourish the *Seed* they bring into the world; for to them their very *Putrefaction* is the greatest blessing.

But then how mysterious is this change, and scarce possible to be wrought, if modern Philosophy be true, but by the influence of that all-wise Being, who brings good out of evil? whose Spirit filling heaven and earth, can easily rule over¹ the *Chaos* of our *Atmosphere*: and whose power makes it reasonable to believe that^m the *Life and Death, the Nutrition and Putrefaction of Vegetables* may be regular and genuine effects of it acting by different methods and degrees, even as the attracting and repelling powers, that seem to be in Bodies, diminish, or increase. And hence it may be, that all the order and beauty we see in the *Vegetable* world may arise, and be preserved out of the same quantity of matterⁿ, that was originally created, and is continually circulating thro' growing and decaying *Vegetables*, whose^o *Putrefaction* by a wise order of Providence qualifies them to rise again in new productions; whereby the nutritive fund of nature can never be spent and worn out, till all the *Seeds* that were made together upon the *third* day of the Creation are at an end: or till *Water*^p shall fail to rise in *Vapours*, and to descend in *dew, rain* and *Snow*, by regular vicissitudes, which will not be, so long as the *Sun* and *Sea* endure. But how all these things may be, and to what real Causes they are owing,^q **G O D** only knows. Human experience and sagacity have hitherto discover'd by visible effects no more, than that

¹ *Hales*, Vol. I. p. 315.

^m *Ditto*, p. 289. *Newton's Opt.* p. 362, 371, 372, 375.

ⁿ *Cic. de Nat. Deor.* l. 2. c. 33. *Woodward*, p. 227. *Newton's Opt.* p. 375, 376. *Hales*, Vol. I. p. 314.

^o *Ditto*, p. 320. *Newton's Opt.* p. 350.

^p *Gen.* viii. 22. *Nieuentyt*, *Contempl.* 19. §. 69. *Woodward*, p. 48, 117, 124, &c. *Bentley*, p. 146, &c. *Hales*, Vol. I. p. 64, 358.

^q *Newton's Opt.* p. 350, 376. *Pemberton's View*, p. 14, 15.

that there must be some ^r *Active Principles* in nature, tho' probably what we call so have no efficiency at all, but are mere *Instruments* or *means* whereby divine power exerts itself in a wonderful tho' uniform manner. Among these *Instruments* we have found of late that the ^s *Air* and ^t *Light*, or if ^v conjecture be allowed, an ^w *Æther* infinitely more *subtile* than these, are the *principal*; tho' their forces, powers, or qualities appear so contrary to each other, and so different from those belonging to matter, that did not *Providence* direct, proportion, and govern, if not immediately give them; the main operations in the *vegetable* System could never, as far as we can judge, be carryed on. For how otherwise is it possible, that the *natural* Interests of the many jarring qualities in the ^x *Air* alone (which are likewise infinitely altered by *foreign* combinations and alliances) should be all of them most exactly balanc'd and adjusted: and that its *attracting* and *repelling* powers should after violent conflicts withdraw their respective Claims, and leave each other by turns in peaceable possession, and so conspire, as that this *Element* should in ^y *one* state be the source of *Life* and a bond of *union* to *Vegetable* Bodies? As that its particles, tho' with the utmost difficulty brought together, should yet afterwards in or near the points of contact ^z cohere most strongly: tho' not so strongly, but that in another ^a state

^r *Newton's Opt.* p. 373--377.

^s *Hales*, Vol. I. p. 314, 316.

^t *Ditto*, p. 327. *Newton's Opt.* p. 349. ^v *Ditto*, p. 344, 380.

^w The Properties or Effects of this *unknown* Medium, which is the *Hypothesis* of Sir *Isaac Newton*, may be seen in the 18th and following *Queries* of his *Opticks*, his *Princip.* p. 484. *Pemberton*, p. 376, 406.

^x *Hales*, Vol. I. p. 312, 318. Vol. II. p. 295. Ex hęc omnis inconstantia, tumultusque est. *Senec. Nat. Quęst. lib. 2. c. 6.*

^y *Ditto*, Vol. I. p. 148, 289, 313, &c. 318. Vol. II. p. 285, 295, &c.

^z *Ditto*, Vol. I. p. 300. *Newton's Opt.* 371, &c.

^a *Hales*, Vol. I. p. 196, 289, &c. 313, &c. 318. Vol. II. p. 295, &c.

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state by means of fire (which consumes the Bodies themselves or by natural ferments which dissolve them) they should make their escape, and with their freedom recover the same properties they had lost by their Union, and then constitute the same kind of ^b *Elastick Fluid* with the common air. And as there is absolute ^c need of this to supply a great and constant waste in the growth of *Vegetables*, so the author of nature has contrived, that it should be freely and plentifully ^d inspired by them, and circulated thro' peculiar Canals: nay, that its *Treasures* might be *inexhaustible*, he has ^e worked up a considerable quantity of it in their original Composition, and daily produces more ^f from their dissolution.

These are some few of the many wonders, that are regularly and continually wrought in the *Vegetable* world; and I hope, they carry such conviction along with them, that I need insist no further in proving that ^g *the eyes of the Lord our God are always upon it, from the beginning of the year, even unto the end of the year:* and that the same infinite *Wisdom* and *Power*, which contrived and created it, are likewise employed in keeping the course of nature in it steady and uniform ^h amidst continual *Changes* and *Contrarieties*, and in making a numberless variety of *ferments*, *confusion*, *corruption*, and even *death* itself to be subservient to the *Life*, *Order*, *Harmony* and *Beauty* of the whole. But if what I have said do really want weight, give me leave to call in the evidence and judgment of one, who has, I believe, as thorough an insight into these matters as any man living: and he will tell us, what is the conclusion of his own great experience, even this; ⁱ that “ the
“ wisdom

^b *Ditto*, Vol. I. p. 203, 292, 310, 316.

^c *Ditto*, p. 156, 245. Vol. II. p. 295. *Cheyne*, p. 267.

^d *Hales*, Vol. I. chap. 5, 6. p. 244, 358. Vol. II. p. 267.

^e *Ditto*. Vol. I. chap. 6. p. 310, 313. ^f *Ditto*, p. 310.

^g *Deut.* xi. 12. ^h *Newton's Opt.* p. 351. *Arrian* in *Epictet*

l. i. c. 14.

ⁱ *Hales*, Vol. I. p. 345. Vol. II. p. 281.

“ wisdom of the Author of Nature is demonstrated in
 “ giving such due proportion and direction to the
 “ Powers above mention’d, that they uniformly con-
 “ cur to the production, and perfection of *Vegetables*;
 “ whereas were such powers under no guidance they
 “ must necessarily (even now) produce a Chaos, in-
 “ stead of that regular and beautiful System which we
 “ see.” The *Wisdom, Power, and Providence* of GOD
 being thus established, I proceed

III. *Thirdly*, to shew, That every thing therein is in reality what *Moses* assures us GOD *saw* it to be GOOD. But herein I find my self prevented by what I have already publish’d; however I cannot forbear making these general remarks, that if *Good* relate to GOD, and signify, that all things are wise, fit, and perfect in their kind, let the most inquisitive *Atheist* go thro’ the various species of *Vegetables*, and examine each of them, nay, every individual in each species with the most censorious sagacity, and he will find, even himself being judge, that they are well, and wisely, and wonderfully made, and ^k *ordered in number, measure, and weight*. Nay, should there appear any seeming imperfection, flaw, or irregularity: yet if he will but impartially reflect upon the many marks of *reason, wisdom and goodness* every where to be observ’d in instances he does or may understand, he would scarce doubt but the same perfections lay hid in those he does not understand. ¹ He would consider that the *uses* of *some* things are known to *some* Men, and not to *others*; that the uses of *some*^m are known *now*, that were unknown to every

^k *Wisd.* xi. 20.

¹ *Wollaston*, p. 82, 84.

^m Witness the many discoveries that have been made about the *Seeds* of *Vegetables*, their *Bloom* and *Flowers*, together with the admirable *Texture* of their *Bodies*. *Motte’s* Abridgment of *Philosoph.* *Transactions*, Vol. II. p. 292, 293, &c. 695. *Millar* under *Plant, Seed, Flower, and Generation*. *Hales*, Vol. I. p. 355. The like may be observ’d in all the Branches of *Natural Philosophy*. *Pemberton*, p. 4, 11. *Cudworth*, p. 874.

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every body *formerly*, and then brought as objections to the wisdom and goodness of the Creator; that the *Uses* of many may be discover'd hereafter; and those of some other things may for ever remain unknown to all men, and yet be in nature, as much as those discover'd were before their discovery, or are now in respect of them, who know them not. Upon the whole, he would consider that the *line* of *human* understanding must of necessity be too short to fathom the infinite depths of *divine* wisdom; and that the perpetually growing discoveries of increasing ages are so many reasons to convince him that ^a *we have seen but a few of his works*, and that *there are yet hid greater things than these*, some of which may for ever escape the eyes or sagacity of Men. He would in the mean while with truth and piety acknowledge, that his not knowing all the uses of some of the works of nature is no proof of any thing but his own ignorance; he would live in expectation, that his own researches and improvements in philosophy may in time remove many of his present difficulties: or if not, he would die in full assurance of FAITH, that his Soul shall not be *cut off*, and perish, whilst it is capable of arriving at new degrees of knowledge and virtue, but be removed into a better State, wherein he may *see* GOD as HE is, and be happily employed to all eternity *in finding him out unto perfection*.

But if *Good* relate to *Animals*, nothing certainly could be better for them in their present Circumstances of being, than the *Vegetable* Creation, considering the various purposes and uses whereunto it is subservient. For ^a *all Flesh* is literally *Grass*, *Vegetables* being the ^b never-failing fund for their support and nourishment. They afford Men *Bread*, and *Wine*, and *Oil*; and I may say, *Meat* and *Raiment*, for the *Animals* that feed

^z *Eccles* xliiii. 32. *Job* xxvi 14.

^a *Isa.* xl. 6.

^b *Gen.* i. 29, 30. *Deut.* xx. 19. *Psal.* civ. 14, 15. *Isai.* lv. 10. *Eccles* xxxix. 26. *Plinii* Nat. Hist. l. 12. c. 1. *Watts's* Philos. Essay IX. §. 4, 5. *Woodward*, p. 127. *Ray*, p. 213. *Xenophon* Oecon. l. 5. §. 2.

feed and clothe us live upon them. We feel the judgments of heaven that affect them; for famine must ensue, when ^c their *Seed* is *rotten under the clods*, when *the harvest of the field is perished*, when *the hay withereth away*, *the grafs faileth*, and *there is no green thing*. They contribute very much towards all the improvements of human art and industry, towards building and furnishing our dwellings: and without them it would be impossible for us to carry on that *Commerce* with the world, to which we owe our riches, strength and glory. In short, by these we enjoy both life and health, and have ^d *medicine to heal our sicknesses*.

By what a variety indeed has the GOD of *Nature* consulted our pleasure, as well as our necessities and conveniences. Luxury itself is almost wholesome and refreshing, while we feed upon the mere products of the earth; and there is no sense that we may not gratify with innocence in the use of them. From *Vegetables* ^e we have several instruments of *Music*, our clothing in *fine linnen*, the delicious flavours of *fruit* agreeing to every taste, the fragrant and exhilarating odours of *flowers*, and that lively *verdure* beautifully varied with inimitable colourings, which overspreads the face of the earth, for the comfort and delight of our eyes. What ^f pleasure is there in all the busy scenes of life, unless we can now and then be reliev'd from the hurry and fatigue of them by rural retirements and entertainments; where the *Vegetable-World* receives us with all the sweets and freshness of air uncorrupted; which alone is often able to revive us, when past recovery by all the powers of *Physick*. We are there treated with a gay and smiling countenance, but without hypocrisy and deceit. “To one us'd to live
“ in a City, (says a wise ^g Observer of Mankind) the
“ Charms of the Country are so exquisite, that the
“ Mind

^c *Joel* i. 10, &c. *Isai*. xv. 6. *Hab*. iii. 17.

^d *Psalms* cxlvii. 3. *Ecclesi* xxxviii. 4.

^e *2 Esdras* vi. 44;

^f *Fairchild's City Gardener*, p. 7, 8.

^g *Spectator*, Vol. II. No 118. *Milton's Par. lost*, B. IX. Ver. 445.

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“ Mind is lost in a certain transport, which raises us “ above ordinary life,” and excites higher sensations of true animal *pleasure*, than can be raised from all the works of art. Nor is this *Pleasure* confin’d to the Gardens of the *Rich*; so far from it, that they themselves are now imitating the *Antients*^h in their taste, or rather following *Nature*, by making their gardens to resemble fields and orchards, and throwing down all inclosures, that they may see with every common eye the natural beauties of their whole estate, and the blessings of its increase, when cultivated and improved by the painful labours of the honest husbandman; that they may see the *valleys standing thick with corn*, the *bills* enrich’d with timber, the *orchards* in their bloom, or full of *fair and goodly fruit*, their *pastures clothed* with grass, and *arrayed* in all the *glory* of flowers, and their *fields* agreeably divided by trees and hedges; which all together do compose the finest *Vista’s*, *Prospects* and *Landscapes*; such as the most skilful *Painter* faintly copies, or invents for the furniture of *Palaces*. And to speak the truth, there are as many *Beauties*, and as great *Curiosities* growing wild in common fields, (were they but as rare) as can be collected at great expence in the best of gardens. The Country without much art opens into an inexpressible variety of scenes, which diversify the face of the earth, and fill the mind with a perpetual succession of pleasing images, so that “ one can hardly ever be weary of rambling from one “ labyrinth of *delight* to another”: or if one is, we^j may *sit down* with like *delight under the shadow* of *Vegetables*. And that all these pleasures might not be quite lost to those, whose *Business* or *Fortunes* immure them to this *Metropolis*, the *Founder* of this *Lecture* thought it worth his while to contrive a *City-Garden* for them.

But

^h *Homeri Odyss.* l. 7. ver. 112, &c. *Virgil. Georg.* l. 4. ver. 127.

ⁱ *Speculator*, Vol. VII. N^o 477.

But I ought not to end this head without observing some few eminent instances, wherein the *wisdom* and *goodness* of the divine Architect marvellously conspire to render the *Vegetable* World, not only wise and perfect in its kind, but most useful and delightful to men. Hence it is, that he has with the most exquisite art adapted our senses, and the objects that strike them, to each other: nay, he has given almost every thing about us ^k a power of raising agreeable Ideas in the mind, a power very foreign to the real constitution of things. Things would indeed make but a poor appearance to the eye, if it saw them *naked*; and in possession only of the qualities essential to *Matter*. And why has providence added foreign ornaments to it, and endowed it with a power of producing in us imaginary qualities, that exist not in the objects themselves, (such as tastes, and colours, sounds and smells, heat and cold): but that *Man* might find even his state of pilgrimage in this world convenient, and the difficulties of his tryals in it made tolerably easy, and oftentimes pleasant by agreeable sensations? What a profusion of visionary beauty is poured out for instance on the *Vegetable* Creation, and with what a variety of colourings is its rough and unsightly figure disguised and adorned? Had not *GOD* an evident respect ^l to *human sight* in this particular, and *human sight* a no less visible reference to *that*? Thus it is with regard to the lively *Verdure*, which covers the earth, and is more ^m *desirable* to the eye than any other colour. The philosophical ⁿ reason of which is, that *Green* is in the *middle* of the natural series of colours, whereof *light* is compounded; and accordingly the tone of the tender fibres of the *Retina* of the eye is ^o adapted to the strength, or degree of the vibra-

^k *Locke's* Essay, B. II. chap. 8. Chap. 23. §. 11, 12. *Newton's* Opt. p. 108. *Ipektor*, Vol. V. N^o 387. Vol. VI. N^o 413.

^l *Arrian's* reasonings are very just upon this subject in his discourse of *Providence*. In *Epietet.* cap 6.

^m *Ecclus* xl. 22.

ⁿ *Newton's* Opt. p. 41, 65, 231.

^o *Ditto*, p. 12, 319, 320, 328.

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vibrations of middle-colour *Green*; whereas had the tone of those fibres been adapted to the *strongest* Colour *Red*, then the weakest which is violet would have made no sensible impression: or had it been adapted to the *weakest*, then the impressions made by the *strongest* would have been too violent, nay, injurious to the *Eye*? As the fact is so, did not He, who is the *Father of light*, who *formed* the *Eye*, and maketh the *green* grass to grow, foresee all this, and with the greatest accuracy adjust those proportions, from whence a harmony and discord of colours proceeds, and in much wisdom and goodness contrive so wonderful a *relation* and *fitness* between the *works* of his hands? And is it not from the very same cause, that those *Flowers* and *Blossoms* which are most beautiful in their *Colour*, and most perfuming in their *smell*, and those *Fruits* which have the richest *taste*, and those *Seeds* by which the several *Families* of *Vegetables* are propagated, are well stored with a ^p high sublimed *Oil*, which occasions these *Colours*, *Smells* and *Tastes*, and is at the same time absolutely necessary to preserve the *Seeds*, and promote their future vegetation?

But I go too far — I doubt beyond your patience: and yet I am afraid of being censur'd as too *luxuriant* in my speculations, unless I shew the *good fruit* of them in one or two practical Inferences.

I. *First*. If so many marks of *divine* wisdom, power and goodness are to be found in the *vegetable* world, it cannot but be worth our while; ^q it is a diversion and study excellently adapted to human nature, nay, it is our duty, as we have opportunity to trace out the most secret and intricate operations of *GOD* herein unto *perfection*, before this part of the *Creation* be *dissolved*, and the *Earth* and the *Works* that are therein be burnt up.

^p *Hales*, Vol. I. p. 320, 326, 327.

^q *Tull. de Senect.* cap. 15, 16. *Xenophon.* *Oeconom.* cap. 5. §. 11. c. 15. §. 4.

up. To exercise, and to entertain our *Senses* only^r is to live, and use it like *Brutes*; whereas we may here find a fit employment for our *Reason*, that glorious and distinguishing faculty, as well as for our *Senses* and *Imagination*. For our wise and good Creator^s has so suited even our present condition to a *rational Mind*, as that all his *visible Works*, before we we enquire into their *inward parts*, strike us with the most lively Ideas of beauty and magnificence, and force us to own his *eternal Power and Godhead*; thus encouraging us likewise to hope, that his *invisible Works* will do the like, and that all our pains to get an insight into the real nature and properties of things will be abundantly recompensed by the value and pleasure of new discoveries^t, the subject whereof is inexhaustible. This was the *Work*^v which G O D gave our *first Parents* to do in their primitive, innocent, and most happy state. The *Patriarchs* all copied their Example: and *Solomon*, the *wisest* of men, ^w sought out the *diversities* and *virtues* of *plants*, till he could *speak* and *write* of *Trees*, from the *Cedar* in *Lebanon* to the *Hyssop* that *springeth out of the wall*. The^x *Arts* of *Agriculture* and *Gardening* have been honourable in all parts and ages of the

^r The sentiments of a *Heathen Philosopher* on this point are worth knowing; and that I may do him justice, I have transcribed them in the *Original Language*. Ἄλλ' ὅτι χεῖρισ, κὶ ἄλλο ᾧρα κολέθησις. Ἐκείνοις [viz. ζώοις ἀλόγοις] μὲ ἀρκεῖ το ἐδίειν, κὶ πίνειν, κὶ ἀναπαύεσθαι, κὶ ὀχεύειν, κὶ τ' ἄλλα, ὅτ' ὀπιτελεῖ αὐτῶν ἕκασον. Ἡμῶν δ' οἷς κὶ τ' ᾧρα κολεθησικῶ δύναμιν ἔδωκεν, ἕκπε ταῦτ ἐπαρκεῖ.— Τὸν Ἀνδρῶπων ΘΕΑΤΗΝ εἰσήγαγεν αὐτῶ τε, κὶ τ' ἕρσαν τ' αὐτῶ κὶ ἔ μόνον ΘΕΑΤΗΝ, ἀλλὰ κὶ ἘΞΗΓΗΤΗΝ αὐτῶν. Διὰ τῆ το αἰχρῆν ὅτι τῶ ἀνδρῶπω ἀρχεσθαι κὶ καταλήγειν ὅπε κὶ τὰ ἄλογα· ἀλλὰ μάλλον ἔνθεν μὲ ἀρχεσθαι, καταλήγειν δ' ἐφ' ὃ ρατέληξεν ἐσ', ἡμῶν κὶ ἡ ΦΥΣΙΣ. Κατέληξε δ' ὅπρ διεύειαν, κὶ ᾧρα κολέθησιν, κὶ σύμφωνον διεξαρῶγην τῆ ΦΥΣΕΙ. Ὁρᾶτε ἔν μῆ ἈΘΕΑΤΟΙ τέτων ἀποδάνητε. *Arrian*. in *Epiict*. l. 1. c. 6.

^s *Pemberton*, p. 3, 12.

^t *Hales*, Vol. I. p. 317, 360. *Fairchild*, p. 68.

^v *Gen*. ii. 15.

^w *Wisd*. vii. 20. *1 Kings* iv. 33.

^x *Cic*. de *Senect*. cap. 16, 17. *Xenophon*. *Oeconom*. c. 4. §. 8, 14, &c. *Columella*, l. 1. *Præfat*. *Millar's Dict*. *Pref*. p. 9.

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the world. And it is one *good* sign in these *bad* days to see them flourishing and improving; to see *natural Philosophy* in high repute; to see our *Princes*, our *Nobles*, and the *Rich* among us, conversant therein, and employing their thoughts and wealth in designing and ^y *making gardens and orchards*, in *planting* them with *all kinds of fruit*, in laying out *Walks*, cutting *Avenues*, and opening *Vistas*, and *fertilizing* their Lands, till the *Country* around them, that was *barren* and *desolate*, becomes ^z like the *Garden of Eden*, yielding whatever is ^a *pleasant to the sight*, and *good for food*. And as if their *native Climate* was too scanty of materials to satisfy their knowledge and curiosity, they fetch home *exotic Plants*, and spare neither cost nor pains to make them live, thrive, and flourish. How innocent, how beneficial, are such employments? nay, how far exceeding theirs, even in *pleasure*^b? whose *Passions* fire them to *turn the world upside down*; or whose *Lusts* inflame them into *gaming*, *revelling*, *rioting*, *drunkenness*, and to *give themselves over to lasciviousness*.

As for such Persons, whose livelihood depends upon their Commerce with the *Vegetable World*, and who *eat their bread in the sweat of their brows*, whilst they are cultivating the ground, manuring, planting and cropping it, and afterwards ^c *pruning* it to reduce all the wild luxuriations of nature into form, and order, and fertility; how may they be ^d *comforted*, *refreshed*, and *delighted in the work and toil of their hands*? whilst their appetite grows the better, their health and strength become more vigorous, their sleep more sweet, and their care, industry and expence are compensated by the plentiful increase of an *hundred-fold*. But what is above all this, their *Mind* will be serene, and may be enlarged

^y *Eccles.* ii. 5.

^a *Gen.* ii. 9.

^c *John* xv. 2.

^z *Ezek.* xxxvi. 35.

^b *Columella* in *Præfat.*

^d *Gen.* v. 29. *Cic. de Senect.* c. 15, 16.

de Offic. l. 1. c. 42. *Xenophont. Oeconom.* c. 5. §. 11. c. 15. §. 4. *Fairchild*, p. 9.

larged and entertain'd, as well as the wisest Philosopher's; whilst they are daily adding to their knowledge by new discoveries and improvements: and whilst they see with surprizing pleasure, and, as I hope, with devout admiration, the *works* of the *Lord*, and the *wonders* of his *Providence*, continually rising to their view and meditation, which, in the good judgment of the *Founder* of this *Lecture*, "is the greatest happiness." But this leads me to a

II. *Second inference.* If the *Earth* be full of the *goodness* and *riches* of *God*, so that ^e *the desire of every living thing is satisfied*; the natural return those reasonable Creatures should make, (for whose use and pleasure all these things are and were created) is ^f *religious adoration, thanksgiving, and obedience.* And indeed how is it possible for such, who are as it were every day *Eye-witnesses* of the *Work of Creation* mentioned in my *Text*, not to be struck with wonder at the *wisdom* and *power* of the great *Creator*, or not to express their thoughts in ^g *words* and *acts* of adoration; acknowledging, ^h that *neither is He that planteth any thing,*

^e *Psal.* cxlv. 16.

^f Itaque naturæ majestatem propius jam licet intueri, & dulcissimâ contemplatione frui: Conditorem vero ac Dominum univerforum impensius colere & venerari, qui fructus est Philosophiæ multo uberimus. *Cotes. Præf. Newtoni Princip. Newton's Opt.* p. 381, 382. *Arrian. in Epictet.* l. 1. c. 6.

^g *Hales, Vol. I. p. 318.* Every *Christian Village*, one would think, should be altogether such (as *St. Jerome* tells us, *Bethlehem* was in his days) where one might every-where hear the *Ploughman*, the *Reaper*, the *Vine-dresser*, and the *Shepherd* entertaining themselves with *Psalms*, and *Hymns*, and *Spiritual Songs*, singing and making melody with their lips, as well as in their hearts to the *LORD*, (*Ephes.* v. 19.) In *Christi* villulâ tota rusticitas, & extra *Psalms* silentium est. Quocunque te verteris, *Arator* stivam tenens *alleluia* decantat. Sudans *Messor Psalms* se avocatur, & curvâ attondens vitem falce *Vinitor* aliquid *Davidicum* canit. Hæc sunt in hæc provinciâ *Carmina*; hæc, ut vulgo dicitur, *amatoriæ cantiones.* Hic *Pastor* sibilus: hæc arma *Culturæ.* *Paulæ & Eustoch.* *Epist. ad Marcellam.*

^h 1 *Cor.* iii. 7. 2 *Cor.* ix. 10. *Deut.* xxxiii. 13, &c.

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*thing, neither He that watereth; but GOD, who first created the Seed, still maketh it to grow, and giveth its increase? How is it possible for Men, who have every sense gratified by the Vegetable Creation, and enjoy all the pleasures and the fruits of it, not to have within themselves such dispositions of mind, as in the reason of things they ought to have towards their daily Preserver and Benefactor? How is it possible for them to have a due sense of all his Mercies, and to receive his Blessings,^h without paying him the small, natural, and pleasant tribute of a grateful heart: or without shewing forth his praise, not only with their lips, but in their lives, by giving themselves up to his service? For as the material world in all its operations acts conformably to those properties and powers that were establish'd by the Creator of it in the beginning: and as its motions, however various or contrary to each other, are all of them subservient to the direction and government of his providence; so REASONABLE Creatures ought most certainly to do the like, and MEN are of all others most inexcusable, if they do it not.—For to them GOD hath givenⁱ the Dominion of this Earth.—To them HE speaks this duty originally by the light of nature, by the voice of reason, by the order and proportion of things both in the natural and moral world, by frequent revelations of his Will, and at last, by the Gospel of his beloved SON; whom if we do not^k receive, reverence, and obey, resisting likewise his Holy Spirit: HE may then take up the same Parable against us, which he spake to the Jews by his Prophet *Isaiab Chap. v. My well-beloved hath a vine-yard in a very fruitful hill. And he fenced it, and gathered out the Stones thereof, and planted it with the choicest vine, and built a Tower in the midst of it, and likewise made a wine-press therein: And he looked, that it should bring forth grapes, and it brought forth wild grapes. And now,**

O in-

^h Job xxxvi. 24, 25. *Speſtat.* Vol. V. N^o 393. Vol. VI. N^o 453.

ⁱ Gen. i. 28, 29. *Pſalm* viii.

^k *Matth.* xxi. 33, &c. *John* i. 11. *Acts* vii. 51.

O inhabitants of the Earth, judge, I pray you betwixt me and my Vineyard. What could have been done more to my Vineyard, that I have not done in it? Wherefore when I looked that it should bring forth grapes, brought it forth wild grapes? And now go to; I will tell you what I will do to my Vineyard; I will take away the hedge thereof, and it shall be eaten up: and break down the wall thereof, and it shall be trodden down; and I will lay it waste: it shall not be pruned, nor digged, but there shall come up briars and thorns. I will also command the clouds, that they rain no rain upon it.

These, my BRETHREN, are the punishments, which GOD in justice ^m threatens to inflict in this world upon such men, as are here figur'd by an unfruitful VINEYARD: and no doubt the whole Vegetable Creation will rise up in ⁿ judgment against us on the day of his SON'S coming to receive our fruits, and will condemn us ^o to be hewn down, and cast into the fire; if under all these natural and providential advantages we do not ^p break up our fallow ground: or if, when it is thus enriched in every thing to all plenteousness, it prove barren, unfruitful, or bring forth evil or wild fruit. But if we now ^q abound more and more in knowledge, and in all judgment, and in the fruits of righteousness, which are by JESUS CHRIST unto the praise and glory of GOD, WE shall then ^r be like Trees planted by the rivers of water, prospering and flourishing in this world: and when we die, WE shall be transplanted into a better Soil, and a happier Climate, WE shall be ^s Blessed, and receive a right to eat for ever of the Tree of Life, which is in the midst of the Paradise of GOD.

^m Jer. xi. 17. Gal. vi. 7, 8.

ⁿ Ecclus xxvii. 6.

^o Heb. vi. 7, 8. John xv. 2. Matth. iii. 10. vii. 19. Luke xiii. 7, 9. Dan. iv. 14.

^p Hof. x. 12.

^q John xv. 16. Philip. i. 9, 11. Col. i. 10.

^r Jer. xvii. 8. Psalm i. 3.

^s Rev. ii. 7. xxii. 14.

John iv. 36. Prov. xi. 30. Wisd. iii. 15.

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All written by the Right Reverend Father in God, Thomas Lord Bishop of Bangor.







