

THE PHILOSOPHICAL WRITINGS
OF
RICHARD BURTHOGGE

MARGARET W. LANDES

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THE PHILOSOPHICAL WRITINGS
OF
RICHARD BURTHOGGE

EDITED WITH INTRODUCTION AND NOTES

BY

MARGARET W. LANDES

HALLOWELL FELLOW AT WELLESLEY COLLEGE, 1913-14

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PREFACE.

THIS book is published in the hope of securing for Richard Burthogge the place which he deserves yet has never held in the history of British thought. Its editors wish to share with other students the rediscovery, which they owe to Georges Lyon, of a seventeenth-century English philosopher so free from the prepossessions of his Platonist contemporaries that he "grounds notions" in sense and so far advanced in the path which, a century later, Kant trod that he says: "The immediate objects of humane cogitation are all appearances, which are not properly in the things themselves."

All the writings collected in this volume are reprints from first editions in the possession of the Harvard University Library. All are printed entire save the *Essay upon Reason*, of which the greater part and (it is believed) the essential part is given including the chapter and section headings of the omitted chapters. The old orthography of English, Greek and Latin has, for the most part, been retained. Bracketed numbers are the page-numbers of the original editions. The kindness of the Harvard Library, in allowing the use of the texts, is gratefully acknowledged.

This volume is the third contribution to the study of seventeenth- and eighteenth-century English philosophical

texts by graduate students of Wellesley College.¹ The immediate incentive to its study of Burthogge is Prof. A. O. Lovejoy's reference to him in an essay on "Kant and the English Platonists." The editors take this opportunity to express their appreciation of Dr. Lovejoy's generous and expert counsel in the preparation of the book. Warm thanks are due also to Professor Rufus M. Jones of Haverford College, and to Professors Charlotte F. Roberts and Alice Robertson of Wellesley College, for Notes attributed to them.

The editor of this volume illuminates the text of Burthogge by biographical and philosophical Notes and, in her Introduction, calls attention to the anticipations both of Locke and of Kant which give the writings of Richard Burthogge, though hitherto all but unknown, their genuine historical significance. Miss Landes compares Burthogge's doctrine with that of his contemporaries and successors and, in an Outline, summarizes and combines the teachings, not always consistent with each other, of his different metaphysical works.

To her philosophical comments may be prefixed a brief remark about Burthogge's literary style. Readers of the *Organum* and the *Essay* will find those works marked at many points by a directness and a simplicity and by an occasional touch of humor which strongly distinguish them from most of the philosophical treatises by Burthogge's contemporaries. His predilection for plain language and for logical statement is indicated by his attitude of kindly scorn toward discourses "wherein Words are sensible but not the Propositions and yet are taken by those that make them for High Sence."

It is hardly to be hoped that the reader of this book will "make sense" of all that Burthogge says. The attentive

¹ Earlier volumes are: an edition of Arthur Collier's *Clavis Universalis*, with Introduction and Notes by Ethel Bowman (Open Court Publishing Co., 1909); and a study of *The Philosophy of John Norris*, by Flora I. MacKinnon (Psychological Review Publications, 1910).

reader cannot, however, fail to profit both by his keen and sympathetic comment on his immediate predecessors and contemporaries and by his first-hand introspection, sound argument and independent thinking.

MARY WHITON CALKINS.

WELLESLEY COLLEGE.

November, 1920.

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INTRODUCTION.

INTRODUCTION.

A. THE LIFE OF RICHARD BURTHOGGE.

THERE are not many sources for the life of Richard Burthogge. The meager accounts by his biographers are based for the most part on the short sketch of his life quoted anonymously by Anthony Wood in the *Athenae Oxonienses*.

Burthogge was born in Plymouth, England.¹ The dates of his life are not definitely known, but are usually given as 1638-94.² As Georges Lyon³ points out, however, the date of his death must have been later than 1694. It might be inferred from the fact that *Christianity a Revealed Mystery* was not published until 1702, that the date has been placed too early. This work, however, may have been posthumous. But the fact that *Of the Soul of the World*, a letter to Locke, is dated 1698, shows conclusively that the date of Burthogge's death must have been at least four years later than that given by his biographers.

Of Burthogge's parents we are told only that his father was a gunner.⁴ And of his early life nothing is recorded but the fact that he received his early education at the Exeter Grammar School.² In 1654 he "became either a serv-

¹ Anthony à Wood, *Athenae Oxonienses*, Vol. IV, p. 581. Georges Lyon, *L'idéalisme en Angleterre au XVIII. siècle*, p. 72.

² Leslie Stephen, *Dictionary of National Biography*. Georges Lyon, *loc. cit.* Ueberweg, *History of Philosophy from Thales to the Present Time*, Vol. II, p. 365.

³ *Loc. cit.*

⁴ Anthony à Wood, *loc. cit.* Cf. Georges Lyon, *loc. cit.*

itor or chorister of All-s. coll." He "took one degree in arts 4 years after, completed it by determination as a member of Linc. coll." He then studied medicine at the University of Leyden and in 1662 "was doctorated in physic." On his return to "his native country, [he] married, buried his wife, took to him a second wife who was a widow of the parish of Totness in Devonshire, on whose joynture he lives in Bowden near to that place, as he hath done above 20 years, practises physic, and by that and wiving he hath obtained a pretty foul estate. This person, who always kept pace with the fanatics, temporiz'd with the papists in the reign of King James II and therefore was made a justice of peace for Devonshire, which office he kept under Will. III as being a favourer of fanatics. He is look'd upon as a person of considerable learning, and of no less pride and ambition." The biographer is here quite evidently not free from personal feeling in sketching the facts of Burthogge's life. It is possible that he speaks with just scorn of Burthogge as one who diplomatically "kept pace with the fanatics," and at the same time "temporiz'd with the papists." Since, however, he furnishes no evidence, it is more reasonable to suppose that what he looked upon as diplomacy in Burthogge was only evidence of more advanced religious views.⁵ Religion in England in the seventeenth century was still dominated by tradition and dogma, and men of liberal religious views were rare.

In the years following his course at Leyden Burthogge was apparently finding time, aside from his professional duties, for philosophic reading and writing. Between the years 1671 and 1702 he published some eight or nine religious essays and three philosophical works. Of his philosophical writings the *Organum Vetus & Novum* appeared in 1678, the *Essay upon Reason, and the Nature of Spirits* in 1694, and *Of the Soul of the World* in 1699.

⁵ Cf., however, *Organum*, Sect. 41, p. 35.

B. BURTHOGGE'S PLACE IN THE HISTORY OF PHILOSOPHY.⁶

Burthogge is one of those individuals, appearing now and again in history, whose merit is unrecognized in his own day not only because his teaching is premature, but also because it is so pervaded by the dominating thought of the time that its element of originality is lost. As a philosopher Burthogge cannot be placed either with the idealists of his own time or with those of the following century. He holds a unique place between the two. All his writings bear in some measure the stamp of the Platonic idealism of the seventeenth century. His most significant teaching, however, is more closely allied to the idealistic philosophy of the eighteenth century. But for its Lockian strain of sensationalism his theory of knowledge is essentially that of Kant.

1. *Burthogge's Relation to the Cambridge Platonists.*

The influence of the Cambridge Platonists is obtrusively evident in Burthogge's writings. His method, except in the *Organum* and in the *Essay*, is the same uncritical method of the Platonists. His theological works are full of the eloquent exhortations,⁷ and long quotations from the Bible⁸ and the classics⁹ which make the writings of Cudworth,¹⁰ More¹⁰ and Culverwel¹⁰ the most tedious of reading. And again,

⁶ Ueberweg alone, of the writers of the history of philosophy, makes mention of Burthogge in a single short paragraph.

⁷ See *Christianity a Revealed Mystery* and *A Brief Discourse concerning Perseverance in Grace*.

⁸ *Of the Soul of the World*, pp. 21-24; *Christianity a Revealed Mystery*, pp. 26ff; *Causa Dei*, p. 43. The page references, throughout, are to the original editions. The writer is indebted to the Harvard University library for the use of its Burthogge texts.

⁹ *Of the Soul of the World*, pp. 11, 18, 24ff; ΤΑΓΑΘΟΝ; *Causa Dei*, pp. 250f, 256, 395, et al.

¹⁰ See Cudworth, *True Intellectual System*; More, *Antidote against Atheism*; Culverwel, *Discourse of the Light of Nature*.

with the exception of the two works mentioned above, Burthogge's writings like those of the Platonists, are drenched with the theological views of the time.¹¹ And even the *Organum* and the *Essay* do not escape the religious bias of the seventeenth century.¹² But more specifically, Burthogge holds in common with the Cambridge Platonists at least two of their important tenets. His doctrine of the superiority of mind over matter is, with unimportant differences, the same as that taught by More and by Cudworth. And one of his doctrines of truth is in agreement with that of the Platonists, although he has a second teaching about truth which contradicts his own first doctrine as well as that of the Cambridge Platonists.

More and Cudworth, basing their teaching on Plato's *Timaeus*, held that not man alone, but nature as well, is dominated by a soul. They did not identify the soul of the world with God himself, but conceived it as an instrument in God's hands, made and used by him to manifest himself in the world.¹³ Burthogge, on the other hand, seems to identify the "Mosaical Spirit" with the Spirit of God¹⁴ diffused throughout the world, although he holds at the same time, that God is "Pure Mind," independent of all matter.¹⁴ Burthogge's teaching also about the nature of the human soul is essentially that of the Platonists. More and Cudworth held that particular souls, i. e., souls of men and animals and even of plants, are "sprigs of the common Soul of the world," not "that very Soul it self,"¹⁵ though it is unreasonable, Cudworth adds, to suppose that every plant and blade of grass has "a Particular Plastick

¹¹ See *Causa Dei*; ΤΑΓΑΘΟΝ; *Christianity a Revealed Mystery*.

¹² *Organum*, Sect. 41; *Essay*, Ch. VII.

¹³ Cudworth, *True Intellectual System*, edition of 1678, p. 150; More, *Antidote against Atheism*, Bk. II, Ch. II, Sects. 4ff.

¹⁴ *Essay*, Ch. IV [VI], Sect. 1, pp. 124ff. Cf. Ch. V, Sect. 2, pp. 111f.

¹⁵ More, *Antidote against Atheism*, Appendix, Ch. XI, Sect. 9; cf. *Immortality of the Soul*, Bk. III, Ch. XVI, and Cudworth, *op cit.*, p. 171.

Life." Similarly Burthogge calls the soul "a certain Determinate Vital Energy....a certain Portion of the Spirit of the Universe, Vested in a Body...."¹⁶

Again, in teaching that by intuition truth is attained, Burthogge is in agreement with the thought of his time. To the Platonists truth always meant religious truth, which is known, they believed, by intuition. The more completely a man can get away from "meer speculation" and enter the realm of "spiritual sensation," the more certain is he of attaining a knowledge of truth.¹⁷ And Burthogge likewise teaches that apart from all sensuous experience we know the form of truth, which enables us to distinguish truth from error just as immediately as we distinguish sense-qualities.¹⁸ Burthogge, however, holds an empirical theory of truth which contradicts this view. The criterion of truth, according to this second theory is based not on intuition, but rather on the objective harmony of things among themselves. Truth is not necessarily that which we "clearly and distinctly" apprehend,¹⁹ nor that which is in accord with our faculties,²⁰ but that which fits in with the whole objective scheme of things.²¹

2. *Burthogge's Relation to Locke and Kant.*

In spite of the abundant evidence in all Burthogge's writings of the influence of seventeenth-century thought, it is true that his theory of knowledge, his most important

¹⁶ *Essay*, Ch. IV, Sect. 3, p. 150. Cf. *Of the Soul of the World*, p. 6: "...particular Souls....are Portions of that Spirit [Mosaical Spirit] acting in the several particular Bodies in which they are."

¹⁷ Smith, *Discourse concerning Divine Knowledge*, Sect. 1. Culverwel, *Discourse of the Light of Nature*, especially Chaps. IX and XI.

¹⁸ *Organum*, Sects. 63, 69.

¹⁹ *Ibid.*, Sects. 18, 68, 69.

²⁰ *Ibid.*, Sects. 7, 72.

²¹ *Ibid.*, Sects. 75, 78. Cf. Sect. 17.

philosophical teaching, remains singularly free from Platonist influence. It will be noted that in the *Organum* there are scattered passages²² in which Burthogge closely resembles his Platonist contemporaries in his estimate of sense, reason, and revelation. But these occasional passages, inconsistent as they are with his usual teaching, form no integral part of Burthogge's doctrine of knowledge, which stands, untouched by Platonist influence, as a remarkable anticipation of Kant.

Far from holding that sense is a hindrance to knowledge, Burthogge teaches, like Kant, that it is one of the only two sources of knowledge. The essentials of Kant's epistemology are found in the well-known words: "Thoughts without contents are empty, intuitions without concepts are blind. . . . The understanding cannot see, the senses cannot think. By their union alone can knowledge be produced."²³ And this is exactly Burthogge's teaching: "The Understanding converses not with things ordinarily but by the Intervention of the sense."²⁴

Sensation, according to both Burthogge and Kant, is the passively received in knowledge, that which is given in experience.²⁵ "...the impressions of things without upon the Sensories, produce or occasion in them the Cogitations which we call Sentiments, as Colours, Sounds, Sapours &c."²⁶ And as objects can be perceived only through sensation, so, Burthogge teaches like Kant, they can be thought only through concepts or "notions." The mind knows nothing, he says, apart from its particular "manner of conceiving things." "The Understanding conceives not anything but under the Notion of an Entity, and this either a Substance or an Accident; under that of a whole or a part: or of a

²² Sects. 30, 32, 34, 35, 50.

²³ *Critique of Pure Reason*, A (1st ed.), p. 51; B, p. 75.

²⁴ *Essay*, Ch. III, Sect. 1, p. 60.

²⁵ *Critique of Pure Reason*, A 51; B 75.

²⁶ *Organum*, Sect. 24. Cf. Sect. 74.

Cause, or of an Effect or the like.”²⁷ And again Burthogge is in agreement with Kant in his most important teaching that in order to have knowledge of the object the percept and the concept must unite. Neither alone is sufficient to give complete knowledge.²⁸

The parallelism between Burthogge and Kant may be carried further. Burthogge holds not only that the object of knowledge involves both the sensational and the notional factor, but, like Kant, he teaches that it has no existence independent of thought.²⁹ Both teach that the object of knowledge is phenomenal, not real. That the sensuous content of knowledge has no objective existence was not an absolutely new doctrine even in Burthogge’s time. Locke, like Descartes, had already taught the ideality of the “secondary” sense-qualities. But that the mind itself, independent of sense-experience, actively contributes to the make-up of its own object is a doctrine which, according to the usual view, was promulgated for the first time by Kant. Yet in the light of the teaching of the *Organum* and the *Essay* it is clear that Kant’s own “Copernican revolution” had an instigator at least a century older than Kant.

To hold, however, as Professor Lovejoy holds,³⁰ that Kant’s theory was the common property of the Cambridge Platonists seems hardly justifiable even in the light of the quotations given in support of this belief. What these quotations from Cudworth and More show is rather the tenacious belief in the superiority of mind over matter, and thus in the superiority of thought (in which matter is subservient to mind) over sensation (in which the mind is affected by matter). Nothing was more abhorrent to the Platonists

²⁷ *Essay*, Ch. III, Sect. 1, p. 57. Cf. *Organum*, Sects. 14-15.

²⁸ *Organum*, Sects. 9-10. Cf. *Essay*, Ch. III, Sect. 1, p. 59; *Critique*, A 50, 100, 109, 116; B 74, 145.

²⁹ *Essay*, Ch. III, Sect. 1; *Organum*, Sects. 8-13.

³⁰ *Essays Philosophical and Psychological in Honor of Wm. James*, pp. 272-78.

than the idea that matter could in any way *assist* mind. The passage quoted from Cudworth³¹ is, by his own confession, simply an outburst against the "atheistic argument" that since matter exists in its own right without need of any creative mind, our knowledge of things depends merely upon "passive receptivity." This teaching was an outrage to the Platonists merely because it belittled the mind, making it appear of so much less importance than matter, and not because it ignored the necessary conceptual element in knowledge as taught by Kant and Burthogge. "But sensible things themselves. . . .," says Cudworth,³² "are not known and understood either by the passion or the fancy of sense, nor by anything merely foreign and adventitious, but by intelligible ideas exerted from the mind itself, that is, by something native and domestic to it." These words of the quotation, italicized by Professor Lovejoy³³ to emphasize their agreement with the Kantian teaching, seem rather to show plainly that Cudworth is simply falling back on the familiar "innate ideas" theory in order to prove to the atheist that the mind is quite capable of getting on without any assistance from matter; that it would, in fact, fare much better could it be rid of sensuous perception altogether.

Burthogge, like Kant, falls short of idealism. He could not escape the influence of the traditional dualism of the seventeenth century any more than Kant could shake off the influence of Wolff's dualistic teaching.³⁴ Neither Burthogge nor Kant ever denied the existence of reality external to mind. But since they find that the object of knowledge has no independent existence, they are forced to hold that reality, conceived as the thing independent of consciousness, is unknown. This teaching about the unknown thing is empha-

³¹ *Ibid.*, pp. 272-74.

³² *True Intellectual System*, *op. cit.*, p. 731.

³³ *Essays . . . in Honor of Wm. James*, pp. 273f.

³⁴ See M. W. Calkins, *The Persistent Problems of Philosophy*, p. 236.

sized by Burthogge in both the *Organum*³⁵ and the *Essay upon Reason*.³⁶ And Kant not only includes it in "Paralogisms" and "Antinomies"³⁷ of the "Dialectic," but anticipates it in all the other divisions of the *Critique*;³⁸ in the chapter on "Phenomena and Noumena"³⁹ of the "Analytic," and in the "Æsthetic."⁴⁰

Burthogge's teaching about the nature of the thing is essentially the same as that of Kant. The "thing" is, in the first place, unlike the "object," non-mental and wholly independent of thought.⁴¹ In the second place, the thing really exists. The object, Burthogge teaches with Kant, is only appearance or phenomenon, without reality.⁴¹ And finally the thing, for Burthogge as well as for Kant, is unknown.⁴¹ Thus does Burthogge, like Kant, unquestioningly and tenaciously hold to an external reality, a reality robbed, however, of all positive character save that of existence.

There is in Burthogge no explicit proof for the existence of the thing. That there exists independent reality was not questioned in the seventeenth century. And Burthogge, like his contemporaries, takes the "thing" for granted though he suggests the argument, later used by Kant, for the existence of it. Our sensations, he says, must have a cause; we know that we ourselves do not cause them; they must therefore have an external cause.⁴² Kant several times in the *Critique* implies this causal relation between the phenomenon and the thing.⁴³ "The understanding," he says, "... forms the thought of an object by itself, but as transcenden-

³⁵ Sect. 9.

³⁶ Ch. III, Sect. 2, pp. 71, 73.

³⁷ A 357, 359, 361, 368, 378, 477ff; B 505ff.

³⁸ See M. W. Calkins, *op. cit.*, p. 237, footnote.

³⁹ A 250, 253, 258; B 300, 303.

⁴⁰ A 26ff, 42, 44f, 49; B 42ff, 59, 61f, 67.

⁴¹ *Organum*, Sects. 9-10.

⁴² *Essay*, Ch. III, Sect. 2, p. 73, cf. pp. 74f.

⁴³ A 252, 288; B 344.

tal only, which is cause of phenomena.”⁴⁴ This doctrine is formulated even more explicitly in the *Prolegomena*: “I grant . . . that there are bodies without us, that is, things which, though quite unknown to us as to what they are in themselves, we yet know by the representations which their influence on our sensibility procures us.”⁴⁵ That the thing or reality is unknown seems, however, to Burthogge to require no proof. On the basis (1) of his view that external reality unquestionably exists, and (2) of his previous teaching that the object of knowledge has no independent existence, it follows inevitably that the external reality is unknown. If what is known is not external and if such external reality nevertheless exists, it follows that this reality must be unknown.⁴⁶

The agreement of Burthogge’s teaching with that of Kant is not complete. Marked as the likeness is between the two, Burthogge’s epistemology seems to diverge from the Kantian at one important point. Along with his teaching that the mind independent of all external impression actively contributes part of its own object, Burthogge at the same time holds a sensationalistic doctrine. While agreeing with Kant in teaching that the notional factor is subjective in source, Burthogge seems to deny to the notion any *a priori* validity by holding, like Locke, that sense-impressions enter the mind directly, independent of *a priori* subjective conditions. “The senses,” says Locke, “at first let in particular ideas, and furnish the yet empty cabinet.”⁴⁷ And again: “Let us suppose the mind to be, as we say, white paper, void of all characters, without any ideas; how comes it to be furnished? . . . To this I answer in one word, from

⁴⁴ A 288, B 344.

⁴⁵ Sect. 13, Remark II. Cf. M. W. Calkins, *op. cit.*, p. 240, footnote.

⁴⁶ For Kant’s arguments in defense of the view that external reality must be unknown, see *Critique*, A 128f, 244, 378.

⁴⁷ *Essay concerning Human Understanding*, Bk. I, Ch. II, par. 15.

experience."⁴⁸ And there are passages in Burthogge which give the same sensationalistic account of the origin of our knowledge: "...the impressions of things without upon the Sensories," he says, "produce or occasion in them the Cogitations which we call Sentiments, as Colours, Sounds, Sapours &c. And Sentiments (again) impressing...the Minde and Understanding, beget or occasion in it those higher Cogitations which we call Notions, Apprehensions of Reason or Ideas..."⁴⁹ This agreement of Burthogge's teaching with that of Locke, and the added fact that Burthogge's *Essay upon Reason*, dedicated⁵⁰ "To the Learned Mr. John Lock, Author of the Essay upon Humane Understanding," appeared four years after Locke's *Essay*, would suggest that Burthogge borrowed from Locke. A further consideration, however, proves the suspicion unwarranted. The *Organum*, in which Burthogge's complete doctrine of knowledge is given, was published twelve years before Locke's *Essay*. Moreover, it will be noted that of Burthogge's two works the later shows less evidence of agreement with Lockian teaching than the earlier. It is true that Burthogge insists in the *Essay*⁵¹ as in the *Organum*,⁵² that all knowledge comes through sense-experience. But the point of emphasis has been shifted in the later work. In the *Organum* Burthogge, like Locke, lays stress upon the fact that sense is the fundamental source of knowledge from which the notional is derived. In the *Essay*, on the other hand, Burthogge seems no longer chiefly concerned in showing that all knowledge begins with sense-experience but rather, like Kant,⁵³ in emphasizing the fact that since all

⁴⁸ *Ibid.*, Bk. II, Ch. I, par. 2.

⁴⁹ *Organum*, Sect. 24.

⁵⁰ Preface, p. [1].

⁵¹ Ch. I, Sect. 1, pp. 3, 6f, 9ff; Ch. III, Sect. 1, pp. 58ff; Sect. 2, pp. 67f, 70ff; Ch. IV, Sect. 1, p. 80; Ch. IV [VI], Sect. 2, p. 138; Sect. 3, p. 152.

⁵² Sects. 9, 24, 26, 27, 32, 74^a, 92.

⁵³ *Critique*, A 104. Cf. the section on Phenomena and Noumena.

knowledge comes through sense the object of knowledge must be phenomenal, not real.⁵⁴

But granting that Burthogge seems to combine inconsistently a quasi-Kantian category doctrine with a Lockian sensationalism, the apparent inconsistency is not impossible of explanation. The explanation lies in two facts: in the first place, Burthogge does not include in his teaching an important part of the Kantian doctrine; and in the second place, his sensationalism is not of the thoroughgoing Lockian type. Burthogge never attributes, as Kant does, a *a priori* validity to notions. While holding that notions are subjective and that they actively contribute to the make-up of the object, he never positively admits the Kantian teaching that these notions constitute the *a priori* condition under which alone sense-experience is possible. And, on the other hand, Burthogge does not hold with Locke, that sense-impressions enter the "empty cabinet" unaccompanied. Burthogge's teaching seems to be rather that, though sense-impressions are the beginning of knowledge, they never appear in the mind by themselves. Upon the occasion of sense-experience there are inevitably aroused in the mind certain notions. These notions are not derived from sense, but, lying dormant in the mind, are made operative upon the occasion of sense-experience. In other words, Burthogge holds neither the Kantian view that notions are the necessary condition for sense-experience, nor the Lockian view that they are merely an outgrowth from sense-experience. He seems to hold rather, that they are the inevitable accompaniment of sense-experience, giving to it meaning.

But this reconciliation between Burthogge's sensationalism and his doctrine of subjective notions leaves still unexplained another apparent inconsistency in his teaching.

⁵⁴ Cf. Burthogge on the advantage of knowing that the object of knowledge is phenomenal (*Essay*, Ch. III, Sect. 2, pp. 68-69) with Kant (*Critique*, 2d ed., Pref., p. xxi) and Locke (*Essay*, Bk. I, Ch. I, pars. 4-6).

The form of *apriorism* against which Burthogge argues is the same widespread "innate ideas" theory of the seventeenth century, later attacked by Locke.⁵⁵ In spite of this denial of original ideas independent of sensation ("Con-natural and Ingrafted Notions; Principles designedly im-planting in the Minde, to be a rule to it. . ."),⁵⁶ Burthogge apparently admits, in the *Organum*, the validity of intuition in judgments of truth and falsity. This teaching seems to be directly opposed not only to his epistemological sensationalism, but also to his teaching that the criterion of truth is empirical. Burthogge indeed asserts both that the "form" or "notion" of truth must be known beforehand,⁵⁷ i. e., independent of sense-experience, in order that it may be applied as the test of truth when the object is presented sensuously, and (in apparent contradiction) that truth is *external* harmony, something in the object⁵⁸ which is perceived empirically only.

These two teachings about the criteria of truth certainly seem to be diametrically opposed, and yet it is possible once more to interpret Burthogge's meaning in such a way as to reconcile his intuitionism with his empiricism. If the account of Burthogge's epistemology as an intermediate form between the Kantian category doctrine and the Lockian sensationalism is correct, we need only apply this interpretation to his teaching about truth in order to explain the apparent inconsistency. In other words, Burthogge's empirical criterion of truth can be reconciled with his intuitionism in much the same way in which his sensationalism was reconciled with his doctrine of subjective notions. Burthogge apparently means that the "form" or "notion" of truth, like all other notions is an actual part of the object, but that it

⁵⁵ *Essay concerning Human Understanding*, Bk. I.

⁵⁶ *Organum*, Sect. 73.

⁵⁷ *Ibid.*, Sects. 63, 64, 69, 74^a.

⁵⁸ *Ibid.*, Sects. 68, 69, 72, 74^a, 75, 78ff, 83, 84. Cf. Sect. 17.

is a part contributed by the mind. According to this view, although the mind alone contributes the notion of truth, it does so only on the occasion of sense-experience. The mind never even becomes aware of its possession of the "notion" of truth, until the sensuous percept provides the opportunity for the application of the notion.

ORGANUM VETUS ET NOVUM.

Organum Vetus & Novum .
OR,
A DISCOURSE
O F
REASON
AND
TRUTH.

WHEREIN
The Natural Logick common
to Mankind is briefly and plain-
ly described.

By RICHARD BURTHOGGE M.D.
In a Letter to the most Honour-
red *Andrew Trevill* Esq. of *Ethe*
in the County of *Cornwal.*

Marc. Ant. *ως συνίεν.* l. 7. s. 12.

Ὁρθὸς ἢ Ὁρθόμηνος.

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ORGANUM VETUS & NOVUM

OR

A DISCOURSE OF REASON AND TRUTH.

FOR THE MOST HONOURED ANDREW TREVILL^{1*} ESQ;
AT ETHE IN THE COUNTY OF CORNWALL.

SIR,

That of making many Books is no End, was truly said by the wisest man that ever was: Not in *this* sense only, that multitudes of Books, begetting in the mindes of those that read them infinite Distractions, deprive them of the Benefits they might receive from fewer; but in *another*, that there is a Prolifickness in Books, that one produces another, and this a third, and so on [2] without End; and consequently that the labour men are at in making them, is not only Useless, but Endless.

You will have reason to believe this second Sense to be as just and true as the first, when you consider that I, who lately wrote an *Apology* for the Deity,² am obliged by the Reflexions made upon it, now to write *Another* to defend it; and no question (but) the Latter may be as obnoxious to Unjust Exceptions as the Former: So that if Occasion given, be

* This index and those which follow refer to the Notes, pp. 185-224.

also taken, there will never be an End of writing, but by what gives End to the Writer.

However, having received an *Invitation* to adde something to the former Essay, I am (at last) resolved, both in justice to myself and to my Book, to comply with *it*, and to enter into thoughts of the *Causes* that not irrationally may be presumed to have had an Influence on the Objectors, and into most of the Objections; and then to offer to ^[3] *them* (by way of Obviation) such *Considerations* as (it may be) will not prove unuseful to Rectifie Mistakes in other Matters, as well as in this.

And the Main Causes I intend to touch on (not to mention Envy, &c.) are Three: Proud *Ignorance*, Ignorant *Zeal*, and Impertinent Reasoning.

I. PROUD IGNORANCE consists in a mans presumption of his own Omniscience, (for the Sciolist is ever most conceited) so that he presently and peremptorily condemneth that for Errour, which himself hath never learnt for Truth; as if there were no growth in Knowledge, or that any Humane Understanding were adequate to Verity: Whereas Capacities of the largest size are yet but narrow; and they that know most, do but the better know how little it is they know, and how much they are to seek. The most the Wisest know, is, that their own and others Ignorance is ^[4] the surest Object of Knowledge. True Knowledge is not conceited; it is humble, and aspireth after more. If any man *think* that he knoweth any thing, he knoweth nothing yet as he *ought* to know.

2. IGNORANT ZEAL, (a cause of very general influence into many Mistakes, not onely in matters of Religion, but also in points of Philosophy) what is it but a Horse of high metal without eyes? Indeed, nothing is more commendable in Religion, or administers a better Argument of Sincerity in its Professors, than fervency of Zeal; but then it must be Zeal *according to Knowledge*, and managed with *discretion*, or else it is but Rage and Fury, not Zeal. Zeal regulated by the Holy Scriptures, that is, Zeal according to Knowledge, and governed with Wisdom, is Fire from the *Altar*: but then Irregular Zeal, Zeal *without Knowledge*, Zeal without *Wisdom*, is *Wild-fire*, which (as the corruption of the best is [5] worst) hath nothing more pernicious than it self to Church or State.

Zeal *without Knowledge* may be stiled *Blinde* Zeal, and is that when men are *passionately* concerned for or against an Opinion and Practice, from a strong, but groundless and unwarranted perswasion, that what they do, and what they are for, is highly to the *honour* and glory of God, and what they oppose, is against *it*: as if they knew abstractly of themselves, and by their own discoursings, what is for God's Glory, or what is otherwise, further than it hath pleased God himself in his Word to reveal it. That onely is for God's Glory, which is grounded on God's Word. The Word of God is able to make the Man of God perfect. The *Corinthians* had a Zeal for God, but not according to Knowledge: and so had the *Jews*, who persecuted

and murther'd the Christians, but thought they did God good service. [6] What manner of men *they* were, who among *them* call'd themselves the *Zealous*, *Josephus*³ hath left on Record. Yes, the Disciples of Christ, in Zeal too, they would have Fire from Heaven, and cite an Example; but our meek and blessed Saviour tells them they *knew not* the Spirit they were of. They took it to be a Spirit of Zeal, but He knew it to be a Spirit of Passion. A persecuting furious Spirit is none of Christ's; it is Antichrist's. The Wrath of man worketh not the Righteousness of God.

Zeal *without Wisdom* may be call'd *Imprudent Zeal*, and is Zeal unseasonably and unfitly shewn in circumstances of time, place, and persons that will not bear *it*; as when men shall take their *Pearls*, their Reprehensions, Counsels, Instructions, or whatever other instances a Zeal is shewn in, and cast *them* before the Swine; and that though they have a Prospect themselves, or an Advertisement from o^[7]thers, of the probable ill success, both that the Pearls shall be trodden under foot, and they themselves be rented; This is not to employ and use Zeal, but to lose *it*. There is a time for every Purpose, and every thing is beautiful onely in that time. Pearls so cast, are cast away.

3. IMPERTINENT REASONING, (the third Cause I mention'd, and a Cause of all others of most general influence into Errours and Mistakes) I call not onely *that* which of the *Logicians* is named παρά-
βασις εἰς ἄλλο γένος, a passing and arguing from

one thing to another, when yet there's no Agreement, no Connexion between them; but *that* also which is bottomed on *single* Mediums, and runs on in a long, but simple line and train of Consequences, from thing to thing; or *else* is founded but on *second* Notions, and inlaid with them: which way of Reasoning must be shewed to be Impertinent, and that by shewing a better, pertinent one. [8]

Thus, Sir, I am arriv'd to what I principally design'd; and I crave your pardon if, for my Readers satisfaction as well as for mine own, I now enlarge, and take the boldness to let him understand my apprehensions of *Reason*, both as to its *nature*, and the *interest* it hath in Religion, and how (I think) *it* must be circumstanced and condition'd, to assure us of *Truth*. By which Performance if I gain no more, I shall this; that as well the persons that *approve* my former Essay,² as those that *cavil* it, will know the *Rule* and Method I proceeded by (in framing it;) which, to the *former* will afford a greater Confirmation, if *it* be Right; and to the *latter*, a fairer rise of assaulting (me) if it be not.

1. Before I can proceed to shew *what* Reason is, I am first to shew the many senses the Word is taken in; which, not done by most, is one occasion of the great Confusion in their talks about it. And Reason (to omit some other senses not so necessary here) is in ordinary Language taken either largely, or strictly, or appropriately and most strictly.

2. Reason *largely* taken, is the same with Minde

or Understanding, and so is commonly affirmed to exert it self in three Acts; the *Apprehension* of *simple* Terms, the *Composition* of those Terms by way of Affirmation and Negation, and *Discourse*, or illation of one thing from another. Reason *strictly* taken, is the Understanding as it issues out in its third Act, not in the Apprehension of simple Terms, nor in the Composition of them, but in Discourse and Illation; and so Reason is the Understanding as it argues, discourses, infers. But Reason is *appropriately* taken, or most strictly, as it is oppos'd to *Faith* and *Revelation*, of which hereafter.

3. *Reason* taken for the MINDE or Understanding, is that Faculty whereby a man is said to be Reason^[10]able, Intelligent, Understanding; as Sight is that Faculty whereby an Animal is said to be Seeing: or 'tis that Faculty whereby a man is said to Elicite Acts of Reason, or to Understand; as Sight is that Faculty whereby an Animal is said to See. I so define it by the *Act*, for that the Act is better known than the Faculty. To Understand (as well as to see) is a first Notion, and he must be very simple that understands not what is meant by it; nor are there any Notions more intelligible, whereby to mark Faculties, than those or their Acts. Acts we see, being conscious of them when we exert them; but Faculties we see not, we know not but by their Acts.

4. The *Acts* of *Reason* in this large sence (as the same with Minde or Understanding) to speak of them as they offer and present themselves to

mine (without confining of my self to Notions of the Schools, or common Logicians) are Two;^[11] *Apprehension* and *Judgement*.

5. APPREHENSION is that Act of Understanding whereby it is said to See or Perceive things, and is the same in relation to the Minde, that Seeing is in relation to the Eye.

6. Apprehension is Conversant with *things* either as in themselves, or as they are *noted*; and they are noted either by simple *words*, or else by *Propositions*, which are words joyned by way of Affirmation or Negation; *both* which the Minde sees or apprehends *but* as it hath the *Sence* of them. Sence or Meaning is the *Motive* and immediate *Object* of Apprehension, as *Colour* is of Seeing. The Eye sees nothing but under Colour; the Minde apprehends nothing but under Sense.

7. I know well that *Truth* is usually affirmed the proper, adequate, immediate, formal Object of the Intellect; but (it) is not so. Not Truth, but Sence or Meaning is the proper, adequate, immediate Object of the Minde, as to its *first* Act ^[12] [that of Apprehension;] Truth is onely the proper, adequate, immediate Object of it as to *another*, which is called *Assent*, and is a kind of Judgement. I understand and apprehend a Proposition which is *false*, that is, I have a Sence and Meaning of it, though when I Understand or Apprehend it, I refuse my Assent. So that it is not Verity that is the Motive and immediate Object of Understanding in its Acts of Apprehension, but Sence or Meaning.

8. Sence or Meaning is that Conception or Notion that is formed in the Minde, on a proposal to it of an Object, a Word, or Proposition; as Colour is that Sentiment begotten, and caused in the Eye, upon the impression of its Object on it.

9. To understand this, we are to consider, That to us men, *things* are nothing but as they stand in our *Analogie*; that is, are nothing to us but as they are known by us; and ^[13] they are not known by us but as they are in the Sense, Imagination, or Minde; in a word, as they are *in our Faculties*; and they are in our *Faculties* not in their *Realities* as they be without them, no nor so much as *by Picture* and proper Representation, but onely by certain *Appearances* and Phaenomena, which *their* impressions on the Faculties do either cause or occasion in them.

10. Every Faculty hath a hand, though not the sole hand, in making its immediate Object; as the Eye makes the Colours it is said to see, the Ear the Sounds, the Fancy the Idols, and so the Understanding⁴ the Conceptions or Notions under which it apprehends and sees things. So that all the immediate Objects of Humane Cogitation (to use the word in its largest sence) are *Entia Cogitationis*, All *Appearances*; which are not *properly* and (may I use a School-term) *formally*⁵ in the things themselves conceived under them, and consequently conceiv'd as if ^[14] they had them, but so onely in the cogitative Faculties. No such thing as Colour but in the Eye, nor as Sound but in the Ear, nor as Notion, Sense, or Meaning, but in the Minde. These,

though they seem in the *Objects*, and without the cogitative Powers, yet are no more in *them* than the Image that seemeth in the Glass is there indeed.

11. So that all *immediately cogitable beings* (that is, all immediate Objects of Humane Cogitation) are either *Entities of Sense*, as the immediate Objects of Sense, Colour, Sound, &c. or of *Imagination*, as the Images therein, the Idols it frames; or of *Reason and Understanding*, Mental Entities, the Meanings or Notions under which the Understanding apprehends its Objects; which (Notions) though they seem to the Understanding to be without it, and to be in the things understood, yet (as I said before) are no more without it or in the things themselves, than Colours are ^[15] without the Eye, or Sounds without the Ear, or Sapours without the Tongue, although they seem so to Sense.

12. Faculties and Powers, Good, Evil, Virtue, Vice, Verity, Falsity, Relations, Order, Similitude, Whole, Part, Cause, Effect, &c. are Notions; as Whiteness, Blackness, Bitterness, Sweetness, &c. are Sentiments: and the former own no other kind of Existence than the latter, namely, an *Objective*^s (one.) A Notion that will free the Minde of much Intanglement in framing Notions. We generally conceive Faculties, Good, Evil, and other Notions (under which the Minde apprehends things) to be *Realities*, and to have an Existence of their own without the Minde, and though there were no Minde to think of them, when indeed they are but *Noemata*, Conceptions, and all the formal being any of them

have, is onely in it. And no wonder if he that takes *Noemata* to be Realities [16] findes himself confounded by that mistake, in forming his Conceptions about them. Notions therefore are very aptly, though somewhat barbarously, stiled by the Schoolmen, *Conceptus Objectivi*; Notions of the Minde, but yet seeming to be in the Object. He that looks for Notions in Things, looks behinde the Glass for the Image he sees in it.

13. Such *Cogitable Beings* as have no foundation, no ground in Realities, that is, in things without the *Cogitative Faculties*, but are mere effects of the Faculties, are call'd *Chimerical* (Entities;) and in the Imagination are *Fictions*, in the Understanding mere Notions; as in the former a Golden Tree, in the latter a Philosophical Romance, or Groundless *Hypothesis*. But *such* as have Foundation in Realities, are called *Real*, [Real Notions] not that in their own nature they are in Realities themselves, but that they have their Grounds in those that are; [17] they are real (as a School-man would express it) not formally,^s but fundamentally; they are inchoately and occasionally in the things, but not consummately and formally but in the Faculties; not in the things, but as the things relate to our Faculties; that is, not in the things as they are *Things*, but as they are *Objects*.

14. Those Words or Propositions any one hath a sence of, those things to which the Words or Propositions relate, he hath a Notion of. Sence is Notion; onely it is called *Sence* as it relates to the

Words or Propositions, and *Notion* as it relates to the Things; but *indeed* Sence is Notion, and to have the sence of a Word or Proposition, is to frame a Notion of it, or of the things signified by it.

15. 'Tis as impossible to apprehend a Word or Proposition one hath no notion, no sence of, as to *see* an Object that maketh no impression of Colour on the Eye; for ^[18] what Colour is to the Eye, that Sence, Meaning, or Notion is to the Minde.

16. Sence, Meaning, or Notion arises from a Congruity in the Object to the Faculty; so that to enquire *why* one cannot understand or apprehend a *Non-sensical* Proposition or Word, is to enquire why he cannot see or hear Tastes, or taste and smell Sounds, or taste, hear, and smell *Colours*, or see an Object hath *none*.

17. That Congruity in the Object to the Faculty, whereby it either actually moves it, or is capable to move it to frame a Notion or Sence, ought to be distinguished from that Congruity which is in the Object within it self, or with other Objects: The former (for distinction sake) I call a *Congruity to the Faculty*; the latter a *Congruity in Things*. The harmony of Objects to their Faculties, and that of them within themselves, or one to another, are distinct Harmonies. I ^[19] can make sence of a Proposition that is not true, so that 'tis Congruous to the Faculty, it moves that; when yet (it being false) the Parts of it are Incongruous one with another.

18. To understand and apprehend a Proposition or Discourse, it sufficeth not to have a Perception

of the sence and meaning of the words; those words as in *Conjunction*, and ty'd together, ought to make such an impression on the Minde, as moveth it to make a Notion of them in that Relation. One may have a *sence* of the words in a Discourse, when yet he cannot make *any* of the Discourse it self, because he cannot frame a Conception, a Notion of them in the Composition that is given them in it. He cannot see how they are joyn'd.

19. There are a thousand Instances of Discourses of this kinde in *Jacob Bèhmen*,⁶ but I need not go so far as *Germany* to seek some; I might have many neerer home with^[20]in the compass of our own time and observation; but I decline them as Invidious; I will onely point to one in Dr. *Fludd*,⁷ a person that could speak as good Sence (if he listed) as another, but I could never make any of many Passages I finde in him, and of one particularly, namely, that in his Mosaick Philosophy, *Book 3. Sect. 1. Chap. 4.*

20. Those Discourses in which nor Words nor Propositions are sensible, or wherein the Words are sensible but not the Propositions, and yet are taken by those that make them for High Sence, may be called *Enthusiasm*. Of the former sort I apprehend the Whims of *Basilides*, of *Valentinus*, and the *Gnosticks*,⁸ and of the latter, those of the *Familists*,⁹ and of others of late.

21. Enthusiasm¹⁰ either may proceed from a *Spirit*, or from *Complexion* and a certain temper of Minde; the former I call *Demoniacal*, the latter *Complexional*; and not unlikely but in most Enthu-

siasts [21] it comes from both: whereof an Upstart Sect¹¹ among us, in its first appearing, afforded strong Evincements.

22. That there are *Philosophical* Enthusiasts, is as certain as that there are *Theological*; Enthusiasts in matters of Philosophy, as well as Enthusiasts in Matters of Divinity. *Paracelsus*,¹² *Helmont*,¹³ and many other *Chymists*, are Examples of the first sort; as *H. Nicolls*⁹ the Father of the *Familists*, and others, are of the second: *Jacob Behmen*⁸ and Dr. *Fludd*⁷ may pass for Examples of both.

23. When Enthusiasts think they understand one another, (as they All pretend to do, and that seriously, and therefore must have some impression to justify that Pretension, whereas yet no sober man can understand Any of them;) I conceive it not to be by *Apprehension*, but *Sympathy*; not Intellectually, by Apprehending, that is, by framing just, steady, distinct Notions of [22] what is said; but Sympathetically, by having excited in their minde on such Expressions, Motions, conformable to theirs that use them; for they all being of the same frame and temper of Minde or of Imagination, whatever touches One agreeably, also moves the Rest; as in Unison-Lutes, or other Instruments fitly tuned, but to strike One, is (at once) to move All.

24. Notions of the Minde are *bottomed* on *Sentiments* of Sense; so that as Realities are Grounds to Sentiments, so Sentiments are Grounds to Notions: the impressions of things without upon the

Sensories, produce or occasion in them the Cogitations which we call Sentiments, as Colours, Sounds, Sapours, &c. And Sentiments (again) impressing of the Fancy, and so the Minde and Understanding, beget or occasion in it those higher Cogitations which we call Notions: Apprehensions of Reason, or Ideas. Idols or Fantoms are in the Fancy, Ideas in the Minde. [23]

25. The neerer our Sensories are unto the Objects impressing them, (if not too neer) the clearer and distincter is the Sensation made by them; as we more cleerly and distinctly see an Object at a neerer than a remoter distance: so the nearer the Minde and Understanding is to Sentiments, the more cleer, distinct, and evident its Perceptions are; I mean, the more *sensible* Notions are, and the neerer to their Grounds, the more effective, more impressive and consequently clearer and more evident they be.

26. Hence Knowledge and Apprehension of things is better both acquired and conceived by *first Notions*, which are next to Sentiments, than by *second* which are more remote: The Knowledge which is had of things by first Notions, is more real, evident, cleer, distinct, than that which is by the second. First Notions are founded immediately on things; Second Notions are Notions concerning Notions: [24] These are not so impressive and effective as the first. By first and Second Notions, I both understand *Terms* or Words, and the Notions signified by *them*.

27. So much for the OBJECT of Apprehension,

which is Sense and Notion; and for the Grounds of that Object, which is Sentiment: Now for the AFFECTIONS of Apprehension (if a good one) and they are two, namely, Cleerness and Distinctness.

28. *Cleerness* of Apprehension, which is in the Minde the same that Cleerness of Seeing is in the Eye, is opposed to Obscurity and Darkness, and presupposes *Light*.

29. Light is that which manifests, and consequently *Intellectual Light* is that means whereby the Understanding comes to See and Apprehend its Objects; or that which manifests them to it: and is either Light of *Revelation*, which is also called Light of *Faith*; or Light of *Nature*, which is also called Light of *Reason*; ¹⁴ where Reason is *Appro*^[25]*priately* taken, and most strictly.

30. The *Light of Revelation* is that Discovery or Manifestation God himself is pleased to make of things by his Spirit, and is chiefly in the Holy Scriptures. The *Light of Nature* ¹⁴ is All other Light whatever but that of Revelation, whereby we See and Apprehend things, and is that we have by Sense and Discourse.

31. *Some things* there are that may be seen in *both* Lights, in that of Nature, and that of Revelation, though more cleerly in the latter than in the former; as that God is Good, and that he is the Maker and Conserver, and supreme Director of All things: *Other things* are *onely* to be seen in the Light of Revelation, being of a nature not to be discovered but in and by it; as the Mysteries of

Christian Religion, the Doctrine of the Trinity, the Incarnation of God, &c.

32. The Lights of Faith and Nature, of Revelation and Reason, ^[26] though they be not the same, yet are not contrary; I mean, that what is shewn or seen to be true in one Light, can never be shewn or seen to be false in the other: What is Apprehended by *Sense* rightly circumstanced and condition'd, to be This or to be That, or else by *Reason* rightly acting to be so, or so, it is never *contradicted* by Revelation. Things are nothing to a man but as they stand in his Analogie: for him to believe against his Faculties, is to believe a Contradiction. If in the Holy Sacrament of the Lord's Supper, the *Elements* first and last are Bread and Wine to *Sense*, and to *Reason* judging according to Sense, I cannot hold my self obliged by (any) Revelation to believe them Flesh and Blood, but in a Notion *consistent* with the judgment Sense and Reason make of them; that is, not flesh and blood substantially, but sacramentally; not flesh and blood really, but only by signification. Else Truth might ^[27] be Incongruity, Inconsistency. *Transubstantiation* is to me a Mystery; I am so far from making truth of it, that I cannot make any sense of it; I might as well believe that two and two make not four, or three and three six, as that it is not *Bread*, or *Wine*, which to my Eye, my Taste, my Touch, in a word, which being an Object of Sense, to all Examinations of my Sense is so. What is against Sense, is against Knowledge.

33. An Object onely to be seen by the Light of

Faith, may be said to be seen by *Reason above Reason*, by Reason assisted with the light of Revelation, above Reason not so assisted, but acting onely by the Aids of Nature; but still it is Reason sees in both: As I can see an Object with a *Tube*, that with my naked and unarmed Eye I cannot: or see in the Sun-light an Object that I cannot by Moon-light; but still it is the Eye that sees in both; the Organ is the same, although the ^[28] Lights be not. It is the same Reason and Understanding, the same Faculty that sees in the Light of Revelation, as it is that sees by the Light of Nature; and the same that Argues and Discourses in the one, as by the other.

34. The great *Designs* of God in all the Doctrines, and even in the highest and most sublime *Mysteries* of our Religion, is to affect the hearts of men: and therefore as (1.) He represents and reveals *them* in *first* Notions; so (2.) He also doth it in *sensible* and *comparative* ones; and usually (3.) He representeth one thing by *many* Notions. (1.) To make it *more Affective*; and withal (2.) to signifie, that no one Notion he represents the thing in, is *adequate* and *just* to it. Thus he represents the great Mystery of our Union unto Christ, and our Communion with him, by that between the *Vine and Branches*, between the *Husband and Wife*, between the *Head and Members*: As ^[29] also the great work of *Conversion* that passes upon Men in the change he makes on them, from their Darkness into his most marvellous Light, He compares *it* to *Gen-*

eration, to Adoption, to Creation: In fine, the New *Covenant* is not only stiled a *Covenant*, but also a *Testament*, and a *Promise*. All which resembling and comparative expressions *may* and *ought* to be employed and used for the apprehending of the things they are designed to signifie, and the making of them more affective; but neither of them *so* (to be insisted on) *as if* it were adequate, or just.

35. The Light of Faith and Revelation, must not be confounded with that of Reason and Nature; I mean, we ought not to consider points of mere Revelation in the light of mere natural Reason: Spiritual things cannot be discern'd but spiritually, and therefore must not be compared but with Spirituals. In Points of (mere) Revelation, we ^[30] ought entirely to *confine* our selves to the Notions, Comparisons, Similitudes and Representations God himself hath made of them, without pretending to be wise above what is written, and to say or understand *just* how in themselves the things are, abstractly from the Dresses Revelation puts them in.

36. He that pretends to understand the Mysteries of Christian Religion, or any Point of meer Revelation stript of those Notions, Resemblances, and Comparisons, when they be not revealed or discovered but in them; as he looketh not on these things in the Light of Faith and Revelation, but in that of Reason or Nature; so not looking on them in their own Genuine and Proper Light, no wonder if he either erre or trifle about them.

37. Justly liable to this Reproof I judge them

that are not content to think and speak of God (the proper Object as well as Author of Revelation) in that manner that he ^[31] speaks of himself; who Reveals himself to us men in Analogous and Comparative Notions, not in such as adequate and adjust him, but such as do proportion and suit with us; as if he had an Understanding, Will, and Affections; and did purpose Ends, and elected Means to compass them; did consult and decree, and were touched with the Affections of Joy, Grief, Love, Hatred, Anger, Revenge, &c.

38. They that tell us that he is not angry, that Revenge is an Imperfection not to be imputed to him, and pretend to tell us just what's meant by it, they might as well tell us that he doth not love nor hate; that he doth not propose Ends to himself, nor designe Means; that he doth not consult nor decree; that he hath no Providence, no Foresight, there being Imperfection in all those Notions; and yet without them, and the like, you can nor Think, nor Speak of God. Abstract the Deity from these and other Compa^[32]rative Notions, Notions of Him, which are not in Him, and yet wherein He pleases to Reveal Himself, and you will soon make Him such an one as *Epicurus*¹⁵ fanci'd, an Infinite Excellency, but unknown, not concerned, nor concerning of Himself with things below Him.

39. It seems to me, that he that would abstract God, or any matter of Religion, from the Notions or Comparisons which He or That is represented in, would do like one that would consider the World

onely in its Realities of Matter, Figure, Texture, and Motion, abstractly from those Phaenomena and Appearances occasion'd by them in our Senses and Mindes: And if the latter may be thought to have but an Empty, Dry, and Barren Notion of the World, the former would not have a much better of God (whom now we cannot know as He is) or of any *Subject* of Revelation, that should so consider it.

40. Whoever well attends, will [33] finde that all the Notions under which we apprehend God, are Notions of Him, like those we have of the World, not as He is in Himself (for so we know him not;) ¹⁶ but as He stands in our Analogy, and in that of the World; which Notions are very fitly stiled *Attributes*, not *Accidents*, as not speaking things Inherent Really in Him, but things ascribed by the Minde, or attributed to Him; as Colours, which but in the Eye, are yet ascribed to the Object; and Sounds, that indeed exist but in the Ear, are attributed to the Air: For we regarding God in that Relation that He bears to the world, and to our selves, and so considering Him, have excited in us such Notions by the impressions the things we look on, and God himself as interested in them, make upon us. The Attributes of God are but (as) so many Aspects. Much Obscurity and many *Errours* in forming Notions about God and his Attributes, are owing to an Unacquaintance with this Truth. [34]

41. Having spoken of Clearness of Apprehension, and of the Lights that make it, I will onely adde a Consideration, which though obvious enough,

is not reflected on as it should; namely, that the Lights are *gradual*; [even that of Revelation] and that all things are not equally clear (in them:) so that we ought to put a difference, as between *Philosophical* and *Theological* Points, and Points *unrevealed* and *revealed*; so in those revealed between *Fundamental* Points (which are but few and plain) and *Superstructures* upon them; between what is in Scripture *in express Terms*, and what is there but by *Consequence*; and in Consequences, between those that are immediate and next to Principles, and those that are *remote* and further off. As there are weighty Points of the Law, so there are Tythemint, Anise, and Cummin; he that makes no difference, takes not his measures by Jesus Christ's. As it is inept and foolish, so it is inhumane [35] and bloody, not to distinguish Errours from Heresies. Heresie in Religion, is as Treason in the Law, a subversion of Fundamentals; and it must be plainly and directly so, and not by Consequences and far-fetcht Deductions: For Heresie, it must be eradicated; but as for Errours, he that is exempt from them, let him throw the first stone at the guilty. But this is not intended as a Plea for Errour, God forbid! but for Humanity.

42. I proceed to the second Affection of Apprehension, which is *Distinctness*. And to apprehend a thing distinctly, is to form such a Notion and Conception of it, and to have such a sence as doth distinguish it from all things else.

43. Distinctness of Apprehension is acquir'd by

Distinction, and by Definition. Distinction, as I take it, is of Words; Definition of Things. To make a *Distinction* is, when a Word hath many Significations, to determine, fix, or define ^[36] the Sence it is taken or us'd in, and by certain Marks and Tokens to distinguish it and circumscribe it from all the others (it hath.) *Definitions* of things are properly Descriptions. To describe, is to notifie, mark, and represent a thing in and by its Attributes, that is, according to the impressions that it makes upon our Faculties, and Conceptions it occasions in them. Essential Definitions are Non-sence. Things are not Explicable, but as they are to us in our Faculties.

44. The more particularly any thing is marked, the more distinct is the knowledge we have of that thing.

45. Most Errours in Divinity as well as in Philosophy, owe their being to confused Apprehensions, and confused Apprehensions their's to the Ambiguity of words, and the uncertainty of their Signification. He that uses words of many Significations without distinctly marking them, and without particularly no^[37]ting what Sence he takes the word in when he uses it, may easily be apprehended to take it sometimes in one Sence, sometimes in another, that is, to take one Sence for another; and he that takes one Sence of a word for another, mistakes, and confounds things. To confound things, is to take one for another. Confusion of things comes from Ambiguity of words. A Word in one

of its Sences may belong to a thing, when in all it cannot.

46. Caution. Take heed of being abused with the Agreement of Words, into a belief of answerable Agreement in Things.

47. Direction. To avoid confusion of Apprehension, the best way is to look beyond the words we hear or read, or have in our mindes, unto their Sences and Meanings: for Words may be uncertain and equivocal, whereas Sence and Notion is not so, but certain and fixt.

48. Having treated of Apprehension in the general, of its Object, and ^[38] of its two Affections, Clearness and Distinctness, it remaineth to speak of those CONDITIONS which are requisite to the forming of a clear and distinct Apprehension; and they are four: a Due Illumination or Illustration of the Object; a Right Disposition of the Faculty; a Due Distance from the Object; and a Due Attention to it. The same Conditions in Apprehension as in Vision.

49. A Due Illumination of the Object; by which I mean here but Perspicuity of Expression: a Representation of things unto the Minde in plain, apt, and significant Words, and in a plain and instructive order and method. Plainness of Expression and Method is the Light of a Discourse; he that uses it is *Didactical*, [apt to teach,] but he that will clearly and methodically express his Thoughts to others, must first conceive them so himself: so that here I might say over again what I have already

about Clearness and [39] Distinctness of Apprehension.

50. A Right Disposition of the Faculty; a Right Temper of Mind, [Rectitude of Minde] consists in a full and perfect Exemption of it from all the prejudices that either Education, Custom, Passion, or false Reasoning have imbibed it with. Prejudices are erroneous (or false) Anticipations, and are in the Minde as Tinctures in the Eye, which falsifie its Vision. Other Diseases of the Minde there are besides Prejudice, as Levity, Curiosity, Scepticism, &c. in an Exemption, from which also Sanity of Minde consists; but the principal is Prejudice. And besides Sanity of Minde, there is (for the apprehending of some particular Objects) necessary also a *Sanctity* of Minde. The pure in heart [onely] see God.

51. A Due Distance from the Object; not to look too neer, nor at too Remote a Distance.

52. *Not too near.* Too near looking is a cause of much entanglement [40] and errour, both in forming of Philosophical and Theological Notions; he that looks too near, doth either see nothing at all, or but confusedly: he looks too near to things, that not contented with common Notions of them, wherein all the world agrees, will have more exact ones; or that not contented with the knowledge of things according to appearances, as he may see them, is always attempting to know them in their Realities, in which he cannot; As in Quantity the common Notion of it, how evident is it! 'Tis evident

to all men, and none but knows what is meant by it; and he that looks on Quantity but so, observes a due distance; but whosoever looks nearer, looks too near, and is confounded with the composition of the *Continuum*¹⁷ [and well he may that takes a Phaenomenon, a Spectrum, an Appearance for a Reality.]

53. Not at *too remote a distance*. He considers Objects at too remote ^[41] a distance, that looks on them but in second Notions, or contents himself with general ones, which at best are but confused and uncertain; and being so, no wonder if they cause mistakes: the more particular and distinct, the surer the knowledge is: we are often deceived with appearances, and take one thing and person for another, when we only see them afar off.

54. Due attention is a fixed and steady beholding of the Object, in order to a framing clear and distinct conceptions about it; and 'tis opposed to Inadvertency, or a precipitate and hasty skipping from thing to thing, without a due considering of any: A Distemper of Minde, to which Youth and warm Complexions are subject, which though they may be more ingenious and witty, and more prompt and ready, are yet for that reason seldom so judicious, prudent and weighty, as those of cooler Tempers and of more Age. ^[42]

55. So much for *Apprehension*, the *first* Act of Understanding; I now pass on to the *second*, which is *Judgement*.

56. Judgement is that Act of the Understanding

whereby it having compared and considered things (presented to it, and apprehended by it,) comes in the end and upshot, either to Assent, or Dissent. So that Judgement is a compounded Act, and (as it were) made up of two; one of which is Mediate and Inchoate, the other Ultimate & Compleat; the first is Comparing and Considering; the second, Resolving and Decreeing: That the Premisses; this, the Conclusion. The former properly is *Reasoning*; the later, Resolving according to Reason.

57. Reasoning is (a) producing or shewing of (a) Reason. (A) Reason is the Ground of Intellectual Judgement; or the Cause why the Understanding either assents, or dissents. Assent is the Approving Judgement of the Understanding; [43] Dissent is the Disproving Judgement of the Understanding. To shew Reason for a thing, is to prove it: to shew Reason against a thing, is to disprove it. Plain Reason is that which convinceth: Forced Reason is that which only confutes. To confute is, so to entangle a person that he cannot answer: To convince is, so to shew him Reason, that he cannot deny it to be so. A man is often confuted, when yet he is not convinced.

58. Method of Reasoning is called Logick; and is either Artificial or Natural. Artificial is the Logick of Schools, of which the chiefest is *Aristotle's*:¹⁸ and is useful many waies, but among others, mainly (as a Whetstone) to acute and sharpen the Wit; and to render it more sagacious, circumspect and wary, both in making and admitting

Deductions and Consequences. Natural Logick, that of plain and illiterate men, of which I designe to discourse, is the natural method [44] of Reasoning; in relation whereunto the *Scots* are said to have a Proverb, That an Ounce of Mother-wit is worth a Pound of Clergy.

59. Natural Logick is universal, a Logick of the whole kinde; so that what in Natural Logick is reason to one man, is so to all; for all having the same Faculties, and using them in the same Method, must needs come to the same issue, and by the same Principles arrive to the same Conclusion.

60. As one naturally by often seeing and attending to his own acts, acquires a method how to look to see to the best advantage, as also Optical Rules by which he judges of Objects; which Method and which Rules are [to speak generally] the same among all men: So may he by frequent reasoning, and attending to his own and others reasonings, easily and insensibly acquire a Method [which as reasoning it self will for the general be the [45] same with all men] how to use his Reason to the best advantage, to reason out things. This common method of Reasoning, (which because common, and in some measure acquired without assistance of Art, I call natural) is natural Logick.

61. All Reasoning is either Speculative or Practical. Speculative Reasoning is shewing a thing is true or false: Practical Reasoning is shewing a thing is to be done, or not to be done. (A) Speculative Reason is the ground of Speculative Judg-

ment. (A) Practical Reason, the ground of Practical Judgment. Speculative Judgment is judgment that a thing is true or false: Judgment that it is true, is Speculative Assent; that 'tis false, Speculative Dissent. Practical Judgment is Judgment or Decree that a thing is to be done, or not to be done. Judgment that a thing is to be done, is Judgment for it, or practical Assent: Judgment that a thing [46] is not to be done, is Judgment against it, or practical Dissent.

62. SPECULATIVE REASONING is either Proving or Disproving. To prove, is to shew a thing to be true; to disprove, is to shew a thing to be false. So that in natural Logic, [as to speculative Reasoning,] there are but two Topicks, or principal places of Arguments, and those are Verity and Falsity: The one affords us a medium of Proving, the other a medium of Disproving: I prove what I say, by shewing the Truth; I disprove what another says, by shewing the Falsity of it.

63. Truth and Falsity are to the Minde, as white and black to the Eye; as these are kinds of Colours, and so the objects of the Eye; so the former are kinds of Sense, and consequently objects of the Minde: And as the Eye rightly circumstanced and condition'd sees white to be white, and black to be black; so the Understanding sees Truth *rightly shewn* to be Truth, and Falsity to be Falsity. [47]

64. Wherefore to prove a Truth to be one, is but in a right method to shew it to the Minde, the Understanding apprehending a thing to be true

when rightly shewed, as the Eye doth see the shew to be white that is duely held before it. A Notion may be true, yet not acknowledged to be so, because not rightly apprehended, or seen; and it is not rightly seen or apprehended, because not rightly shewed: Then Truth is rightly shewed, or shewed to be Truth, when 'tis shewed *Systematically*, or *Harmonically*. The like is to be said of Falsity. But to enlighten this Point, I am to shew at large what Truth, and consequently, what Falsity is.

65. TRUTH, in the apprehensions of some of the School-men and of others, is that conformity which is in things to their original Ideas in the Divine Intellect. All second Beings are but Copies of the Minde of the first, in which they have their Exemplars: and wherein doth [48] the verity, the truth of Copies consist, but in a conformity to their Originals?

66. But this notion of Truth (however true it may be) is not pertinent to us; 'tis *Metaphysical* Truth that it relates unto; a Truth of things as standing in the Analogy of God; but the Truth we treat of, and whose notion we are enquiring after, is *Logical*, a Truth of things as standing in our Analogy, and which is the ground of Assent. Certain it is, this notion that the Schools afford us, is not (nor can it be to us) a *Medium* of Reasoning; since we cannot say what is conformable or what is not unto the divine Exemplars. He must see the Original, and compare the *Copy* with it, that our Knowledge will affirm *this* to be true.

67. Of late the old *Catalepsis* has seen the light again, that comprehension discoursed of by *Cicero* in his *Lucullus*.¹⁹ The meaning of which is, that there is no other *Criterion*, [49] no other judicial note of Truth, no other Rule, Mark, or Measure whereby to know a thing to be true, than *clear* and *distinct Perception*. And thus also the *Cartesians*.¹⁴

68. But on the contrary, clear and distinct Perception is not the *Cause* and Ground of Assent, but onely a *Condition of causing*; Truth is the onely Adequate and effectual Motive or Reason of Assent; but to be so, it must be clearly and distinctly perceived. Truth (as whiteness) is something in the Object that invites Assent: clear and distinct Perception is not in the Object, but of it; and consequently is not Truth, but conversant about Truth. Sight is not Colour, but of Colour; so neither is Perception Truth, but of Truth. Besides, that cannot be a certain mark of Truth, which may be affirmed as well of Errour as of Truth. I may as clearly and distinctly perceive a thing to be false, as to be true. A thing may be evidently [50] false, as well as evidently true.

69. If any say (as doubtless some will) that by clear and distinct Perception, they mean nothing but a clear and evident apprehension of the truth of things; I answer, That then either they know what Truth is by its mark and definition, and by the impression that it makes on the Minde, as well as what Whiteness (is) by the impression made thereby on the Eye; or they do not. If they do not,

how can they say they clearly and distinctly perceive a thing to be true, who know not Truth? They might as well say, they clearly and distinctly see a thing to be white, when they know not whiteness. Or if they know what Truth is, then that Impression, that Form, that Notion of Truth they have, ought rather to be insisted on, and not the (bare) Perception. They should say, The thing is true, we see clearly the Form and Notion of Truth in it. For indeed, nothing ^[51] makes a thing true, but the Form and Notion of Truth therein: For did I apprehend a thing to be true never so clearly and distinctly, yet if I did but apprehend it so (as I may, and many do) and that the Notion and Form of Truth were no wise in it, it were not true by vertue of the Apprehension I had of it, but onely seemed so. As I clearly and distinctly see an Image in the Glass, when indeed it is not there; or an Oar in the Water bowed and crooked, when indeed it is not so. It is an Errour (and a most dangerous one too) to assert, that seeming or intellectual sense (for clear and distinct Perception signifies no more) is the measure of Truth: There are so many ways wherein a thing may be seen clearly and distinctly, that is, may seem true, and yet not be so. No convincing Hereticks, or opinionate Philosophers, if Seeming be the mark of Truth.

70. To this Opinion, I am now ^[52] to adde another much of kin to it; That of the truly-Noble and Learned the late Lord *Herbert*,²⁰ namely, That Truth consisteth in the Analogy, Agreement, Har-

mony of things to our Faculties, inviting a most free and full Assent: Or, in his own Terms; *Veritas est Harmonia inter objecta & Facultates, habens sensum gratissimè & lubentissimè sine ulla haesitatione Respondentem.*

71. All the difference between the Former and the Latter Opinion is, that in the former Apprehension clear and distinct, in the latter Assent Free and Full, is made the Mark and Measure of Truth. Of this (Latter) Opinion, as that eminent Person (last mentioned) among the Moderns; so among the Antients were a many noble Philosophers; in *Tully* it is called συγκατάθεσις, and as described by him, it hath the same Foundation that his Lordship builds on, namely the οἰκειότης of Truth. That Truth is so Domestical and ^[53] *Congruous* to the Faculty, so Analogous and fit to it, that the Inclination of the Minde thereto, in Nature and Necessity, resembles that of a Stone, or whatever or other heavy Body you'll imagine, to the Center.

72. But (1) a bare Congruity between the Object and the Understanding is not the ground of Truth, but of Sense or Intelligibility; and though there be a Congruity in all Truth, because there is a sense in it, and happily more Congruity because a more agreeable Sense; Yet since that Congruity is unobservable, unremarkable but by Assent, and Assent (of it self) is no sufficient Evincement of Truth; I lay it by as Illogical and useless. (2) Nor doth the Understanding blindly incline to Truth, and as it were by Sympathy, or a natural Motion

of Aggregation; its *Assent* is (an act of) Judgement: The Minde proceeds *therein* judicially upon Allegations and Proof; judging a ^[54] thing to be true, that is, assenting to it, onely because it sees therein the Form, Notion, and Mark of Truth, as it judges a thing to be white wherein the Eye assures it there is the form of Whiteness. And (3) one may readily and chearfully assent to Falsities and Errours, and mistake them for Truths; and therefore free and full Assent is no sufficient evincement of Truth. Not to urge that chearfulness of Assent, that readiness and promptness we many times observe in it, is oftner an effect of a Passion, bribing of the Understanding, than of a pure clear impartial Reason.

73. Wherefore, others of the Antients, as well as of the Moderns, abundantly convinced of the insufficiency both of Perception clear and distinct, and of Assent free and full to ascertain them of Truth, and yet unwilling to have *Nature* (so liberal in other matters) exposed to the reproach of Deficiency in One so important as intellectual ^[55] Judgement; They have conceited humane understanding furnish'd by *her* with certain [προλήψεις] Anticipations, that is, with Connatural and Ingrafted Notions; Principles designedly implanted in the Minde, to be a rule to it to direct it.²¹ Thus in the *speculative* Understanding they have set up a habit, which they call *Intelligence*; in the *Practical* another which is called *Synteresis*; in both, a Constellation of *Principles*, shining with their own Light

and imparting it to others that want it; not much unlike to what is affirmed of *Dionysius*²² in his Celestial Hierarchy concerning Spirits, that those of superiour Orders enlighten all beneath them in the inferiour.

74. But were there really such a System of Notions and first Principles ingrafted in the Minde by Nature, in whose Light all others were to shine and to be seen, it would follow that Contemplation of our own mindes, acquainting us with the Chain. Concatenation, and Sol^[56]rites of the Principles therein, and Propositions deducible therefrom, would more import to the rendring us Philosophers (not to say Divines also) than observation of the World and Experience; and so the greatest School-men (those Metaphysical Alchymists) that insisted much on this Method, and spun out all their notions of their own Bowels, should have been the wisest and most fruitful of men. Whereas we know the men, and the manner of their Communication; all their Discourses are indeed subtle and acute; but also empty and barren, and no more agreeing with Realities (and in our Analogy) than Light with Darkness.

Again, the Soul in its state of Union and Conjunction with the Body, is so dependent on it in all its Operations, that it exercises none without the Aids of it. Ratiocination it self it is an Animal act; not an abstract Action of the Soul, but a (Concrete) act of the Animal; it ^[57]is the Man reasons.²³ And in the ordinary method of Nature, we receive

into our Mindes no Impressions, no Images, but what are handed to them by our Senses. I am apt to think that person who should never have seen, nor heard, nor tasted, nor smelt, nor felt any thing, would have his minde as little furnish'd with Idea's or Notions, as his Memory with Images, and would understand as little as he had sensed. Besides, those very Principles themselves we call First ones, or Anticipations shining with their own lustre and light, Propositions which we cannot but assent to as soon as we hear them, or minde them; It will appear, if we reflect warily on what doth pass in our Mindes, that even these are not assented to, but on the Evidence they bring; I mean not assented to naturally, but (as other Propositions are) judicially. For instance, that the whole is greater than the part, we assented not unto it on the first hearing, but first ^[58] considering what was meant by Whole, what by Part, what by Greater, what by Lesser; and then having sensibly, either by Eye-sight, or by Imagination, compared one unto the other, we evidently saw it to be so; that the Notion of Greater, even to Sense, ever agreed to the whole; and that of Less, to the Parts. The like that Two and Two make Four. This is the way we first admitted to belief the Propositions which are called Principles; and it is no other than that wherein we admit all others. Onely the Propositions (which are) call'd Anticipations, or first Principles, are Propositions of so easie, sensible, and plain an evidence, and so obvious, that we early admitted them, so early, that

we cannot well remember when we first did so; and therefore they are stiled Anticipations, or proleptick Notions: for being of so early an admission and existence in our Mindes, they preceded all our (after) knowledges, whose acquirement we well remember. [59]

Further, Beings are not to be multiplied without *Necessity*, and there is *none* of faigning such Anticipations and Habits of Principles to direct the Minde in inquisitions after Truth, since all acknowledge there are no such principles in the Eye, the Ear, the Nose, the Tongue to direct *them*, and why then in the Minde? Besides Reflection on our ordinary reasonings, evinces that in them we seldom attend to such Principles, but to the Object discoursed of; nor need we to do otherwise, if it can be evidenced that there is a certain Notion, Form, Ground of Truth that runs through all things true; which Form or Notion of Truth, as soon as the Understanding rightly circumstanced and conditioned, apprehends in an Object, it cannot but acknowledge it to be true, as it would another to be white or black, wherein it is assured by the Eye rightly circumstanced and conditioned, that there is the Form of Whiteness or Black^[60]ness. As for Anticipations, they are too particular, and not of a nature so large and comprehensive as to be the Rules and Measures of Truth, which is infinite. Let those Anticipations be reckoned, and then Experiment be made upon comparison with the im-

mense Latitude of *Questions*, and of Truth relating to *them*.

75. Thus I have shewn the Indications, Marks, and Notions of Truth that (in my judgement) are not proper, adequate, or useful; it now remaineth that I shew one (that) is. And Truth, as it is the Ground, Motive, and Reason of Assent, is *objective Harmony*, or the Harmony, Congruity, Even-lying, Answerableness, Consistence, Proportion, and Coherence of things each with other, in the Frame and Scheme of them in our Mindes. Truth is universal and exact Agreement or Harmony.

76. On the other hand, Falsity (as the ground, motive, and reason ^[61] of Dissent) is Objective Disharmony, or the disharmony, incongruity, inequality, unanswerableness, inconsistency, disproportion, and incoherence of things, in the Frame and Scheme of them in our Mindes. Any Disagreement or Disharmony is Falsity.

77. Probability or Likelihood of Truth, is an appearance of Congruity. A thing is probable, when it hath some consistence and agreement; it Quadrates and lies even with what we do know; but in regard there are particulars relating to the same Systemes and Frames of Thoughts which yet we do not know, therefore we know not if it will lie even and square with them. Improbability is apparent Incongruity.

78. That Truth is Harmony and Proportion, and consequently that Probability is apparent Harmony, apparent Proportion; and Falsity, Disharmony, Dis-

proportion cannot be but very evident to him that [62] shall consult with Nature and common sense.

79. In Nature it is plain: For Harmony, it is the Reason of the World; the World was made by it, cannot be known but by it. The rule of Proportion is the King-Key, unlocking all the Mysteries of Nature. The Great Creator framed all things in the Universe in Number, Weight, and Measure: Extremes in it are united by participating Middles; and in the whole System there is so admirable Uniformity as ravishes every one that beholds it: every thing in its place is aptly knit with what is next it; and all together into one most regular Frame of most exact Proportions. Every thing we look on affords Examples; and *Galen*²⁴ in his Books of the use of Parts, has a Thousand, to whom (if in so plain a matter it be necessary) I remit the Learned Reader.

80. And 'tis a common sense, that what is congruous is true, and what [63] is true is congruous; so common, that none ever fancied any notion of Truth but in Congruity: some School-men, in Congruity to the Divine Intellect; Others in Congruity to our Faculties; and all men (though they speak not out, and it may be minde not that they do so) in Consistence and Congruity of things with one another; all generally concluding that Narration (for instance) to be probable, which seems consistent; and Probability being appearance of Truth, if what seems consistent be probable, what is so is true. But to give a Mechanical instance; one that would repair a broken *China*-dish, or make up a

Watch or other Engine taken abroad, what Measures doth he naturally take to do so? what Rule proceeds he by? None verily, but by that of Congruity; he makes no question but that when he hath found a place for every part wherein it lies consistently and aptly with others, so that in the whole [64] there is exact Coherence and Congruity, no Flaw, no Unanswerableness, it is truly set together, and every part in its place. Truth is Harmony.

81. And seeing Truth is Harmony, and the Universe it self, as it consists in our Analogy, is but one System; it follows that properly there is but one *Science* (which some will call Pansophy) one Globe of Knowledge, as there is of Things: As also that the partition of Sciences, or rather the crumbling of them into so many, hath been a great impediment of Science; the dependency of Things, and their Relations one to another, thereby becoming unobserved and unconsidered. And in fine, that the more large, general, and comprehensive our Knowledge is, the more assured and evident it is. It is in Science as it is in Arch-work, the Parts uphold one another, and mutually contribute strength and beauty. The confinement of the Understanding [63] to particular Knowledges, as also the limiting of it in any unto certain Methods and Terms of Art, is like too straight a swathing of the Childe, and spoils its growth.

82. So much for the two Topicks of natural speculative Reasoning, namely, Truth and Falsity. It now lies on me more expressly to describe *How*

Reasoning is performed in reference to them, and so *what* the *Nature* of it is. And natural speculative Reasoning is Systematical, and Harmonical; it is a shewing, an evincing the Truth or Falsity of a thing, by conferring and comparing thing with thing; it is a shewing a Notion to be true or not true, by representing of it in a Frame, a Scheme of real Notions, with all its Relations in it; and so by Comparing, Evidencing how it squares, agrees, and harmonizes, or otherwise.

83. That Natural Reasoning is Harmonical, Systematical, that it is conferring, comparing, is evident [64] in the Natural Reasonings of Plain and Illiterate, but Understanding men; who not having other Logick but that of kinde, to verifie their Tales, desire but to have them heard out from end to end; and who no otherwise confute their Adversaries, than by telling over again in their own way the whole Relation, that so both may be compared. Besides, the comparative method of Reasoning, used by the Minde in intelligible Objects, is no other than that we naturally use in those that are sensible: For, be it a visible Object we enquire²⁵ into, and examine the truth of, we turn it every way, and into all postures, so to make a certain judgement of it; and Circumspection, (which is *Cicero's* word for it) or the Mindes comparing and conferring of things is no other. And if Truth indeed be Harmony, Proportion, Congruity, an Object cannot be evinced true, but by being evinced Harmonical, Congruous, Proportionable; and [65] it cannot be evinced Har-

monical, Congruous, Proportionable, but by being conferred and compared, and upon collation and comparison shewn to be so.

84. To prove Harmonically, is in a Scheme and Frame of Notions bottomed on things, to shew the thing to be proved, to quadrate, lie even, and to be entirely congruous and answerable. To disprove a thing Harmonically, is in a Frame and Scheme of Notions bottomed on things, to shew it not to quadrate, but to be incongruous, unanswerable, and inadequate.

85. The best way of *Confuting Errour*, is to do it by shewing the Truth: There is so great a delicacy in Proportions, that a Scheme of Thoughts may seem congruous and agreeing by it self, which compared with another, is observed no longer so; as two pieces of fine Cloath looked on at a distance, and not compared together, may be judged equally fine, and one no better than ^[66] the other; whereas when put together and felt, and so compared, the difference is plain and discernible.

86. The Effect of Reasoning, (and as it were the Conclusion) is Assent, or Dissent, according to evidence. Evidence is the Assurance we have a thing is true or false, and so is either of Truth or of Falsity, and answerably bottomes either Assent or Dissent.

87. Assent is the judgement of the Minde upon evidence of Truth, that the thing is true. Dissent is the judgement of the Minde upon evidence of Falsity, that the thing is false.

88. *Evidence of Truth* is either certain or probable. *Certain* Evidence is full Assurance. *Probable* Evidence is good Assurance, but not full. Certain Evidence is evidence of certain Truth. Probable Evidence is evidence of probability. Probable Evidence is now a-days termed a *Motive of Credibility*. [67]

89. In Proportion, as the Evidence is, so is the Assent. If the Evidence be certain, that is, indubitable and unquestionable, [and that is to be understood to be so, of which there is no cause to doubt, or make any Question] then the Assent is firm and certain, and without doubting; (but) if the Evidence be but probable, the Assent then is infirm, and with doubting more or less, as the Evidence is lesser or greater. To *Doubt*, is to fear lest the thing to which Assent is given should not be true.

90. Evidence of Certainty, is to the Minde (as to its Assent) all as much as Evidence of *Infallibility*: For the Minde as firmly adheres to what it hath all reason for, and no reason against; all reason to believe it to be so or so, and no reason to believe it to be otherwise, as to what it apprehends impossible to be otherwise; seeing it were unreasonable and contradiction for Reason any wise to doubt, when it [68] hath no reason at all to do so. I am as sure that once there were such persons as *William* the Conquerour and *Henry* the Eight, and that there are or lately were such Cities as *Rome* and *Constantinople*, as I am that Two and

Two make Four, or that the Whole is greater than the Parts.

91. Firm Assent in matters in themselves *mutable* and of a contingent nature, may be called *Confidence*; but in matters of a necessary, firm, and immutable nature, it is *Science*. Infirm Assent, or Assent with Dubitation, is called *Opinion*. Suspicion is a beginning Assent, or an inclination to believe a thing, and is short of Opinion. Suspicion on grounds is called just suspicion. Suspicion on no grounds is mere suspicion. Probability is appearance of Truth: And ground of Suspicion is Appearance of Probability. Suspicion is also called *Presumption*.

92. Assent on Evidence by the ^[69] testimony of our own Senses rightly circumstanced and conditioned, is as firm as firm can be, and is called *Knowledge*. Assent to a thing upon anothers knowledge and not our own, is called *Belief*. To Believe, is to take a thing upon anothers word; and if that word be divine, the belief is called *Faith*; or if but humane, it is called simply *Belief* or *Credit*. Belief is grounded on the wisdom and veracity of the person believed: for he that believes another, believes him to have wisdom enough not to be imposed upon or deceived himself; and Veracity or Truth (which among men is called *Honesty*) enough not to impose upon or to deceive him. The Word of God therefore is the most proper object of belief, God being so wise he cannot be deceived, and so true he cannot deceive. *Notoreity* of a thing [of a fact] is the certainty of it on

Common Knowledge: It is not Presumption, nor Probability, but Certainty. [70]

93. Assent to Falsity under the notion of Truth, if it be firm, is called Errour: If infirm, and with dubitation, it is erroneous Opinion.

94. Ratiocination Speculative, is either Euretick or Hermeneutick, Inventive or Interpretative; and this latter again is either interpretative of the World, the Book of Nature; or of the Scriptures, the Book of God. But of these perhaps, another time, as also of the method of Reasoning which I called Practical, and is either that of Prudence (1. Humane, or 2. Christian) or of Conscience.

Now on the whole Matter, who seeth not the share and interest (that) Reason hath in matters of Religion? Men are reasonable Creatures, and therefore their Religion must be reasonable: Every Tree must bring forth Fruit in its kinde. Faith it self it is a rational Act [If I have any reason to believe Men, I have all reason to believe God] and [71] Ratiocination is as much imploy'd in points of Revelation, as in points of mere Reason. Truth is the immediate reason of Assent in matters of Revelation as well as in others; and there is an Analogie of Faith as well as of Nature; the Mediums are different; but Ratiocination is the same in both: We are as well obliged to compare Spiritual things with Spiritual in the one, as Natural things with Natural in the other. Thus are the *Bereans* applauded as persons of nobler and more generous

Mindes than those of *Thessalonica*, because they took not all on trust as these did, but examined the things were told them, and compared them with the Scriptures.

It is easie also to infer, that if any person shall give himself the trouble of disproving what in my Apologie I presented to the World; to do it to Conviction, he must produce a frame and Scheme of Thoughts more Congruous and Harmonical [72] than mine, and must account for those Phaenomena which I therein essay'd to solve, in a method more perspicuous and natural, and with more agreeableness and uniformity of Notions than I have; or else he will not Confute, but confirm it.

I say this, to shew the fairer play to those that undertake to answer me, if after I have said it any shall resolve to do so; and I say no more, to shew the Opinion I yet avow to be mine of all the Objections whispered up and down, that in themselves they have as little force and evidence, and as little conviction, as those that make them have yet had either Courage to own them to the world, or Candour to own them to me.

Thus, Sir, I have performed what I principally designed. I have shew'd the nature of Reason: I have shewed the true method of Reasoning; as also the nature of Truth, and (up and down my Discourse dispersedly) the causes of [73] Errour: and I have shew'd the extent of Reason. In which performance, whatsoever other Incongruity or Errour I may have been guilty of, sure I am I have com-

mitted none in dedicating it: For to whom could I address a discourse of Reason and of Truth more properly, than to a Person who is so great a Lover and owner of both? and withal who is so perfectly honoured as you are by all that have the happiness to know you: But by none more than

Sir,

Your most humble

Servant and Son,

Richard Burthogge.

Bowdon, *Aug.* 14. 1677.

AN ESSAY UPON REASON.

AN
ESSAY
UPON
REASON,
AND THE
Nature of Spirits.

By *Richard Burthogge*, M. D.

L O N D O N :

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in the *Poultry*. 1694.

OF HUMAN REASON.

THE FIRST PART. CHAP. I. OF REASON IN GENERAL.

SECT. I.

In what sense Reason is taken and discoursed of here. A double account of it; the first, more Notional; the second, more Real. Of the Agreements of Reason, Sense, and Imagination. (1.) That all three are Cogitative and Conceptive Powers. Cogitation what. Monsieur des Cartes, and Honoratus Faber, their Opinion, that Sensation is not Cogitation, considered. (2.) That Sense, Imagination, and Reason are Mental and Spiritual, and not meerly Mechanick and Material Powers. The Differences of those Powers; that all Sensation is Imagination, and what is commonly called Imagination, is but Internal Sensation. Intellection or Reasoning, is Knowing without Imagination. Instances, setting out these several Notions. The power of Knowing without Imagining, why called Reason. [2]

Reason taken for Human Mind, or Understanding (which is the sense I take it in now) is defined

by most, the faculty whereby a Man is said to be Reasonable, or Understanding; in like manner as *Sight* is defined, the faculty whereby a Living Creature is Denominated Seeing, or Visive, or Reason is that faculty whereby a Man does Exercise the acts of Reason, or doth Understand; as *Sight*, the faculty whereby a Man or any other Animal doth see, or discern Objects.

Nor are they altogether without Reason, who do so define and explicate it; for *Acts* of Perception properly so called, are not Known, or Knowable, but in and by themselves; we Know not, nor are capable of Knowing, what the Act of Seeing is, but by seeing; nor what that of Hearing is, but by Hearing; or what the Act of Understanding is, but by Understanding. And again, *Perceptive faculties* are not Known, or Knowable, but by their Acts: We Know not what the faculty or power of Seeing is but *relatively*, with relation to the Act of Seeing: Nor what the faculty or Power of Hearing is, but by the Act of Hearing; nor what the faculty or power of Understanding or Reasoning is, but by *Acts* of Understanding or Rea^[3]soning: In a word, no Faculties, no Powers are Known, or Knowable, but by their respective Acts or Exercises, and therefore they cannot be defined or set out but by them. All this is certain.

However, since this is but a notional fruitless way of Explicating Reason, and too short, too narrow to satisfie a Curious and Inquisitive Mind; therefore to settle an *Idea* of it, that may be more to pur-

pose, more real, and more edifying; I will show, in the first place, the *Agreements* it hath with other Conceptive Cogitative faculties, what it holds in common with them; and afterwards, set out the *Differences* that do discriminate and divide these several faculties, each from other, and this particularly from the Rest.

The *Conceptive Cogitative* Faculties that are in Man, (for so I call the Faculties by which he makes acquaintance with external Objects) are his external *Sense, Imagination* (as it is called) and *Reason* or Understanding: *Three* Faculties which do all *Agree* and Concur in this, that they are *Conceptive* and *Cogitative*, and consequently *Mental* and *Spiritual*, and not meerly *Mechanick* and *Material* Powers.

First; All three are *Conceptive, Cogitative* Powers; Sensation and Imagination, as well as Reasoning or Intellection, are ^[4] *Cogitations*. Cogitation is conscious Affection; *Conscious Affection*, is Affection with Consciousness of that Affection; and by another name is called *Knowledge*. Knowledge, as it has a double relation, so it may be considered two ways, to wit, either in reference to the *Object*, which is Known, and so, properly, it is *Apprehension* or Conscious Perception; or, as it respects the *Image* and *Idea*, by means of which we do perceive or know that Object, and so it may be called *Conception*. Conception properly speaking, is of the Image, or Idea; Apprehension, Knowledge, or conscious Perception is of the Object, by means of that

Idea, or Image: It is as proper to say, that the Sense and Imagination do conceive, as that the Reason or Understanding doth; the former does as much conceive Images and Sentiments, as the latter does Ideas and Notions.

Conception and Cogitation, really are but one Act, and consequently, all Conceptive are Cogitative Powers, and Cogitative Powers Conceptive. Only, to clear the Notion of *Consciousness*, by which *Cogitation* or Knowledge is distinguished, tho' never divided, from *Conception*, we must further consider the *Way* and *Manner* how *Consciousness* Arises. And it seems to me to *arise*, ordinarily, from the distinction [5] and difference that is in Conceptions; for, should any person have his Eye perpetually tied to one Object, without ever closing of, or turning it to another, he would no more be sensible that he *saw* that Object, or know any more what it was to *see*, than if he had been blind from his Birth. For since *Consciousness of Seeing* is nothing but a perceiving by the Eye, that one is Affected, or otherwise Affected than he was, with the appearance of Light, or Colour. If a person had never seen but one thing, and never but seen it, he could have no perceivance (that) he is so Affected, that is, he could not be sensible or conscious (that) he did see. Thus, tho' in our Members the parts that do compose them are contiguous one to another, and do always touch, yet we do not feel them touch, that is, they touch, but we are not sensible they do, because no difference being in the Affection, there is no

Sense, no Consciousness of it: But Dislocation is soon perceived; as also it is when any part is pressed unusually. I conclude, that as difference of Conception arises from different Affections of the Faculties by Objects, so Consciousness, or Sense of Conception, arises from the difference of Conceptions. Did we know but one thing, or had but one Act of Conception, we should not know [6] that we did know that one, that is, that Conception would not properly be Cogitation, but would be, as touching without feeling. However, since there is so great a diversity of Objects in the World, all-around us, and consequently, so many various Impressions made upon the Mind, by those Objects, so that its Conceptive Power cannot but be diversly Affected, and moved, and the Mind also have a perceivance of that diversity; hence it comes to pass, that Conception is always Cogitation. In short, Conception is Modification of Mind, and Cogitation is Conception with Consciousness of it. Consciousness of Conception is a sense of the Alteration made in the Mind by that Conception (of which it is conscious;) *si nihil* (says *Cotta apud Cicer. l. 1. de Nat. Deor.*)²⁶ *inter Deum & Deum differt, nulla est apud Deos cognitio nulla perceptio*,

I know very well that Monsieur *Des Cartes*,²⁷ the ingenious *Honorato Fabri*,²⁸ and many others do differ from me, for denying (as they do) that Sensation is Knowledge, and consequently, excluding both Conception and Consciousness from the Idea of it, they must also deny, that Sense is a Cogitative

or Conceptive Power. But then, it is hard to say, what that Idea is, that they have of Sensation. Besides, 'tis [7] most certain that in Men, Sensation is Conscious Perception, for whatever Impression is made upon our Eye by any Object, we do not for all that, discern, or see the Object, if we do not attend unto, as well as receive, the Impression; that is, we do not discern or see, but when we Know we do. Then only we have a Sensation of Objects, when we are Conscious that they do Impress us; that is, when our Organs being Impressed, there arise and spring up in us, by means of those Impressions, certain Images or Conceptions, that (many of them) by a Natural delusion do seem as really to Exist without us, in the Objects themselves, as if they were indeed so many real Affections of them, or Inherent Accidents in them. And those Images being but Modifications of Mind, arise not in us upon any Impressions but when the Mind Attends to them, for else they cannot Affect it.

But happily it will be told me, that this Consciousness of Impressions, which is in men, when they do see, or hear, or otherwise perceive Objects, by the Affections of their External Organs, Arises in them only from the *Concomitance* of the Understanding; because in men, whatever Affects the Sense, is also perceived by the Understanding; but that there neither is, nor [8] can be, any such thing in other Animals, which are as void of Consciousness of any Impression made upon their Organs, as they are of that Reason and Understanding that

makes it in Men. But as this may be said, so it may be as easily Replyed to; for 'tis as impossible, that Men should have any clear, or indeed any *Idea*, at all of Sensation, in other *Species* of Animals, but by that, which they have of their own; as it is certain, that Sensation in Men cannot be understood to be without Conception, nor Conception without Attention of Mind. *Attention of Mind*, is the Application of it unto Objects, and therefore in Men, is called *Minding*: Without Attention no Conception, and without Conception no Consciousness; Consciousness being (as I have said) nothing but a Sense of Alteration made in the Mind, by some new Affection of it, that is, by a new Thought or Conception. Besides, there are many other things that do make for this Opinion, that all Animal Sensation is Cogitation; particularly, that great *Sagacity* that is in some Animals, which cannot be accounted for with any clearness, but by allowing to them a great degree of Knowledge and Consciousness.

And hence it follows, that Sense and Imagination, as well as the Understand^{ing} and Reason, are Mental and Spiritual, not meerly Mechanick and Material Powers. By Mechanick and meerly Material Powers I understand such as do result from Matter only, and the Modes of Matter; from Local Motion and Rest, and from Size, Figure and Texture. By *Mental Spiritual* Powers, I understand such as cannot be conceived to arise from Matter only, and the Modes of Matter, without the Influence of Mind; and in the number of these I

reckon Sense, and Imagination, as well as the Understanding or Reason. It is true, the term [*Mind*] is Appropriated, by way of excellency, to the Understanding or Reason, this being a faculty that hath the participation of Mind in a higher degree than the others have: But yet, there is Mind, and as much of Mind in all the Conceptive Cognitive Acts of Sense or Imagination, as there is of Conception and Cogitation in them. Thus I have shewed how Sense, Imagination, and Reason do agree, now I am to shew how they differ.

Sense, (by which I mean the power of Seeing, of Hearing, of Tasting, of Smelling, and of Feeling,) is that by which we make acquaintance with External Objects, and have Knowledge of them by means of Images and Apparitions, or ^[10] (which is a better expression, as being more General and Comprehensive,) by *Sentiments* excited in the External Organs, through Impressions made upon them from Objects. *Imagination* is internal Sense, or an (After) Representation of the Images or Sentiments (that have been) excited before in the Sense: This is the Basis and Foundation of it; Composition, Division, and Enlargement of Images, is but Accessory, but Superstructure, and an Improvement of Sense. *Reason* or Understanding, is a faculty by which we know *External Objects*, as well as our own Acts, without framing Images of them;; only by *Ideas* or Notions. In short, *Sensation*, properly, is Imagination, for every Sense Imagines; and that, which commonly is called *Imagination*, is

but Remembrance, or Recollection of Sensation. Imagination, is *Repetition* of Sensation made from within, Sensation, is Imagination occasioned by immediate Impressions from without us. *Reason* or Understanding, is refined, Sublimated Sensation, that is, a conscious preception of things by *Notions* or Ideas, and not by Images, or sensible Representations. And thus, *all* the cogitative powers that are in Man, may be reduced to *Two*, to *Sense* and *Reason*; the former comprehending the Imagination, which is but ^[11] the power of Remembering Sensations, and of Amplifying them; and the Letter comprehending Intellectual Remembrance, which is only a recollection of Ideas or Notions.

But to make a Reflection of more light, it may be minded, that when we look on a *Book*, (to Instance in a thing that is next to hand,) and read any *Sentence* in it, as this, *God is a Spirit*, we have at that time in our Eyes the *Figures* of the *Letters* that compose the Words, and so do know by *them*, what the words are; and this is *Sense*. But if putting aside the Book we will endeavour to *Recollect* those words, we must do it one of *two* ways; *either* by Retrieving in our thoughts the very Figures and Images of the Letters and Words before presented to our Eyes; or (which we ofttest do) by recalling the Words and Sentence, and saying to our selves, or unto others, *God is a Spirit*, without thinking in the least, of any Figures of the Letters that do make the Words, or of the Images of the Words that compose the Sentence. In the former we do *Imag-*

ine the Sentence, as raising again the Images of the Words that make it, and this is *Sensible* Remembrance; but in the latter, though, when we Recollect the Sentence, we must withal (some way [12] or other) mind again the words that compose it, yet we do it *without* Imagining them, and this is *Intellectual* Remembrance, or the act of the Reason. Add, that at the same time that we do see the Schemes and Figures of the Letters, and have the portraictures and draughts of the words presented to our Eyes, which is *Sense*, we have, or may have, in our minds the sense and meaning of those words, of which sense or meaning however, we have neither Picture or Figure; and this is *Understanding*: In the former we have *Images*, in the latter only *Ideas*; we *See* the words, but understand the meaning. This power of the Mind, (of perceiving without Imagining,) is called *Reason*, because in those Acts in which it does converse with things by means of words (and those are most of the Acts exerted by it) the sense and meaning of the words is (as it were) Inferred and Reasoned from them. What I have said, suffices to make the Notion or Idea of Reason or Understanding conceivable, by men who use Attention, and do *think*, but nothing will be enough to explicate and set it out to such as cannot endure that trouble, but will swallow all things without chewing—[13]

SECT. II.

Of Reason as taken for Contrivance, Contrivance, what, Sagacity what. Reason taken but for Contrivance, not Characteristical to Man. Of the Imaginative Contrivance in Irrational Animals. An Instance of it in a certain Hen. Apprehension, Composition, Illation, Acts of the Imagination, as well as of the Reason or Understanding. Composition of Phantasms, how Illustrated by Mr. Hobbs. That Reason taken for the Understanding (in the Notion of Understanding settled before) agrees to no other Animal but Man. Of Prince Maurices Parrot. The Acts of Reason as taken for the Understanding, reduced to two, to wit, Apprehension and Judgment.

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CHAP. II.

Of Apprehension.

SECT. I.

Apprehension, the first Act of Reason. Of Words. the ordinary Means of Apprehension. The Ends and Uses of Words. 1. To distinguish things as they are in the Mind, in which, words do stand for things. . Why Mind is called Understanding. 2. To express our Thoughts and Conceptions one to another. The Importance of

Words unto Knowledge, in this second Use of them. Of the Sense of Words. Of Canting. All Use of New Words, not Canting. The Sense of Words twofold; Verbal, and Reall. This distinction of the Senses of Words Illustrated, and the Usefulness thereof explained. Why the Meaning of Words is called Sense.

Apprehension, or that Act of the Reason or Understanding, in respect of which it is said to see or perceive things, is the same in reference to this faculty, that seeing is unto the Eye: for the mind to apprehend, perceive, or know any Object, is the same (to speak by way of allusion and similitude) as for the Eye to see, or discern one. [24]

What I have said in the former Chapter, does cast some Light on this Subject; but yet to set it out more fully, I will consider, *First*, the Ordinary Means the Understanding uses in its Acts of Apprehension, and those are Words. *Secondly*, The immediate Object of Apprehension, and that is Notion, or Intellectual Sentiment; Sentiment of the Mind. *Thirdly*, The two chief Affections of Apprehension, and those are clearness and distinctness; of which three considerations; the Second properly is a Subject of Metaphysicks; the Third of Logick; and the First is common to both.

* * * * *

A *Distinction* then there is (and that a remarkable one too) between the verbal, and real, meaning

of words; which to set out more fully, I will show, *First*, The Occasion, and Rise of it, and then *Secondly*, The Use and Benefit of it.

First then, this distinction Arises from the Imperfection and Inadequacy of Human Knowledge; we Knowing little of things but under words, and words being (immediately) the signs but, of our Conceptions, which are always short and narrow, and, too often, indistinct and confused. Now if the sentiments we have according to the Vulgar and Ordinary way of conceiving, which is but general and confused, do cohere and hang together, when one of them is affirmed or spoken of another, so that the Notions are compossible in common acceptation, we *call* it sense, though really the things themselves (for which those words are understood to stand) be Impossible, and repugnant each to other, and therefore *indeed* it is Nonsense. This is to be better understood in Examples. Such *Propositions* as these, that *Colours* (even as to their Images) are in the Objects in which they do appear; that *Odours* are in the things smelled; that *Sapors* are in the things that are tasted; these and the like Assertions are not com^[36]monly understood, or said, to be Nonsense, because, Knowing in the general and confusedly, what is meant by colour, what by Odor, and what by *Sapor*, as likewise what is meant by the thing seen, by the thing that is tasted, and by the thing which is smelled; nothing appears in those confused general Notions (which we have,) to hinder us from thinking that Colours, Sapors, and

Odours do as really Inhere in those external objects, as they seem to do. And yet to a Person that hath distinct, real, and just conceptions of the several subjects and predicates in those propositions, it is evident, that 'tis as gross and palpable *Nonsense* to affirm that Colours, Savors, Odours, and other Accidents, (which are but *Phaenomena* and Intentional beings) do really exist in the Subjects where they seem to be, as to say, that there are Notions and Cogitations in a Wall, in a Figg, or in a Rose, than which there cannot be a greater Bull or absurdity.

The *Usefulness* of this distinction, is greater than most will think; since from the want of making, or of observing it, it comes to pass, that so many do run into great mistakes and errors, in their discourses; *Do* skirmish one with another, to no purpose, and without end; and of^[37]ten *do* differ from themselves, as much as each from other. For few there are that do fix and settle even the verbal Sense of words, (which often have a doubleness of meaning, and then are called Ambiguous;) and fewer that do think of the real, without which yet, they can never come to any certainty; so that, (as Mr. *Hobbs* has ingeniously said; words that are Wise Mens *Counters*, become Fools *Mony*.²⁹

The meaning of words, as well the verbal, as the real, is called *Sense*, because the Perception of it ought to be as *Clear*, and distinct, and as steady and fixt, as that of Sense is: For words, to be understood as they ought, must have their meanings be as clearly and distinctly perceived, by the mind, as

objects of Sense when they are Seen, or Heard, or Tasted, or Smelled, are by the Senses. [38]

SECT. II.

All Falsity is not Nonsense; but all impossible Falsity is. Repugnance in the mind to yield assent to propositions that are Nonsense. Whence it arises. Of Enthusiasm, as it is a kind of Nonsense. What Enthusiasm is. The distributions of it. Examples of the several Kinds of Enthusiasm, out of Dr. Fludd, and in the Magick Aphorisms of the Rosy-crusians. That Enthusiasts where they seem to understand one another, do so by Sympathy only, and not by way of Apprehension and Judgment. How this may be, set out in a story very Remarkable.

* * * * *

SECT. III. [47]

Of Questions, their Nature, and their distribution. That a Question is neither true, nor false; neither Affirmative nor Negative. An Objection removed. That proceeding by way of Question, or as it were of Inquiry, in Common Discourse, is very useful, as well as Civil. Judgment required in putting Pertinent Questions.

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CHAP. III.

Of Notion, the immediate Object of Apprehension.

SECT. I.

That Notion may be considered two ways. 1st. In general; and 2ly. more specially. Of Notion in the general sense of the Word. No Original Native Notions. Why it seems as if there were. The Notion of Apprehension cleared. Of Notion in the special and limited Sense of the Word, what it is. That the understanding apprehends things but inadequately, and under Notions in the limited sense. This evidenced by several considerations. An Objection against it removed.

I have spoken of words the ordinary, but instituted, means of Apprehension; I am now to speak of *Notion*, the immediate Object (some would call it the natural means) of Apprehension.

The word *Notion*, may be considered two ways, either as it does signifie more generally and largely, or as it is taken in a more restrained, special and particular sense. [52]

A Notion in the general and larger aception of the word, is *any* conception formed by the Mind in reference to Objects; and so taken, is the same with a *thought*, or that, in respect of the Mind, that a Sentiment largely taken, is, in respect of the sense. I say a Sentiment largely taken; for instance; when Sentiment is taken in respect of the Visive Power,

not strictly and properly for light, or colour only; but largely, for any perception that the Eye has, by way of sight, of things, or of their relations and habitudes. And since there is so great an Analogy between the Eye and the Understanding, and between the Sentiments of the one, and of the other, it will be an easy inference, that no reason can be given why there should be Original *Innate Notions* in the Understanding (as some imagine there must) that it may be able to apprehend, which will not equally *argue*, that there should be the like *original Figures* and *Images* in the Eye, which should enable it to see; and yet none will Allow of *these*.

But to show how It comes to pass, that there are (as there are) appearances as if the mind had some original innate Notions,²¹ which for that reason are called *Prolepses* and Anticipations, and withal to bring some light to the business of Apprehension, [53] which (as to the *way* of it) is obscure enough, and but seldom touched to any purpose: I will offer an Observation very common, but (as it may be applied) very luciferous in reference to this Subject.

Everybody observes, that if a Blow is aimed at the Head of any person, he will hold up his Arm to receive it, and keep it from his head, without thinking either *that*, or *why*, he does so; and this is said to be done *Naturally*, and by instinct; because, in truth, it is done without premeditation, and so, at that time, without any actual conceived design.

And yet again it is certain, that an Infant will not do so, or any Child before it has been taught and

instructed to do it; which makes it plain, that the doing so in those who are come to reason, is no effect of natural instinct, but of use; only the Child was taught to do it so early that by the time he comes to the Age of Discretion, having forgotten, or rather, having made no observation, when it was first taught, or first did it, and upon what Motives, and doing it now *without deliberation* it hath the aspect of a thing effected by *Nature*, and not of a *custom* or habit.

In the same manner in the business of *Reason*, we may, and often do proceed up^[54]on Principles instilled into us very *early*, and are Acted by them, without Knowing *how*, or *why*, it being no Effect of present consideration. *Experience* confirms this, since we may be certain, if we do but attend to our own Actions, that, many times, we are carried to the Affection, or Disaffection of things, and the Approbation or Disapprobation of them, we Know not *why*, and yet all the passions and Motions of our Mind, have *Reasons* for them; for all Effects must have Causes; but *these*, sometimes, are so *early* grafted in us, and, at other times, so *unawares*, that we remember not they were so; and then the *Effects*, only being observed, and the causes lying deep, hidden and secret, we do call it *Nature*, or Instinct, though in truth, it be *Reason*, and habit, as much as any thing else is.

Again, much the same way we do compute or *reckon*; for when we use any greater numbers, either in Addition, or in Substraction, or in any

other Arithmetical operation, we do it without any actual consideration of what the lesser particular numbers are that make the greater, for that we have done before, (perhaps long,) and consequently are possessed of the *Ideas* (may I so express it) without the *Images* of them. But at first, we had ^[55] a particular Knowledge. As, when we Multiply and say, Six and Six is Twelve, and Twelve and Twelve is Four and Twenty, we do it without considering actually at that time, that six is so many unites, though at first (but possibly so long ago that we do not remember it) we did so, and must (do so) to Know the particular value of that number; and the like is of others.

And thus also with an easie Application may it be conceived, *how words come to stand in the mind for things*, and that when we have the *word*, we think we have the simple *Idea* of the thing; it is just as the Figure [6] doth stand for the number [Six]. And that when once we have had a distinct Idea or Notion of the *Number*, afterward, (without actual thinking thereof,) we use the Figure instead of it, and that as well, or better than if we did distinctly consider the Number it self. Now, words do carry the same Relation unto things, that Figures do unto Numbers, and both Words and Figures seem to derive the power which they have of standing in the Mind as Representatives, from the connexion they have, Figures with Numbers, and Words with Things; after the same manner as we hold up our Arm, or a Stick, to save our Head, with^[56]out

thinking of saving it. For though the Action prevents all actual thought of the End of it, yet 'tis done for an End, in vertue of its first *Direction* and Use. This Discourse attended to, and well digested, will open a great light into the *way* in which the Understanding comes to have Apprehension of things by the means of Words; and to form its Ideas and Notions, taking Notions largely for *any* Thoughts or Conceptions.

But besides the former Sense of the Word [Notion,] there is *Another* which is more Restrained and Limited; in which a Notion is *Modus Concipiendi*, a certain particular *manner* of conceiving; a manner of conceiving things that corresponds not to them but only as they are *Objects*, not as they are *Things*; there being in every Conception some thing that is purely *Objective*, purely Notional; in so much that few, if any, of the Ideas which we have of things are properly *Pictures*; our Conceptions of things no more resembling them in strict Propriety, than our Words do our Conceptions, for which yet they do stand, and with which they have a Kind of Correspondence and Answering; just as Figures that do stand for Numbers; yet are no wise like them. [57]

To make this clearer, it must be considered that the *Eye* has no perception of things but under the *Appearance* of Light, and Colours, and yet Light and Colours do not really exist in the things themselves, that are perceived and seen by means of them, but are only in the *Eye*. Likewise the *Ear*

has no perceivance of things, as of a Bell, of a Lute, or of a Viol, but under sounds, and yet sound is only a sentiment in the Ear that hears, and is not, or any thing like it, in the Bell, or Viol, or Lute that is heard. For as the Eye has no Perceivance of things but under *Colours* that are not in them, (and the same time with due alteration, must be said of the other Senses.) So the *Understanding* Apprehends not things, or any *Habitudes* or *Aspects* of them, but under *Certain Notions* that neither have that being in Objects, or that being of Objects, that they seem to have; but are, in all respects, the very same to the mind or Understanding, that *Colours* are to the Eye, and *Sound* to the Ear. To be more particular, the Understanding conceives not any thing but under the Notion of an *Entity*³⁰ and this either a *Substance* or an *Accident*; Under that of a *whole*, ore of a *part*; or of a *Cause*, or of an *Effect*, or the like; and yet all these and the like. are only *Entities of Reason* con^[58]ceived within the mind, that have no more of any real true Existence without it, than *Colours* have without the Eye, or *Sounds* without the Ear. Every person that hath the least Understanding of the way in which we do apprehend things, will yield this to be true as to *Whole* and *Part*, to *Cause* and *Effect*, and to all the *Notions* which are commonly termed by Logicians the *Second*; and it is as certainly true in reference to *Substance* and *Accident*, to *Quantity*, *Quality*, and those other *General Notions* under which the Understanding apprehends its Objects, though com-

monly they are called *First* ones, and in comparison of the others are so.

I have laboured the more to make the Notion that I have in this business plain and easie, because much of what is to be said hereafter will depend upon it; and now taking it for granted that my meaning is *Intelligible*, what remains, is to evince *true*; and this I shall do, from the very Nature of Cogitation in general, (as it comprehends Sensation as well as Intellection,) since that the Understanding doth *Pinn* its Notions upon Objects, arises not from its being *Such* a particular Kind of Cogitative Faculty, but from its being Cogitative *at large*; let us then reflect ^[59] again on the Nature of Cogitation at large.

It is certain that things to us Men are nothing but as they do stand in our *Analogy* that is, in plain terms, they are nothing to us but as they are known by us; and as certain, that they stand not in our Analogy, nor are Known by us, but as they are in our Faculties, in our Senses, Imagination, or Mind; and they are not in our Faculties, either in their own *realities*, or by way of a true *Resemblance* and *Representation*, but only in respect of certain *Appearances* or Sentiments, which, by the various impressions that they make upon us, they do either Occasion only, or Cause, or (which is most probable) concur unto in Causing with our Faculties. Every Cogitative Faculty, though it is not the Sole Cause of its own immediate [apparent] Object, yet has a share in making it: Thus the Eye or Visive

Faculty hath a share in making the Colours which it is said to see; the Ear or Auditive Power, a share in producing sounds, which yet it is said to hear; the Imagination has a part in making the Images stored in it; and there is the same Reason for the Understanding, that it should have a like share in framing the *Primitive Notions* under which it takes in and receives Objects: In [60] summ, the *immediate Objects* of cogitation, as it is exercised by men, are *entia cogitationis*, all Phaenomena; Appearances that do no more exist without our faculties in the things themselves, than the Images that are seen in water, or behind a glass, do really exist in those places where they seem to be.

But as this is a truth that Many will admit with more facility in reference to the Objects of Sense, and Imagination, as Colours, Savors, Sounds, &c. Than to those of the Mind or Understanding, such as Substance, Accident, Quality, Action, &c. So I find my self obliged to give a farther *demonstration* that it holds in these, as well as in those; which I hope to do by the following Considerations.

First, the understanding converses not with things ordinarily but by the Intervention of the sense, and since sentiments of sense are but Appearances, not Pictures, or proper Representations, it is hard to conceive how such conceptions are framed only by their occasion, and only wrought out of them, should be portraits of the things themselves, and made just and exact to them.

Secondly, The understanding is a power ^[61] of that nature that many think it doth not immediately Attinge (as they call it) or reach particular singular beings, which yet are the only beings that compose the Universe, as members or parts of it; and really, it uses to proceed by way of *Abstraction*, and therefore doth more Connaturally converse with Universals, that are not of Mundane existence, than with singulars that are. Now, since things as they are in the mind, do undergo an *Abstraction* and sublimation, certain it is, they must put on another dress there, and so appear in quite another shape than that they have in the World. In short, All Agree that our conceptions of things are but *inadequate*, as indeed they must needs be, since things have much Refraction (may I so express it) both before they come and after that they come, to the mind; and if they are inadequate, they cannot be commensurate, that is, they cannot be so just and exact, to things, as to show them as they be, and in their own existences.

Thirdly, It may be Argued from the very nature of an *Idea* or notion; since this after a sort is a sentiment of the mind, as a sentiment (properly so called) is, after a sort, an *Idea* or Notion of the sense; the ^[62] immediate objects of the sense are *sensible* sentiments, and those of the understanding are *Intellectual* ones; which they must needs be, because the understanding it self is a kind of sense, only a more sublimed and raised. *Mens ipsa* (says

*Cicero, l. 4. Academ. Quaest.) quae sensuum fons est, etiam ipsa Sensus est, &c.*³¹

In fine, this is so certain a truth, that whosoever reflects, tho' never so little, cannot chuse but observe that as he takes in nothing by his sense but under *sentiments*, which are the *notions* of sense, so he receives in nothing in his understanding, but under *certain notions*, which are the *sentiments* of the mind; since he knows nothing Intellectually but either in general only, under the notion of a *thing*, or more specially under that of a *substance*, or else of an *Accident*; and what are all these but *Objective Notions*?^s as will appear in particular upon the examination and Tryal of them.

Let us then inquire *first* into the *thing*, (for we shall shew it of *Substance* and *Accident* hereafter) and what is thing but *modus concipiendi*? a notion or sentiment that the mind has, of whatsoever any wise is, because it is? Thing indeed is the most *general* notion, but then it is but a *notion*, because it is general; and has the most of ^[63] a notion, because it is the most general. To be more particular; If the Question be asked, *what thing* is? or what is meant by that word? Some have no other Answer but this, that a thing is *that which hath essence*. But then it may be farther demanded, what is meant by *essence*, which is said to be had? What it is to *have* essence? And what is meant by *that*, which hath it? Or if it be said, that a thing is *that, which is*, (as it is by others;) the same difficulties again occur: for it may be demanded, what *that* is, which is? And

what is meant, when it is said to *be*? And whether Existence be Essence? especially since Existence seems not the first conception of a thing; but is a second, or after-conception; as not being that, which makes a thing to be what it is, [a thing;] but what only makes it a thing in being.

By this, it plainly appears, that the meaning of the word [*thing*,] is but an *inadequate* conception, arising in the mind upon its conversing with *Objects*, and so doth speak a certain particular sentiment, which the mind has of *them*; a sentiment better understood, than defined by words; but a sentiment too, that doth not enter us into the knowledge of the Reality it self (may I so express it,) of *that* which is; *which* we only apprehend inadequately, [64] under the Disguise and Masquerade of notions. As, that it is *that*, which is; or *that* which has essence; or the like; but not by any adequate exact conception. And as for *Substance* and *Accident*, which yet are the first steps we make toward a distinct Perceivance and knowledge of things; what are they, but likewise *Modi concipiendi*? Entities of Reason, or notions, that (it is true) are not without *grounds*, but yet that have, themselves, no Formal being but only in the *Mind*, that frames them; there being no such thing in the World as a *Substance*, or an *Accident*, any more than such a thing as a *Subject*, or an *Adjunct*; and yet we apprehend not any thing but as one of these, to wit, as a *Substance*, or as an *Accident*; so that we ap-

prehend not any at all, just as they are, in their own realities, but only under the Top-knots and Dresses of Notions, which our minds do put on them.

But here it will be told me, that plain unlearned men, who yet do exercise the Acts of Reasoning well enough, and perhaps in the best manner, as doing it without *Art*, and in a way the most agreeable to *Nature*, do conceive and speak of things without conceiving or minding of Notions, such as I have mention'd; for they conceive and speak of *man*, of *good* and [65] *evil*, of *vertue* and *vice*, and the like, without conceiving or minding of *Substances*, or *Accidents*. But this is easily got over: For tho' unlearned plain men do not explicitly and in terms denominate *goodness*, *vertue*, *vice*, &c. Accidents, yet since they do conceive them (as All do) all things that *are in* a man, or in some other thing, tho' they do not call them Accidents, yet do they conceive them *as* Accidents: And when they do conceive, or say of a *man*, for instance, that he is *vertuous* or *vicious*, or the like, they do conceive him to have *vertue* or *vice in* him; that is, tho' they do not think of the *name substance*, yet they do really conceive that person to be *one*; since a substance is nothing but a *subject*, or a thing that has other things in it as Accidents; whereas in truth, neither Accident, nor Substance hath any being but only in the mind, and by the only vertue of cogitation or thought. [66]

SECT. II.

Inferences from the former Discourse; first, that human knowledge for the most part is but intentional, not real. The usefulness of this Inference; an Objection against it removed. (And yet) Secondly, That the immediate Objects of the cogitative Powers are somewise external to those powers; and this, both as to appearances, (which is sensibly demonstrated) and as to their grounds. Two other Inferences added; the first in reference to the grounds of the Doctrine of the old Academy; the second concerning the obligation we are under ordinarily to conceive and speak of things as they are in our Analogy, and do appear to our faculties.

I infer from the former Discourse; First, that human knowledge (at least for the most part) is but Intentional, not Real; and that we have no Perception of any thing, (in any degree to speak of,) *just as it is* in its own Reality and being. For all our notions and conceptions of things, are of them under *sentiments*; the understanding it self (as I argued before) [67] being but a higher and more sublimated *sense*; and sentiments (as such) are in their own *formalities* but *apparently* only, not existently, without the faculties that do conceive them. To be particular, we have no perception or knowledge of any thing but as it is a Substance, or an Accident, or a Quality, &c. And these are only

notions: for example, as to *Water*; we have no knowledge of it by all, or any of our senses, what really it is in it self, just as it is, and absolutely speaking; for we are utterly ignorant (otherwise than by Conjecture) of the Magnitude and size of the little parts that compose it; Ignorant of their figure and shape; and Ignorant also of the kind, and degree of motion they have; all this we are Ignorant of, and yet this is all that is Real in Water. But as Ignorant as we are of what it *really* is, in it self, and absolutely considered, we have much *Comparative* Relative Knowledge of it; for we know it by sense to be fluid; to have some degree of tenacity or viscosity; to be moist; in a word, to have so many Qualities (for so we conceive and speak) that all put together, do give the mind a sufficient rise to distinguish it, as a different substance, from Earth, or Fire; So that a person that has at any time had [68] the perception³² of them all, will not mistake them afterward, one for the other.

But here it must be remembred, that (as I have shewed before) tho' we do not see the *reality* of things immediately, and just as it is in the things themselves, yet by means of sentiments and notions, we do somewise, perceive *it*; as the Eye that sees not anything immediately but Light or Colours, yet by means of Light and Colours, discerns Gold, Silver, Stones, Wood, as also the Magnitudes, the Figures, the motions, the distances of things; with a thousand other Realities, so the understanding discerns infinite Realities, infinite habitudes of

things; not indeed immediately, but either under the sentiments of sense, or by means of its own, which I call notions; as of Substance, Quality, Cause, Effect, Whole, Part, &c.

I have been somewhat longer in the Explication of this Inference, because to know the *nature* of our Knowledge, must needs be of great advantage unto us; and much relieve us in our Inquiry after the nature of Things; since it frees us from the confusion, that our mind must necessarily be in, should it take the Apparitions of things (for such sentiments and notions are) to be external and real Existences. Would not a thinking man be much perplexed, to make a satisfying conception, what that Image is, that he sees in a glass, or in water, if he was perswaded of its being a Reality (of Existence,) and not a meer Apparition? The like must he be, who takes Objective^s Notions for *real* Existences, and who confounds Attributes that are only Objective, and that do belong to things but as they are Objects with those that do belong unto them as they are Things, and that are Real,

However, it will not follow, as some have weakly objected, that then nothing is Real; for tho' the Images themselves of Whiteness, Blackness, Redness, Greenness, that do *seem inherent* in visible Objects, are not really so, yet really there are Dispositions and textures of particles in those Objects, that, by the various Modifications which they give the Light, do occasion in the Eye, to which the Light is reflected, all that diversity of sentiments (which

we call colours) that does appear in those Objects. The same, *mutatis mutandis* must be said of sounds, savors, odors, and of Tangible qualities, and in proportion will hold also in mental notions. For tho' the very Notions of Entity, Substance, Accident, Whole, Part, Cause, Effect, and the like, do not really exist without the mind; yet as they do *seem*, Real, and some ^[70] more Real than others, so *really* they have in things without us certain *grounds* or Foundations, that, upon our converse with these things, do naturally Occasion, or Excite, such notions and sentiments in us. But I will speak to this matter more particularly, because it is of importance.

First then, the *immediate* Objects of Cogitation, both the Sensitive, and the Intellectual, are, in *appearance*, *external* to their several faculties; that is, such Objects do so *seem* to be without their several faculties to which they correspond, *that*, in appearance, they are either the very *ultimate Objects* themselves of those faculties, or, at least, do *Exist* in them, and upon this account are called *Objects*; for Whiteness *seems* to the Eye to be *in* snow, or in a white wall; and sound to the Ear, to be in the Air; a Man doth seem to the understanding, to be really a Substance, or a thing that is invested with Accidents.

If it be *Inquired* how it comes to pass, that sentiments and notions, which really are not in the things that are without us, do yet appear as if they were, and consequently that they seem to be Objects? it must be *Answered*, that this arises from the very

nature of cogitation it self, and of ^[71] the cogitative faculties; and that both Reason and Experience do evidence, it must be so.

First, *Reason* sheweth that it must be so; for as we are conscious that we have a perceivance of Objects under certain Images, and Notions, so we are *not* conscious of any Action by which our faculties should make those Images or Notions; and therefore being sensible that we are Affected with such Images, and Notions, so long *as*, and no longer *than* we do Attend to things without us, (which things are therefore called *Objects*;) and not being sensible that we are so by any Action from within our selves, it cannot but appear unto us that we are Affected *only* from the things without us, and so, what really is only in our selves, must *seem* to come from those things, and consequently to be really in them.

Experience also shews; (to wit, that what is *really* but in the cogitative faculty, does yet *seem* without it;) for if the Eye by any accident becomes infected with *Colours*, as, (to instance in a more received, than often experienced, Matter,) with *yellow*, by the yellow Jaundice, or with *Green*, (as I have sometimes observed, before the coming of Convulsions;) ³³ that is, ^[72] (for this is the Reality) if the Visive Spirits, or whatever other parts of the Eye, that are immediately concerned in the Act of Vision, be Preter-naturally put into the same motions with those, which by the Impressions of Yellow or Green Objects they are naturally put into, in

either of these Cases, the *Object* beheld by *that* Eye, will appear as yellow, or green, tho' to every bodies else, it is but White, or Red, or of some other colour And whence comes this, but hence? that the Images conceived in the Eye, (for in the Instances alledged, the Images of yellow and green are no where else,) are naturally *pinned* upon the Object. As is farther evident in *Dazling*; which is, when an Impression made upon the Eye by one Object, becomes translated to another; thus, coming out of a bright Sunshine, on a Summers day, into a darkish room, one sees a *splendor* in every corner, and upon every Object. The like Appearance there is, upon the beholding of Objects thro' tinctur'd *Glasses*: So that it must be concluded, that the immediate Objects of cogitation, I mean the very Images and sentiments that are perceived, do, to all *appearance*, seem as external to the cogitative powers, as even the ultimate Objects themselves, that are ^[73] perceived under them; which was the first thing to be shewed.

The second point to be shewed is, that the immediate Objects of cogitation are external in their *grounds*, as well as in appearance, and in truth, are therefore external in appearance, because they are so *really* in their grounds. And this is as certain, as that every Effect must have a Cause. For *things without us*, are the Causes that do excite such Images and Notions *in us*: In the order of Nature, we do *see* a thing so long *as*, and no longer *than*, we keep our Eye upon it; and therefore that we do see it, must come from some *impression* from the Thing:

and since to *see* a thing, is nothing but to have some Image *from* it, and so *of* it, in the Eye, and the Image is as the Impression, and the Impression as the Thing that makes it, it follows that the *grounds* of the Image is in the Thing without us. And since the Image (by which I mean Light or Colour) is the immediate object of *Vision*, and, that what is instanced in one Act of cogitation, will equally hold in all, it follows, that the immediate Objects of all other cogitations, as well as of vision, are ordinarily and naturally as external in their *grounds*, as in *appearance*; that is, are fundamentally external, as well as apparently. [74]

I thought once to have ended this Chapter here, but now before I do so, I will add an Inference or two from the former Doctrine; the first is, that we learn from it the *Foundation* of that Opinion the *Academicks* of old were in, That *no judgment could be made of Truth*; that things do seem to us, but cannot be perceived by us; and that no *certainty*, but great *probability* only, is to be Attained unto by men. For as this Opinion had all the *Phaenomena* of cogitation to give it countenance, so those *Philosophers* saw it; for they evidently perceived, that they saw not the Realities, but only the Appearances of things; *Plato* the chief of them, one of the most penetrating, as well as the most elegant, of all that ever were, affirmed that the present, was a word, of *Veri similitude only*, and not of Truth and Reality; That the beings in this World were only *Shadows* but that the *Substances* themselves were in the

*Ideal.*³⁴ How far herein he went with the Truth, may easily be perceived by what I have discoursed before, concerning the Nature of Cogitation; as also, where he strikes out.

The *Second* Inference is, That since Sentiments, and Notions bottomed upon the Realities, do seem, the former to the Sense, the latter to the Understanding, to be Realities; and since we are obliged to con^[75]ceive, and speak, of things, ordinarily and popularly (for all are not Philosophers) in that way and manner that they seem to be; it follows, that we are obliged to conceive, and speak of Sentiments and Notions in Common Conversation, and to the people, *as if* really they were the things themselves that are perceived; or at least were in them: And so may say, the Snow is white, the Emerald is green, and the like. ^[76]

CHAP. IV.

Of the distribution of Notions in the Restrained sense of the Word.

SECT. I.

Notions are either the Notions of things, or Notions about things. Of the Notions of things. And first of Entity or Thing. The Pinax Entium, or general Table of things. Things are either Real, or Cogitable. And these either meer Cogitables, or real Cogitables. A Reality, what A Cogitable what. Of Real Cogitables. Real Cogitables, either Proper, or Reductive. Proper

Real Cogitables of two sorts; of the Sense, or of the Mind. These of the Sense, of two kinds; Connatural, or Preternatural. Apparent colours, are real Connatural Cogitables. Real Cogitables of the Mind, like those of the Sense, of two Kinds; Connatural, or Preternatural. Real Cogitables Reductive, subdivided into those of sense (External, Internal) and those of the Understanding.

Notions taken in the limited Sense of the word, for *Objective Ideas*, by [77] and under which the Understanding apprehends, and conceives, of, things, and which, for this reason, may be called *Fundamental* (as being essential to the business of Knowledge,) are either Notions of things; such as Entity, Reality, &c. Or Notions about Things, such as whole, part, cause, effect, &c. of which the former are conceived as *absolute*, the latter more as *relative* Notions.

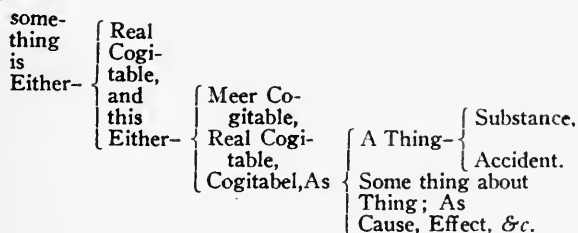
The Notions, (or *Modi concipiendi*, that I call Notions) of things, may be reduced to four, to Entity or thing, Reality, Substance and Accident.

Entity or *thing* is taken in several senses; either first, in the largest, in which it is the same with *something*, or *Aliquid*. Or 2dly. more strictly, as it comprehends *but* substances, Accidents and Modes. Or 3dly. Most strictly, as it stands for *Substances* only. I take it not at this time in the *largest* Sense.

Thing in the largest Sense, is that which any wise *is*, or that is Knowable, directly: for Nothing, no wise is, nor is Knowable, but indirectly, and by means of thing, of which it is a Negation; Nothing is Not a thing. [78]

And thing, or Entity, taken in the largest sense for

Aliquid



For that which any wise *is*, is either without the thinking of any one upon it; or it is no longer than while one is a thinking, and because he is a thinking, on it.

That which is without the thinking of any one upon it, and whether it be minded or no, is a *real* Thing, or a Reality; a thing that so is in the world, as that it is a part, or Appurtenance of it, and such a thing is *matter*, and every Affection, and every System of matter; and such a thing also is Mind.

That which no longer is than while one is a thinking, and because he is a thinking, on it; [so that tho it have that which is [79] called in the Schools an objective being,^s a being in the Cogitative Faculties, yet hath none without them in the World:]

this I name a *Cogitable*; a Cogitable thing, or Entity. And thus, all the *Sentiments* of Sense, those of the Mind, and even meer Objective Notions, are Things, not things of Mundane and External Existence, but of Cogitation and Notion; Intentional, not Real things. For such are Colours, Sounds, Savors, Time, Place, Substance, Accident, Cause, Effect, &c. they are *Intentional* things, things that, as such, have only an *esse Objectivum*, an *esse Cognitum*, as the Schoolmen phrase it.

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SECT. II. [86]

Of meer Cogitables, or Fictions. What a Fiction is. That all Fictions are Creatures either of the Mind, or of the Internal Sense; None made by the External Senses. The Reason of it. Two Philosophical Doctrines observed, one concerning meer Cogitables, the other about Real Cogitables Reductive. Why the Representations of things in Prophetical Dreams, are always made as if they were present.

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SECT. III.³⁵

Of Thing strictly taken, and of the Difference betwixt the Notions of things, and those that are only about things. Of the Idea of Substance, and that of Accident. Spinosas Notion of Sub-

*stance, and that of an Accident considered.
Maxims of Thing in general.*

Thing taken strictly, as it comprehends but Substances, Modes and Accidents, is whatever seems *External* to any Faculty, and consequently, seems to have Being in the World, as a Part, or an Appurtenance, of it, whether it be really so or no. And in this sense of the Word, as *Real Things themselves*, (which are eminently called Things.) So likewise the *Sentiments* we have of these things, as Colours, Sounds Savors, &c. are Things; and thus also, *Notions* are [92] Things, both the more general and common Notions, those of Substance and Accident, and the more special, the Notions of the several *Species* of Quality, and *those* of Relations, &c.

But when I say, that not only things themselves, but the Sentiments and Notions we have of them, are Things, it must be understood with *distinction*; for the Things themselves, (so I call the *grounds* of Sentiments and Notions) are Realities of *True Existence*; but Sentiments and Notions being only Real Cogitables, are only *seeming* Realities; Realities of *Apparition* only, not of *Existence*: Thus the *Notion* of Substance is a Reality of Appearance only, but the things that we apply it to, are Realities of Existence.

By the Notion of thing as taken strictly, we have a Rise afforded us to apprehend the difference between the Notions the Understanding hath *of* things, and those it hath only *about* things; for the Notions

that I call the Notions of things, appear to the Understanding as *Things External* unto it; for (not to mention Substances) even some Relations, and Intelligible Qualities do seem to the Understanding, as really Inherent in the things they are Attributed to, as the sentiments of [93] Colours, Odors, and Sounds do unto the Senses. But for Notions that are only framed by the Mind about Things, such as Cause, Effect, Measure, Measured, &c. they seem not to it to have being in the things themselves, but to arise from its own Reflexions, upon comparing and considering of Things. Thus, at the same time that the mind conceives of Almighty God, that he is the Cause of all, as it does conceive, that the word [God] is the name of a Real Being, so it conceives also, than the term [Cause] is not, but that it only signifies a certain Kind of Relation between God and Things, as these do spring from him, and so is only the name of a certain Objective, and not of a Real, Being.

Of the things that do Appear unto our Faculties to have a Reality of being, *some* are perceived by them *immediately*, in their own proper Formal Natures, and those are either *Modes*, or *Compleat Accidents*; *Others* are not perceived by them immediately, in their own proper Formal Natures; but only by *means* of, and under, those that are perceived so; and *these* are called *Substances*: Compleat Accidents and Modes are Appurtenances, Substances are the things to which they do Appertain. [94]

It is true, Spinoza is in another perswasion; who tells us, that he understands by *Substance*, that which is in it self, and is conceived by it self, that is, as he expresses it, a thing in whose conception that of another is not involved. Adding, that by *Attribute* he understands the same that he means by Substance, to wit, a thing conceived in and by it self, in whose conception that of another is not involved. Thus says he, *Extension*, in as much as it is capable of being conceived in and by it self, is an *Attribute*; but *Motion* that cannot be conceived but as something in another thing, is None. Only he says too, to prevent Objections; that a Notional distinction may be made between a Substance and an Attribute, in this manner, that a thing may be called an Attribute in respect of the *Understanding*, which doth Attribute such a certain Nature to a Substance; and then a Substance is the thing that the Understanding doth Attribute that Nature unto.

But as what this Philosopher says on this occasion is not very clear, so it is certain, that the Notion of Substance,³⁶ as also that of an Attribute, is Relative; nor are the Instances he puts so well adjusted, but that some exceptions may be brought against them. I can no more conceive [95] any *Real Extension*, than I can any *Motion*, but as a thing that belongs to another; Extension to the thing extended, as Motion to the thing moved. And tho' I do not believe my Understanding, the measure of other mens; yet I cannot but think, it will be found on tryal, as hard a task for any other, as it is for me.

to think otherwise; For what is meer Extension. but an Extension that belongs to nothing? And what is Extension that belongs to nothing, but an Extension of nothing? and certainly, an Extension of nothing, is nothing really, whatever it may be in Imagination; but more of this in another place.

Maxims concerning Thing in general

1. Nothing can be, and not be at once.
2. Things that but Appear, do equally Affect the Mind as those that really are.
3. Things are not to be Multiplied Unnecessarily; as they are, when the Fictions of Men, are made to pass for the Creatures of God. [96]

CHAP. V.

Of Substance.

SECT. I.

The Idea or Notion of Substance. Self Subsistence, how in the Idea of it. The Idea of Substance only Relative. Neither Extension nor Existence the Idea of it. Substances are either Principles, or Principiates. The Grounds of this Division. Substance that is a Principle, is either Mind or Matter. Considerations premised for the better Understanding of this Discourse. The Ideas of Mind and Matter. The Grounds of the distribution of Substance into Mind and Matter. Abstracted Mind is as con-

ceivable as Matter, under the Notion of Substance. Spinosas's Notion of Mind rejected.

The Primary Notion or Idea which we have of *Substance*,³⁶ is (as I have hinted in the former Chapter) that of a thing which is a *Subject*, or an *Ultimate* Object; that is, we have not any Real immediate Conception of it, but only a Notional. Or (to speak more plainly, [97] according to the Principles laid before) Substance as such, is not a thing conceived just as it is in its own Reality, but a thing conceived under a certain notion; that is, a substance is a thing that is a Subject. For when the Understanding does think of the things we call Accidents (which are the only things that do immediately, and at first present themselves unto us,) for example, when it thinks of Odours, Colours, sapers, figures, &c. it doth at the same time conceive, that besides *these* there must be other things that have them, in which those odors, colours, sapers, figures, &c. are. And those things that are conceived to *have* others, we call *substances*; as those that are conceived to be *had* of others, or to be in them, we call *Accidents*: but what those things, which we do Denominate Substances, Are, in themselves, stript of all their Accidents, is no wise known; All we know of any substance is, that it is the subject of such and such Accidents; or that it is Qualified so or so; and hath these, and the other Qualities.

This Notion of a substance [that it is the same with a subject,] I call Primary, because though

that [of subsisting by it self,] is deemed so by others, yet, in our ordinary way of Reasoning, and Investigating of things, this [of self subsisting] is a consequent one, to that of being [98] a subject. For conversing with things; as the first that do present themselves to our consideration, are the Accidents of them; so the first reflection the understanding makes, upon these Accidents, is, that other things are under them, which do uphold and support them, and consequently, that are *subjects*, or substances. But then indeed, when it comes again to consider, whether these subjects are also *in* subjects, finding in its self a certain Reluctance to conceive (that) they are, because, if they were, there would be no end, things would be in one another infinitely: therefore it concludes, that that, which is a subject of Accidents, is it self in no subject; that is, it is self-subsistent. Thus the notion of being self-subsistent, arises from that of being a subject: Nor is the notion of [being self-subsistent] a more Real one, than that of [being a subject.] For what is Self-subsistence but an *Attribute* that belongs to something else? but what that something else is, to which it belongs, I am willing to learn; and will ever honour as my great Master, that Person who will effectually teach me. We have no Ideas of any substances, but such as are Notional and Relative; that is, such as do arise from them as they stand in our Analogy, and are cloathed with Accidents. [99] A truth that might be made to appear by a full Induction of all the particulars; But I will instance but

in some; but those the most obvious, and most commonly discoursed of. For what Idea have we of *Earth*, but that it is something material, that it is fixt and tastless? What of *Salt*? but that of something sapid, and easily soluble in water? And what Idea have we of *water*? but that it is something material, moist, and fluid in such a degree, and the like? So that the Idea of a substance is that of a thing which is a subject; and this is a Relative Idea.³⁶

But many, who cannot satisfy themselves with the former, do conceit that they have found a Better, a Real, a Positive Idea of Substance. Of these, some do hold, *Extension* is that Idea, so that substance is Extension; and accordingly as Extension is either Penetrable, or Impenetrable, so they frame the Notions of *Spirit*, and *Body*; or the species of substance, as it is immaterial, or material.⁴⁴ Others hold, that *Existence* or Being is the Idea of substance in general, and that substances of this or that particular species, are only determinate Talities of Being; for since in being is the Idea of an Accident, being (say they) must be that of a substance, and as to be is to exist, so *being* is nothing but *existence*.^[100]

I shall have another occasion hereafter to consider the first of those Opinions when I come to Answer a certain Objection, touching the Idea of God; but will say of it now, that those who profess it, cannot make out (as they ought to do) a clear and satisfactory Idea of *Extension in general*, that shall agree in common, both to that which is Im-

penetrable, and to that which is Penetrable. *Besides*, it is not conceiveable, that a Spirit should be only a Penetrable Extension, since (as will appear more fully hereafter) Extension has but little to do with mind or thought, which is Essential to a Spirit: and without which a Spirit cannot be a Spirit: and Penetrability, and Impenetrability has all as little.

Nor is the *second* Opinion more conceiveable. For not to Insist, that Existence properly taken is only of Causates, (*existere* properly being [*esse extra causas*,] and nothing properly is [*extra causas*] that was not first (*in causis*;) I will take it at large, for *any* being in act; yet even so, it is not of the Idea, or first Conception, of substance: for [being] taken not as a *Noun*, but as a *Participle* (as here it is taken,) is in the very sense of the term, a word of Relation; *being* is not a *thing*, but of a thing; not a thing, but a *mode* of it, [101] and consequently presupposing it; and that which presupposes thing or substance, cannot possibly be in the Idea, or first conception of it. In short, Accidents have being, tho' not the same being as substances; but to proceed.

Now, if this is the proper notion of substance in general, that it is a thing that is a subject of Accidents, it will follow, that we cannot frame any *Notions* of substances in particular, or make any agreeable *Distributions* of them, but according to the several Accidents, of which they are subjects. And this I desire may be noted, because it will be

of very great use in clearing what I shall say hereafter, in the prosecution of this Discourse.

Of Substances some are *Principles*, some *Principiates*. By *Principles*, I mean substances that are causes of other things, but are themselves uncaused. By *Principiates*, (give me leave to make an English word of one not very good Latin) I mean substances that are caused, or composed of Principles. Principles make, Principiates are made to be.

That there are substantial Causes, and substantial Effects, in the World, is evident to sense; For even to sense, some substances *begin* to be, and some do *cease* being. Now that which begins to be, is [102] made to be after having not been, must of necessity have Something, (and this something must of necessity be another thing,) that makes it to be; that is, it must have a *Cause*. So that Causes and Effects there are; else nothing could begin to be, or cease being. And if there are Causes, either those Causes, all of them have Causes also, and consequently, as they (as Causes) make other things to be; so, (as things that have Causes) themselves are made to be by others; or else, at least some of them have no causes, but are self-subsistent and uncaused. If all Causes have Causes, then an infinite Progression must be owned in the account of Causes, than which nothing can be more repugnant to the mind of Man; to Science; and to the Order and Unity of the Universe. And indeed then, there must be a number actually infinite, since all Causes are actual. But if any Causes are uncaused, (as

certainly some must be, for the reasons Alledged). those uncaused Causes are *Principles*, or first Causes. More shortly, either something in the Universe of being is uncaused, and so is a Principle, for what is uncaused is a Principle; or else, every thing is Caused; but every thing cannot be Caused; for if every thing is Caused, Nothing must be the cause of Something. For if [103] every thing is caused, every thing was once nothing, for what is Caused was nothing before it was Caused; and if every thing was once Nothing, either Nothing must be the Cause of some, or, (which in effect is the same) nothing may become something without any cause, than which No thought can be more unreasonable.

Again, as nothing is more certain than that there is some Principle, so the *Stoicks* (the Wisest of all the Philosophers, as well as the most Devout) affirmed, that there are *two*, Mind and Matter. Thus *Seneca* in his Epistles (*Ep.* 65.)³⁷ *Universa ex Materia & ex Deo constant*. All things (says he) are composed, or, do Consist of God and Matter. And indeed, we cannot be more assured by all our faculties, that there is *Action*, and *Passion* in the World, and that the World could neither be, or persevere in being, without them, than we are to speak Philosophically, that there are *two* Principles, *one*, the Principle of all the Action; the *other*, the Principle of all the Passion is in it; the former the *Active* Principle, or first subject of Activity, the latter the *Passive* Principle, or first subject of Passivity;

of which, I call the first, *Mind*, the second, *Matter*. This Assertion *Zeno* in *Laertius* fully agrees unto, when he tells us, that the Principles of ^[104] things are two, τὸ ποιοῦν καὶ τὸ πάσχον,³⁸ the Active, and the Passive; Nor doth the great Originist *Moses* say much less, when in his *Genesis*, he writeth of the *Spirit* of God that moved, and of the *Abyss* and *Waters* upon which he moved; and methinks, in all *Animal Generations*, in which there must be a *Male* and a *Female*, as who should say, an Active and a Passive Principle, there is some (and this no very Dark or Obscure) Adumbration of it.

Before I do proceed to a more particular Consideration of these Principles, I would have it observed, that we ought to *Distinguish* what is manifest, certain, and of undoubted truth concerning them, from that which is but doubtful and uncertain. Now it is certain, *that* there is such a thing as we do call *Matter*; such a thing as *Mind*, such a thing as *Motion*; and *that* Matter is alter'd, figured, textur'd, and infinite ways wrought upon & moulded by means of motion. *Again*, it is certain *that* all things have not Mind in equal proportions, but that some exert the acts of it in a higher way and degree, and some in more ways for kind than others do; and also certain, *that* the exercises of Acts of Mind in all the ways and all the degrees of them in Corporeal Animals, (for we are not so well acquainted with others,) do much depend ^[105] upon the Nature and Qualifications of their Organs; that is, upon Texture and Disposition of matter. These things we

are as certain of, as that our selves be, and have a true use of our faculties. But if we advance farther, and to endeavour to Enter and Penetrate into the very *nature* of Matter, into *that* of Mind, and into the *Nature* of Motion; here being forsaken and destitute of sense to hunt for us, we are much at a loss, and as unable to proceed in our search an inquiry after them, as to their just Realities, as we are in that of things, which are wholly out of our view. It is hard to conceive just what *matter* is in its own Positive Reality; also what *Mind* is, and even what *Motion* is, (as taken for a subordinate Principle.) Nor can it be Demonstrated, that (as some will have it) there is only *one* substance in the Universe, and that Matter and Mind are only several *Modifications* of that one substance; nor be Demonstrated, that *Matter* (for this I think they mean by substance) is in its own Nature, a *vital* Energetical thing; and that the diverse *Gradations of Life*, that are observed in the several species of Animals, arise only from the several Modifications of Matter, and of that *life of nature* (as those Philosophers call it) which is Essential thereto, and is ^[106] the *root* of those Perceptive, Appetitive, and Motive Powers that do dress up being in all the Shapes and Forms in which it appears upon the Stage of the World. I will not build upon such *Hypothesis*; which being unevident, must needs be doubtful and uncertain, if not false. A Philosophy that shall be *solid*, and sound, must have its Ground-work and Foundations firmly laid; which none can have, but that

which is bottomed, rais'd and built upon *evidence*; I mean, upon the certain *Testimony* of our faculties. And therefore since our *faculties* do rather go upon *Notions*, than on Realities, and do plainly *Distinguish* between Mind and Matter, and (as I will show in the Progress of this Discourse) do Contradistinguish them, I hold my self obliged to treat of these distinctly, but still in the *Real Notional* way.

Mind then is Cogitative, thinking, or perceiving substance; or, Mind is the first subject of Cogitation. *Matter* is Extensive, spacious, substance; or, the first subject of dimensive spacious Quantity. In other, but Equivalent terms; *Mind* is Active substance, *Matter* Passive substance. I affirm, that these latter Definitions are equivalent to the former, because, in effect, it is the same to say, that Mind is *Active*, as to say, it is *Cogitative*; and the same to [107] say that Matter is *Passive*, as to say, it is *Spacious* Extensive substance. Nor is Mind Cogitation, or matter extension, as *Des Cartes* makes them; but the former is Cogitative, the latter Extensive substance.³⁹ We find a Reluctance in our minds to conceive that Cogitation is a substance, as also to conceive Extension as one; and yet we cannot conceive Mind and Matter but as substances.

The main Reason why I do *distinguish* Substance into Mind and Matter, as into *first* Original kinds, is, because (as I hinted before) Cogitation and Extension, that do Constitute their several Ideas, are of no Relation one to another, for what hath a Thought to do with a Cube, or a Triangle?

or with Length, or Breadth, or Depth? Certainly Cogitation and Extension are quite different Accidents, without any thing in their Ideas, that is *Common* to both; and therefore the first subject of the one, cannot be conceived the first subject of the other; their subjects must be substances of quite as different kinds as themselves are, at least to us; since all the diversity we can conceive in substances, is and must be, taken from the accidents they have, these being the Characters by, and under which alone, we do perceive and know, and by consequence, can only distinguish them. [108]

I insist herein the more, for that many think that *Mind* is only an Accident, and that taken for a substance, it is unintelligible, and a meer *Chimera*: so that, tho' Matter is acknowledged (by them) to be a substance, it will not be yielded, that Abstract, separate mind can be one.⁴⁰ But those that think it so, if they consider'd, that men have no conception of substance, nor can have any of it, but as it is a subject of Accidents, they would soon change their Opinion. For the Accident of *Cogitation*, or of Activity, that Mind is the subject of, is as distinctly and clearly conceivable, as that of Extension, or of Passivity, which matter is the subject of. Nor is the *thing* it self that is the subject of Extension, or of Passivity; any more Conceivable but by, and under *this*; that is, the substance of mind and matter are equally conceivable, and equally unconceivable. They know no more what *that* is in it self, that is extended,

than what *that* is, that is Cogitative; and may be as sure, that they do think, as they are, that they are spacious, ay, they cannot know that they are spacious, but by thinking. But of spatiosity or extension, (the Accident that constitutes matter,) I shall have occasion to discourse hereafter, when I come to speak of quantity, I proceed now to discourse of mind. [109]

The Idea I have given of Mind, that it is the Immediate subject, or (as others perhaps would chuse to say) the Immediate Principle, of Cogitation, Energy, or Activity, is much more easie to be conceived than that of *Spinosas*, when he defines the human mind to be the Idea of a body, or thing, actually existing:⁴¹ for Mind, even the human, is not so properly said to be an Idea, as to be the Principle, our Cause efficient, of Ideas; since all Ideas (even in common sense) are conceived; and Mind is that, which conceives them. Thus it is in our Refracted, Inadequate, *Real-Notional* way of conceiving; and for an Adequate and just one, as it is above our faculties, so I do not find that *Spinosas*, or *Mal. Branche* after all their Ambitious Researches in that higher way have edified the World thereby to any great Degree. This way of *seeing* all things *in God*,⁴² and in their own proper *Realities*, is a way much out of the way. Otherwise, when *they* keep the lower way of sense, many of their thoughts are surprizing, and excellent. [110]

SECT. II.

A two fold Consideration of Mind; one, as it is Abstracted from Matter; the other as it is Concerned with Matter. What is meant by Concernment of Mind with Matter— Of Mind. That is the Idea of God. God as pure Mind, is in himself, and directly incomprehensible. However, he is knowable as it were by Refraction, and Reflection; in an Hypothesis, and by way of similitude. That a Parabolical, Comparative way of knowing God, ought to content us. Of the Divine Attributes; the true conception of them. The vanity of those who talk of seeing all things in God. Spinosa's Opinion that God is all substance Rejected, for several Reasons. That this Opinion seems to imply, that God is no singular self-existent, self-subsistent Being. The Ground of this Opinion touched. Another sentiment concerning God, that he is infinite Extension indued with Goodness, Wisdom, and Power, considered. The Ground of this understood, and the nature of the Divine Omnipresence represented. [111]

Mind may be considered, either in it self, as it is *Abstract* and simple, free from all Concretion and Composition with matter; or else as it is *concreted* or concerned therewith.

By the *Concretion* of mind with matter, I mean nothing but the acting of Mind in this or that par-

ticular manner, by means of matter. As it is in our selves, who do not see, or hear, or feel, but by means of Organs, that is, of matter.

Mind as it is in it self, Abstract and Simple, free from all concretion or concernment with Matter, I call *Pure Mind*; Mind Concreted with Matter, I term, *Mind in Matter*.

Pure Mind, is the Notion or Idea of *God*; as is implied by our Saviour, when he says, *John* 4. 24. God is *Spirit*; he does not say, God is a Spirit, but God is Spirit; πνεῦμα ὁ θεός, All Spirit, nothing but Spirit. In like manner *Seneca*, in the Preface to his natural Questions, first demanding what God is? Answers, he is *Mens universi*, the mind of the Universe; and being obliged, for the clearing of his notion, to show the difference between the nature of God, and that of Man, adds, Mind is only the Principal *part* of *our* nature, but the *whole* of Gods, which is no^[112]thing but Mind God is pure Mind, all Reason. In his own terms thus, *Quid ergo interest inter naturam Dei & nostram? Nostri melior pars Animus est, in illo nulla pars extra animum*. Again, in his Epistles (*Ep.* 65.) He has this expression, *Nos nunc primam & Generalem causam quaerimus, haec simplex esse debet; nam & materia simplex est*; now, says he, we seek the first Universal cause, which ought to be simple (or uncompounded) for even matter it self is simple. Only, I doubt, he (as many other Philosophers did) took God but for an immanent an ingredient Cause

of all; which perhaps is only true of the Mosaical Spirit of God.⁴³

But *God* as he is *Pure* mind, is an *Inaccessible Light*, that dazzles all the eyes that behold it; and therefore, we can hope to acquire but very little particular knowledge of *him*, or acquaintance with *him*, under this notion. But then again, as the *Sun* that cannot be beheld directly, in its own proper light, may yet be seen by Reflection; so may the Deity, in an *Hypothesis*, and by way of Parable; by speaking of him after the manner of men. The holy *Scriptures* themselves go this way. They Represent God as an Infinite Almighty Person, (suppose a man,) that hath Understanding, Will, and Affections; that [113] consults and decrees; and that is touched (as men are) with the motions of Love, Hatred, Desire, Aversion; and in consequence of this Notion, do further Represent him, sometimes as a Father, sometimes as a Lord, or as a great King, that Governs the Universe, according to the Rules and Laws that he himself hath set, and by rewards and punishments. Now, all this is *Parabolical*, and but Comparative Knowledge: However, we ought to satisfy and *Content* our selves therewith; for though it is not to know the Deity in the Reality, as he is in himself, yet it suffices for the Principal *End* for which we should endeavour to know him; which is to Adore and Obey him. *Besides*, it is well nigh the only particular Knowledge of him that we Mortals are capable of, in this Terrestrial State; and, *in fine*, is almost as much, in

effect, as that which we have of any thing else, even in the Corporeal World.

It is true we understand that *Matter* and *Motion* are Real things, and that all others that are Corporeal, do result from these; but this (at least) is only a *General Confused Knowledge*, and *no more* than *that* we have of the Abstracted Pure Mind. For, as to the *particular* Natures of things, their Internal Fabrick and Texture,^[114] and that degree of Motion, that is in the particles which compose them, (of this) we have only a weak imperfect Conjecture, without certainty. All the particular Knowledge that we have of things by which we distinguish them one from another, both in reference to their Kinds, and to the Individuals of those Kinds, and by which we resolve their Operations, is of nothing (to speak of) but of *Accidents*; and Accidents are nothing but (as I have touched before, and shall shew again more fully hereafter) the *Sentiments* we have of things; *they* being not so much as Grounds or proper Representations of Grounds, but only certain *Appearances*, under which our several Senses do dress up things, and so show them unto us: and this is enough for *Use*.

As therefore any person would know but little of this *Corporeal World*, and nothing usefully, that would not take it in by his Senses, and know it (as he only can) under the Mascarade of *Sentiments*. that are not without him, but only in Appearances. and in their Grounds; so, he shall know but little of *God*, that will not condescend to see him in an *Hy-*

pothesis, by way of Analogy and Similitude. 'What was said by God himself unto *Moses*, will [¹¹⁵] hold true in every Mortal; *Thou shalt see my Backparts, but my Face shall not be seen*: All our Knowledge of him at present, is but ἐν αἰνίγματι, we can but *Riddle* at him; the *Ideas* we have of him, are only *Attributes*; and Attributes are not Qualities really Inherent in him, but only *Notions* of his Operations, and of the various Relations and Aspects which they bear, to one Another, and to Us,) that are excited into us, upon the view and considerations, which we take of his works. Thus the several Attributes of God, that we conceive and know him under, are, in reference to him, just as the *Accidents* of things Corporeal, their Colours, their Odors, their Sounds, their Tangible Qualities are unto them; we see him but ὡς ἐν ἐσόπτρῳ as in a Glass; and to see a thing as in a Glass, is not to see the thing it self, but only by Appearances; and yet, he that will look behind the Glass, to see more, shall see nothing at all.

What, then, must be said of those, who think, they *See all things in God*?⁴² When God, though in himself he is Pure Light, without any Mixture of Darkness, yet, as to us, in respect of any clear, just, distinct Knowledge of him, He dwells in the thickest Darkness: No [¹¹⁶] Windows in the *Sanctum Sanctorum*, where the Seat of God was; and the very *Heathen*, many of them, Adored him with *Silence*, as one that was Ineffable and Unconceivable: Methinks, it is meer Enthusiasm, to talk of

Seeing All Things in the *Original*, when we cannot so much as look upon *it*; God is Pure Mind, and Pure Mind is Pure Light, of too Transcendent Glory to be immediately beheld by us, but Blear-eyed, Weak-sighted Mortals.

There are *two* Opinions in reference to the Nature of God, that *Differ* from mine; both of which I will consider.

The *First* is, that of *Spinosa*, That he is *all* Substance, and that Particular Beings (even formally taken) are but Participations of his; as being only so many several Modifications of the Divine Attributes.⁴⁴ But this is a Notion (of the Deity) that I cannot receive, as for other Reasons, so for this particularly, that it makes him to be the *Universe*, and to be Matter, as well as Mind; whereas, God is neither Matter, nor the World or Universe, but only Pure Mind; for [117] the Great World has a Mind, that made, and Governs it, as well as the Little. Even Mr. *Hobbs*, has said, *He that thinks this World without a Mind, I shall think him without a Mind*:¹⁶ And says *Seneca*, *Nat. Quast. Lib. I. C. 45. Eundem quem nos Jovem intelligunt, Custodem, Rectoremq; Universi; Animum ac Spiritum, Mundani hujus operis Dominum & Artificem, cui nomen omne convenit, &c.*⁴⁵ Which I would Render thus; God is the Father All-mighty, All-wise, All good, the Maker of Heaven and Earth, Sovereign Preserver and Governor of All.

For my own part, I much doubt that those Philosophers, who profess themselves in this Opinion, [that God is *all* Substance, or that he is the World,] do really believe he has no Being at all, but, only in Fiction of Mind, and by way of *Prosopopæia*; and that as *Nature Fortune, Chance*, which yet are said to do This, and to do That, do, really, only signifie *Causes* so or so considered; so, *God*, with them, is only a *Notion*, a Name, a Mode of Expression, by which they mean *all* Causes taken together; and so no more the Name of a Real Individual singular Being, than that of *Nature*, or *Fortune*. *Sunt* (says ^[118] *Lucilius* in *Cicero* l. 2. de *Nat. Deor.*) *Qui omnia Naturae nomine appellant, ut Epicurus, &c.*⁴⁵

The unwary Expression of some Theologues, and Theologizing Philosophers, who Denominated God *Nature Naturing*, might give occasion to this improper conceit of him, among the moderns; as might also that mistaken *Idea* of *Infinity* (as an Attribute of God) that some have given, which seems to shock his *distinction* and singularity of Being. For *thence* it is Argued, how can God, be Infinite Being, if he be not all Beings? And if he be, how can he be One by himself? be a Singular Individual Being, distinct from all others? These were the speculations, that obliged *Spinoza* to conceive of God, that he is the *Ingredient*, Immanent Cause of all Things;⁴⁴ and the speculations too, that tempt others, to other mistakes concerning him. But when I come to discourse of the Notions of *Finite*

and *Infinite*, and to Represent in what Sense the latter is truly Ascribed to God, I hope to manifest, that there is great *Mistake* in such Speculations and Arguings, and to exempt the true received Notion of Infinity both from these, and from all the like intangling Embarrasments and Difficulties. [119]

The *Second* Opinion is that of Dr. *More* and his Followers, who do hold, that God is an Infinite *Extension*;* that he is indued indeed with all Goodness, Wisdom, and Power, but he is an Extension so indued; and of this they are so confident, that some require a belief thereof as of an Article as great as any in the Creed; an Article that is the Foundation of all Religion; both revealed and Natural. But as I believe, that no Man hath known the Father except the Son, and he to whom the Son hath revealed him, so, since among all the Revelations that the Son has pleased to make of God the Father, this is none [that he is an Extension] I cannot admit his being so, to be a Notion so Essential unto all Religion, as they would make it; Especially when I consider, that it might as easily have been said, that God is *Extension*, as, that he is a *Spirit*; and Christ hath said the latter but not the former. Besides, I cannot understand how Wisdom, Goodness, and Power should be said of meer Extension, which is but space; it seems to me a lesser incongruity (though even this is Incongruity enough) to say that God is *Matter* so indued, that he is *Space* so indued; seeing, even in common sense, there is more

of Reality and Being in meer Matter, ^[120] than there is in meer Extension or Space. But to urge this Argument more home. By *Extension*, (which the persons who are in this Opinion do Attribute to God,) they must mean either *meer* Space, or else a *thing* that in the Idea of it is *Spacious*. If meer space is intended; As this does in no ways differ from *inane* or *vacuum*, so one may think, it might as well be said (which yet its hard to say) that God is an Infinite *inane* or *vacuum*, that is, in plain English, an Infinite Nothing indued with Wisdom, Goodness and Power, as, that he is infinite Extension so indued. On the other side, if by Extension is understood a *thing that* in the Idea and first Conception of it is Extensive, that is, a thing that does essentially take up space so that it cannot be conceived, but withal space must be Imagined, as an Appurtenant of it; in this Sense, I cannot see how it differs from *Matter*; and then to say, that God is Extension, is to say, that he is Matter; whereas, God is Pure *Mind*, not *Matter*. *In fine*, as it is certain, that God is Mind, rather than Matter; so likewise it is certain, that in the Ideas that we frame of Mind, and of all the things that properly relate to it, such as Wisdom, Goodness, Thought, &c. We never do once think of Extension or ^[121] Space: And if at any time we do endeavour to apply Extension or Space unto Mind, or to any thing properly mental, there always arises a Repugnance in us, upon but the thoughts of it; an Inch, a Foot, a Yard of Understanding, or Goodness, is a *Bull*.

I know it is Argued from the *Omnipresence* of God, that he is Extended; and in truth it is very hard to imagine any presence with things that are extended, but withal, there must be an Imagination of some Extension in the thing that is present: but still, this is but *Imagination*, which is apt to impose upon us, and therefore it must be examined by Reason. And Reason tells us, that we cannot have a distinct and clear conception of the *presence* of God, if we have not (as we have not) such an one of his *Essence*, since the presence of God is but a Mode of his Essence; and if we have no distinct and clear Conception of the presence of God, nor consequently of his Omnipresence, or the way how he is present with all his Creatures, where ever they are; I do not see with what Cogency or Force an Argument can be Deduced from it, in this business. In short, since things are present one with another very *differently*, in proportion to their several Natures, it will follow, that ^[122] things *Mental*, must be present with others, in much another way than those that are *Material*, and Consequently that God who is pure Mind, must be present with Material Beings, much otherwise, than these themselves are, one with another. Mind can no more be present the same way that Matter is, than be the same thing with Matter. ^[123]

CHAP. IV.⁴⁷*Of Mind in Matter.*

SECT. I.

Mind as concerned with Matter comes under a double consideration, 1 As it actuates a most subtle and more than Etherial Matter, that is diffus'd throughout the World. 2ly. As it actuates some particular Vehicle or Body. In the first Notion of it, Mind in Matter is the Idea of the Mosaical Spirit of God. This Spirit according to the Scriptural Hypothesis, is the Immediate cause of all things in the first Creation, and ever since. The Being of this Spirit Evinc'd, both by Authority and by Argument. Dr. Mores Distinction, between the Spirit of Nature (which he calls Principium Hylarchicum) and the Spirit of God, considered.

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SECT. II. [129]

An Inquiry into the Original and Rise of Motion. What is meant by Motion in this Inquiry. That Motion comes from Mind in Matter, or the Mosaical Spirit. This shewed in many instances, by the Connexion between Cogitation and Motion. How Motion comes from a Principle at Rest, and how Matter from Mind set

out in the Metaphysical Hypothesis, and by other Illustrations.

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By *Finer* and *Delicater Impressions*, I mean such as have less of Local Motion. By *Finer* and *Delicater Faculties*, I mean such as are sensible of *Finer* and *Delicater Touches*, or Impressions.

In this sense, the *Imagination* must needs be a finer and more delicate faculty than any external sense, for as much as it receives the impressions of External Objects but by *Reflection*, or Communication from the Sensories, but these have them *directly* from the very *Objects* themselves; and by the same Reason, the *Understanding*, that receives impressions from the *internal sense*, ^[139] must needs be (as indeed it is) a much finer and delicater faculty than *That*.

Upon the whole, it is evident, that there is a near relation between actual motion and cogitation, and consequently, that it is no unreasonable thought to think, that as they are *near of kin*, so both are Offsprings of *one* Original cause, [mind in matter;] but then it will follow also, that motion, and indeed all Energy whatever in the Spring and Principle of it is *Rest*, for so mind is. But this is the difficulty. For that motion should come from a Principle that is at rest, appears as unintelligible, as that Frost should come from Fire, or Darkness from Light.

Wherefore to make this clear, I must consider things in the *Metaphysical Hypothesis*, as all are

understood to come from one, by way of *Emanation*: and thus, all *Created Being* is compared to *Light*, that flows from the Sun; and then its *Emanation* is in the same manner, as the *Radiation* of Light, which is from a Center into an Orb or Sphere, in *Extenuating* Lines. Now in this Hypothesis, as all Beings (even those that are most opposite) do come from *one*, so they come from *it* in this way, that the more *Removed* any is from the *Central Being*, the more *Extenuated* it is; that is, as *God* or pure mind is the Central Being, ^[140] that *Sun*, that is the Father of Lights; so all the Being that proceeds from *him*, has less of Light and more of Darkness, in proportion to the distance it has, upon the Scale of Being, and in its utmost *Elongation* or Removal from him, terminates in that, which in Appearance has nothing of Resemblance to the Original Light; but (to be compared with it) is only *Darkness* and shadow; and this last is the Idea of *meer matter*, as that of the Central Light is of pure Mind. God is Light; Matter is *Darkness*; all intermediate Beings are *Light* and *Darkness*, in several proportions.

What I have said is sensibly set out in the *shades* of Colours, and in *Colours* themselves, which are but shades of *Light*; For the Extremes of *any* Colour, for Example, the *Brightest* Red, and the *Darkest*; or the Extrems of *all* Colours, as *White* and *Black*; compare them each with other, and they are so contrary, that nothing can be more, especially the two latter; and yet they do participate, the former not only of Colour in general, but also of Red; and

the latter, tho' of no particular Colour, yet of Light, which is the Ground of Colour in general; and also the Darkest Red, if it doth not come from the Brightest; and the Blackest Col^[141]our from the Whitest; yet, by the Gradation of Shades, or Participle, intermediate Colours, they are so continued one to another, that the Ascent and Descent from one unto the other is most Agreeable and Delightful, as made by easie steps, without any Patches, or Chasms. It is true, if we look on Contraries in their *Physical* Consideration, so they are of *opposite Natures*, opposite Operations, and one expels the other, when they are immediately set together; but if we look upon them in their *Metaphysical* Consideration, so they are but *degrees* of the same nature, and capable of being United and Reconciled; insomuch, that One in a right sense may be said to come from Another; as Darkness from Light. For however contrary *Light* and *Darkness* are, each unto other, as to Qualities and Physical Operation, and so in their Physical Consideration, yet as to their Metaphysical, they differ but in *degrees*; both have the same grounds; for Shadow really is but lesser Light, occasion'd by the interposition of an Opaque Body, and Darkness is but a great Shadow. And thus a *Flat* and a *Sharp*, tho' contrary sounds, as to their *Physical* Consideration, yet as to their *metaphysical*, they are but different degrees; the Sharp a greater, the Flat a lesser de^[142]gree of Celerity. And thus as Darkness comes from Light, only by the Lessning or Extenuating of it; so may

matter come from mind: *mind* is pure Light, or, all Being in Eminence; but *matter*, as it doth Participate nothing at all of mind, but only by meer Existence, so it is meer darkness, without the least degree of Vitality or Life; and *all Beings* between Mind and Matter, are as *Colours*, in respect of Light, or as *Shades*, in respect of any particular Colour.

But to add some further clearing to this Subject, and to shew how actual local motion may come from a Principle that is at rest, which being shewed, will shew withall *how* Matter may come from mind, since there is no greater Repugnance (even to common sense) in the one, than is in the other, I will consider the Relation that the *Center* of a Circle has unto its *Circumference*, and how things are in the *one*, and how in the *other*; For this will afford it much Illustration. In the *Center* then of a Circle, or of a moved Sphere, all is at Rest, and out of it all in motion, but in such proportion, that that portion of a *Radius* which is at a farther distance from the Center, is *more* in motion, by reason of that distance, and that which is nearer ^[143] is *less*.

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Well then, supposing that the Principle of Energy and Motion is in the *Center* of the Orb of Being, (and we may well suppose it, since even *Nature* has its Sphere of Activity, and Acts as from a Center to a Circumference; (so *Seeds* Act, so *Light* Acts and Diffuses it self;) it is certain that motion must come from something not in Motion,

but at Rest; for so that is, which is in the Center: and indeed, else there must be infinite progression in Motions. *Again*, since in the Orb of being, Pure Mind is in the Center, ^[146] and matter in the utmost Circumference, it follows, that the nearer things are unto pure mind, and the more they do participate of that, the more they have of Rest, and the less of motion; but the farther off they are from pure Mind, and the nearer to matter, the more in motion they are. And indeed, all Energy in matter is Local Motion. Thus all the Effects of *Mechanism*, as they are purely material, so they are performed *only* by Local Motion; but the business of Cogitation, even in the lowest step of it, which is sensation, as it is of nearer Relation unto mind than to matter, so it is performed rather by way of mutation, than of Local motion; the *Eye* is not sensible of any motion imparted to it, nor is the Ear, or the Nose, or any other of our Sensories, and yet each is sensible of a mutation made therein, (or rather in the Faculty) which comes from motion. But tho' the more refined any Beings are, and the nearer that they are to the Central Mind, the more at rest they be, and the less in motion in their several Actions; and consequently Abstract Spirits that do not live in gross Elementary Bodies, are more at rest, and have less of motion, in the exercises of their several Powers, than Men have, who are imbodied in Elementary Vehi^[147]cles; yet *no Spirit* whatsoever but only *God* himself, who only is Pure Mind, is *so* wholly, so Absolutely at Rest, *as* that it sees all Things at once, by one Entire

view and Intuition; all Principles and all Conclusions in them; all Ends and all Means and Motives to them; without the least degree of Succession, or any Addition. Only the *Central Being* sees so, and he doe's.

For seeing all the Circumference is in the Center, so that all the Lines however divided they be in the former, do meet together in the latter; it is plain, that an Eye placed in the *Center*, must needs see all in the *Circle*, as clearly as any thing in it; and this too with one Individual, single Intuition, without Succession, or, Addition; seeing there is nothing of Motion, but all is Rest in the Center. And this properly is to *see in Eternity*. Thus *God* sees. But all *other Beings* beside *God*, as they are not *God*, or Pure mind, so they are not in the Center, and not being the Center, but at Distance from it, some at Greater, some at Lesser, but All at some, they All have something of Motion, and consequently cannot Act, or See, in the same manner as Central Pure Mind, by way of Absolute Rest, without Succession, or Addition, [148] and without Distinction of past, present, and to come: For tho' all the Lines do meet in the Center, yet there being no place without it in which they do so, Creatures cannot see as *God* sees, no more than they can be in the Center as *God* is. It is too short and Inadequate a way of Arguing to Infer that any Creatures can see All things at once, but from the notions (confused enough) that we Mortals have of *Time* and *Eternity*; as that *Time* is Successive, *Eternity* a Permanent Duration; to-

gether with a Conceit, that *all Spirits* (they being things Abstract and Separate from Bodies,) both Are, and Act, *in Eternity*, as all Imbodied Beings Are, and do Act, in *Time*. Certainly every Being but God, is in Time, tho' not in the same Kind of Time; for as God only is in the *Center*, so he only is Absolutely *in Eternity*. And if Time is taken for all Duration that is not Eternity, God only is without Time, and so without Succession of Actions. But to Return. [149]

SECT. III.

Of Mind as it Actuates a certain Particular Body: Mind in this Notion called a Soul. Body is a System of Organs. Soul and Body an Animal. Body Considered two ways. To wit, in Reference to External Objects, and in Reference to the Internal Principal that Acts it. In the First Consideration of Body, the Ends and uses of Organs are shewed, and withal the Reason of their variety. This illustrated by several Instances and Observations. The use of Body in Relation to the Internal Principle that Actuates it, is to Individuate and Singularize that Principle. This set out in sensible and plain Resemblances. A Comparison between Vital and Locomotive Energy; with a Recapitulation of the whole Discourse, as it unfolds the Mystery of Animals.

We have Considered Mind in the first Step of Relation that it carries unto Matter, Namely, as it doe's *Actuate a most subtle Matter diffused throughout the Universe*, in which Notion is called *Spirit* simply, as was showed from *Malachy*, Ch. 2. v. 15. Come we now to Consider ^[150] it in the next place. as it *Actuates some Particular System of Matter*, in a Particular Manner; and so it is called a *Soul*; and that Particular System of Matter, which it doth Actuate, is a *Body*, or a Particular Vehicle; and the Result of both an *Animal*. An *Animal* is nothing but Soul and Body together; or a Body Actuated by a Soul. A *Body* is a System of Organs; an *Organ* is Matter framed and Contrived after a Particular Manner for some Animal Use, and End; some Use, End, or Action of a Soul: A *Soul* is a certain Determinate Vital Energy; or a certain Portion of the Spirit of the Universe, Vested in a Body, or particular Vehicle; in which Notion all *Souls* are *Spirits*; as indeed they are stiled in the Holy Scripture, wherein we Read of the Spirit of the *Beast*, tho' it goes Downward, as well as of the Spirit of a *Man* that goes Upward.

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We will first Consider a Body in the Relation that it has unto *External Objects*, and here we must set out the *Nature*, that is, the Ends and Uses of the Organs which compose a Body, as also the Reason of the *Variety*, and number of those Organs; why *any* Organs at all, and why *many*: both which will

be done with one Performance. An Organ properly, is Matter Particularly Textured, and Framed for some Particular use: And an Animal Organ is Particularly Textured, and Framed for an Animal use: I will give the Example in only Sensitive Animals, and in the Acts of Sensation, as being best understood; but what is said of Sensation, and of the Organs of it, will, by Proportion, hold in all the other Actions of Animals, and in all other Organs, with a due Alteration. [152]

In all *Acts of Sensation* there is first an *Affection* of the Organ, and then a *Perception* of that Affection by the Soul; or rather, a Perception Excited in the *Soul* by means of that Affection; and this is the *End* of the *Organ*, and the only Use of it, that the Soul makes, to wit, to come by means thereof unto a Perception of External Objects; as, to see their Colours, to hear their Sounds, to Relish the several Tasts they have, and the like. In short, a Soul cannot but by *means* of *Organs*, take any notice of External Objects, nor the Organ be a means of conveying any notice to the Soul, but by being first *Affected* it self. Now the *Affection* of the Organ arises from a *Perception* (may I so express it) or a Reception of the *Motions* Communicated to it by Objects; and a *Capacity* for this Reception from the Particular *Frame* of the Organ. For since all Matter indifferently is not capable of receiving all kinds of Motions and Impressions; but that for some *Particular Motions* and Impressions (of which sort are sensible ones) there must be *Par-*

ticular Textures and Frames of Matter to *Catch* them; it follows, that there must be *Organs*; and these too in such *Variety* and Number: there must be *Organs*, to Receive the Impression and Motions of Objects, which ^[153] without a Particular Texture of Matter could not be Received; and there must be *Variety* of Organs, to Correspond these various Kinds of Motions and Impressions that are in Coloured, in Sonorous, in Sapid, and in other *Species* of Objects.

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So much concerning Body in its Relation to External *Objects*; come I now to consider it in the Relation which it has to the *Soul*, (the Internal Principle that Actuates it, and Acts in, and by it;) and so, the Great work and Business of the Body is to *Singularize* and Individuate the *General Vital Principle* of the Universe, that it may become a *Soul*, or a Particular Vital Principle of a certain Particular Body. To understand this it must be ^[155] Consider'd, that the *Mosaical Spirit* (the Rise and Principle of all Created Cogitation,) as it is Extended throughout the whole Universe; so, to become in Particular a *Soul*, of any Particular *Animal*, it must be *Singularized*, and Individuated, that is, it must be *Apportioned* (as it were) to that Particular Animal, which it comes *to be* by means of the Body. To Illustrate this, it must be Remembered, that a *Voice* or Sound Diffused throughout the whole capacity of the *Medium* (as the *Mosaical*

Spirit is throughout that of the universe) is yet in the *Phonocamptick Center* or object (which is nothing but a place conveniently Disposed for this Purpose,) so *Individuated* and Singularized (as the Mosaical Spirit is supposed to be by a Congruous fit Body,) that Really it has *other Affections* and Properties, than *those* it owns, in all the rest of the *Medium*, insomuch that by Vertue of it, this *place* instead of being a *Medium* of Sound, becomes to all Appearance a *Principle* of it, and so a *Speaker*, and this is called an *Echo*. It may also be set out in a *Speculum* or Looking-Glass, (for a Body is to the Mosaical Spirit, what a *Speculum* or Looking-Glass is to the Image of an Object in the Medium;) A *Speculum* Catches the Diffused Image, and so *Singularizes* it, that [156] it becomes a very Different thing, and puts on other very Different Properties than those it has in the *Medium*, for in the *Looking-Glass* it doth appear as an Object which it doe's not out of it. But what doe's set it out most naturally, is, that it is so in *Man*; For the Soul or Cogitative Principle of a Man, as it is Extended throughout the whole Capacity of the Body, in like manner as the *Mosaical Spirit* is, throughout that of the Universe; so it is *Singularized* and Individuated, in, and by, the particular *Organs*: insomuch that the *Eye* only does *See*; the *Ear* only does *Hear*, and only the *Tongue Tasts*, in Vertue thereof; for which Reason these are owned to have several particular *Faculties*, which are as so many several Souls unto them. Now what the *Organs* are to the Soul in

any Body (that is but a System of Organs,) Bodies themselves are, unto the *Mosaical Spirit*, the great Soul of the Universe, of which all particular Bodies are Organs. But since this Notion is of so much Importance, that it will deserve a more particular Consideration, and I design to give it one in another Chapter, I shall dismiss it at present, without further Insisting on it; and now will only add some *Improvement* to the former Discourse, by making a Comparison be^[157]tween the Vital and the Mechanical Energy.

First then I lay it down as certain, that there is such a thing as a *Vital*, as well as a *Mechanical* Energy: by *Vital Energy* I mean all that is not merely Mechanical; and therefore do comprehend in that Term whatever is properly *Mental*; by *Mechanical Energy* I mean Impulse or Springines, the nearest Physical Principle of Actual Local Motion. Now we are as sure by our senses, and by the Reflection that we make upon our selves, and upon the Notices which we receive from Things without us, that there is such a thing as a *Vital* Energy, as we are that there is a *Mechanical*: Because we are as much assured of the Effects of the *one*, as we are of those of the *other*; as much assured that there is life, Sensation, and Intellection, that come from a Vital; as we are that there are Actual Local Motions; Motions of Ascent and Descent, Motions Direct, and Motions Circular, &c. which (as Motions) come from Impulse, the Mechanical Energy.

Again; As it is Certain that *Local Motion*, or that Impulse which is the nearest Physical Principle of it, is *not* Matter, or Materiate, but yet is *in* Matter; as United unto it: so by this Consideration we may ^[158] become as certain, that *Vital Energy* and the Effects of it, *though* they be Immaterial, *yet* they may be in Matter; since there needs no more of Hooks and Crooks to make the Latter, than to make the Former, to stick, and hold together.

In the next place; As the Mechanical, or Locomotive Energy is Diffused *throughout the World* (for there is nothing in this, that is Entirely at Rest;) so is the Vital: Since it is certain that wherever, and whenever, any Matter becomes Disposed, the Vital Principle is *always at hand* to Actuate that Matter, and Act in it, according as the Dispositions of it do Invite or Permit: All *Putrefaction* or Digestion *any where*, determines in *Insects*, or little Animals, (as Experience evinces,) the Spirits being Unfettered and let Loose thereby.

And yet *as* the Mechanick or Locomotive Impulse is not Received in all Textures of Matter indifferently, but that, (as I have showed already) there must be some certain Modifications of Local Motion, be certain particular Textures of Matter, *so* neither is the Vital Energy Catcht and Received indifferently by all Textures of Matter; but as all Life consists in Motion, or in something Analogous, so for certain Gradations and Exercises of ^[159] Life, there must be certain particular Fabricks and Textures of Matter, called *Organs*, and also certain partic-

ular Dispositions in the *Mechanical Spirits* (for so I call the subtle Active Corpuscles in every Concrete) that are the immediate instruments of the Vital Principle in all its Actions of Life, in this Corporeal World.

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CHAP. VII. [161]

Animals are either Invisible or Visible; in the Former sort I reckon Angels, Good and Bad, which are Etherial: As also the Genii, which are Aerial Animals. Invisible Animals, why called Spirits. That they are Spirits Evinc'd, 1. From the general Tradition of the World. Mr. Hobbs's Evasion of this Argument Considered. 2. From Operations that cannot be Accounted for but from such Causes. 3. From Intelligences and Notifications that cannot be Resolved but upon this Hypothesis. 4. From Spectra or Apparitions. Of the way and manner how Spirits do Appear, that it is twofold, Real and Visional. That Good Angels when they do Appear are called πνέυματα or Spirits; and the Bad φαντάσματα or Fantomes.

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SECT. II. [171]

That there are Spirits, proved by General Tradition. Mr. Hobb's Answer to this Argument shewed

*to be but an Evasion, from the Evangelists
Matthew and Mark, &c.*

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SUB. I. [177]

*Another Argument to Prove Spirits. Of the Con-
version of an Indian Raja. A Remarkable
Story of Witchcraft, out of Mr. Gage's Survey.*

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SUBS. II. [197]

*The Third Argument from Supernatural Adver-
tisements. An Instance out of Simócatto. An-
other, of a strange Omen out of Sir W. Raw-
leigh. Of the Corps-Candles in Wales, &c.*

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SUBS. III. [211]

*The Third Argument from Apparitions. Three
Stories of them from the Junior Pliny, in his
Epistles. A Recent Story of an Apparition.*

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SECT. III. [223]

*The Apparition of Spirits twofold, Real, or Visional;
both ways Explained. A Conceit about the Ap-
pearing of Ghosts Rejected. That most Appa-
ritions of Spirits are Visional, not Real, Evinced
by several Considerations. Some Phaenomena*

of Apparitions Salved. Of the Distribution of Spirits.

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CHAP. VIII. [236]

Another Essay about the Nature of Animals and Spirits.

SECT. I.

The Subject farther Illustrated, by a Comparison of the Universe with a particular Animal. The Universe a whole; Particular Animals but Members of that whole. A Particular Animal is as an Organ with its faculty; the Universe, as a Body composed of several Organs, with a Soul that endues these Organs with several Faculties. A Demonstration even to sense, of a common Principle that penetrates throughout the Universe. In what sense a Soul is a faculty, and in what a Principle of Faculties. Two senses of the word Soul, and how in both, it may be conceived as a Principle of Faculties. The Soul in its state of separation becomes a Spirit properly. Soul is the name of a part, a Spirit the name of a whole Substance. God the Central Sun, and Fountain of all Souls and Spirits. The Emanation of Souls and Spirits from God, or from his Spirit, set out in the Comparison of Light and Colours. Not only

Philosophers, and Poets, but even many Christian Doctors, and particularly St. Augustin, compared God in respect of his influence in and over the Universe, unto the Soul in a Man.

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SECT. II. [252]

Several Objections against the Former Hypothesis considered, First, that it makes Souls to be Faculties or Powers, whereas indeed they are Actions, or Acts. This Objection Answered, and the notion of the Souls being a Principle and Faculty, rather than an Action, cleared. The Second Objection, that in this Hypothesis the Deity is considered as an Immanent, and not (what he is) as a Transient cause of all things, Removed; and how he is both the one and the other, shewed, and Confirmed by the Authority of St. Austin, and other Christian Fathers; as well as of the Chiefest Philosophers. The Third Objection, that hereby God and Nature are Confounded; Answered, by shewing how God and Nature are Distinguished in this Hypothesis. The Last and strongest Objection, that if there were but one Original Perceptive Principle throughout the Universe, all Animals would have the same Perceptions.

which they have not. This Objection Removed, and the Reason of Different Perceptions in Different Animals cleared.

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CHAP. IX. [268]

Of Substance in the Scholastical Consideration of it. Substance what, that it is First or Second. Second Substance is called a singular, a suppositum, or subsistent. Of the Principle of Individuation, or that which makes a singular to be so. Dr. Sherlock's Notion of the Individuation of Spirits. Of a Person. The true Idea of it. Laurentius Valla his notion of a Person, the unusefulness of it to the salving of the Holy Trinity shewed. The Trinity a Mystery, and Doctrine of Faith; not a Point of Philosophy; and so the Idea of it to be derived only from Revelation in the Holy Scriptures, and not from bare Discourses of Reason.

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OF THE SOUL OF THE WORLD.

OF THE
S O U L
OF THE
W O R L D;
AND OF
Particular Souls.

I N

A Letter to Mr. *Lock*, occasioned by
Mr. *Keil's* Reflections upon an Essay lately
published concerning *Reason*.

By the Author of that Essay.

Minut. Fæl. in Octav.
Veritas obvia, sed requirentibus.

Erasmus in Hyperaspist. l. 2.
Verborum umbris territamur, quòd in re nihil
sit absurdi.

L O N D O N,
Printed for *Daniel Brown*, at the Black Swan
and Bible without *Temple-Bar*. M.DC.XC.IX.



OF THE SOUL OF THE WORLD, AND OF
PARTICULAR SOULS.

TO JOHN LOCK, ESQ;

SIR,

It may seem an improper way of making satisfaction for a former Trouble, to give a new one: yet since you have pardoned the Confidence that made a Present to you of my *Essay* concerning Reason, and that some very sharp Reflections have been published on a part of that Essay, I hold myself obliged to send you my Defence of it.

My Intention in this Address is not to ingage you in the Protection, or to the Countenance of any *Opinion*, further than as Reason allows it; nor is it to insinuate that you are of mine, to gain it the more Authority: For though I could not procure a greater Advantage to any Opinion I own, [4] than to have others perswaded that you are of it; yet I must do you the justice to profess that I am wholly ignorant what yours is, as to the Point in debate.

I only appeal unto you now, as I did at first, as to an *Arbiter* or Judge, for which your excellent penetrating Understanding highly qualifies you, without

inviting you as a Party to come to my Assistance, which at this time I hope I shall not need.

Mr. *Keil*⁵⁰ in the Introduction to his Examination of Dr. *Burnet's* Theory of the Earth,⁵¹ hath done me the Honor (tho I am not sure he designed it for one) to mention me with several very celebrated Persons; but he doth it in that manner, and with that Abatement, that I have no great cause of being exalted on that regard.

After he had instanced in *Spinosas*, Dr. *More*, and Mr. *Hobbs*, as *Authors of great Discoveries, which might well demand Esteem and Veneration, if they were real*, he picks out some of their Opinions, which he believed the most obnoxious, *that by them his Readers may see how well they deserve such a Character*. He then adds, "But a new Philosopher (naming me, who am not ambitious of that Title) "has much outdone any I have yet mentioned, "in a Book lately printed concerning Reason; there "[5] *he assures us that there is but one universal Soul "in the World, which is omnipresent, and acts upon "all particular Organized Bodies, and makes them "produce Actions more or less perfect, in proportion "to the good Disposition of their Organs. So that in "Beasts that Soul is the Principle of the sensitive "and vital Functions; In Men it does not only per- "form these, but also all other rational Actions: "just as if you would suppose a Hand of a vast Ex- "tention, and a prodigious number of Fingers, play- "ing upon all the Organ-pipes in the World, and "making every one sound a particular Note, accord-*

*“ing to the Disposition and Frame of the Pipe: So
 “this universal Soul acting upon all Bodies, makes
 “every one produce various Actions, according to
 “the different Disposition and Frame of their Or-
 “gans. This Opinion he as confidently asserts to be
 “true, as other Men believe that it is false; tho it is
 “impossible he should any other way be sure of it
 “but by Revelation; and I believe he will find but
 “few that will take it upon his word”.*

Mr. *Keil*, I hope, will give me leave to tell him without offence, that the Representation of my Opinion, had he pleased to make it in my own Terms, would have been less invidious, and withal more just [6] than it appears in his. However, since he hath endeavoured by a *Comparison* to illustrate, or else to expose [for I cannot well resolve which 'tis] the Sentiment I own, and that this Comparison is capable of being applied unto it to good purpose. I will my self make use of it my own way.

But first I must give a Plan of my true Notion, which in short is this; That the Mosaical Spirit (called *Gen. i. v. 2.* the Spirit of God) being a Spirit of Life, and present every where, in all the Parts of the Universe, is the Original of all the Energy, Motion, and Action therein, especially of that which is Animal. And that particular *Souls* [for such I acknowledge there be] are Portions of that Spirit acting in the several particular Bodies in which they are, according to the Capacities, Dispositions, and Qualities of those Bodies. A Sentiment conformable to two received Maxims: *Quicquid re-*

cipitur, recipitur ad modum recipientis. Actus activorum sunt in patiente disposito.

To make it imaginable, let us suppose a vast Organ, consisting of innumerable Pipes of different Sizes and Fabrick, and this Organ to be filled with Wind blown into it, and the Wind to be received, and some portion of it appropriated by each particular Pipe: Imagine also innumerable Fingers playing upon those several Pipes; For then each particular Pipe being played upon, will, by means of the Wind, be made to sound a particular Note, differing from the Notes of all the other Pipes, according as its Qualities, Dispositions, and Fabrick differ.

The World is as such an Organ [an orderly Aggregate;] and the several Sorts of Bodies that compose it are as the several Pipes of that Organ; the Mosaical Spirit present every where throughout the whole World, is as the Wind (which is) blown into the Organ. This Spirit is received and apportioned by the several particular *Bodies*, as the Wind in an Organ by the several particular *Pipes*: and as *these* inspired with Wind, being played upon, do sound different Notes or Tunes; so *those* animated with their respective Portions of the Mosaical Spirit, being impressed and acted upon by Objects, do perform their several vital Functions, according to their several Dispositions and Fabrick.

Thus far the Comparison plainly holds; but it may be carried a greater length, and made serve to illustrate what I say in my *Essay* concerning the nature of Animals, of Spirits, and of Souls. For it

may be [8] added, that as the power of making an Organ sound at all, or the power of making a particular Pipe to sound a particular Note, arises not solely from the frame of the Organ, or from that of the Pipe; for the Organ sounds not at all, if it be not inspired with Wind, and tho inspired with Wind, and consequently tho it gives a Sound, yet it will not sound to such and such a particular Tune, if it be not played upon with the Fingers. In like manner, the Power of making a Body live, or of any particular Instrument of it exercise any particular Action of Cogitation, as of Seeing, or of Hearing, arises not solely from the frame of the Body, or from that of the particular Instrument, the Eye, or the Ear: for the Body lives not, if it be not animated with some Portion of the Mosaical Spirit; and if it be animated, and consequently hath Life, as the inspired Organ hath Sound, yet it doth not exercise that Life in this or that particular manner of Cogitation, by its several Instruments, as in seeing by the Eye, or hearing by the Ear, if it be not acted upon, and impressed by Objects, any more than an Organ which is only inspired, tho it sound, will sound to this or that particular Tune, if it be not played upon with the Fingers. Thus Life originally comes from [9] the Soul: I say, comes *from* the Soul; for that, speaking properly, it is not *in* the Soul, consider'd as a Soul, any more than Motion is, which properly is not *in* the Soul, but *from* it. And as Life, so Cogitation, which is a Species of Life, proceeds from the Soul, but the Specification of it from the Body.

And for the actual exercise of Cogitation in its several Species, whether of Sensation, or of Intellection, it comes originally from the Impressions and Operations of Objects. For *Images* and *Ideas*, that is to say, the Sentiments of the Sense, and those of the Mind or Understanding (they) are nothing but different Modifications of Cogitation; the former, Modifications of Sensation, the latter of Intellection; after the same manner as different Notes or Tunes are but different Modifications, or diverse Modulations of Sound.

In this Way of conceiving, the Production of *Images* and *Ideas* is more perspicuous and intelligible, as well as more connatural, than in that of *Malbranch*;⁴² which, methinks, in things of Nature, instead of having recourse to natural Causes, doth a little too unphilosophically, too soon repair unto the first Cause, which is the Author of Nature. But (as I said) in the way before set out, the Conception of it is very easy: [10] For Images and Ideas being but the Modifications of Cogitation, they are made by Impressions, and made different by different Impressions of Objects upon the Faculties; as Notes and Tunes are made by the playing, and different Notes and Tunes by the different playing of the Fingers upon the several Pipes of an Organ.

This Comparison of the World animated with the Spirit of God, to an Organ filled with Wind blown into it, cannot but be acknowledged to have much of Resemblance and Agreeableness; and the more, if we consider that this Spirit of God is called

Ruach in Hebrew, a word signifying Wind; and likewise that Pneumatical or Wind-Instruments of Musick are said (tho but metaphorically) to be animated, as I think they are in *Psalms* 150. v. last. For here it is said, *Let every thing that hath Neshamah*; the same Word that is used for the Soul of Man, *Gen.* 2. 7. when God is said to breathe into him the Breath of Life: so here, *Let every thing that hath Neshamah*, every thing that is animated with Wind, let every Wind-Instrument (for the Coherence plainly carries it unto Musical Instruments) *Praise the Lord*. And as *Neshamah* comes from *Nasham*, *Anhelare*, to pant or breath, so likewise *Nephesh*, another Word in Hebrew for a Soul, derives from a Root of the like signification, and often stands for Breath, as well as for a Soul.

Nor was this a particular Sentiment only of the *Jews*, but both the *Greeks* and *Romans* were in the same: For in Greek the Name for Spirit is πνεῦμα, and πνεῦμα comes from πνέω to blow; and ψυχή, the Word for Soul, derives from ψύχω to breathe. With the *Romans*, the word for Soul is sometimes *Anima*, sometimes *Animus*; words that come from ἄνεμος, which signifies Wind, as in like manner *Spiritus* does from *Spiro*.

When I affirm that [*Anima*] and *Animus* are often used promiscuously in Latin Authors, I have good Authority to support it, since *Cotta in Cicero* l. 3. *de nat. Deor.* saying, *Quî magis quam præter Animam, unde Animantium quoque constet Animus, ex quo Anima dicitur,*⁵² intimates the same: for

there he calls the vital Principle of inferior Animals *Animus*, and in effect says, both that it consists of *Anima* or Breath (which is inspired Air or Wind) and that for this reason the Breath is called *Anima*, because it is to inferior Animals what the *Animus* is to Man; [*Animus ex quo Anima dicitur.*] *Anima* it is *Animus* with a little distinction; *Anima* is the *Animus* or Soul of Brutes, and *Animus* is the *Anima* or Soul of Men; [12] as in the Holy Scripture, where St. *Paul* speaks of Body, Soul, and Spirit, what he means by Soul may be expressed by *Anima*, what he intends by Spirit by the word *Animus*; the former word importing the sensitive Principle, which is common to Beasts, the latter the rational or intellectual which is proper to Men.

To clear this Passage further, which I have quoted out of *Cicero*, and the sense I have given to it, we ought to consider that the *Stoicks* held an opinion that all Souls were Fire; and *Balbus* (who was one of them) taking it for granted, is told by *Cotta* that he was too forward in assuming so much; for, says he, 'tis the probable Opinion that the vital Principle or Soul is not Breath only as most think, or Fire only as *Stoicks* think, but a Complex or Result of both; *probabilius videtur, tale quiddam esse Animum, ut sit ex igne atque animâ temperatum.*⁶²

It is true *Julius Scaliger*⁶¹ in his 107th Exercitation against *Cardan*,⁶² is extream severe upon that wonderfully knowing and learned Man for saying but by implication, that other Souls besides the hu-

man were called *Animi*. For *Cardan* having said, *Animi vires praecipuè humani, &c.* *Scaliger* replies upon him, *Quasi verò alius sit Animus ab hu-^[13]mano*. Insinuating thereby, that to hold that every (or indeed that any) Soul might be called *Animus* is very absurd, as in truth it would be, if what he says was well grounded, to wit, that all wise Men did ever understand by *Animus* a Faculty of the human Soul, which he says; tho at the same time he confesses *Cicero* (who, it seems, for this reason he thought not very wise) to be in a different Opinion: *Nam tametsi Cicero* (says he) *Animal ab Animo dictum scribit, tamen hominis proprium Animum, id est, Animae vim, sapientes omnes intellexêre.*

And to lessen *Cicero's* Authority in this particular, he impeaches him of Inconstancy, telling us that at another time, speaking of *Apronius*, he uses such Expressions as do evidently so distinguish between *Anima* and *Animus*, that no room is left to imagine but that he took the latter for only a Power or Faculty of the former. *At* (says *Scaliger*) *non servabit [Cicero] constantiae opinionem invitis doctis viris, ejus enim verba de Apronio sunt, qui non modo Animum integrum, sed ne Animam quidem puram conservare potuisset, ubi apertè Animae facultatem innuit Animi appellatione.*

But our Hypercritick has not exercised his Talent to advantage in this place: for tho it must be acknowledged that *Animus* is ^[14] very often used for a Faculty of the Soul, and not always taken for

the Soul it self; yet when *Cicero* says of *Apronius* that he could not *conservare animam puram*, he does not mean by *Anima* his Soul (of which the *Animus*, that he distinguishes from it should be a Faculty) but he understands his Breath, which was impure, foul, and stinking. This is evident from the Orator himself, who in *Verrem lib. 3.* describing this *Apronius*, says of him, that his Breath was so fetid, that, as some affirmed, the very Beasts could not endure its Stink: *Ut odor Apronii teterrimus oris & corporis, quem, ut aiunt, ne bestiae quidem ferre possent.*

In truth, nothing more surprizes me on this occasion, than to find *Scaliger* (a very extraordinary Man, and a great Critick) so positive in this Opinion, that none of the Antients who had any Wit, ever denominated the Souls of inferior Animals *Animi*, or even that of Man *Animus*. For *Seneca* Epist. 113. tells it to *Lucilius*, as the Opinion of the Antients, that the *Animus* is an Animal, for that it makes us Animals; and that *Animals* receive their name from *ANIMUS*: *Quae sint* (says he) *quae Antiquos moverint* dicam; *Animal constat Animum esse, cum ipse efficiat ut simus Animalia, & cum ab illo Animalia nomen hoc traxerint.*⁵²[15]

However (to note it by the by) it must not be said neither that the Antients never gave the name [*Anima*] to the Soul, or that *Anima* of old did only signify the Breath: For tho *Anima* was us'd to signify the Breath, it was so but in a secondary Sense, the Breath being therefore called *Anima*,

because the *Anima* or Soul was generally understood to be contained therein, or to consist thereof. This is manifest not only from what is said already, but (to omit others) from a Passage in *Seneca l. de provid.* where *As* he says, *sive haustus ignis cursum Animae remeantis interscidit*, &c. where [*Anima remeans*] signifies Respiration or Breathing: So he likewise says, *Id quod vocatur MORI, quo Anima discedit a corpore*, &c. For here [*Anima*] is taken for the Soul. But to put it out of question, that even the human Soul is called *Anima* by antient Authors, I need to cite but *Seneca* his 117th Epistle; where, writing of the Immortality of Souls, and saying that the Consent of *Mankind* in that Point is a cogent Argument for the truth thereof, he uses the Word [*Anima*] not [*Animus*] for a Soul; *cum de ANIMARUM aeternitate disserimus*, says he, *non leve momentum apud nos habet consensus hominum, aut timentium Inferos, aut Colentium*.

I have a fruitful Subject before me, and [16] could add a great deal more, if I believed it proper; but it may suffice at this Time to have shewed that both *Anima* and *Animus* are Names for a Soul, and that both derive from a Word that signifies Wind or Breath: for this evinces that the Comparison I have made between the animated World and an inspired Organ, is not any remote one, or (as we usually speak) farfetch'd but very fitting and agreeable.

However, tho this Comparison between the World and an Organ is well enough imagined, and

carries much resemblance; yet since an Organ is but a Machin, and only artificial, and that Animals are Works of Nature, and more than mere Machins. I chose in my *Essay* to illustrate and set out my Notion by Comparisons taken from Nature, as from Sound and Echo, from Light and Colours; but more particularly from our own Souls, and their different Operations in the several Organs of Human Bodies, by means of their several Faculties.

In that Treatise I have shewed at large, *that there is* a universal vital Principle diffused throughout the World; and withal have shewed *how* that Principle comes to be singularized, and individuated; so as that there be particular Souls. I have also endeavour'd to satisfy Objections, and have instanced in the Theodosian and Scotch ^[17] Monsters, as sensible Demonstrations of the truth of what I affirm in Reference to this Subject.

I have shewed likewise that the Jewish Doctors. many Philosophers, some Fathers, and several Schoolmen, were in the same Sentiment as to the main: for tho perhaps they all agreed not either each with other, or with me, as to particular explanations; yet all held a vital Principle that doth permeate the whole World; and that, unto the Universe, is what the Soul of Man is to his Body. And if common Language does signify a common Sentiment, this must be owned to be one. For why else is Man called a Microcosm or little World, but because he is like the Great, and has Soul and Body? And tho this Expression is appropriated unto Man,

yet if we believe *Galen*, the Antients held that every *Animal* is a Microcosm, a World in little; and then surely, in their Opinion, the World itself is, after a sort, an *Animal* in great.

Upon the whole it is evident, that for any to imagine I exclude particular Souls, because I do affirm a general (one,) is to do me injury; and in effect, the same as to infer that I deny there are Colours, because I affirm there is Light; or that I deny there is Echo, because I affirm there is [18] Sound. In sum, he might as fairly conclude that all those deny the Powers of Seeing, of Hearing, of Feeling, &c. to be in any *Animal*, who do affirm that the *Animal* has a Soul which is the Principle of those Powers; for those Powers in divided Bodies would be so many Souls, that in the same Body are only so many Faculties of one Soul. This way of Reasoning goes on the same Ground that *Seneca's* does, when, in another case, he says, *Epist.* 113. *Animal sum & Homo, non tamen duos esse dices: Quare? quia separati esse debent. Ita dico alter ab altero debet esse diductus, ut duo sint.*

Yet, after all, it has pleased Mr. *Keil* to make a sharp Reflection upon me for this Opinion (but with how much Equity or Candor, our Readers must determine) and he doth it in these Terms:

"This Opinion he as confidently asserts to be true, as other Men believe it is false; though it is impossible he should any other way be sure of it but by Revelation; and I believe he will find but few that will take it upon his Word.

First he says, *I confidently assert, &c.* As for Confidence, I acknowledge that a Confidence like his in this Reflection, that does only assert but not prove, cannot merit a^[19]ny great Commendation: But otherwise I know no fault in being of any Opinion or in a confident asserting of it, (which however I am no way conscious of) if there is reason for that Confidence, and that the Opinion be well grounded.

But this he supposes mine is not; for he says, *I confidently assert, &c. tho it is impossible I should any other way be sure of it but by Revelation.* If he mean it is impossible I should be absolutely sure of it but by Revelation, and that for this reason 'tis a Presumption in me to assert the Opinion, since I am not assured of it that way, he must excuse me if I differ from him. For, in the first place, I will take the liberty to tell him what I believe most others who consider, would upon occasion, that there are many Degrees of a just Confidence, that yet do all fall much beneath Infallibility, or absolute Certainty. Besides, methinks it should content him, as being a sufficient ground of asserting any Opinion, even with Confidence, that there is Reason for the Opinion, tho he that asserts it cannot be absolutely sure of it without a Revelation; especially since Mr. *Keil* himself, I dare say, will not affirm he had a Revelation for all he confidently asserts in his Book, of which yet he cannot be absolutely sure ^[20] without one; but what there is of Revelation in the Question between him and me, he may be told hereafter, and

might have learned somewhat of it from the Essay, where also he might have seen that there was some reason for the Opinion.

And whereas he says, that I *as confidently assert my Opinion to be true as other Men believe that it is false*: If I should yield him so much, what would follow but this, That if this be all, 'tis only Confidence on either side; I confidently assert it to be true, other men *as confidently believe that it is false*? And when equal Confidence and nothing else is in both the Scales, what shall turn them? But certainly, tho other Men (if but *other Men*) believe an Opinion to be false, that any one affirms to be true; it will not necessarily follow that 'tis false indeed; for if it should, Mr. *Keil* himself, who writes in opposition to *other Men* (and those very worthy Men) must believe himself in the wrong Box, till he can convince them, ay, and all the rest of Mankind that think otherwise than he does; for till then other Men will believe that what he says is false. Indeed, if my Opinion went contrary to common Sense, and that all other Men, or but all considerate, wise, and thinking [21] Men were in another belief, I should be very apt to suspect I was imposed upon by false Appearances; but there is nothing of this in the matter, as will be manifest presently.

Mr. *Keil* closes up his Censure (for all he says against me is Censure only, not Argument) with telling his Readers his Belief, which is, that I *will find but few that will take the Opinion upon my word*. In truth it is not my desire, as it is not

reason any should; nor as it falls out, is there any need they should: for if a Revelation in the Holy Scriptures, if the Authority of some of the most thinking and sagacious Philosophers, and if Reasons taken from the *Phaenomena* of Nature, can put any Sentiment beyond the Misfortune of being precarious, mine is safe enough from that Imputation.

As for Revelation, what Interest it hath in this Opinion, I have shewed in my Essay from *Genesis* Ch. I. v. 2. compared with *Psalms* 147. v. 15, 16, &c. which I will not repeat, only I will add that I think it abundantly confirmed by an Evidence I find in the Book intituled, *The Wisdom of Solomon*, where it is said, Ch. I. v. 7. *The Spirit of the Lord filleth all the World; and the same that maintaineth all things hath Knowledge of the Voice.* [22]

This Spirit, as it hath in the Holy Scriptures the Denomination of the Spirit of God, because it comes from him, and is his hand in all his Influences upon the World; so it hath that of the Spirit [or Soul] of the Creatures, whether these be Plants, Sensitives, or Men, as being that vital Principle that acts and actuates them all. Thus in *Psal.* 104. v. 29. that which is called the Breath of the Creatures, or the immediate Principle that makes them live, and is their Soul, upon whose Departure they are said to die, and to return to their Dust, is, in the 30th verse of the same *Psalms*, called the Spirit of the Lord, which being sent into them, makes them live: *Thou sendest forth thy Spirit, and they live; and thou renewest the face of the Earth.*

This is particularly affirmed as to Man by *Elihu*. Job 33. 4. *The Spirit of God hath made me, and the Breath of the Almighty hath given me Life:* By Job himself, Chap. 27. v. 3. *All the while my Breath is in me, and the Spirit of God is in my Nostrils:* And by *Elihu* again more comprehensively, Job. Chap. 34. v. 14, 15. *If he set his Heart upon Man* [to take notice of him, and remark his Iniquities] *and [consequently] gather unto himself his Spirit and his Breath; all Flesh shall perish together,* and Man shall ^[23] turn again unto Dust. Plainly intimating that the Spirit of God (as if it were a common Soul) is the Original Principle of Life and vital Operation in Man, as well as in all things else that have life. See *Isa.* 42. 5.

The Prophetical Scheme in *Ezekiel*, Ch. 37. concerning the dry Bones, is very pertinent, and full to the same purpose. For when the dry Bones are to be made to live, God is introduced saying to them, v. 5. *Behold, I will cause Breath to enter into you, and you shall live.* And he effects it by the same steps, and in the same manner as he created Man at first. For first he organized Bodies, v. 7, 8. *The Bones came together, Bone to his Bone, the Sinews and the Flesh came upon them, and the Skin covered them above.* But tho the Bodies were organized, yet being not inspir'd, [*for there was no Breath in them*] they were not made to live as yet; and therefore to make them living Bodies, and put Soul into them, the Prophet had a Commission to the MUNDANE SPIRIT to come and animate

them, v. 9, 10. *Then said he unto me, Prophecy unto the Wind, prophecy, Son of Man, and say to the Wind, Thus saith the Lord God, Come from the four Winds, O Breath, and breathe upon these slain, that they may live: So I prophesied*^[24]*, as he commanded me, and the Breath came into them, and they lived.* Where it may be observed, that the Spirit that quickneth and giveth Life to those Bodies is compared to inspired Wind or Breath; that this Spirit of Life or quickening Breath is diffused throughout the Universe in all the Quarters thereof; and that it is intirely at the Command and Beck of God: For it is Breath is called upon to come and quicken those Bodies; and it is called upon to come and quicken them from the four Winds; and it is no sooner called upon, but it comes forthwith, and quickens them.

It may also be observed that the Breath or common Spirit of Life, that blew upon those Bodies, as it came upon them all, so it was apportioned by each; for the Breath must be in them: And where the Breath is in all, each hath his Portion of it in particular, and then may say as *Job*, Chap. 27. v. 3. *All the while my Breath is in me, and the Spirit of God is in my Nostrils*, &c. So long his Breath is in him, as the Spirit of God is in his Nostrils.

Thus every Man hath his own Soul, but this Soul is only a Portion of the Spirit of God that, as a Soul, does permeate the Universe; so that it is (as in *Pythagoras's* Expression, which I find in *Lucretius*) ^[25] *Ἀπόσπασμα Ἀιθέρος*, a Spark of Ether;

or as others choose to express it, *particula Aurae Divinae*: which, according to the grounds that I have laid in my Essay, I would render a Portion of Mind in Matter. So much for my Opinion from the *Authority* of Revelation.

As for *that* of Philosophy, I produced in my Essay as Vouchers of my *Hypothesis*, not only the great Philosopher last named, who was Founder of the *Italic* Sect, but also *Zeno*, *Seneca*, *Plutarch*, *Marcus Antoninus*, and *Apuleius*. To all which, from as many as would fill a Volume, I will add a few more.

Thales the Father of the *Ionick* Sect, held (as *Laertius* tells us)⁵³ that Water was the Principle of all things, and that the World was animated [ἐμψυχον] In which Doctrines (as is very probable) he was instructed by the Mosaick Tradition [of the Waters, and the Spirit that moved upon them] for unto this his *Dogmata* are very conformable.

There are in *Plato* so many Testimonies of a mundane Soul, and his Opinion is so generally known, that it were to overdo to instance Particulars.

I have mentioned *Zeno Citticus* in my Essay:⁵⁴ but seeing he was Founder of the [26] *Stoick* Sect, and that I find in *Laertius*, who wrote his Life, a fuller State of his Opinion, and in more particulars consonant to mine than what I have mentioned already, I will produce him again. He then, as *Laertius* tells us, asserted a Mind that permeated every Portion of the World, after the same manner that the Soul

in us doth permeate the Body. εἰς ἅπαν αὐτοῦ [κόσμου] μέρος διήκοντος, καθάπερ ἐφ' ὑμῶν τῆς ψυχῆς. But through some more, through others less ἀλλ' ἤδη δι' ὧν μὲν μαλλον, δι' ὧν δὲ ἥττον.] For instance some, he says, it pervaded only as a Habit [ὡς ἔξις] as through the Bones and Nerves; but through others as a Mind [ὡς Νοῦς], as through the understanding or rational part: [ὡς διὰ τοῦ ἡγεμονικοῦ].

This Sentiment of a Divine Virtue that pervaded the whole Universe, was in antient time so generally received, that even the Tyrant *Phalaris*, in an Epistle Consolatory written by him to the Children of *Stesichorus* (if indeed he was the Author of those Epistles passing in his name)⁵⁴ mentions it as such an one; ἡ γὰρ ἀθάνατος τοῦ Θεοῦ Μοῖρα, says he, πρὸς τὸ Πᾶν οὔσα, ἅπη &c. which his honoured and very learned Translator renders thus: *Immortalis quippe Dei vis, quae per universum diffunditur, mihi nihil* [27] *nisi haec ipsa harmonia videtur.* He is also understood by that excellent Person in his Annotations, to mean the mundane Soul of the *Pythagoreans*, when in his 104. Epistle, which is to the Inhabitants of *Catana*, he says, εἰ γε θείας τυχῆς, ὥσπερ τὰ λοιπὰ τῆς φύσεως στοιχεῖα, &c. *Si enim Divinae fortis, quemadmodum caetera naturae elementa, &c.*

And even *Aristotle*, tho a great Opposer of the Platonick Soul (yet) being prevailed upon by irresistible Experience (he) in a Paragraph quoted out of him by *Julius Scaliger*,⁶¹ in his 26th Exercitation against *Cardan*,⁶² comes somewhat near to my Opin.

ion: For there he affirms, γίνεται δὲ ἐν τῇ γῇ καὶ ὑγρῷ, καὶ τὰ ζῶα κατὰ φυτά, διὰ τὸ ἐν γῇ μὲν ὑπαρχειν ὑγρὸν, ἐν δὲ ὕδατι πνεῦμα, ἐν δὲ τῷ παντί θερμότητα ψυχικὴν, ὡς τρόπον τινα πάντα ψυχῆς εἶναι πληρεῖ. That both *Animals and Plants are produced in the Earth and in the Waters, for that there is, as in the Earth Moisture, so in the Water Spirit, and throughout the Universe an animating [vivifick] Heat; in-somuch that after a sort [it is true that] all things are full of Soul.* [28]

To those Philosophers I will add the well-known Testimony of a philosophical Poet, *Virgil AEn.* 6.

*Principio coelum, ac terras, camposq; liquentes,
Lucentemq; globum lunae, Titaniaq; astra,
Spiritus intus alit, totamq; infusa per Artus
Mens agitat molem, & magno se corpore miscet.*

*Rendered by Eugenius Philalethes*⁵⁵ *thus:*

The Heavens, the Earth, and all the liquid Main,
The Moon's bright Globe, and Stars *Titanian*,
A Spirit within maintains, and their whole Mass
A Mind, which through each Part infus'd doth pass,
Fashions and works, and wholly doth transpierce
All this great Body of the Universe.

I begin to be fatigued with the unpleasant Drudgery of quoting and transcribing; and therefore wholly omitting modern Testimonies, I will add but one more of the antient, and that shall be

from *Cicero*, who l. 2. *de natur. Deor.* introduces *Balbus* de^[29]monstrating that all things in the World are subject to a sentient perceptive nature, and are administered and governed by it. This he evidences by shewing, that particular works of Nature have infinitely more of the Beauties of Art and Contrivance than the most noble Productions of Human Skill, and yet that no particular Operation of Nature, for example, the Production of a Vine, of a Tree, or of that of the Body of any *Animal*, can shew as to Conformation, Order, and Situation of Parts, or as to Adjustment and Fitness of them for ends and uses, that wonderful Sagacity, that Subtilty of Invention, or that wise Contrivance that shines with great brightness in the general frame of the World; whence he confidently, but justly infers that the whole World is under the Conduct and wise Administration of a sentient and perceptive Nature, or else that nothing at all is so. *Aut igitur*, says he, *nihil est quod à sentiente Naturâ regatur, aut mundum regi confitendum est.*

This last Testimony, as it is an Evidence, so it is also an internal Argument; and being taken from the *Phaenomena* of Nature, reminds me of what I undertook to do in the third place, which was to shew that my Opinion had Reasons for it in Nature, and ^[30] grounded upon things themselves: And these I will now produce.

The First is taken from the Uniformity even in Difformity, the mutual Relation and the Harmony of Parts that is in the World in its general Fabrick,

if it may be allowed to make a judgment of the whole Frame by that of a particular System, which we our selves belong unto: But I will not now insist any longer on this Argument, because it is set out at large in my Essay in many Instances, and the learned Reader will find more in *Nemesius de nat. Humanâ*.

Again, this *Hypothesis* accounts for another *Phaenomenon* that cannot be so well accounted for any other way, that whenever any Matter becomes disposed for *Animal* Life, this is presently afforded to it; which how it should come to pass, is easily conceived, on supposal of a mundane Soul, or a Principle of vital Energy diffused every where; but otherwise one must imagine particular Souls, and those too to be Spirits (that are) always every where in waiting for an Office, which is hard to be admitted. I say [and those too to be Spirits] for that 'tis certain that mere corporeal Souls (as some call them) suffice not for Animal Operations, even tho we should conceive ^[31] them (as those do) to consist of *Flame* for vital Actions, and of *Light* for the sensitive ones: for if Matter be not radically *vital*, and so there be no need at all of Spirit or Mind, and then there is no such thing, it will be absolutely unconceivable how Flame and Light (which are only Matter under greater comminution of its parts of a particular Texture, and in rapid Motion) can of themselves be vital and perceptive, or make other things become so. But to return.

Mr. *Lewenhoec's* Experiment of pepper'd Wa-

ter, every Drop whereof affords (as he says) so many Thousands of Animalcules,⁵⁷ is a sensible Demonstration of an omnipresent vital Principle that acts as occasion is; and a sensible Demonstration too of spontaneous *equivocal* Generations: for so I call the Productions of *Animals* that do not come from Seeds in the common Acceptation of this word. I acknowledg it almost a Scandal but to name *equivocal* Productions at this time, they are now so generally disbelieved and exploded; but for my part, I am not ashamed to confess that as yet I have not observed so much said by the excellent *Redi*,⁵⁸ or by any other Author against the Reality of them, as to oblige me to depart from a Sentiment that [32] hath been the common Belief of most Inquirers into Nature, in all Ages before this last. And the *Hypothesis* of a mundane Soul will make Productions of that kind conceivable; without which indeed it will be hard to apprehend how they can be.

Dr. *Cox*, in a Process of extracting volatile Salt and Spirit out of Vegetables, which is described in the Philosophical Transactions, intimates this Observation; That many of the Herbs putrefied and fermented after his way, did swarm with Maggots, especially at the Bottom, and in the Middle, where (he tells us) Flies and other Insects could have no access to deposite their Eggs,⁵⁹ and where the Heat is so violent that they could not possibly subsist. Some years after that learned Person, I find another, the experienced *Juncken*, in Processes of much a like nature, making the like Observation,

that in the Putrefaction and Fermentation of the Vegetables, great numbers of Insects and little Animals were generated, tho (as he says) the Vessels were never so close stopp'd: And indeed it is commonly observ'd that Putrefactions do terminate in Animals of one sort or other. [33]

The Relations of Barnacles, that are said to be Birds arising out of the putrefied Relicks of shipwreck'd Planks,⁶⁰ which Relations have been confirmed to me by an Eye-witness of unsuspected Credit, are further confirmed by the Testimony of an Eagle-eyed Philosopher, who tells us he hath seen a Creature of that kind; for so I understand *Julius Scaliger*,⁶¹ when in his 59 Exercitation against *Cardan*⁶² he says, *In Oceano Britannico magis mireris ignotam avem, anatis facie, rostro pendere de reliquiis putridis naufragiorum, quoad absolvatur, atque abeat quaesitum sibi pisces, unde alatur: hanc quoq; vidimus nos.*

To the former Story *Scaliger* in the same Exercitation adds another, which he calls miraculous; it is of an *Oyster-shell* not very great, that was presented unto *Francis*, King of *France*, and contained in it a little Bird, almost finished with Pinions, Feet; and the Bill, sticking to the Extremities of the Shell. This Bird he says, some Learned Men believed a Transformation of the Oyster. His own words are these, *Singularis nunc Miraculi subtexenda historia est, ubi de Aquis agimus. Allata est Francisco regi opt. max. Concha non admodum magna, cum aviculâ intus penè perfectâ alarum*

fastigiis, ro^[34]stro, pedibus, haerente extremis oris ostraci. Viri docti mutatum in aviculam Ostreum ipsum existimarunt.

My Lord *Bacon*, in his natural History, Century 4th, Exp. 228. tells us, That if the Spirits be not merely detained, but protrude a little, and that Motion be confused and inordinate, there followeth Putrefaction, which ever dissolveth the consistence of the Body into much inequality, as in Flesh, rotten Fruits, shining Wood, &c. and also in the Rust of Metals; but if that Motion be in a certain order, there followeth Vivification and Figuration, as both in living Creatures bred of Putrefaction, and in living Creatures perfect: But if the Spirits issue out of the Body, there followeth Desiccation, &c.

In Experiment 339, his Lordship further tells us, that all Moulds are Inceptions of Putrefaction, as the Mould of Pyes and Flesh, the Moulds of Oranges and Lemmons; which Moulds afterwards turn into Worms, or more odious Putrefactions, &c.

And methinks the Production of *Plants* without Seed affords a very weighty Ar^[35]gument for the like Production of *Animals*. My Lord *Bacon*⁶³ gives us many Instances of the 'former in the 6th Century of his natural History, where he tells us, Experiment 563. That it is certain that Earth taken out of the Foundation of Vaults and Houses, and Bottoms of Wells, and then put into Pots, will put forth sundry kinds of Herbs: but some time is required

for the Germination; for if it be taken from a Fathom deep, it will put forth the first year, if much deeper, not till after a year or two. And in the 565th Experiment, adds, that the nature of the Plants growing out of the Earth so taken up, doth follow the nature of the Mould it self; as, if the Mould be soft and fine, it putteth forth soft Herbs, as Grass, Plantane, and the like; if the Earth be harder and coarser, it putteth forth Herbs more rough, as Thistles, Furs, &c.

Scaliger,⁶¹ in his 323^d Exercitation against *Cardan*,⁶² speaking of the Production of Frogs,⁶⁴ that sometimes have been rained in great abundance, of which there he gives several Instances, tells *Cardan*, who affirmed them to be bred of Frogs-Eggs or Spawn, that they were spontaneous or equivocal, as being Productions of a gene[³⁶]ral Nature, and not seminal ones; which kind of Animal Productions he evinceth to be possible the same way that I have, by shewing that there are the like in *Plants*: *Quid multa*, says he, *nonne quotidiana foetura coelestis genii, quae natura est potentiam declarant Plantae, nullis ortae seminiis?*

My Lord *Bacon* assures us for a certain truth, that *Toads* have been found in the middle of a Free-stone,⁶⁵ where it cannot be imagined that an *Animal* of that Kind should come and lay her Eggs; and I have been credibly informed, that very lately a living Toad was found in the Heart or Middle of a large Oak when it was felled.

The *Animation* of Horse-hairs⁶⁶ lying in the Summer time in Pools, has been observed of many, some of which I have discoursed concerning it; and an understanding Man of my acquaintance assured me, that more than once he hath made an Experiment which very much confirms the truth thereof. He takes a Hair with the Root, pluck'd from the Main or Tail of a Mare that is proud, and in a warm Season puts it into a wooden Dish full of Water, where letting it lie two or three Days, the Hair in that space will, for the most part, be^[37]come quickened with a strong Motion, and a Head like that of a Serpent grow out of its Root.

The infectious Water of the Showers that accompany the Tornadoes on the *African* Coast, standing any where, do (as Mr. *Terry* tells us in his Relation of a Voyage to *East-India*) presently bring forth many little offensive Creatures; which is likewise affirmed by Mr. *Herbert*.

The *Vermination* in Human (as well as other Animal) Bodies,⁶⁷ of which there are innumerable Instances in Medical Writers, as in *Bartholinus's* Centuries, in *Borellus's*, in *Tulpius's* Observations, &c. is another weighty Argument for spontaneous Generations; but I will mention only one: A Worm of an unusual Figure, with Head of a Serpent, found in the left Ventricle of the Heart of a Gentleman, whose name was *John Pennant*. The Relation well attested, together with the Figure of the Worm, was in the year 1639. printed at *London* by one

George Miller, to which Relation I refer the Reader. This *Phaenomenon* of Vermination is a good Evidence of SPONTANEOUS GENERATION; and this, a weighty Confirmation of the Existence of a *mundane Soul*. [38]

Another Argument for it may be taken from the Difficulties that the admittance thereof will remove, as to the Production of Human Souls; which some conceive to come, as they express it, *ex traduce*; not indeed by way of Eduction from the Power of the Matter, for they acknowledg no such Power therein, but by propagation. But others think them immediately created by God, either all at once, as those do who hold the Doctrine of Prae-existence, or (as most imagin) on occasion, according to the exigence of Matter.

As for the first Opinion, that of Traduction, I find it in *Nemesius, lib. de nat. human. cap. 2.* where he tells us, it was the Sentiment of *Apollinarius*, that Souls do propagate Souls, as Bodies do Bodies; and *Julius Scaliger* concurs with him, affirming that Souls may come from Souls, *ut lumen de lumine*, that is, that Souls do propagate one another, after the same manner as Candles light one another. *Poirot* believes as the two former, that Souls are propagated, but extends the business of Propagation somewhat further than they do, and upon other Grounds. For in his *Col^[39]gitat. rational. l. 1. c. 5. in Annot.* he affirms that all things are Prolifick, and that as Matter produces Matter, and Motion

is productive of Motion, so in like manner one Soul or Spirit may generate and produce another.

But there are many Difficulties in this Opinion, of all which I will insist on this only; That a Soul, if it be an immaterial Substance (as most conceive it to be) is as incapable of Propagation (otherwise than by a Metaphor) as it is of Discerption or actual Division. For even the Propagation of Light is by Discerption; some *Effluvia* or Emanations of the enlightning Candle passing into that which is lightened. And for the Propagation of Motion, the way thereof is so obscure, it cannot afford Light to this Subject. Only this is certain, that in local Motion derived from Body to Body, so much of it as is imparted unto one, departs from the other; which (I suppose) will not be admitted in the Propagation of Spirits. And as to the Prolifickness of Matter, I should think but few will allow thereof, who consider, that there is no more of Matter in the World now than ever was, and that Matter is ingenerable and incorruptible, being a *Subject* of ^[40] all substantial Mutations, but not the *Term* of any: So that if the Generation of Souls has no other, or no better Foundation than this, That Soul is productive of Soul, as Matter is of Matter, I conclude the belief thereof will never become general with knowing Men.

As for *Creation* of Souls (an Opinion generally held by Divines, and among our late Philosophers,

particularly embraced by *des Cartes*) many Objections lie against it; of which I will touch but one or two, as sticking most with me.

The first is, that it seems a little unphilosophical to call in a supernatural Agent for a Business and Work of Nature, such as is (if any is) the Propagation of Kind: My full consent is with *Julius Scaliger*, when he says *Nihil quod est in naturâ præter naturam est*: Nothing is in Nature that hath not a Cause in Nature.

Again, it may be further argued, that if human Souls are immediately created by God, it must be admitted that those of Beasts are so too, since nothing can be clearer, even to Sense, than that Men and Beasts do propagate their kinds the same way, [41] whether that way be by Creation, by Traduction, or by any other whatever. There is in Mankind, as well as in the kinds of Beasts, a Distinction of Sexes for the Business of Generation; a Furniture and Disposition of Organs for it in both; and in both a like Use and Application of Organs. All Men and Beasts are alike conceived in their respective Wombs, alike nourished and augmented, and both come out in the same manner: and therefore there being the same Evidence, it is but reason to make the same Conclusion for both.

I know this Argument will have but little effect upon *Cartesians*, who, against the testimony of

Sense, believing that Beasts are only Machins, without any conscious Perception or Knowledg, do not own them to have Souls as Men have, in the proper Sense of the Word. But yet it cannot want its due Weight with all others, who, believing their own, refuse not Senses unto Beasts; as thinking they have reason to conclude that Beasts see and hear, &c. as Men themselves do, because they have Eyes and Ears, &c. as Men themselves have, and, to all appearance, make the same use of them upon occasion, as Men themselves upon the like would do. And all these will find the same ^[42] reason to infer that Men and Beasts beget their like the same way, because there are the same Appearances to make us think they should.

These Appearances are obvious, and they ought to be considered; nor are they capable (I think) of being solved, or the other Difficulties, that do lie in both the ways of Creation and Traduction, capable of being removed otherwise than on the *Hypothesis* I have proposed, by acknowledging a Mundane Soul, that, according to the Exigence and Disposition of the *Matter*, is always ready with a Portion of it self to animate and actuate *it*; so that there is no need of any new Creation, of Praeexistence, or of any Traduction of particular Souls. But to proceed.

There is another *Phaenomenon* very obvious, that is better solved on this Hypothesis of a mundane

Soul, than it can be on any other ; to wit, that certain *Animals* do move and stir, and give other Tokens of Life and Sensation, tho cut in several pieces, such as Eels, Snakes, Earthworms, Butterflies, &c. This in the common way is hard to be conceived, since it must infer either that there is a Discription and actual Divi^[43]sion of Souls, of which, if Souls be immaterial, they are absolutely incapable ; or else that vital Effects may remain in being after that the Soul, which is the next immediate Cause of those Effects, is departed ; contrary to the Maxim, *Sublata causa, tollitur effectus*.

But the Reason of this *Phaenomenon*, if we suppose an universal mundane Soul, will be very plain : for since the Parts of those divided Animals do retain for some time the same Qualities and Dispositions that they had before their *Separations*, there not being in them, as in *those* of other Animals, that sudden Dissolution of the Texture, or of the Spirits ; it follows that they must receive the same Influences which they had before from the mundane Soul, and consequently, that for some Time they must continue to live, and in convenient Circumstances would longer ; for like Reasons as the Parts of Vegetables do, which, tho separated from their Wholes, yet continue to live in Slips, in Buds, in Grafts, when inserted into other *Wholes*. Nor do I see but that the Parts of *Animals* might be inoculated, or ingrafted into Animals, as well as those of *Vegetables* are into Vegetables, if the Qualities and Dispositions of Ani-

mal Parts, when separat^[44]ed, could be as well preserved as those of Vegetables, and a Coalition of them as well made: a Sentiment that is confirmed by the Experiment of *Taliacotius*, and by all the others that the *Chirurgia Curtorum* affords.

Thus I have instanced in a few *Phaenomena* of Nature, to which I might have added many others of a higher Quality; but these sufficiently confirm my *Hypothesis*, against which I cannot imagine any Objection of moment, capable of being rais'd, except this, that it does seem to render the Distinction between human and inferior Souls less conceivable, and in consequence the Immortality of the former.

But this Objection will soon vanish, if we but suppose there is a firm and indissolvable Union between the Spirit of God and its Vehicle in *Man*, and that there is not the like Union between it and its Vehicle in *inferior Animals*. And this Supposal is not without ground. For such a firm indissolvable Union betwixt the Spirit of God and its Vehicle, must be admitted to be in *Angels*, if they are (as they are) immortal; and then the Ligament or Bond of that Union, provided it be natural, must consist in a natural, but a naturally immu^[45]table, Congruity. Now the System of Spirits, that in Man is the Vehicle of the mundane Soul, must be owned to have more Alliance unto that of Angels than the Vehicles of it in inferior Animals have, if we consider the advantage the Human Understanding hath

in excellency of Operations, above the Imagination of Beasts; and also consider that the Souls of Men are capable of the Divine Image, which those of Beasts are not: for thence it will evidently follow that the former have more of a natural congruity to the Spirit of God, which is the Soul of the World, than the latter have; those as to their Vehicles being of a celestial, but these of a terrestrial and elementary matter. No wonder then if the Spirit of a Man, when he dies, goes upward, but that of a Beast goes downward.

Thus Sir, I think I have evinced from the holy Scriptures, and from several *Phaenomena* of Nature, that there is a Principle of Life diffused throughout the Universe; and I have likewise evinced that it was the Sentiment of many great Philosophers: so that tho I am not very fond of any Opinion, I hope I may say of this, without Injustice to Mr. *Keil*, that what he hath offered in contradiction to it, does in no degree impeach its Credit, or lessen mine for [46] asserting it. However I do own I am obliged to that ingenious Gentleman for the occasion he hath given me of further explaining and confirming my *Hypothesis*, and thereby too of professing a second time before the World, that

I am with the greatest Respect, *Sir*,

Your Devoted Humble Servant

Rich. Burthogge

June 13. 1698

OUTLINE.



OUTLINE OF BURTHOGGE'S PHILOSOPHY.

A. THE DOCTRINE OF KNOWLEDGE.

I.

The Faculties of Knowledge: "Conceptive, Cogitative Faculties" (*Essay*, Ch. I, Sect. 1, pp. 3-4; cf. Ch. III, Sect. 1, pp. 58-59; *Organum*, Sects. 3, 10, 13).

- a. *Sense*, affected directly by the external thing (*Org.*, Sect. 24; *Essay*, Ch. III, Sect. 1, p. 60), furnishes the perceptual element, which is the beginning of knowledge (*Org.*, Sects. 6, 24, 32; *Essay*, Ch. I, Sect. 1, pp. 9-10; Ch. III, Sect. 1, p. 59) :

"I am apt to think that person who should never have seen, nor heard, nor tasted, nor smelt, nor felt any thing, would have his minde as little furnish'd with Idea's or Notions, as his Memory with Images, and would understand as little as he had sensed" (*Org.*, Sect. 74^a).

- b. *Reason*, stimulated by sense perception (*Org.*, Sect. 24; *Essay*, Ch. I, Sect. 1, p. 8), apprehends the "meaning" of the object through the notion (and in no other way) :

"....as the Eye has no Perceivance of things but under Colours....So the Understanding Apprehends not things.... but under Certain Notions" (*Essay*, Ch. III, Sect. 1, p. 57; cf. Ch. I, Sect. 1, p. 10; Ch. III, Sect. 1, p. 62, Sect. 2, p. 68)

II.

The Object of Knowledge is

- a. *Complex*, made up of

1. The sense factor (*Org.*, Sects. 63, 74^a; *Essay*, Ch. I, Sect. 1, pp. 9-10; *Soul of the World*, p. 10).
2. The notional factor (*Org.*, Sects. 6, 8, 63; *Essay*, Ch. II, Sect. 1, p. 23; Ch. III, Sect. 1, p. 57; *Soul of the World*, p. 10).

- b. *Dependent* upon mind: no object apart from the knower.

1. The parts of the object known through sense (i.e., the "sentiments of sense") have no existence apart from the "cognitive powers":

"No such thing as Colour but in the Eye, nor as Sound but in the Ear,.... These, though they seem in the Objects, and without the cognitive Powers, yet are no more in them than the Image that seemeth in the Glass is there indeed" (*Org.*, Sect. 10; cf. *Essay*, Ch. III, Sect. 1, pp. 57-59).

2. The parts known through the notion, i. e., the notions of things (substance, entity, etc.) and about things (cause, effect, etc.) exist in the mind only:

- a) If it be admitted that "sentiments of sense" have no external existence it must be admitted also that notions have none:

- 1) Notions are dependent upon "sentiments"; "sentiments are grounds to notions" (*Org.*, Sect. 24; *Essay*, Ch. III, Sect. 1, 60).

- 2) Notions are themselves "sentiments," i. e., "Intellectual Sentiments"; "Reason...is refined, Sublimated Sensation" (*Essay*, Ch. I, Sect. 1, p. 10; Ch. III, Sect. 1, p. 62).

- b) If notions give only an inadequate knowledge of things (as all admit), they cannot exist in things themselves but only in the mind (*Essay*, Ch. III, Sect. 1, p. 60).

c. *Phenomenal, not real*:

"....the immediate Objects of Humane Cogitation....are *Entia Cogitationis*, All Appearances; which are not *properly*in the things themselves" (*Org.*, Sect. 10).

"....the *immediate Objects* of cogitation....are *entia cogitationis*, all Phaenomena; Appearances that do no more exist without our faculties in the things themselves, than the Images that are seen in water, or behind a glass, do really exist in those places where they seem to be" (*Essay*, Ch. III, Sect. 1, p. 60).

III.

The Thing (or Cause of Knowledge).

- a. *Real*, i. e., independent of mind:

"That which is without the thinking of any one upon it,.... is a real Thing" (*Essay*, Ch. IV, Sect. 1, p. 78; cf. Sect. 3, p. 90).

- b. *Virtually Unknown*: we have only a very inadequate knowledge of the thing.

1. Our senses communicate directly with the external object (*Org.*, Sect. 24; *Essay*, Ch. I, Sect. 1, p. 10; Ch. IV [VI], Sect. 2, p. 138), but do not give even a true copy of it (*Org.*, Sect. 9; *Essay*, Ch. III, Sect. 1, p. 59; Sect. 2, p. 66).

2. Reason gives us notions of the thing, but these notions are not like the reality itself:

"...few, if any, of the Ideas which we have of things are properly Pictures; our Conceptions of things no more resembling them...than our Words do our Conceptions, for which yet they do stand" (*Essay*, Ch. III, Sect. 1, p. 56; cf. pp. 59, 63; Sect. 2, p. 66).

c. *Essential to Knowledge*: though outside the realm of knowledge the thing directly impressing the organs of sense is the cause of sensation:

"...things without us, are the Causes that do excite.... Images and Notions in us" (*Essay*, Ch. III, Sect. 2, p. 73; cf. p. 70).

B. THE DOCTRINE OF TRUTH.

I.

The Definition of Truth.

a. *Negative Statements.*

1. Truth cannot be defined as that which corresponds exactly with its original model, for

a) We have not the original with which to compare the copy (*Org.*, Sect. 65):

1) The original is in the mind of God (*Org.*, Sect. 65).

2) We have no "anticipations," no innate notions, either of God (*Org.*, Sect. 39), or of things (*Org.*, Sect. 73):

a) If we did have innate notions, knowledge would not be founded, as it is, on impressions and images of sense (*Org.*, Sect. 74²; cf. *Essay*, Ch. III, Sect. 1, p. 62).

β) Although immediate assent to certain principles and immediate action under certain circumstances seem to indicate "innate notions," both assent and action are really due to previous learning (*Org.*, Sect. 74²; *Essay*, Ch. III, Sect. 1, pp. 53-55).

- γ) "Beings are not to be multiplied without Necessity": there are no original images in the eye or ear and there is no reason for supposing original notions in the mind (*Org.*, Sect. 74^s; *Essay*, Ch. III, Sect. 1, p. 52).
- b) Even if we did have "anticipations" or innate notions they would be "particular" and therefore too narrow a test of truth which is infinite (*Org.*, Sect. 74^s).
2. Truth cannot be defined as 'that which is "congruous" with our faculties, for
- a) Congruity between object and faculty gives merely *knowledge* of the object (*Org.*, Sect. 72).
- b) A "falsity" as well as a truth may be congruous with our faculties (*Org.*, Sects. 7, 63).
- b. *Positive Definitions.*
1. "Truth.... is objective Harmony," i.e., that which is congruous with itself and which fits in with the whole objective scheme of things is true (*Org.*, Sect. 75; cf. Sect. 17).
2. That is true which conforms to the "notion" or "form" of truth which is in the mind, independent of the sensuous percept to which it is applied (*Org.*, Sects. 63, 69, 72, 74^s).

II.

The Relation of Truth to Knowledge: knowledge of the object as object precedes knowledge of the object as true, for

- a. Knowledge of the object as object follows bare congruity between object and faculty (*Org.*, Sect. 72), while
- b. Knowledge of the object as true comes only
1. After the reasoning, i.e., the forming of a judgment, about the object already known (*Org.*, Sects. 7, 56, 82, 83, 86).
2. After the "form" of truth is perceived in the object already apprehended or known (*Org.*, Sects. 63, 68, 69, 72, 74^s).

C. THE DOCTRINE OF SUBSTANCE.

NOTE: Burthogge's teaching about substance is inconsistent. He says not only (1) that substance is a notion of the thing (or, as he sometimes phrases it, "a thing conceived under a certain notion"—*Essay*, Ch. V, Sect. 1, p. 97), in other words, that substance is merely the way we think of reality, but also (2) that substance is the thing itself, the reality about which we have notions.

I.

Substance as Notion.

"....Substance and Accident....; what are they, but likewise *Modi concipiendi*?....notions, that....are not without grounds, but yet that have, themselves, no Formal being but only in the Mind, that frames them; there being no such thing in the World as a Substance, or an Accident" (*Essay*, Ch. III, Sect 1, p. 64; cf. p. 57; Sect. 2, pp. 67, 69; Ch. V, Sect. 1, p. 96).

II.

Substance as Thing.

a. *Its Nature:*

1. In itself unknown: what substance is itself, "stript of all.... Accidents, is no wise known" (*Essay*, Ch. V, Sect. 1, p. 97, cf. p. 101).

2. Certain facts *about* it known:

a) That it is subject of accidents:

"All we know of any substance is, that it is the subject of such and such Accidents" (*Essay*, Ch. V, Sect. 1, p. 97; cf. pp. 99, 101; also Ch. III, Sect. 2, p. 67).

b) That it is self-subsistent:

"....that which is a subject of Accidents [i. e., substance], is it self in no subject; that is, it is self-subsistent" (*Essay*, Ch. V, Sect. 1, p. 98; cf. p. 102).

NOTE: Burthogge often implies (*Essay*, Ch. III, Sect. 1, p. 64; Sect. 2, pp. 70, 71), and sometimes positively asserts that the "attributes," (1) of being subject of accidents, and (2) of self-subsistence, are only *notions*; and that we can not say whether substance itself is possessed of these attributes:

"....a substance is nothing but a subject, or a thing that has other things in it as Accidents; whereas in truth, neither Accident, nor Substance hath any being but only in the mind, and by the only virtue of cogitation or thought" (*Essay*, Ch. III, Sect. 1, p. 65; cf. Ch. V, Sect. 1, p. 98).

c) That it is real, i. e., independent of mind (*Essay*, Ch. V, Sect. 1, p. 97; cf. p. 108).

d) That there are two kinds of substance, (1) Mind and (2) Matter:

"That which is without the thinking of any one upon it....is a *real* Thing, or a Reality;....and such a thing is matter....and such a thing also is Mind"

(*Essay*, Ch. IV, Sect. 1, p. 78). "*Mind*....is Cognitive, thinking....substance," "*Matter* is Extensive, spacious, substance" (*Essay*, Ch. V, Sect. 1, p. 106).

NOTE: There are passages where Burthogge says that we distinguish two *kinds* of substance only "notionally," i. e., as phenomena (*Essay*, Ch. V, Sect. 1, pp. 106, 107). But this teaching is not inconsistent with his general teaching about substance as thing. Burthogge's meaning seems to be that there are two kinds of substance, in themselves unknown, but *distinguished* "notionally," i. e., in our representations of them, as mind and matter (*Essay*, Ch. IV, Sect. 1, p. 78; Ch. V, Sect. 1, p. 107).

b. Classification and Description of Substance.

1. Principles, "substances that are causes of other things, but are themselves uncaused" (*Essay*, Ch. V, Sect. 1, p. 101):

a) Matter: "Passive substance" (*Essay*, Ch. V, Sect. 1, pp. 103, 106).

b) Mind: "Active substance" (*Essay*, Ch. V, Sect. 1, pp. 103, 106):

1) "*Pure Mind*", i. e., *God* (*Essay*, Ch. V, Sect. 2, pp. 110, 111, 112).

2) Mind in matter:

a) *Soul of the World* (*Essay*, Ch. IV [VI], Sect. 3, pp. 149, 150, 154f).

β) *Particular Souls* (*Essay*, Ch. IV [VI], Sect. 3, pp. 149, 150, 154f).

2. Principiates, "substances that are caused" (*Essay*, Ch. V, Sect. 1, p. 101):

a) Matter (*Essay*, Ch. V, Sect. 1, pp. 103, 106).

b) Mind (*Essay*, Ch. V, Sect. 1, pp. 103, 106).

NOTES.

The Notes which follow to Burthogge's ORGANUM, ESSAY UPON REASON and SOUL OF THE WORLD, are historical, bibliographical and philosophical in character. The pages referred to by the Notes are those of the original editions (the bracketed numerals of the present edition). The cases in which a given note elucidates not merely one but several passages are shown in the Index.

NOTES.

I. NOTES TO "ORGANUM VETUS & NOVUM."

1. (Note to p. 1.) Andrew Trevill to whom the *Organum* is addressed is undoubtedly Burthogge's father-in-law. In Lyson's *Magna Britannia*, London, 1814, Vol. III ("containing Cornwall"), p. cxviii, under the head of "Extinct Families," appears the following note: "Treville of Ethy or Tethe in St. Winnow—extinct in the latter part of the seventeenth century. The coheiresses married Burthog, Savery, and Arscot." Furthermore, in both the *Organum* and in the *Tayabov* (1670, dedicated also to Andrew Trevill), Burthogge signs himself "Your most humble Servant and Son." It is interesting to note that in the year 1651 "Andreas Trevill" was "High Sheriff of Cornwall" (cf. Hitchins, *History of Cornwall*, Vol. II, p. 685).

2. (Note to pp. 2 *et al.*) No criticism of Burthogge's *Causa Dei* as a whole could have called forth the *Organum* in reply. The *Causa Dei* is a long-drawn-out attempt to show that the everlasting torments to which the wicked are condemned are not inconsistent with God's goodness. (Cf. pp. 12-13 for Burthogge's statement of his aim in writing.) The book is a fair example of Burthogge's theological writings embodying the current views of his day and bearing little resemblance to his more original philosophical works. The criticism to which Burthogge refers may have been

made upon a short section (pp. 395-407),¹ more or less incidental to the main purpose of the essay, in which Burthogge discusses the role of reason in conduct. Reason, he says, is an "intellectual Sense," a "Light within" by which we know good and evil, just as white and black are "sensible ones," by which we recognize things as white or black. (Cf. Burthogge's theory that the "form" of truth is an innate notion which we apply to objects to determine whether they are true or false, *Organum*, Sects. 63, 69, 72, 74.) Reason, unassisted, does not, however, point out "duty." To know duty, the good must be recognized as the "will of a Superior." And the principle which shows it to be the "will of a Superior" is "conscience," which is an instinct.

The fact that the *Causa Dei* was written in answer to a still earlier essay, *Tayabov*, 1670 (cf. letter following "The Epistle Dedicatory" in *Causa Dei*), lends further emphasis to the introductory paragraph of the *Organum*.

3. (Note to p. 6.) Burthogge can not mean to refer to the Jewish historian as a chronicler of the persecutions of the Christians by the Jews. Josephus mentions the Christians but once throughout his writings, and that in a merely casual manner. (Cf. his so-called "Testimony," *Antiquities of the Jews*, Bk. XVIII, Ch. III, par. 3, translation by William Whiston; in some of the older translations the chapter divisions differ, and the "Testimony" appears in Ch. IV, par. [2].) Burthogge's reference is evidently merely to Josephus as an historian who "hath left on Record" "what manner of men" the "zealous" Jews were, zealous not in persecuting the Christians but in maintaining their own independence of Roman authority. (Cf. *Antiquities* and *The Jewish Wars*.)

4. (Note to p. 13.) In the original this word is misprinted: *Uunderstanding*.

¹ All citations are from the first edition, noted in the Bibliography. pp. 227ff.

5. (Note to pp. 13 *et al.*) Burthogge uses the terms "formal" and "objective" in the sense generally accepted in the seventeenth century. The thing itself was said to exist "formally," i. e., independent of mind. Cf. Descartes, *Meditations*, III and VI; cf. also Fleming's "Vocabulary of Philosophy" (in Krauth's *Vocabulary of the Philosophical Sciences*, New York, 1878) for a brief history of the use of the term "objective."

6. (Note to pp. 19 *et al.*) Jacob Behmen, 1575-1624 (variously spelled Behm, Behme and Behmen by his English translators in the seventeenth century). For a clear and sympathetic treatment of the significance of Behmen's teaching as an outgrowth of the Reformation and a forecast of the Quaker movement, cf. R. M. Jones, *Spiritual Reformers in the 16th & 17th Centuries*, London, 1914. A complete bibliography of first editions of the works of Behmen will be found on p. xii of the Everyman edition of *The Signature of all Things*. For a bibliography of English translations cf. Jones, *op. cit.*, p. 213.

Burthogge rightly characterizes the works of Behmen as obscure. In the *Aurora* (1612) Behmen's first and most widely known work, he frankly admits the unintelligibility of his writings even to himself, when the dictating "Spirit" has left him. "...this work," Behmen says (p. 54 of translation by Sparrow, 1656), "comes not from his [the author's] Reason, but from the impulse of the Spirit," and "...if the Spirit were withdrawn from me, then I could neither know nor understand *my own Writings*" (p. 73).

7. (Note to pp. 20 *et al.*) Robert Fludd, Oxford, B.A. 1596, M.A. 1598, M.D. 1605, is perhaps most widely known for his connection with the fraternity of the Rosicrucians. He has been called the "English Rosicrucian." (H. Jennings, *The Rosicrucians, Their Rites and Mysteries*, New York, 1879, Ch. 38.) He probably got his first knowledge

of this fraternity of mystics from his friend Michael Maier who introduced Rosicrucianism into England. (Cf. A. E. Waite, *The Real History of the Rosicrucians*, New York, 1888, Ch. X.)

On two points, at least, the biographers of Robert Fludd agree, (1) that he was a man of great erudition, but (2) that his writings are, for the most part, so obscure as to be quite unintelligible. Granger says of him (*Biographical History of England*, London, 1775, Vol. II, pp. 3-4): "...a vein of unintelligible enthusiasm runs through his works." In Wood's *Athenae Oxonienses*, London, 1815, Vol. II, pp. 618-19, we read: "...as he [Fludd] wrote by clouding his high matter with dark language...so he spoke to his patients, amusing them with I know not what, till by his elevated expressions he operated into them a faith-natural, which consequently contributed to the well working of physic." And again Chalmers (*General Biographical Dictionary*, London, 1814, Vol. XIV) says of him: "He did not begin to publish until 1616, but afterwards became a voluminous writer, being the author of about twenty works, mostly written in Latin, and as dark and mysterious in their language, as in their matter" (p. 418). "All the mysterious and incomprehensible dreams of the Cabbalists and Paracelsians, he compounded into a new mass of absurdity... he...describes the whole mystery of production and corruption, of regeneration and resurrection, with such vague conceptions and obscure language, as leaves the subject involved in impenetrable darkness" (p. 419).

For an annotated bibliography of Fludd cf. F. Leigh Gardner, *A Catalogue Raisonné of Works on the Occult Sciences*, Vol. I, "Rosicrucian Books," London, 1903, pp. 23-28. Other bibliographies will be found in (1) Wood, *Athenae Oxonienses*, Vol. II, p. 619; (2) *Dictionary of National Biography*, Vol. XIX; (3) A. E. Waite, *Real History of the Rosicrucians*, New York, 1888, pp. 287-88; (4) H. Jennings, *The Rosicrucians, Their Rites and Mys-*

teries, New York, 1879, pp. 363-64; (5) Chalmers, *General Biographical Dictionary*, London, 1814, Vol. XIV, pp. 418-19.

8.² (Note to p. 20.) Gnosticism (c. 100-300 A.D.) is a form of mystical religion grounded in dualism. The Gnostics believed themselves to be endowed with a peculiar and mysterious sort of knowledge hidden from the uninitiated and imparted to them by special revelation.

Burthogge's knowledge of the "Whims of Basilides, of Valentinus and the Gnosticks" was probably not first-hand. Very little of the writings of the early Gnostics has survived (for an annotated collection of the fragments cf. Hilgenfeld, *Ketzergeschichte des Urchristentums*, Leipsic, 1884, pp. 195-218). And Burthogge's acquaintance with the Gnostics was made, more probably, through their contemporary opponents: Irenæus, Hippolytus, Clement of Alexandria and Tertullian. There were three early systems of Gnosticism: (1) the Egyptian, (2) the Asiatic, (3) the Syrian. And it is generally conceded that although these early systems arose simultaneously with Christianity their ideas were borrowed from various sources much older, e. g., from Greek philosophy, from Buddhism, from Parseeism and from Jewish-Alexandrine philosophy. It was only later, when Gnosticism was declining and could find nothing in the older philosophies to bridge the gap between spirit and matter, that it incorporated Christian beliefs in order "to bolster up a crumbling fabric." Gnosticism began to wane in the second half of the third century running more and more into mysticism.

Basilides and Valentinus were both leaders in the early Egyptian school of Gnostics. Basilides, born in Alexandria, was the founder of that form of Gnosticism known as the "Abraxas" religion, based, as all forms of Gnosticism were, upon a fundamental dualism. For an exposition of the

² Notes 8 and 21, in part, and Notes 14, 17, 23, 27 and 42, entire, were written by Professor Calkins.

teaching of Basilides cf. Mansel, *Gnostic Heresies of the First and Second Centuries*, London, 1875, Ch. X, and for a shorter statement of his theory of the creation of the world cf. Kramer, *Sources of Gnosticism*, Princeton, 1896, pp. 8-10, also Irenæus's summary in C. W. King, *The Gnostics and Their Remains*, London, 1864, pp. 34-35. Basilides died about 133 A. D. He published twenty-four volumes of "Interpretations upon the Gospels," besides "Odes" and "Spiritual Songs."

Valentinus, born also at Alexandria, but of Jewish origin, followed Basilides and elaborated his system of emanation. Of the two, Valentinus was the more prominent leader of the Gnostic movement. He was the founder of a great number of subordinate schools. For a statement of the system of Valentinus cf. Mansel, *op. cit.*, Chs. XI and XII. Valentinus died in 158 A. D.

9. (Note to pp. 20 *et al.*) The religious sect known as the "Familists" or "Family of Love" was founded about the middle of the sixteenth century, by Henry Nicholas (or Niclaes, fl. 1502-80), and was in existence as late as the opening of the eighteenth century. The teaching of these mystics is closely allied to that of their successors the Quakers. Many of the doctrines generally supposed to have originated with the Quakers were probably borrowed from the "Familists." The central idea in the teaching of Nicholas, called by Henry More "the begodded man of Amsterdam," is that real righteousness is reached not through conformity to any external law or ceremony, but through the attainment of a spiritual union with God, a union in which the man becomes "godded." For an excellent sketch of the life of Henry Nicholas, "Father of the Familists," cf. the *Dictionary of National Biography*. A bibliography of his works (all written originally in Low German) will be found there also. For an exposition of the teaching of Nicholas, with quotations from his writings, cf. R. M. Jones, *Studies*

in *Mystical Religion*, London, 1909, Ch. 18. The names of the various contemporary opponents and an account of the charges which they brought against the "Family of Love" will be found on pp. 442-48 of the same book.

10.³ (Note to p. 20.) The terms "demoniacal" and "complexional" are very common terms for types of enthusiasm, by which is meant the claim to direct divine guidance. I give one illustration from Cornelius Agrippa's *Occult Philosophy* which was translated into English in 1651. Agrippa says, in speaking of "enthusiasm": "Melancholy men, by reason of their earnestness, do far better conjecture, and quickly conceive a habit, and most easily receive an impression of the celestials. And he [Aristotle] in his Problems saith that the Sibyls, and the Bacchides, and Niceratus the Syracusan and Ammon, were, by their natural melancholy complexion, prophets and poets. The cause, therefore, of this madness, if it be anything within the body, is a melancholy humor; not that which they call black choler, which is so obstinate and terrible a thing, that the violence of it is said, by physicians and natural philosophers (besides madness which it doth induce), to draw or entice evil spirits to seize upon men's bodies" (p. 186).

I have also run across the following passage in Holland's translation of Plutarch's *Morals* (1603): "The Daemons use to make their Prophets and Prophetesses to be ravished with an enthusiasm or divine fury."

A great number of writers who followed Paracelsus used "complexions" for combinations of the so-called four "humors," the "choleric," "phlegmatic," "sanguine" and "melancholic." Dreams and revelations of one sort and another were believed by these writers to be the result very often of "complexions," or, as we should say to-day, of emotional conditions. From the time of the Renaissance it

³ Extract from a letter from Prof. R. M. Jones, of Haverford College, to Miss Calkins.

was customary either (1) to treat "enthusiasm" as an invasion by a good or bad spirit, or (2) to consider it to be a result of "temperature" or "tincture" or "complexion," these being various terms which cover pretty much what we mean by a psychical or emotional condition of the subject. Abundant illustrations can be found in the writings, for instance, of the English Platonists, especially in those of Henry More.

11.⁴ (Note to p. 21.) It is extremely difficult to be absolutely sure about the "upstart sect." There are three sects to which Burthogge might be referring: the Quakers, the Behmenists and the Muggletonians. I feel very sure that he is referring to the Quakers. They were far and away the most numerous and they had aroused far greater interest and comment than any other "upstart sect" of the time. There were probably thirty thousand Quakers in England at the time this tract was written and they had made very sweeping claims to the possession of the direction of the Spirit. The Muggletonians came into notice about 1652 and claimed to have a wholly fresh and new revelation from God. They were, however, always few in number and are not nearly as likely to be meant as are the Quakers. I hardly think Burthogge can be referring to the Behmenists, though they, too, claimed to have full guidance of the Spirit, and they were striking examples of "enthusiasm." The "Familists" and the "Seekers" had so greatly waned in numbers and in influence by 1675 that they, I think, are eliminated.

12.⁵ (Note to p. 21.) Despite the vast amount which has been written in praise and in disparagement of Paracelsus, the famous iatrochemist and physician (1493-1541), the facts definitely known regarding his life are few. He was

⁴ Extract from a letter from Prof. R. M. Jones to Miss Calkins.

⁵ For this Note the editor is indebted to Dr. Charlotte Fitch Roberts, late professor of chemistry at Wellesley College.

born at Einsiedeln in Switzerland, led for the most part a wandering life, though he was settled for about three years at Basel as city physician and lecturer in the University; and he died in Salzburg. His constant attempts at reforms and innovations brought him many enemies. "That you other physicians are angry," Paracelsus writes (in the Preface of *Das Buch Paragranum*), "because I write differently from your books, is something which depends upon your unreasonableness, not mine. No one cries out who is not wounded, and no one is wounded who is not vulnerable. The art of medicine does not cry out against me, for it is invulnerable and immortal." Though ranked as an alchemist, his principal work in the development of chemistry consisted in turning away attention from the attempt to prepare gold and silver, and in applying chemistry to medicine, thus founding the school of iatrochemists. As a physician, many brilliant cures were attributed to him in his lifetime, but his claim to recognition now lies not so much in the contribution of new discoveries as in the introduction of the empirical method in the study and practice of medicine. "All things," he writes, "are possible to science" (*De Natura Rerum*, Huser edition, Basel, 1589-90). He did a real service to the advancement of science in general by his emphasis on investigation and on independence in work. This idea of independence is brought out in the motto which he adopted for himself, which appears in connection with many of his portraits: "Alterius non sit qui suus esse potest." Another favorite saying which recurs in many forms in his writings is: "Lehren und nicht tun, das ist klein; lehren und tun, das ist gross und ganz." Again, he writes: "At the basis of a good physician is fidelity—not halved nor divided. For, as little as the truth of God can be divided or limited, so also is it with fidelity" (*Paramirum*, Strassburg folio edition, 1616-18).

A vast number of writings on many and varied subjects are extant which have been published under the name of

Paracelsus, but in many cases the books were published after his death and are of doubtful authenticity.

13. (Note to p. 21.) Jean Baptiste van Helmont (1577-1644), was a Belgian chemist and physician and a disciple of Paracelsus, although he repudiates some of his master's teachings. (Cf., e. g., his "Nativity of Tartar in Wine," tr. by Charleton in *A Ternary of Paradoxes*, etc., London, 1650, Sects. 1, 13, 15; and *Oriatrike*, tr. by Chandler, London, 1662, Ch. 115, on "The Arcanums or Secrets of Paracelsus.") Helmont was a curious paradox, both mystic and scientist. He was "a careful observer of nature and an exact experimenter who in some cases realized that matter can neither be created nor destroyed," yet at the same time he resorts to supernatural agencies in solving his physiological problems. His works were collected by his son and published at Amsterdam, in 1668, under the title of *Ortus Medicinae*. For the facts of his life cf. *Encyclopædia Britannica*, 11th ed., also the *Catholic Encyclopædia*. A bibliography of French and German works on Helmont will be found in the former. For English translations cf. Charleton, *op. cit.*, and Chandler, *op. cit.*

14. (Note to pp. 24 *et al.*) Burthogge's "Light of Nature" is only roughly parallel to Descartes's. For Descartes does not make the contrast between the "Light of Revelation" and the "Light of Nature," whereas he distinguishes the "natural light"—by which he means self-evident truth (cf. *Meditations*, III, par. [3])—from "natural impulse" which he describes as "only a certain spontaneous impetus that impels me to believe in a resemblance between ideas and their objects, not a natural light that affords a knowledge of its truth" (*ibid.*, par. [9]). Natural light, not natural impulse, is described by Descartes as "clear and distinct perception."

15. (Note to p. 32.) The gods of Epicurus were "unknown" in the sense of being *unrevealed*, which is apparently Burthogge's meaning. In a region of perpetual calm and serenity, in the space between the worlds, they lived in perfect happiness, aloof from men, and "not concerned, nor concerning themselves with things below them." These gods *resembled* men, but were immortal and of a superior nature. Like men they feasted and conversed together. And their bodies were of human form, though of a more ethereal substance. They required food (of a kind suited to their bodies), but no sleep.

This conception of the gods was a result of Epicurus's attempt to prove the absurdity of the two opposing views—alike intolerable to him—which were current at the time. (1) the theory of divine interference, and (2) that of Stoic fatalism. According to his conception of the gods, both views become impossible. The gods cared nothing for men and their affairs, and were content to let them guide the course of nature as well as their own fortunes. For a statement of the theology of Epicurus cf. Wm. Wallace, *Epicureanism*, London, 1880, Ch. IX; E. Zeller, *Stoics, Epicureans and Sceptics*, tr. by O. J. Reichel, London, 1892, Ch. XVIII; and R. D. Hicks, *Stoic and Epicurean*, New York, 1910, Ch. VII.

16. (Note to p. 33.) It is interesting to note that the conception of God as unknown is, in the view of Hobbes, the natural outcome of a materialistic system (cf. *Leviathan*, Pt. I, Chs. XI and XII; Pt. II, Ch. XXXI; Pt. III, Ch. XXXIV). Hobbes conceived of the whole universe as "corporeal substance." On this materialistic view of the universe, God (if he exist at all) must be either "corporeal" or unknown. Unwilling to deny His existence, but unwilling also to make Him merely a part of the material universe, Hobbes makes God the unknown "cause." To this unknown God, he teaches, we apply the attributes of cor-

poreal substance, as well as the "indefinite" attributes: "good," "just," "holy." (Cf. *Leviathan*, Pt. II, Ch. XXXI.) But what He really is in Himself we do not know. The doctrine of an unknown God is the natural development of Burthogge's doctrine of knowledge. If our knowledge of the material world is subjective, that is, if we can know objects only as they exist in the mind, and never as things in themselves outside of the mind, how much more true must it be that we can know God only "as He stands in our Analogy," and not "as He is in Himself." It is inconceivable that our "Notions" which are inadequate for knowledge of things, should be adequate for a knowledge of God.

17. (Note to p. 40.) Prof. Arthur O. Lovejoy has pointed out⁶ that this is the earliest use of an argument best known in the form which Kant gave it in his Second Antinomy. From the opposition between the "common Notion" of Quantity and "the composition of the Continuum," Burthogge argues that quantity is a "Phenomenon" or "Appearance," not a "Reality." For Arthur Collier's use of the same argument cf. his *Clavis Universalis*, p. 63 of the Open Court edition, edited by Ethel Bowman, and also A. O. Lovejoy in his essay "Kant and the English Platonists" (in *Essays Philosophical and Psychological in Honor of William James*, New York, 1908).

18. (Note to p. 43.) For an analysis of Aristotle's logic and the history of its use cf. Ueberweg, *System der Logik*, Bonn, 1857, par. 16; Brandis, *Handbuch der Geschichte der griechisch-römischen Philosophie*, Berlin, Vol. II, Pt. II (1853), Sect. III, pp. 148ff; Zeller, *Die Philosophie der Griechen*, Leipsic, Vol. II, Pt. II (3d ed., 1879), pp. 67ff; Prantl, *Geschichte der Logik im Abendlande*, Leipsic, Vol. I (1855), Sect. IV; Vol. II (1861), Sects. XIII-XIV; Vol. III (1867), Sect. XVII.

⁶ In a private letter.

19. (Note to p. 48.) Burthogge refers here to Cicero's discussion, in the second book of his *Academica* (inscribed *Lucullus* in the first edition), of the role of sense-perception in knowledge. The chief characters in the dialogue are Lucullus and Cicero himself. Cicero, as spokesman of the Academy, upholds the view that the senses are wholly untrustworthy, and offers in support of his position the old illustration of the oar in water and the colors on a pigeon's neck. Lucullus, on the other hand, while he admits that the senses can not under all circumstances be trusted, holds that there is the "very greatest truth in the senses, if they are in sound and healthy order, and if everything is removed which could impede or hinder them." Or, as Burthogge interprets Lucullus, not everything that is perceived through sense is true, but only that which is clearly and distinctly perceived.

20. (Note to p. 52.) Edward, Lord Herbert of Cherbury (1583-1648) was the author of the first purely metaphysical treatise written by an Englishman. The *De Veritate* (published first in Latin, Paris, 1624, England, 1633, and in French translation 1639, and criticized by Locke in his *Essay*, Bk. I, Ch. III, pars. 15-19), is his most important philosophical work, embodying not only a methodology for the investigation of truth, but a theory of knowledge and a scheme of natural religion as well. Truth, according to Lord Herbert, is the agreement between faculty and object. For every object in the world there is a corresponding faculty in the mind. And each faculty reacts only to its own object. The faculties of the mind, though infinite in number, may be reduced to four general classes: (1) natural instinct; (2) internal sense or conscience, by which good and evil are distinguished; (3) external sense; (4) reason. Of these four, "natural instinct" is the most reliable and reason the least reliable in determining truth. (Cf. Spinoza's theory of truth, *Ethics*, Pt. II. According to Spinoza, the true idea is the

idea which "agrees with its ideal" or "is adequate." And of the three types of knowledge, opinion, reason and intuition, only the last two are efficacious in determining true ideas. Prop. XL, Note II,—Prop. XLIII.)

For the facts of his life and for an introduction to Lord Herbert, the gallant English nobleman, soldier and diplomatist, the reader is referred to his autobiography. In his own opinion his contributions to literature and philosophy, his only real claim to fame, were merely incidental to a career filled with valiant deeds and hairbreadth escapes. Bibliographies of his historical and philosophical works will be found in the *Encyclopædia Britannica*, 11th ed., and in the *Dictionary of National Biography*.

21. (Note to p. 55.) Burthogge here, of course, refers to the theory, then current, of innate ideas—the theory so sharply criticized twelve years later by Locke. (Cf. *Essay*, Bk. I; also p. xxiii of this book.) It is interesting to note that Burthogge, though he implies that the doctrine of innate ideas arose from a conviction that we have certain universal concepts which we could not have got through the senses, had another account also, of their origin. The theory of innate ideas, he suggests, was the invention of those who, while admitting the fallibility of the senses, were yet unwilling to deny the possibility of knowledge. Innate ideas were thus hit upon as the *deus ex machina*, to be relied upon to lend assistance to knowledge on all occasions where the senses proved incompetent.

22. (Note to p. 55.) Modern scholars have decided that the author of the *Celestial Hierarchy* is not Dionysius the convert of Paul, but a pseudo-Dionysius writing in the fourth or fifth century. (For arguments against this view cf. Parker, *The Celestial and Ecclesiastical Hierarchy of Dionysius, the Areopagite*, London, 1894, Introduction.) The works of the pseudo-Areopagite (four in all: *Celestial Hier-*

archy, *Ecclesiastical Hierarchy*, *Divine Names* and *Mystic Theology*) were probably not known in the East until 533 A. D., and in the West they were not known, to any extent, until the ninth century when Erigena made a Latin translation of them. Borrowing from Judaism, from Christianity and from Oriental philosophy, but chiefly from neo-Platonic philosophy, Dionysius combined his material into a system which had an enormous influence not only on the philosophy but on the art and literature of the Middle Ages as well. In poetry his influence is seen in Dante, in Spenser and in Milton; in philosophy, in the works of Albertus Magnus and Thomas Aquinas. Indeed, so faithfully did Aquinas reproduce the Dionysian conceptions that it has been said that if the writings of Dionysius had been lost "they could be almost reconstructed from the works of Aquinas." A good summary of Dionysius's conception of the threefold hierarchy of celestial beings through whom man rises to a mystic experience of God, and a statement of the place of Dionysius in the history of medieval thought, will be found in R. M. Jones, *Studies in Mystical Religion*, London, 1909, Ch. VI. Cf. H. O. Taylor, *Classical Heritage of the Middle Ages*, New York, 1911. For an English translation of the *Celestial Hierarchy* and the *Ecclesiastical Hierarchy* cf. Parker, *op. cit.*

23. (Note to p. 57.) Evidently Burthogge here refers to Locke; and Locke (*Essay*, Bk. II, Ch. XXVII) defines an animal as a "living organized body" (*loc. cit.*, par. 8); teaches that "the same successive body must, as well as the same immaterial spirit, go to the making of the same man" (*ibid.*); and, finally, contrasts both *spirit* (or *soul*) and *man* with *person* (or *self*) which he conceives as "a thinking intelligent being, that . . . can consider itself as itself" (*ibid.*, par. 9).

24. (Note to p. 62.) Claudius Galen (130-200 A. D.), the greatest of the ancient medical writers, was born at

Pergamus, in Mysia. At the age of sixteen he began to study medicine and later studied at Smyrna under the anatomist and physician Pelops. About 160 he went to Rome where he gained great reputation for his learning and success in the medical profession. During the years of a later visit to Rome, at the invitation of the emperor Marcus Aurelius, Galen greatly extended his already wide reputation as a physician and wrote at this time most of his important works. He is said to have written nearly five hundred treatises on various subjects, including not only medicine, but logic, ethics and grammar as well. Of the original works on logic, only one remains: the treatise on "*Fallacies in dictione*." Many points of logical theory are discussed, however, in his medical and scientific writings. A brief statement of the logical theories of Galen will be found in Prantl, *Geschichte der Logik*, Vol. I, pp. 559-77. Down to the seventeenth century the Arabian physicians, and the European through the Arabian, borrowed largely from Galen. And most of the descriptive terms in physiology, pathology and anatomy, now in use, were employed by Galen in the sense in which they are now employed by modern authors. Burthogge's reference is evidently to Galen's seventeen books *De Usu Partium Corporis Humani* (cf. *Opera Omnia*, ed. by D. Carolus Gottlob Kühn, Leipsic, Vols. III-IV, 1822). For a bibliography of the various translations and editions of Galen's works and critical works about them cf. *Encyclopædia Britannica*.

25. (Note to p. 64.) In the original this word is misprinted: *enquire*.

II. NOTES TO "ESSAY UPON REASON."

26. (Note to p. 6.) The quotation is from the passage (*De Natura Deorum*, I, 29, 80) on facial distinctions among the gods: "Ecquos si non tam strabones, at paetulos esse

arbitramur? ecquos naevum habere? ecquos silos, flaccos, frontones, capitones; quae sunt in nobis? an omnia emendata in illis? Detur id vobis. Num etiam una est omnium facies? nam, si plures, aliam esse alia pulchriorem necesse est: igitur aliquis non pulcherrimus deus. Si una omnium facies est, florere in coelo Academiam necesse est. Si enim nihil inter deum et deum differt, nulla est apud deos cognitio, nulla perceptio."

27. (Note to p. 6.) Cf. *Meditations*, II, end: "... it is now manifest to me that bodies themselves are not properly perceived by the senses nor by the faculty of the imagination, but by the intellect alone."

28. (Note to p. 6.) Honoratus, or Honoré, Fabri, S. J. (1607-88), was a French writer and teacher. For fourteen years he taught philosophy at the Collège de la Trinité at Lyons. He was later called to Rome as *grand pénitencier*, and died there. The works of Fabri, many of which were written pseudonymously (under at least six different pseudonyms), include treatises on mathematics, logic and medicine, as well as on philosophy. Fabri has been called "the pleader of lost causes." He is recognized as a great worker but one whose loud promises were seldom fulfilled, and one whose writings have to-day not even an historical significance. A bibliography of his works and an account of his life will be found in Michaud's *Biographie universelle*; also in Jöcher's *Allgemeines Gelehrten-Lexicon*.

29. (Note to p. 37.) The quotation is from the *Leviathan*, Pt. I, Ch. IV, and reads: "... words are wise men's counter's, they do but reckon by them; but they are the money of fools, that value them by the authority of an Aristotle, a Cicero, or a Thomas, or any other doctor whatsoever, if but a man." (Cf. *Concerning Body*, Pt. I, Ch. II, "Of Names.")

30. (Note to p. 57.) In the original this word is misprinted: *Enity*.

31. (Note to p. 62.) The quotation is from the *Academica*, II, 10, 30. The chief speakers in the dialogue are Lucullus and Cicero; the subject under discussion is sense. Lucullus has argued against the untrustworthiness of the senses, but for the sake of continuing the discussion, he grants to the Academicians the invalidity of sense in reference to knowledge and turns to a consideration of sense in relation to the affections, desires and thought: "Sed disputari poterat subtiliter, quanto quasi artificio natura fabricata esset primum animal omne, deinde hominem maxime, quae vis esset in sensibus, quem ad modum primo visa nos pellerent, deinde adpetitio ab his pulsa sequeretur, tum ut sensus ad res percipiendas intenderemus. Mens enim ipsa, quae sensuum fons est atque etiam ipsa sensus est, naturalem vim habet, quam intendit ad ea, quibus movetur."

32. (Note to p. 68.) In the original this word is misprinted: *perceptlon*.

33. (Note to p. 71.) This seems to be Burthogge's only suggestion, in any of his philosophical writings, of the fact that he was a physician.

34. (Note to p. 74.) For Plato's allegory of the cave see *Republic*, Bk. VII, 514-18.

35. (Note to p. 91.) In the original this section is wrongly numbered II.

36. (Note to pp. 94 *et al.*) Up to this point Burthogge has referred to external reality simply as "the Thing" or "things without us," or as "grounds" or "cause" of sensations (cf. *Essay*, Ch. III, Sect. 2, pp. 73-75). Here, how-

ever, in discussing this reality not primarily in its relation to knowledge but in and for itself, he names it substance. Burthogge's conception of substance is Lockian rather than Spinozistic. Self-subsistence, the essential character of Spinoza's substance, is, according to Burthogge, not fundamental, since it is involved in or derived from the main character of being "subject of accidents." Burthogge agrees with Locke in holding that substance is primarily the unknown substratum of sense-phenomena, "a supposed I know not what to support those ideas we call accidents." (Cf. Locke's *Essay*, Bk. II, Ch. XXIII.) The idea of substance is then according to both, a "Relative Idea" only. Substance is known only as that which is related to its accidents. What it is absolutely and apart from those accidents can never be known. (Cf. Notes 41 and 44.)

37. (Note to p. 103.) The quotation reads more fully: "Nempe universa ex materia et ex Deo constant: Deus ista temperat, quae circumfusa rectorem sequuntur, et ducem. Potentius autem est ac pretiosius est quod facit, quod est Deus, quam materia, patiens Dei. Quem in hoc mundo locum Deus obtinet, hunc in homine animus: quod est illic materia, id nobis corpus est."

From Plato directly, but not improbably from Seneca's borrowed Platonic conceptions as well, Burthogge derives his conception of God as "pure mind," a substance utterly different from matter. Burthogge does not, however (as he himself points out, p. 112), follow Seneca in identifying God with the Soul of the World.

38. (Note to pp. 103-04.) The quotation is from the *Lives of the Philosophers* of Diogenes Laertius, Bk. VII, Ch. I, Sect LXVIII, par. 134: Δοκεῖ δ' αὐτοῖς ἀρχὰς εἶναι τῶν ὄλων δύο, τὸ ποιοῦν καὶ τὸ πάσχον. Τὸ μὲν οὖν πάσχον, εἶναι τὴν ἀποιον οὐσίαν τὴν ὕλην· τὸ δὲ ποιοῦν, τὸν ἐν αὐτῇ λόγον τὸν θεόν. Τοῦτον γὰρ ὄντα αἰδίδιον διὰ πάσης αὐτῆς δημιουργεῖν ἕκαστα.

39. (Note to p. 107.) Descartes does not, any more than Burthogge, identify cogitation with mind, or extension with matter. He merely holds, with Burthogge, that thinking is the principal attribute of mind, and extension that of matter. (Cf. Descartes, *Principles of Philosophy*, Pt. I, LII-LIV.)

40. (Note to p. 108.) Burthogge probably had Hobbes in mind, for the polemics of the seventeenth-century idealists in England were almost sure to be hurled at Hobbes. A genuine passion for the revival of the study of Plato was, to be sure, the primary factor in the origin of the Cambridge movement. But the desire to refute Hobbes certainly furnished an added impetus, without which the writings of the Platonists would have lacked definite purpose. (Cf. Culverwel, *Discourse of the Light of Nature*, and Smith, *Select Discourses*.)

Cudworth, and More only less violently, attacked the "atheistic arguments" of Hobbes against the existence of "spiritual substance." Although the materialism against which Cudworth argues is the "atomic" materialism of the ancient philosophers, Democritus and Epicurus, he has in mind constantly his contemporary Hobbes. He scorns even to mention his name, referring to him simply as "a modern writer," or "a late writer," and sometimes as "a late pretender to Politics" and "the author of the Leviathan," who has outdone his masters in the "sottishness" and "impudence" of his atheism. The fury of the Platonists against Hobbes is easily understood. The denial of the existence of spiritual substance was a teaching long made familiar to them through the "Democritic and Epicurean Atheists," whose arguments, based on the "atomic" theory, appeared to them futile and antiquated. But the denial of the soul's existence on the ground that it can not be perceived by sense was a new and startling teaching, and one which to the Platonists was simply exasperating. Sense, according to them, never could be the criterion of any truth, and least of

all of spiritual truth, yet here was "a modern atheistic writer" boldly asserting that we must deny the existence of "spiritual substance" because we can not perceive it through sense.

For the attitude of the Cambridge Platonists toward Hobbes cf. Cudworth, *True Intellectual System of the Universe*, Ch. V, "A Confutation of Atheism," and More, *A Collection of Several Philosophical Writings*, esp. *Immortality of the Soul*. Cf. also Tulloch, *Rational Theology and Christian Philosophy in England in the Seventeenth Century*, London, 1874, Vol. II.

41. (Note to p. 109.) Whether or not Spinoza's definition of the human mind as the "idea of a thing actually existing" (cf. *Ethics*, Pt. II, Prop. XI) be accepted, it must be admitted that it is consistent with his system as a whole. As thought and extension are but two attributes of one substance, God, so the human mind and body are but two aspects of a single individual. The statement that the mind is the "idea of the body" means to Spinoza not only that it is the idea coexistent with the body, but also that it is the idea whose object is the body. (Cf. *Ethics*, Pt. II, Prop. XXI, Note; also Prop. XV, Proof.)

42. (Note to pp. 109 *et al.*) Malebranche teaches that we know God immediately; that we know ourselves "through internal sense," and other selves, as well as "pure intelligences," through "conjecture" (*Recherche de la vérité*, Bk. III, Pt. II, Ch. VII); and, finally, that we have ideas of things "in God," i. e., that God by his will continually furnishes us with ideas of things. Yet Malebranche, though he can not argue with Descartes that an extended material world exists in order to explain our perception, none the less holds that an extended material world exists. He therefore protests against the identification of his teaching with that of Spinoza, who makes the material world, with all its "dés-

ordre," an aspect of the infinitely perfect Being, God. (Cf. *Entretiens sur la métaphysique*, IX, Sect. II; also *Œuvres*, ed. by Simon, Vol. I, Introd., pp. 33f.)

43. (Note to pp. 112 *et al.*) The first quotation is from *Naturales Quaestiones*, I, Praefatio: "Quid est Deus? Mens universi. Quid est Deus? Quod vides totum, et quod non vides totum. Si demum magnitudo sua illi redditur, qua nihil majus excogitari potest, si solus est omnia, opus suum et extra et intra tenet. Quid ergo interest inter naturam Dei et nostram? Nostri melior pars animus est: in illo nulla pars extra animum. Totus ratio est...."

The second quotation, from Ep. 65, reads: "Sed nos nunc primam et generalem causam quaerimus: haec simplex esse debet; nam et materia simplex est. Quaerimus, quae sit causa, ratio scilicet faciens: ista enim, quaecumque retulistis, non sunt multae et singulae causae, sed ex una pendent, ex ea quae faciet."

Burthogge agrees with Seneca in holding that God is not only necessary cause of the universe but efficient cause as well. He denies, however, Seneca's teaching that God is immanent cause. The Soul of the World, he admits, may be the immanent cause, but God must be the transcendent cause of the universe. (Cf. Note 37.)

44. (Note to pp. 116 *et al.*) At least three conceptions of the nature of substance were current in the seventeenth century. These conceptions are not mutually exclusive, and as a matter of fact two of the three are found in the teaching of most of the seventeenth-century philosophers. The first is that which holds substance to be the self-dependent. This conception is suggested, but not logically carried out, by Descartes. (Cf. *Principles of Philosophy*, Pt. I, LI; cf. also Hobbes's definition of substance as "any thing that has existence or subsistence *in itself*.... in which sense God is properly.... substance.... having subsistence

not only *in himself*, but *from himself*," in "An answer to Bishop Bramhall," *Works*, Molesworth edition, Vol. IV, p. 308.) This doctrine is consistently developed by Spinoza (*Ethics*, Pt. I, Defs. III and VI, and Props. XIV and XV). The second conception is that taught by Locke, according to which substance is the unknown, "a supposed I know not what, to support those ideas we call accidents" (*Essay*, Bk. II, Ch. XXIII, par. 15). According to the third conception, substance is that which is subject of accidents. This last view was the most wide-spread of the three. It was held by Descartes and by Locke, as well as by the Cambridge Platonists. The Cambridge Platonists, to be sure, do not define substance as the subject of accidents, but their characterization of the different kinds of substance implies this conception. Spinoza and Locke also hold that substance is the subject of accidents, though neither regards this as the fundamental character of substance. (Cf. Burthogge's teaching about the nature of substance, Note 36.)

As regards the kinds of substance and the characters which differentiate them, there are again three doctrines which were current in the seventeenth century. By far the most common was the dualistic. Descartes, Locke and the Cambridge Platonists hold that there are two kinds of substance: (1) spiritual, and (2) corporeal. According both to Descartes and to Locke, the chief attribute of spiritual substance is thought, but Locke also regards "a power of action" as one of the "primary qualities or properties of spirit" (*Essay*, Bk. II, Ch. XXIII, par. 30). The attribute which distinguishes corporeal substance is extension, to which Locke adds solidity, and the "power of being moved" (*op. cit.*, Ch. XXIII, par. 15). More teaches that all substance is extended, but distinguishes between corporeal and spiritual substance by characterizing the first as "impenetrable" and "discernible," the second as "penetrable" and "indiscernible" (cf. Note 46). Cudworth regards "*Life, Cogitation and Understanding*" as the "Peculiar Attributes

and *Charackteristicks of Substance Incorporeal*," as contrasted with "*Senseless Matter*" (*True Intellectual System of the Universe*, Bk. I, Ch. III, Sect. XXXV, pp. 145f). Hobbes holds a materialistic view of substance. All substance, he teaches, is corporeal; substance is synonymous with body; to speak of incorporeal substance is meaningless. Spinoza, finally, holds an absolutistic view of substance. Substance, as he conceives it, is one, but can not be identified either with mind or with body. Extension and thought are, he teaches, but two "attributes" or aspects of a single fundamental substance which he calls God (*Ethics*, Pt. I, Props. XIV and XV).

45. (Note to pp. 117-18.) The reference is to Cicero's *De Natura Deorum*, II, 32, 82. Lucilius concludes his résumé of the various views held about nature, with that of Epicurus. "Sunt autem," he says, "qui omnia naturae nomine appellant, ut Epicurus; qui ita dividet, omnium, quae sint, naturam, esse corpora et inane quaeque his accidunt."

46. (Note to p. 119.) For More's doctrine of substance cf. especially *Epistola Prima H. Mori ad R. Cartesium*, also *Immortality of the Soul*, Bk. I, Ch. 2, Axiomes VIII-IX. All substance, More held, whether corporeal or incorporeal, is possessed of two characters: (1) extension, and (2) motion. To deny that substance is extended is to deny, he said, that it exists. Incorporeal substance, however, while sharing with corporeal substance the attribute of extension, is distinguished from it by being "penetrable" and "indiscerpible." Corporeal substance, he held, is "impenetrable and "discerpible." It is not unlikely that the Platonists as a whole (though none but More includes this teaching in his writings) held that incorporeal substance is extended. It was the common belief in the seventeenth century that spirits have bodies, extended but of a more ethereal nature than human bodies. Burthogge's criticism that to hold that

incorporeal substance is extended is to make it either a "vacuum" or "matter," could thus have been easily met, in More's opinion. (Cf. Notes 36 and 44.)

47. (Note to p. 123.) It will be noted that this, the sixth chapter, is wrongly numbered.

III. NOTES TO "OF THE SOUL OF THE WORLD."

48. (Note to title-page.) The quotation is made from the *Octavius* of Felix Marcus Minucius, one of the earliest Christian apologists. The dialogue, which seems to be modeled on Cicero's *De Natura Deorum*, dates back to the second or third century A. D. It first appeared in the *Adversus Gentes* of Arnobius. The quoted words are supposedly spoken by the Christian Octavius who accuses pagan writers of corrupting youth by fictitious tales of the origin of the Greek gods. The passage reads: "His atque hujus modi figmentis, et mendaciis dulcioribus corrumpuntur ingenia puerorum et hisdem fabulis in haerentibus, adusque summae aetatis robur adolescent et in iisdem opinionibus miseri consenescent: cum sit veritas obvia sed requirentibus" (*Arnobii Disputationum adversus Gentes Libri Septem: M. Minucii Felicis Octavius*, Paris, 1595, p. 353; cf. *Octavius*, ed. by A. Baehrens, Ch. 23, par. 8).

49. (Note to title-page.) The quotation is from Erasmus's "Hyperaspistes Diatribae adversus servum Martinii Lutheri," Lib. II. (Cf. *Opera Omnia*, Leyden, 1706, Vol. X, p. 1531.) "Et si poterat *Augustinus*," he says, "per vim liberi arbitrii audire concionantem *Ambrosium*, legere libros sacros, erogare stipem in pauperes, vacare precibus ac meditationibus, confabulari cum piis hominibus, eosque rogare ut Domino salutem ipsius suis precibus commendarent, quid

est cur sic exhibetur opinio Scholasticorum, quae tradit hominem per opera moraliter bona promereri de congruo gratiam justificantem? Verborum umbris territamur, cum in re nihil sit absurdi."

50. (Note to p. 4.) John Keill (1671-1721) was a mathematician and astronomer, noted mainly for his exposition of the Newtonian principles and for his opposition to the theory of "natural philosophy" upheld by Whiston and Burnet. Keill received the M.A. degree, with "distinction in mathematics and natural philosophy," from the University of Edinburgh and in 1694 was "incorporated M.A." at Oxford. Here he at once distinguished himself by his lectures on Newton's *Principia*. His *Examination of Dr. Burnet's Theory of the Earth*, published 1698 (cf. Note 51), increased his reputation, although the seriousness with which he opposes the "Theory," using long trigonometrical proofs to overthrow some fanciful detail of the "Hypothesis," appears to the modern reader ridiculous. Burthogge's protest against Keill's presentation (in the Introduction of his *Examination*) of Burthogge's Soul-of-the-World theory seems rather ill-founded. Keill's account, so far as it goes, is accurate, and Burthogge himself, in presenting his theory anew, finds the metaphor of the "vast Organ" illuminating. In 1701 Keill's *Introductio ad Veram Physicam*, considered at that time his "best performance," was published. In 1712 he was elected Savilian Professor of Astronomy at Oxford, and in 1713 the degree of D.M. was conferred on him by the University. The later years of his life were occupied mainly in a defense (begun in 1705) of Newton as inventor of fluxional calculus against the claims of Leibniz. For a more detailed account of Keill's life, cf. *Dictionary of National Biography*. An interesting, though brief, estimate of his personal character will be found in Thomas Hearne's *Remarks and Collections*, edited by C. E. Doble, Oxford, 1885, Vol. VII, p. 273. (Cf. also scattered references *ibid.*,

Vols. I-VI.) For a bibliography of Keill's works cf. the British Museum Catalogue.

51. (Note to p. 4.) Thomas Burnet (1635?-1715) was an English divine educated at Northallerton and at Clare Hall, Cambridge, where in 1654 he became master. In 1658 he received the M. A. degree from Christ's College and in 1667 became senior proctor of the University. He was chosen master of the Charterhouse in 1685. Later, Burnet became "chaplain in ordinary and clerk of the closet of William," but was removed in 1692 on account of the opposition to his *Archaeologia Philosophicae* in which he treats the Mosaical account of the fall of man as allegorical and professes to reconcile his own "Theory of the Earth" with the Mosaical account. Part I of Burnet's *Theory* was first published in Latin in 1681 under the title *Telluris Theoria Sacra*. An enlarged English version followed in 1684. The second part of the *Theory*, together with a second edition of the first, and an English translation of the whole appeared in 1689. The work passed through a number of later editions, the seventh appearing in 1759.

Burnet's *Theory of the Earth* is a fanciful account of the evolution of the world, originating in an attempt to explain how it was possible for the Mosaical deluge to have taken place. In his own words, it "is an Account of the Original of the Earth, and of all the great and general Changes that it hath already undergone, or is hence forwards to undergo, till the Consummation of all things" (p. 3). Burnet's science is crude even for his own time. His "Hypothesis" is borrowed from Biblical sources and is bolstered up by a vivid imagination. The present world, he holds, is but the "ruins" of an antediluvian "Paradisiacal" world. The projections of the broken shell of that first world form our mountains, and our seas are a part of the great "abyss" uncovered by the break. As the first world was destroyed by water, so it will be restored by fire in all

its "Paradisiacal" perfection. Like the Phoenix, he says, "it will be consum'd in the last Fire: And from its Ashes. . . . will arise another World."

Burnet's *Theory*, taken seriously in his own time, although it did not lack supporters (e. g., Whiston), met with a good deal of opposition. Two of the most formidable opponents were Erasmus Warren and John Keill (cf. Note 50). Burnet's "Answer" to Warren's *Exceptions. . . . against the Sacred Theory of the Earth* and to Keill's *Examination of the Theory* will be found appended to the fifth edition of the *Theory*, London, 1722.

52. (Note to pp. 11 *et al.*) Burthogge has correctly made and interpreted these quotations.

53. (Note to p. 25.) Cf. August Heinrich Ritter and Ludwig Preller, *Historia Philosophiae Graecae*, 7th ed., Gotha, 1888, "Thales," pp. 6-11.

54. (Note to p. 26.) Phalaris, tyrant of Agrigentum, Sicily (c. 570-554 B. C.), was notorious for his horrible cruelty. According to tradition he was entrusted with the building of the temple of Zeus and took advantage of his position to make himself despot. Until the seventeenth century it was generally believed that Phalaris was the author of the *Epistles* which bear his name. Politian, in the fifteenth century, had, to be sure, attributed the *Epistles* to Lucian. Not, however, until 1690 when Sir William Temple revived the interest in Phalaris by naming his *Epistles* one of the greatest masterpieces of antiquity, was any serious question of their genuineness raised. And by 1698, the year in which Burthogge published his *Soul of the World*, the controversy between Charles Boyle and Richard Bentley over the authorship of the *Epistles* was at its height. In the Preface of his new edition (1695) of the *Epistles*, Boyle presents the various views regarding the authorship without

presuming to decide in favor of any. In 1697 Bentley's *Dissertation on the Epistles of Phalaris* appeared, appended to Wotton's *Reflections on the Ancient and Modern Learning*. Bentley believed the *Epistles* to be spurious, arguing mainly from the anachronisms to be found in them. Towns are mentioned, for example, which were not in existence until long after the time of Phalaris, and men are spoken of who lived centuries later. Early in 1698 Boyle replied with *Doctor Bentley's Dissertation...examined*. And later in the same year Bentley published a reply to Boyle in a second enlarged edition of his *Dissertation*. A full account of the controversy will be found in R. C. Jebb's *Richard Bentley*, New York, [1882]. The epistle to which Burthogge makes reference is numbered 103.

55. (Note to p. 28.) The Eugenius Philalethes referred to is probably Thomas Vaughan (1621-66), twin-brother of the poet Henry Vaughan. The pseudonym Philalethes was fashionable in the seventeenth century and Anthony à Wood names three others, all contemporary with Vaughan, who use it. Yet, although it has been impossible to verify the quotations, there are several considerations which make it almost certain that Thomas Vaughan is the poet referred to by Burthogge. For Thomas Vaughan more consistently than any one else, wrote under the pseudonym Eugenius Philalethes. Moreover, he wrote both English and Latin verse and translated several of the Latin poets.

56.⁷ (Note to p. 31.) Leeuwenhoek, Antony van (1632-1723). A Dutch naturalist and microscopist, perhaps best known as the investigator who completed Harvey's work on the circulation of the blood by the discovery in 1686 of the capillary connection between arteries and veins. Leeuwenhoek's enthusiasm in the use of the newly invented

⁷ For Notes 56 and 58-67 the editor is indebted to Dr. Alice Robertson, formerly professor of zoology at Wellesley College.

microscope led him to experiment in grinding lenses, so that he possessed the best microscopes of his day with powers ranging from forty to two hundred and seventy diameters. In 1675 he discovered the protozoa, the one-celled animals so abundant in water containing decaying organic substance, his so-called "peppered water." Twelve years later he discovered bacteria.

Belief in spontaneous generation had declined somewhat during the seventeenth century. The experiments of Redi (cf. Note 58) had confirmed the truth of Harvey's epigram, "Omne vivum ex ovo." After the discovery of these one-celled organisms, however, although spontaneous generation could no longer be affirmed of the larger animals, belief in its possibility was revived in regard to these minute animals. And, indeed, it must be admitted that such a theory of generation was not wholly unreasonable as long as the life histories of protozoa and bacteria were unknown. For the life and work of Leeuwenhoek the reader is referred to W. A. Locy, *Biology and Its Makers*, New York, 1908, pp. 77-88.

57. (Note to p. 31.) In the original this word is misprinted: *Animalcles*.

58. (Note to p. 31.) Redi, Francesco (1626-97). An Italian physician living at Arentine. In 1668 he first performed an experiment which, in the minds of scientists, dispelled all doubt of the untenability of the theory of spontaneous generation. The experiment was so simple that it is astonishing that it had not been tried before. He set three jars containing fresh meat in a place where all would be subjected to the same environmental conditions. One jar remained uncovered, a second was covered with parchment, a third with wire-netting. The first soon showed signs of putrefaction accompanied with visible animal life. The second also putrefied but no animal life was apparent.

On the wire-netting covering the third jar flies had deposited many eggs, but the putrefying meat in the jar gave no signs of life. The conclusion was evident that the organisms found in the first jar were not spontaneously generated, but had hatched from eggs which flies had laid on the meat. This experiment weakened the belief in spontaneous generation revived by the discoveries of Leeuwenhoek. Cf. Locy, *Biology and Its Makers*, pp. 277-82.

59. (Note to p. 32.) The larvæ of insects that feed on fermenting material instinctively seek darkness. Hence, although such larvæ (maggots) were found, as reported, at the bottom of the fermenting mass, the eggs were probably laid on the top, the larvæ, after hatching, seeking the darker places. It is not necessary, therefore, to assume that the adult flies had to endure the high temperature of fermentation, since the eggs were laid before or at the beginning of fermentation. The eggs, however, require a high degree of heat in order to incubate and hatch rapidly, and the larvæ are adapted to endure this high temperature. Redi's experiments with meat, both shielded and unshielded from flies, apply to any putrefying or fermenting masses, and the assumption of spontaneous generation in such cases as the above is thus shown to be invalid.

60. (Note to p. 33.) The myth of birds arising from barnacles is extremely old and wide-spread, dating back to the twelfth century and extending from Britain to Ceylon. Max Müller has studied this myth and gives an interesting and amusing account of his research in the second volume of *Science and Language* (New York, 1891), pp. 659-82.

61. (Note to pp. 33 *et al.*) Julius Cæsar Scaliger (1484-1558) was an ardent believer in, and supporter of, the theory of spontaneous generation. He is best known to-day as the author of an unwarranted attack upon Cardano (cf. Note

62) in a brilliantly written Latin work entitled *Exortercarum Exercitationum Liber XV de Subtilitate ad Hieronymum Cardanum*, first published in 1557, and followed by numerous later editions: 1576, 1592, 1612, 1634 and 1665. At the time of this attack Scaliger was a physician of repute living in the home of the Archbishop of Agen as his medical adviser. Roused by envy at Cardano's success, and jealous of the attentions he received on his triumphal return to Milan, it is said that Scaliger aspired to be talked of as the rival of Cardano. Much color is given to this belief when it is remembered that Scaliger wrote his book three years after the second edition of Cardano's work was printed, without ever reading this second edition, in which Cardano had laboriously expunged many erroneous statements. G. Naudé, who had no love for Cardano, says, writing of Scaliger's attack: "Scaliger undertook this work not in the interest of learning, but rather for disputation, and a comparison of the works of the two men will show that Scaliger committed more errors in his than he found in Cardano's." According to this authority, Scaliger's purpose seemed to be to deny all that Cardano affirmed and to affirm all that Cardano denied. This quarrel seems to have been widely known and the dogmatic nature of Scaliger's criticisms fully appreciated, especially in the countries Cardano had so recently visited. In one of his *Commonplace Books*, Sir Thomas Browne quaintly observes, "If Cardan saith a parrot is a beautiful bird, Scaliger will set his wits on work to prove it a deformed animal." Cardano kept his temper admirably during the whole dispute. He published a short and dignified reply, *Actio prima in Calumniatorem*, in which the name of Scaliger never once occurs. His attitude of dignified indifference won him approval by contrast to the raging fury of his adversary.

62. (Note to pp. 33 *et al.*) Cardano, Girolamo (1501-1576). A notable and picturesque personality of the six-

teenth century. Possessed of a highly imaginative mind as well as of a highly emotional nature, he was as a child moody, misunderstood and neglected. In youth he early showed unusual power of abstract thought and distinguished himself in mathematics, dialectics and philosophy. Much against the desire of his father, who wished him to follow the profession of law, he entered the University of Padua in 1520, bent on the study of medicine, and in 1524 received his degree. An eager student, a voracious reader, greedy for knowledge of all kinds, he grew to manhood self-assertive, irascible, disregarding the conventions of society, and what was more important, neglecting the cultivation of the rich and powerful. Few patients called on the services of the young physician who started on his medical career offending his colleagues in Milan by the publication of a book entitled *De Malo Recentiorum Medicorum Medendi Usu*. This book proved a great financial success but brought the enmity of the medical profession. Turning to mathematics, a favorite study, he published works in arithmetic and algebra which early carried his fame far beyond the bounds of Italy. He not only raised algebra to a point it had never before reached, but his name as a mathematician became known throughout Europe and the success of his mathematical writings was remarkable.

Between 1547 and 1551, holding a professorship in Pavia, teaching besides several young men in company with his own son, he brought out his great work, *De Subtilitate*. (Later editions appeared in 1554, 1560, 1563 and 1582.) In this treatise the author ambitiously wished to treat of the cosmos. It is said that he produced the richest and at the same time the most chaotic collection of the facts of natural philosophy that had yet issued from the press. The book displays amazing erudition and industry, for not only did Cardano collect vast masses of information, but much of it he verified by experiment. Thus he was one of the earliest scientists to use the experimental method. In speaking of

one of his discoveries in medicine he remarks, "In the matter of invention Reason will be the leader, but Experiment the Master." Cardano, paradoxically enough, was an earnest student of astrology, even though the fact of his indulging in this study was quoted by his enemies as reflecting on his fair name as a physician. However, Cardano's medical fame arose partly out of his literary effort in *De Subtilitate*, and partly out of his knowledge of astrology and his power to cast horoscopes.

In 1551, through the reading of *De Subtilitate*, which inflamed him, it is said, with a desire to become acquainted with everything Cardano had ever written, Cassanate, a Franco-Spanish physician who was in attendance upon Archbishop Hamilton of St. Andrews, invited Cardano to meet the Archbishop in Paris in order to prescribe for the prelate's asthma. Eventually Cardano went to Edinburgh and there staid five weeks in attendance upon his illustrious patient. The fame of Cardano spread rapidly and the nobility of Scotland flocked to him paying him most liberally for his advice. On leaving Scotland he was entreated to visit England to give an opinion on the health of Edward VI, and to cast his horoscope. His journey homeward was a continuous ovation, and on his return to Milan he stood the acknowledged head of his profession. He was flooded with invitations from the wealthy and powerful, each desiring his exclusive attention. All of these invitations he steadily refused, being satisfied to hold an honored place in his favorite city, Milan.

His own words written on his return from this famous journey reveal the spirit of the man: "...I, who was born poor, with a weakly body, in an age vexed almost incessantly by wars and tumults, helped on by no family influence, but forced to contend against the bitter opposition of the College at Milan, contrived to overcome all the plots woven against me, and open violence as well. All the honours which a physician can possess I either enjoy, or

have refused when they were offered to me. . . . What I have written has been lauded ; in sooth, I have written of so many things and at such length that a man could scarcely read my works if he spent his life therewith. . . . I have refused always to flatter the great ; and over and beyond this I have often set myself in active opposition to them. . . . I have been most fortunate as the discoverer of many and important contributions to knowledge, as well as in the practice of my art and in the results obtained ; so much so that if my fame in the first instance has raised up envy against me, it has prevailed finally and extinguished all ill feeling."

Cardano, unlike his adversary Scaliger, opposed the doctrine of spontaneous generation as held in his day, maintaining that the facts urged in support of this theory could be better explained by natural than by supernatural processes. For the life and work of Cardano cf. Henry Morley, *Life of Girolamo Cardano of Milan*, 1822, and William George Waters, *Jerome Cardan: a Biographical Study*, 1898. Cf. also *Encyclopædia Britannica*, 11th ed.

63. (Note to p. 35.) Whether Lord Bacon believed that plants may be spontaneously generated it is difficult to say. As Burthogge quotes, Bacon mentions instances in which he says that plants were produced without seeds. (For Bacon's experiments cf. his *Sylva Sylvarum: or a Natural History in Ten Centuries*, London, 1627. Burthogge's reference to experiments in Century IV are wrongly numbered 228 and 339 instead of 328 and 329.) Considering Bacon as an authority not to be questioned, our author reasonably infers the possibility of animal production without eggs. However, the instances cited can not be urged as evidence of spontaneous generation. It is well known that ants, earthworms and other burrowing animals disseminate seeds long distances under the ground, and it is further known that seeds retain their vitality for long periods of time, and may even withstand unfavorable environments. The instances cited by

Bacon may, therefore, be accounted for by normal and natural processes. As to the power of seeds to withstand unnatural environment, it will be remembered that a few ounces of mud, collected by Darwin from under the water of a pond where no vegetation was visible, when brought into his study and given suitable environment produced no fewer than 537 plants. As evidence of the vitality of seeds, Professor Cowles of the University of Chicago reports experiments in which dried seeds not less than twenty-five years of age, have germinated, and refers to other experiments in which seeds have been shown to retain their viability for 150 to 250 years.

64. (Note to p. 35.) No instance of a rain of frogs or of other creatures can be accepted as proof of spontaneous generation. Although some apparently authentic stories are told of such occurrences, even these must be received with incredulity. If true, the animals must have been transported by the wind from some near-by body of water, and it is not impossible perhaps that such transportation might take place during or following a severe storm. This may be especially true in tropical regions. The phenomenon of the sudden appearance of a surprisingly large number of animals, frogs or fish, is not uncommon after heavy rains in the tropics. In these regions, during the dry season, many kinds of aquatic animals are known to bury themselves in the mud from three to twelve or sixteen inches, and on the return of the rainy season to reappear with such rapidity and in such multitudes that it is not surprising that mythical stories have arisen. For an account of instances of the belief that fishes fall during heavy showers and for the probable explanation of the phenomenon cf. Edward Terry's *A Voyage to East India*, London, 1777, p. 6; also Sir J. E. Tennent's *Ceylon, an Account of the Island, Physical, Historical and Topographical*, London, 1860, Vol. I, pp. 211ff and Notes (A) and (B), pp. 226-27.

65. (Note to p. 36.) The hibernation of toads, their ability to do without food for long periods if temperature conditions are relatively cool and constant, together with the natural credulity of the ignorant, have contributed to the longevity and persistence of this myth. Actual experiment has shown that toads may live for over a year in sand-stone hermetically sealed and buried three feet in the ground. In more porous stone, such as limestone, they live a few months longer. If permitted an almost infinitesimal amount of food and air, in a cool place where escape is impossible, they might live a much longer time, but not indefinitely. For further details regarding the hibernation of toads and tortoises the reader is referred to Hans Gadow's *Amphibia and Reptiles* (Vol. VIII of *The Cambridge Natural History*, London, 1901), esp. pp. 68, 347, 354, 363, 369, 376; also to Sir J. E. Tennent's *Ceylon*, Vol. I, p. 218.

66. (Note to p. 36.) The horse-hair myth, like those of the goose barnacle and toad-in-hole, is difficult to eradicate since even to-day there are people who regard it with credulity. The so-called "horse-hair" worm is threadlike, five or six inches long, found in water-troughs, ditches and pools of stagnant water and known to science as *Gordius*. The life history of *Gordius* comprises three distinct stages: two of them are larval and parasitic, the third is adult, aquatic and free living. The eggs are laid in water and hatch into minute larvæ possessing an effective boring-apparatus. *Gordius* larva bores its way into the body of the larva of an insect, that of the Alder fly, and passes into a resting-stage in its muscles or fat body. During the next few months the Alder fly larva metamorphoses into the adult fly, and *Gordius* larva then passes over into its body. The Alder fly falls an easy prey to a certain predacious beetle which haunts its habitat, and which thus becomes the host for the second larval stage of *Gordius*. Here it lives several months and after consuming a large

part or all of the internal organs of the beetle, it bores its way out and becomes adult. If the beetle host has chanced to fall into water or has been carried into water by the wind, Gordius lives a free life as the "horse-hair" worm. If, on the other hand, the beetle host falls on dry land, as doubtless often happens, Gordius dies.

For the classification, anatomy and life history of Gordius the reader is referred to Arthur E. Shipley, *Nemathelminthes & Chaetognatha* (Vol. II of *The Cambridge Natural History*, London, 1910).

67. (Note to p. 37.) Modern biological investigation has shown that worms of various kinds may infest the organs of persons living under unsanitary conditions, or eating infested food not properly cooked. The hookworm infestation of certain regions of this country, and the sporadic cases of trichina in man are modern examples.

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NOTE: The appended lists of libraries in which each book may be found are based on inquiries addressed to about fifty university and city libraries in the United States. (The British Museum Library is the only European library to which reference is made.) The following abbreviations have been used:

Amh.	Amherst College Library.
Ath.	Athenæum Library, Boston.
B. M.	British Museum.
C. U.	Columbia University Library.
Chic.	Chicago Public Library.
Cor. U.	Cornell University Library.
H. U.	Harvard University Library.
L. C.	Library of Congress.
Lib. Co.	Library Company, Philadelphia.
P. I.	Peabody Institute, Baltimore.
U. P.	University of Pennsylvania Library.
U. Theol.	Union Theological Seminary Library.
Y. U.	Yale University Library.

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- 1678 *Organum Vetus & Novum, or a Discourse of Reason and Truth; Wherein the Natural Logick common to Mankind is briefly and plainly described.*

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Divine both Goodness and Justice (that notwithstand-
ing) Defended. The Nature of Punishments in Gen-
eral, and of Infernal ones in Particular Displayed.
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London, Imprinted for Lewis Punchard Bookseller in Totnes in Devon.... Pp. 422. B. M., L. C., U. Theol.

- 1683 *An Argument for Infants' Baptism, deducted from the Analogy of Faith and Harmony of the Scriptures: in which, in a Method wholly new, and upon Grounds not commonly observed, both the Doctrine of Infant-Baptism is fully asserted, and the Objections against it are obviated.*¹

London.

- 1685 *Vindiciæ Pædo-Baptismi: or, a Confirmation of an Argument lately emitted for Infant-Baptism.*¹

London.

- 1687 *Prudential Reasons for repealing the Penal Laws against all Recusants, and for a general Toleration.*²

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London. Pp. (4), 52. U. Theol.

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¹ Title taken from *Athenae Oxonienses*, Vol. IV, p. 581.

² The following note is added after the title in the *Athenae Oxonienses*: "There is no name set to it, only said in the title to have been pen'd by a protestant person of quality."

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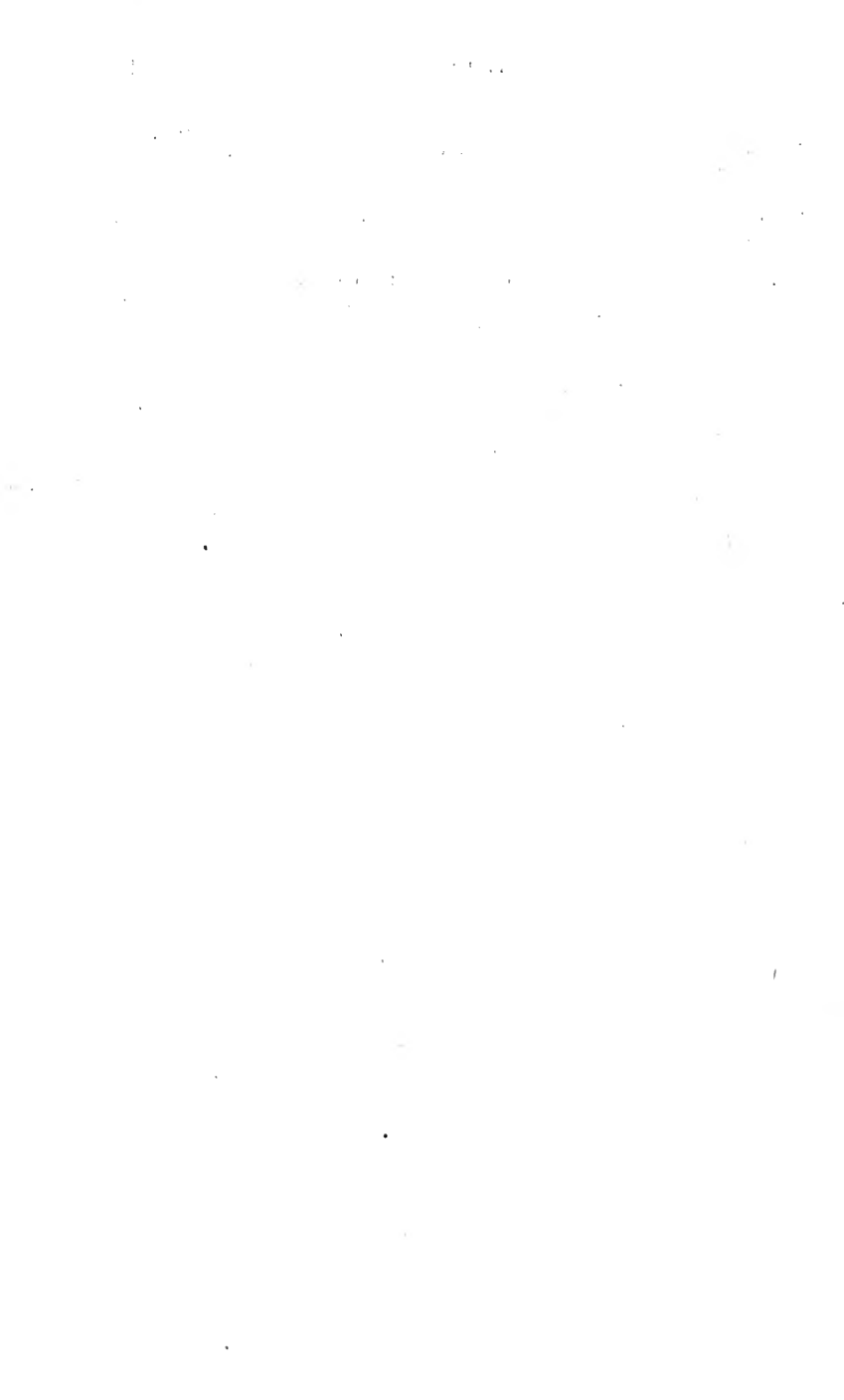
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