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IOHANNIS WYCLIF

TRACTATUS DE LOGICA.

NOW FIRST EDITED FROM THE VIENNA AND PRAGUE MSS.

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BY

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VOL. III.

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INTRODUCTION.

I. Preliminary Remarks.

With the third volume of *Logica*, Wyclif's first great philosophical work comes to a close. All that should be said as regards the genuineness of the work and its date has already been said in the Introduction to Vol. I, and there is no need to repeat it here. As to the state of the manuscript, a few words may perhaps be allowed. Very illegible from the beginning, as stated in the Introductions to Vols. I and II, it becomes worse and worse, sometimes intolerably so, as it approaches the end. This may account for, and to some extent excuse, the numerous shortcomings of the present edition, which no one can regret more than the editor himself.

I wish to take this opportunity of again most sincerely thanking all those who have aided me in the work; especially Dr. Furnivall, the Founder of the Wyclif Society; and Mr. Matthew, whose notes have more than once been of great service.

The two chapters of Wyclif's book which make up the present volume were also copied as separate tractates. The last chapter, however, dealing with time, is quite distinct from the treatise *De Individuacione Temporis*, not yet published. Before entering into a detailed examination of the contents of these two chapters, I think it advisable to notice several matters of importance which may strike the reader on a perusal of the whole.

II. A General View.

It is useless to deny that in many respects this third volume of *Logica* will be found unattractive, especially by such as have not made

a study of works of the kind. The wild boldness of the conclusions reached, the impossibility of conceiving what Wyclif himself declares over and over again to be beyond the scope of mathematical speculation, although it deals with Space and Time; above all, the strangeness of Wyclif's standpoint, so foreign to all our modern ideas of Natural Philosophy — will often, no doubt, confuse the reader, and lead him to pass over unnoticed the many excellent qualities, both of subtlety and of depth of thought, with which this volume abounds. I myself, though long engaged in the preparation of this edition, thought at first that the two tractates on Space and Time were merely side-issues that might have been lopped off from Wyclif's philosophy without disadvantage to the whole. But on further consideration my opinion has been very much modified. His theory of Time and Space appears to me now as a logical result, partly of his Realism, partly of his doctrine concerning *maxima* and *minima*; and this same theory is, I think, the root from which his doctrines on the Eucharist necessarily sprang. It is thus essentially linked with his fundamental doctrines; but it is at the same time a link, indissolubly connecting them with the further developments of his theological ideas.

When Wyclif affirmed the objective reality of all universals, he at once encountered a considerable difficulty in dealing with the phenomenon of extension. Nominalists, if consistent, say that not only points, but lines, surfaces, and even volumes, are all *entia rationis* — mere figments of our mind. For a volume is a Universal — One in Many — containing an infinite multitude of surfaces; a surface, again, is the universal of the line; and the line is in like manner the universal of the point. And for the same reason that they denied this reality, Wyclif was obliged to maintain it. As to points, they must be real things too, though not universal, since the line is nothing more than a series of points, and is made up of them: at all events, being something in that which is real, they must be real too. Now, as we have seen in the two former volumes, Wyclif abjures the doctrine of the indefinitely great, and roundly asserts that there is a maximum and a minimum for all things. A maximum of size: therefore space is not absolutely infinite, but only relatively so — relatively to *us*. There is also a minimum of size, which of course is the point. Now, what are those real countless points, which fill all space, and of which all space consists? They are surely not

spiritual. But, if material, how can material substance coexist in the same space as they? We have to explain how the world fills space, which is already filled by these punctal realities.

The answer, however bold it may seem, is but the outcome of the difficulty just stated, working in Wyclif's mind, already imbued with the doctrines I have mentioned above. Matter is made up of atoms, each atom consisting of a number of points, really distinct from one another, really without length, breadth, or thickness, and yet really touching each other. One point cannot make length; two begin to make it; their essence is to have position of their own, and so, though they touch, they do not coincide. This non-coincidence is the beginning of length. Two points do not make a surface, but three do (inchoatively) if the third is not in a line with the other two; and this is the beginning of the plane, and indeed of all surfaces whatsoever. A fourth point not in the same plane as the other three would be the beginning of volume. Such are the primordial atoms, which correspond to every point and in fact *are* every point in space, for no vacuum is possible. And, were there any real difference between the reality of mathematical and that of material points, they would clash together. In short, mathematical points are real and material; therefore, there can be no others. Co-penetration, Wyclif asserts, is an absolute impossibility.

If then a vacuum is inconceivable, and space is the same thing as matter, it follows that, beyond the circumference by which our universe is bounded, there is no space at all, and that the conception of a straight line, indefinitely producible, is but a contradiction in terms. The world being the greatest amount of matter possible, nothing greater can exist; nor can its size be diminished, for then it would no longer be the greatest possible.

Here we come to the point where this development of Wyclif's Realistic doctrines comes in contact — if not in conflict — with the dogma of Transubstantiation. If the size of the universe cannot be diminished, is the annihilation of any part of it admissible? Certainly not. Besides, to each of those points of which the universe consists, it is essential to have position somewhere; to annihilate one single point would be to take away, not only its existence, but its very essence too; or in less Scholastic terminology, it is as impossible to annihilate any portion of matter as to think away a part of space, which, when once

created, is absolutely necessary. A further proof is in the impossibility of a vacuum: if a piece of bread be annihilated, what remains in its place? Nothing thinkable; and, therefore, annihilation is unthinkable too.

Wyclif is thus forced to deny that anything can be annihilated, even by Almighty Power, *even absolutely considered*; and here we see the profound difference which separates him from the general opinion of Scholastic philosophers and theologians, who distinguish between what is possible to Omnipotence, irrespectively of God's other attributes, but are not all of one mind as to whether annihilation is absolutely impossible. They would willingly grant the truth of Milton's lines in the second book of *Paradise Lost*:

. . . . How He can

Is doubtful; that He never will, is sure.

But Wyclif has no doubt at all on the matter.

Now, in the doctrine of Transubstantiation, it is affirmed that the bread *ceases to exist*. This (though some Doctors of great note, Aquinas amongst others, explain it in a different manner) certainly seems to point to annihilation, as was very probably admitted by Wyclif's Nominalistic opponents. At any rate, the assertion that the whole substance of the bread ceases to exist at a given instant — both as to its substantial qualities and the underlying substratum of those qualities — could, in Wyclif's system, be understood only as the annihilation of the atoms of which it consists. This had to be denied. The bread, it was affirmed, ceased to exist *as bread*; in its place there remained a body that Wyclif (no doubt out of respect for the dogma which he still seemed to admit) called a *corpus mathematicum*. I say, 'still seemed to admit'; for, as we have seen, this *corpus mathematicum*, quite orthodox enough in the ordinary sense of the words, is nothing else but the atoms, or mathematical points, of which the bread consists, just as they were before. Any one who will read p. 137 of the present volume will, I think, be convinced that the successive stages of Wyclif's opinions in this matter, as given by Wodeford (see *De Benedicta Incarnacione*, ed. Mr. Harris, *Int. IX.*) were successive only in the mode of expression, not in the thing itself. The same *esse*, he says, which was previously that of bread, becomes sacramentally the Body of Christ. True, he also says that it does not remain bread after consecration, and explains himself no further; but the indestructibility of the bread-atoms has already been

posited. They are the subject of the accidental qualities which we perceive; and though Wyclif calls them a *corpus mathematicum*, they are real objective existences, and not the atoms of Christ's Body. That Body, as I pointed out in the Introduction to *De Apostasia*, is present there as a symbol — and is therefore really present with the reality of a symbol — but not otherwise. Is not this in substance the very same theory that Wyclif expounds in his later works? There is indeed a complete change of language and style, though even so late as in the tractate *De Apostasia*, he continues to employ the term transubstantiation; but here, even from the very outset, he refuses to admit that anything in the physical substance of the bread has been changed.

Such are the most important points in this third volume of Logica; their bearing both upon what preceded them and what followed, justifies me, I think, in setting them before the reader in connected form. Here and there, we also find certain other allusions, paragraphs upon necessity and free-will, a word or two against the abuse of ceremonies and the excess of riches in the Church, and other signs which show what was already fermenting in Wyclif's mind; but they are mere side-issues, and not (so far as I can see now) essentially connected with his system. They will, therefore, be more advantageously considered in their place, as we go on to the detailed examination of the two last chapters of Wyclif's Logica.

III. Analysis of the Work.

a) Chapter IX.

Short Summary of the Contents.

Local propositions (p. 1—11). Movement defined and divided (p. 11—27). — *Other divisions of movement (27—30). — Is the Continuous made up of points? Arguments pro (30—35). — Arguments contra, drawn from Aristotle's authority (35—38); from geometry (38—63); from physical science (63—70); from theology (70—74); and from the fact of chemical combination (74—85). — What is the measure of the velocity of motion? Wyclif's opinion (85—87). — General arguments contra (87—100). — Astronomical objections (100—111). — Of Augmentation (111—116). — Difficulties (116—118). — Of Alteration (118—121). — Objections refuted (121—132).*

Local propositions. Place may be taken to mean merely position (1). The world consists of atoms, cannot be increased nor diminished in size, nor moved, nor changed in shape. The whole of space is the whole world; partial spaces are made up of points. To each point corresponds a place, which is fixed, whereas the points are all movable, and may enter it, one after the other (1, 2). It is a mere relation of distance from the poles and the centre of the world (3). The universe is the common place of everything; yet each of its parts has its own partial site (3, 4). Two bodies may thus be in the same place in one sense, and in another, in quite different and separate places (5). Site and situation are not identical, except at the poles and at the centre (6). Position depends upon the distance of anything from the centre (6, 7). Animals, like the world, have in themselves these differences of position: above, below, back, front, right and left (7—11).

Movement defined and divided. Movement is the 'form', or perfection, by which the mobility of a mobile becomes actualized; local movement is but one of its many divisions (11). Local movement implies a mover which is other than the thing moved; this leads us to admit a First Motor, motionless, indivisible, everlasting (12, 13). Local movement may be straight, circular, &c. (14, 15). Can we say that the same body has two different movements at once (16—18)? Not according to strict logic; but one movement may be considered as the combination of two others, and rest, as the result of two equal and contrary motions (18—23). Every change which makes a body to differ from what it was, deserves to be called movement in a wide sense; and in a sense still wider, the activity of the intellect and the action of God upon His creatures, is movement (24). The swiftness of the movement of a body is represented by the space it would pass through in a given time, if not prevented. The impediment only counteracts the external effects which movement tends to cause, and therefore must count for nothing, even when so great as totally to destroy the effect (25). Supposing the sun to have a retrograde movement on the celestial sphere as rapid as the forward motion of the sphere itself, there would be no apparent motion of the sun from east to west, though it would move from north to south (26). Wyclif here alludes to the fact that the sun is higher in the sky in summer than in winter. The effect of which he speaks would be produced, in the language of modern astronomy, if the earth, whilst

continuing to revolve round the sun, ceased to rotate on its axis. The sun would be for ever in the same meridian; but in summer it would be seen higher in the sky — that is, nearer the North Pole; — in autumn, it would go lower — that is, nearer the South Pole — until it disappeared beneath the horizon for six months. This supposition aids Wyclif to explain the sun's yearly apparent passage through the signs of the zodiac, by imagining an eastward movement, which in some unknown manner is delayed to the extent of about one degree every day; while the sun's position in the sky changes at the same time from North to South, or vice versa.

Other divisions of movement. Wyclif here deals only with local movement, uniform or varied; and if varied, varied either in itself or in its subject. If the world revolves with a movement that seems uniform, each part of the world turns round with a different degree of rapidity, except at the poles, where the movement is *nil*. All these various rapidities of movement may at once be predicated of their one subject — the world. It thus at the same time moves faster and slower than itself: which of course, with the above explanation, is evidently true. Wyclif goes farther, and asserts that the motion of a part may be equal to, though less than, that of the whole; notwithstanding that this admission lends a handle to sophistical objections. A movement smaller in velocity¹ is equal to the whole movement in duration. The circular movement of a part of the world near the poles is much less rapid than at the Equator; yet both take place in 24 hours (28). Movement is again either uniformly or variably varied; and once more the old mediaeval distinction

¹ *In velocity.* The assertion that a part of any movement is equal to the whole is explained in the text by the distinction: *quoad molem* — *quoad duracionem*. I find it difficult to understand. The sense, as I give it above, does not, I confess, agree well with *quoad molem*; it ought to be *quoad velocitatem*. But we might understand the words thus: Movement in one atom only (a part of the whole movement *quoad molem*) is equal to the movement of the whole body moved. But then, why does Wyclif use the words *quoad duracionem*? They ought again in this case to be changed for *quoad velocitatem*. I think that the explanation, as given above, answers better to the general drift of the argument. Either way, we see how may be maintained that a partial movement is equal to its whole. — I may here, by the way, repeat what I pointed out in the Introduction to Logica, Vol. II, viz. that I in this analysis often introduce comparisons or remarks of my own, in order to clear up what is not clear, or to reconcile seeming discrepancies.

of movement 'varied in the subject' comes in. Movement variably varied may be so in infinite manners, and endless new species of movement are thus conceivable. At this stage of the enquiry, Wyclif proposes three questions; the first, dealing with succession, is to be solved in the following chapter; the second concerns the Continuous, and the third, the measure of velocity of motion, and will be answered here (29, 30).

Is the Continuous made up of points? Arguments pro. — If the world consists of atoms which in their turn consist of indivisible points,¹ how can we explain the existence of the Continuous, which is indefinitely divisible? How can the Extended be made up of elements which are in no wise extended? But Wyclif says that it must be so, and gives seven arguments to prove it. — 1. The intrinsic cause of anything is necessarily a part of that thing; now points *cause* lines, lines surfaces, and surfaces volumes; thus points are parts of space, and it is ultimately composed of them. — 2. Either points are not, or they are, parts of lines; if not, all the points in a line could be taken away without shortening it: a manifest absurdity. — 3. If two bodies touch in one point only, we have two points which touch one another, and yet are distinct (as belonging to different bodies); that is, they are not in the same place. So we see that 'to touch' does not mean 'to coincide', and the possibility of space consisting of contiguous points is saved (30, 31). — 4. An instant is to divisible continuous time what a point is to a divisible continuous line; but one instant is not identical with the next immediately following it: consequently, neither is one point identical with another that it touches. And if so, the point is, not the negation, but the element of the Continuous (31). — 5. A mobile, passing through two surfaces that touch — air, v. g. and water — will pass one *after* the other, and touch each of them at two indivisible instants of time, distinct, though not separated by any interval. Other suppositions lead

¹ Boskowitch's theory of indivisible points — mere mathematical centres of attraction — which is well-known to the philosophical world, would seem somewhat similar to that of Wyclif. But there is an enormous difference. Boskowitch's atoms *do not touch*, they cannot touch; they act upon each other with attractive and repellent forces through a perfect vacuum. Thus his theory, though lying open to other objections, cannot be assailed by those which Wyclif here undertakes to refute.

to the same conclusion (32). — 6. There are days and nights but one instant long (as at the poles). These days and nights are part of the continuity of time, and yet are distinct from the rest of it; therefore they are real parts, which make up that continuity. And if Time is thus composed, it is easy to show that space is composed likewise (33). — 7. If God, by His almighty Power, created a series of substances each the size of a mathematical point, and placed them side by side throughout the whole of space, we should have continuous extension; and nothing can be brought to prove that what is possible in this case is not a really existing fact (34). — Throughout the whole of these arguments, our author seems at times to take the idea of the absolutely inextended point — the Nothing of Space — and at others, that of a line divided by “a quantity that has increased beyond all measure”. The latter, according to modern mathematicians, is not absolutely without length; only its length is shorter than the shortest line conceivable. Such infinitesimal magnitudes would indeed be factors of the line; but would they agree with Wyclif's conception of the point, as an absolute minimum of bulk?

The line A, divided by ∞ , gives $\frac{A}{\infty}$; but $2A$, divided in like manner, gives $\frac{2A}{\infty}$; the second quantity is mathematically double of the first. But I leave these considerations to such as are versed in a science which, since five hundred years, has made such progress as Wyclif never dreamed of.

Arguments contra: Aristotle's view. — The difficulties which surround such a system are of course great and manifold. Aristotle seems against it; for instance, when he says that the Continuous is infinitely divisible. But, *a)* Aristotle speaks of that which is continuous to our senses; and that, so far as our senses can tell, is indeed made up of innumerable parts. But though infinite for us, they are not so to God. And, *b)* Aristotle distinctly says that the point is the cause of the line; if so, it must be its element, and this *dictum* is quite in Wyclif's favour (35). The doctrine of indivisible points transcends both our senses and our imagination. Geometry has nothing to do here, these points are beyond geometry; physics are out of court, they belong to metaphysic. God alone knows how many points go to form a given square, but their number is not infinite to Him (36). The word 'Infinite' is used to denote

all that goes beyond our power of conception, even though the thing be not infinite in itself. A number, therefore, which is infinite to one man will be finite to another; and none is infinite to Divine Intelligence. This evidently flows from Wyclif's conception of *maxima* and *minima*. There is a fixed number of all things — even of the points in a line — which, infinite to us, is finite to God; and no straight line can be infinitely long (37, 38).

As this conception of the Infinite may give rise to the inquiry how far our author is in agreement with the majority of Scholastic philosophers, a short digression is not out of place here, and I shall proceed briefly to state the points on which there is the least contradiction among Schoolmen in this matter.

The Infinite means 'that beyond which nothing greater can be conceived', whether by human thought, or by any other intelligence, however perfect. If no substance or being can be conceived greater, it is the Absolute Infinite — God; if no accident, then it is the relative Infinite — of quantity (multitude or magnitude) or of quality. The Infinite cannot be made up of finite parts; it is not the mere negation, but the negation of a negation, and thus has a positive meaning. Infinite magnitude of matter is impossible; so is an infinite number, an infinite multitude, and a movement infinitely swift. Infinite imperfection or *badness* is also inadmissible; for it would totally destroy any substance in which it inhered; but qualities that denote nothing but perfection, such as force, life, duration, &c. must be admitted in God; in the human soul too, but only from a certain point of view, "secundum quid". This Infinite "secundum quid" is in general predicated of that which is finite in every sense but one; as, e. g., the two halves of an infinite line, or of infinite space. In this sense, and *from the point of view from which it is finite*, one infinite may be greater than another. — Clearly the term, as employed by Wyclif, has quite another meaning, unless when he applies it to God.

Objections based upon geometry. — If Wyclif's theory be true, then the number of points is the same in two lines, one of which is double of the other. For two mobiles, passing over each of them, one double as fast as the other, correspondingly to the length of the lines, will go over them in the same number of instants, and therefore that same number of points will be passed in that time. The difficulty is solved

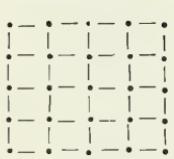
by denying that at each instant of *any* movement one point is passed over; it is the case only for the swiftest movement possible, that of the 'equinoctial point' in the sky (38, 39). — It is true that such an answer does away with all really continuous motion, except for the said point: during any slower movement from A to B, the mobile C would be at rest in a multitude of points; and thus rest would be identical with movement. But movement may appear to be continuous, though it is not really so; a succession of very short motions, interspersed with rests, will give us the feeling of continuity. As a fact, our senses often mislead us; as, for instance, in certain phenomena of sight, and in the vibrations of which sound consists. If the most rapid possible movement is at the rate of one point per instant, it follows that the world cannot be larger than it is; for if larger, it would revolve more rapidly, and that is impossible: a confirmation of what has been proved elsewhere and otherwise (39, 42). — "But if the apices of several pyramids touched, they would be *in the same place*, and thus coincide." This is merely begging the question. If a point has position of its own, it cannot be in the same place with another. — It is said that in Wyclif's system each point must touch an infinity of others; which leads to difficulties. But this is denied. Six points only touch a seventh placed in their midst. Thus in certain directions one cannot go immediately from one point to the next; their position follows certain fixed rules, somewhat like the grain in wood, or the lines of cleavage in crystals. A line drawn from one point to another which it cannot touch directly, only by means of a third, is nevertheless not bent; for it is as straight as a line can possibly be. To say, the point A touches B, and B, C; therefore, A touches C, is a sophism. All this is indeed unimaginable; but we must go beyond imagination when we have to deal with the *Inextended*. And at any rate, Nominalists have no right to argue at all in the matter (42—46).

Here Wyclif enters into a series of explanations on the different senses given to the words *point*, *line*, *surface* and *angle*, and he expounds what he conceives to be Euclid's meaning. An angle may mean either its apex, or the space which it encloses; two very different things (46—49). But the adversaries point out that either an angle is indefinitely great; which Wyclif denies, affirming that any angle is complete in its apex (49, 50); or that any number of angles, small and great, may coexist at the same point; which is granted as a harmless

conclusion (50, 51); and that our author's system would imply the denial, not only of Euclid's definition of angles, but of the whole of his treatise on the subject. (Here, by the way, we may note how quietly the trisection of an angle is taken for granted "secundum doctrinam prime Vitulonis", i. e. Vitellio, the famous Mediaeval mathematician and optician "que docet angulum rectum datum in tres partes dividere", whereas all mathematicians are at present agreed that such trisection is impossible. As, however, I have not been able to get a sight of Vitellio's works, though living in the very city in which he wrote them,¹ I am not quite sure that what he teaches is anything more than a mere practical way of dividing an angle into three parts, without any claim to absolute exactitude.)

Wyclif replies that, as regards Euclid's definition of the angle — the meeting of two lines — this is merely a genetic, not an essential definition. Euclid indeed says what causes an angle; but that is not the angle itself. As to the rest, the answer is ready: Euclid's theory concerns only sensible angles, not such as are found amongst points which touch; such, for instance, as form triangles which have sides only two points long, and of which the apex is an angle which cannot be bisected, &c. — All this cannot be imagined, and should, therefore, be denied from a merely geometrical point of view (52, 53).

We come now to what is perhaps the strongest mathematical objection to Wyclif's system. According to him, points are placed as follows, in a small square of say, 25 points only; I have added the connecting hyphens in the subjoined figure to show which points touch, and



which do not touch. As is seen, the points on the diagonals do not touch directly, and there are no more points on the diagonal than on the side of a square. This, true for the given square, all but infinitesimally small, will also be true for all greater ones; and thus the diagonal of any square (containing an equal number of points) will be equal to its side, the greater to the less: which is absurd (53, 54). — Wyclif's reply admits as an evident fact that the diagonal of a square is longer than its side. But when he comes to the statement that parallel lines,

¹ I asked for a copy of Vitellio's works at the Jagellonian Library, Cracow, but was informed that they had been lent to a gentleman who lived a good distance away.

drawn from the sides and perpendicularly to them, touch the diagonal at only one point, he denies it. If it were so, the diagonal would be only as long as the side. Each parallel intersects the diagonal *at several points*; and this accounts for the greater length of the latter line. It is absurd to suppose that two lines which intersect at a very acute angle do not touch by more points than when they are perpendicular; or that these parallels would no longer be straight after intersection: the touching in several points does not change their direction. This somewhat risky answer is supported by the assertion that the ultimate squares (consisting of two points each) are beyond the scope of geometry; also by some remarks concerning the position of points relatively to the poles of the world (55, 56), which I, not clearly seeing their relevancy to the subject, prefer to pass over. But I think it is at this part of the book that we get nearest to the weak point in Wyclif's system: viz. that two points which touch, i. e. which are at *no* distance from each other, are yet *not in the same place*. I at least can find, even in thought, no distinction between *distance* and *difference of place*.

Wyclif comes to the conclusion that God alone knows what the real proportion of the diagonal of a square to its side is; for it depends on the number of points touched by all the intersecting lines parallel to that side. Geometry may perhaps be true only hypothetically; it can prove that the proportion $\sqrt{2}$ exists in the whole diagonal, but not that it exists in every part of that line (57). The admission that in every line there is a certain number of points, of course implies the denial of all incommensurable quantities; that is, absolutely incommensurable, though for us and to our way of thinking, they are so: for in every such case the numbers are infinite to us, and we cannot tell whether they are odd or even (58—60).

Another perplexing question concerns the shape of the smallest figures possible, which consist of a few points only. Are they circles, triangles, spheres, pyramids, or what? They may be maintained to be either any or none of these, and it does not matter, since they are unimaginable realities in their extreme smallness. We cannot even conceive them distinctly by the intellect, at least in its present state of union with matter (60—63).

Objections based upon physical science. — Rarefaction (and condensation too) would be impossible in such a system. For if the whole

of space were filled with indivisible impenetrable atoms, should anything increase in size, the whole universe would become larger than it can possibly be. Yet rarefaction must be admitted; and a like argument has the same weight as regards condensation. Wyclif, in his reply, at once declares that he does not admit the possibility of a body occupying more or less space without gain or loss of matter. Rarefaction, therefore, and condensation also, are denied in this sense, but admitted in another. On account of the accession or the removal of another body, a substance may *seem* to increase or diminish in size; as, v. g., smoke seems to spread itself out and fill a room, whereas it is in reality mixed with the air. This is the only sense in which rarefaction is possible, and it answers all the objections. We need not follow our author through the mazes of Mediaeval physics which he threads, nor inquire whether this view would destroy all difference between the elements of fire, air, water and earth (63—70). Wyclif ends by stating, as his opinion, that the compenetration of two bodies is an utter impossibility. This conclusion evidently flows from his doctrine. Two points, having no dimensional qualities — nothing but position — would, if they coincided, lose even that essential quality, and be nothing at all. But it raises grave theological difficulties; for the School generally admits that God's Omnipotence can make two bodies occupy the same space.

Objections drawn from theology. Since spiritual forms, having more perfect entity than matter, can occupy the same space with it, then *a fortiori* matter can be coëxtended with matter. Besides, the glorified bodies of the Saints possess the gift of subtlety, i. e. of passing through matter; which seems to imply compenetration. — The answer is a repeated denial of its possibility (71). The gift of subtlety, bestowed on glorified bodies, is somewhat perplexing; but there are various ways of explaining it without admitting compenetration (72, 73).

Objections drawn from chemical combination. — If every punctal atom is and remains eternally the same, then the elements would remain in their compounds; size would be made up of that which has no size, and movement of what is not properly movement, as one point passes *instantaneously* into the place of another. — The first of these conclusions is granted by Wyclif, though the question itself was, during the whole of the Middle Ages, a battle-field for the rival sections of the School. The Thomists maintained that in all chemical combinations,

as distinguished from mere mechanical mixtures, the elements do not exist any longer actually, but only potentially; that is, they may, under certain circumstances, again be extracted from the compound. Their position, as given in their text-books of Philosophy at the present day, is that in a mere mixture — of hydrogen and oxygen, for example — both elements, though mingled together, do really and actually exist; but that as soon as the mixture is exploded they no longer exist in the compound — water — except in this sense, that the water may be analyzed into its constituents. Of course, so long as it is not possible to show them the atoms coexisting side by side, they are free to maintain that their existence is only potential. But, even during the Middle Ages, the Scotists protested loudly against such an assumption, of which nothing could prove the truth.

Wyclif takes the side of the Scotists, as he was bound by his system to do. He gives us a disquisition on the conditions necessary to chemical combination, which seem to be almost the same as those now posited by modern science (74); and then he observes that Aristotle's assertion of the non-existence of the elements in a compound ought not to be taken literally. Even Averrhoës' position, viz. that they exist, but with less intensity of being, would be contrary to the system of inextended points; compenetration being impossible, nothing can interfere with their intensity of existence (75). With yet greater decision he opposes the hypothesis of merely potential existence. If the reason that there is a form which unites the elements in one compound (making the elemental forms to exist no longer) were valid, then in a human body, of which the soul is the form, nothing would remain of the body but its primal matter; and that body, so complicated in all its parts, would be simpler than an element (76). It may be worthy of remark that this conclusion, strange as it may seem, is even now admitted and taught by that branch of Neo-Scholasticism which adheres strictly to the teaching of St. Thomas. When the human form, or soul, departs, what (they are asked) takes place in the body? Do not all the elements exist in it again? And if they exist there at once with all their differences, can it be that they were only potentially there before? The answer given is that after the soul's departure, a new, but transient form comes to give being to the body; it is called the cadaveric form, *forma cadaverica*, and precedes the various forms of decomposing matter, which succeed

each other until the final evolution of the elements. All this time the elements were *in potentia* — *remotissima*, *remota*, *proxima*; then *in actu primo remoto*, *in actu primo proximo*, and at last *in actu secundo*.

Wyclif continues to urge the point against his adversaries. If we *get* the elements out of the compound, they must have been there before; and many instances go to prove that they actually exist there; for instance, the phosphorescence of fishes' scales in the dark is attributable to the actual existence of fire (77). And as a fact, we find in combinations the same qualities as were before in the elements; or if not, a mean between them; or their reaction in the compound may even produce a quality. There is no need to suppose that the former qualities are destroyed because they do not appear (78, 79). I have added the last clause as the answer of such philosophers as dispute with the modern Thomists, who point out that carbon, hydrogen, and nitrogen are harmless, and that prussic acid is a violent poison. The poisonous quality is merely the reaction upon each other of various qualities of the three component elements.

To this the adversaries reply that such a compound would be but a mere aggregate of atoms 'which a man that had the lynx's eyes might see separate'. Wyclif's answer is that of the modern chemical school; they are not mere aggregates: *what differentiates the compound is the relative position of one atom to another* (80). But, it is urged, if the elemental forms are everywhere in the compound, the superadded form of the compound must be nowhere. Wyclif replies that this form is everywhere in the whole, and to a certain extent, indivisibly so, being less material than the elementary forms. There is something of the universal in these higher forms, which exist partially in each atom, considered as part of the compound (80—81). — One last difficulty. In this system, the whole world is one being; and one only, since all points touch, from the centre to the extreme point where space ceases to be possible. — It is quite true, answers Wyclif, that the world is one being; but it does not follow that everything in the world is one. One being may be separated from another by a third. Continuity does not mean sameness of nature. Every part of the world joins in and aids the harmonious action of the whole; all things are made for man, and it is for that reason that all the elements concur to form his organs of sense, and

that some of them predominate in certain of the elements, and others in certain others (82—85).

What is the measure of velocity of motion? — Not, says Wyclif, the space gone over by the mobile in a given time. This seems paradoxical; but an example, given directly afterwards, shows that our author is thinking, not of the distance in length, but of the whole surface gone over. A large body and a small one, though moving with equal speed, will go through very unequal spaces in the same time. What measures the motion of any body is the point of maximum swiftness, which in every case must exist, and must exist somewhere at the surface of the moving body; there is also a point where the movement is reduced to a minimum, but Wyclif, somewhat unaccountably, restricts this proposition to living beings that move (86). Now the measure of velocity of a body is the line described by the point which moves fastest (87, 94).

General arguments against Wyclif's position. — The First Mobile, being the outermost sphere, and having no space beyond it, can describe no line at all; planets have many movements, and no point can be said to describe them all at the same time. Again, if we suppose a given length passed over in a given time, this may be done by mobiles of infinitely varying velocities, which would all have this length and time for the measure of their respective velocities. And we can conceive the case of a body continually losing its swiftest point by the very fact of its movement: which would refute the assertion that every mobile must have such a point (87, 88). This last objection is urged, from p. 89 to p. 92, in a long argument which I have been utterly unable to follow. Wyclif then points out that the reason for which some deny the general idea of movement (abstracting from its rapidity, and allowing a general measure of velocity for the whole mobile) is in reality the doctrine of Nominalism. Nominalists do not want to admit a universal idea of movement which exists even in bodies at rest, when acted upon by contrary forces (94). The movement of a body is as swift as that of its swiftest part; this swiftness is the measure of the whole (*ib.*). As to the objections, that of the First Mobile has no value whatever. What that sphere describes may not be formally called a line, but it is equivalent to a line. Planets have not many movements, but one which is tantamount to many (*unus motus, habens rationem diversorum motuum*) (95). If, in the last case, the point of greatest velocity is continually lost, a new

one is continually brought into being; take the velocity common to each of these at each instant, and you get the speed of the whole (96).

Here comes a curious passage, in which Wyclif is led to state the exact rapidity of the swiftest movement possible, *viz.* one point per instant. It seems to us that, in continuous movement, whether slow or quick, one point — an infinitely small distance — is always passed over in the infinitely small interval of one instant. This is denied. In all movements which are slower than that of the Equator of the First Mobile, we have two, three, four instants during which the point is motionless, and then passes instantaneously on to the next place, which is infinitely near (97—99). In all these remarks, and elsewhere, as the reader will doubtless perceive, there is a dim perception of the non-equality of infinitesimal quantities; but the state of Mathematics was not then sufficiently advanced to foster the idea, and Wyclif himself, though far in advance of his time, was more of a metaphysician than of a mathematician. His conception, if carried into the field of pure Mathematics, might possibly have had good results; understood in the Realistic sense, they came to nothing.

A logical quibble about the possibility of instantaneous change (whether, between the instant of changing and that of having changed, there is any interval) brings our author to a short digression upon death, which takes place in two instants. In the first, the man dies; in the second, he is dead; for we cannot say, *he is dead* at the instant when he dies, nor *he dies* at the instant when he is dead. Other writers would say that the instant of death is the same in both cases; but viewed from different standpoints: as the end of life, and the beginning of non-life. This, Wyclif says, is impossible (100).

Astronomical objections. — The assertion that the Equator alone moves one point per instant is beset with many difficulties. The First Mobile is a perfect sphere; its movements therefore ought at all points, and not only at the Equator, to be uniform. But every point in the First Mobile does not touch every other: so the smaller circles, making a shorter journey in the same time, will not require to move so fast. The circle tangent to the Equator has but one point fewer than the Equator; performing its journey in the same time, it will remain immobile for one instant, to make up for the missing point: which of the points is missing we need not enquire. — The Poles belong to the great circles,

perpendicular to the Equator, i. e. those of which the curvature is the smallest; at the same time each of them forms the smallest possible of circles — a point — parallel to the Equator, and of which the curvature is the largest. Which of these curvatures belongs to that punctal atom which is a pole of the world? Wyclif, noticing that the difficulty would tell against his adversaries no less than against himself, solves it by denying that any one circle is more curved than another; in each circle every point of the circumference is equally distant from the centre. — If the Equator consist of tripunctal atoms, it cannot be a circle. For these atoms do not form a curve; they are either in line or make up a triangle; in either case, there is curvity. Wyclif answers that, being points which touch each other without any distance between them, they form neither a triangle nor a straight line. Geometry is only seemingly against this, because such things are conceivable by the mind alone, not by imagination. That science cannot give us absolute exactitude (100—111).

Of Augmentation. — Leaving the questions concerning local movement, and coming to the movement by which, without changing its place, a body increases in volume, Wyclif points out that augmentation, strictly taken, means only the increase of an animated being, caused by nutrition and by the assimilation of food (111), gives us a description of the digestive process such as might be expected, interesting merely as a curiosity (112, 113), and enters into a disquisition about the cause of natural death from mere decrease of vitality (114, 115). The movement of augmentation is not continuous any more than undulations are continuous; it is a collective entity, consisting of many movements (115, 116). The difficulties which follow are of slight moment, and only serve to bring in a description of the various kinds of tissue in the human body. The rapidity of augmentation depends on the size acquired and the time taken to acquire it (116—118).

Of Alteration. As alteration is a change in quality, grounded upon the substantial components of each body — matter and form, — it is mainly Wyclif's theory with respect to the latter that is discussed here. Having expounded his idea of the universe — one material being, made up of punctal atoms, filling all possible space, and unchangeable except in so far as one of its parts can be separated from another by local movement — he states that the world can be thought, *firstly*, as mere

being; *secondly*, as substance, or the subject of various attributes; and *thirdly*, as matter, being extended, and possessing form (119). Thus matter, form, and the compound are the same being, the same essence, and not separate realities (120). This, in fact though not in words, is the denial of matter and form in the usual Scholastic sense of “two distinct realities, whereof the latter determines the former and the former is determinable by the latter which at the same time is sustained in existence by the former: both incomplete in themselves and apart, but together making up the complete material substance”. In Wyclif’s system, there is no need to admit such dualism. The simple inextended point *may be* either fire, air, water, or earth; this possibility is matter. It *is* actually one or other of the four; the igneity, aëriality, &c., which it possesses is its form. And the point itself, as being thus whilst able to be otherwise, is the compound. Denying the existence of extended atoms, the writer, whose system here does not differ much from that of other Atomists (*i. e.* so far as his way of explaining matter and form goes), escapes from many difficulties which beset the path of those who admit that the primordial atom is extended. But there are others.

Objections. — It is asserted that matter and form, since they are parts of the whole compound; cannot be identical with the whole. But Wyclif notes that they are not quantitative parts — as, for example, the head and the heart in man — but qualitative merely, like rationality and animality, for instance. The whole man is reasonable and is animal; the whole man is not at once head and heart (121). We have thus a sort of trinity in which matter, form and compound, identical in one sense, are different in another: but Wyclif takes great care to point out the difference between this trinity and that of the soul, or of God (121, 122). — If matter, as Wyclif asserts (121) is eternal, form is so too, being identical with it; and thus the world is eternal. But here he denies that the radical identity of matter, form, and compound with Being, renders these three identical with each other. Man is reasonable, man is animal; yet rationality and animality differ. All that is true, is good; yet truth is not the same thing as goodness. And Wyclif points to the Incarnation, as affording us another instance of a similar fallacy (123). — On the supposition that every essence is in reality everywhere the same, we have all sorts of contradictions. The answer to this is that contradictions may coexist in the same subject, either at different times, or

in different parts. No quality is essentially inherent to primordial matter; therefore, nothing can contradict it. A body composed of parts which come and go successively may receive different and contrary qualities, and yet remain the same; as, v. g., the Mediterranean may ebb and flow, and yet be the same sea (124—127). Thus, when we say, *This is hot*, we speak of the compound alone; it is *that which* is hot. Here comes a digression. How can heat, the proper quality of fire, be found in water, which is naturally cold? Particles of fire may be mingled with the water, though they are in a violent state; the water, if left to itself, will soon again become cold. However mingled the different elements may be, they still obey the laws which govern their nature (128—130). The chapter closes with a short survey of creation, beginning with the elements which, uniting, form vapours; these produce metals and earths; the earths, if mingled with fire and water, bring forth plants and also animals in an ascending scale of forms, the lower hardly distinguishable from inanimate beings, the highest, quasi-immortal. The soul of man is completely so; and each higher form includes in its perfection that of the lower ones (130—132).

b) Chapter X.

Summary of the Contents.

Temporal Propositions do not affirm that the known is wherever the knower exists (133, 134). — Objections refuted (134—155). — Are all things together in time and place? Arguments contra (155—157). — Wyclif's solution (157—161). — Corollaries (161—165). — Three views on the essence of Time; 1st that it is identical with God or the world (165—166); 2nd that nothing temporal is in the present (166—170); 3rd that Time might be indefinitely lengthened by God (170—173). — Wyclif's view: It extends to all past and future time (173—177). — Objections refuted (177—191). — An eternal antecedent does not necessarily produce its consequent in time (191—192). — A cause produces its effect before that effect exists (192—199). — Time is the same everywhere. Arguments contra refuted (199—211). — Movement implies time; refutation of objections (211—224). — The non-entity of the world did not precede its entity (224—227).

Is the known wherever its knower is? — No; for then everything would be, as God is, everywhere (133, 134). It is objected that everything is truth, and that truth, like God, is everywhere. We may, however, admit this, restricting the sense of *being in space* to *filling that space quantitatively*. Thus, granting the force of the argument, we nevertheless deny it in the signification usually given to words. Christ's Body has size in the Sacrament, yet it does not properly fill space; it is present without either position or shape. The bread is not annihilated; what remains is a purely mathematical body, but not nothing; the sacramental sign is the reality of Christ's Body (134—137). It may be urged that the fact of movement is not extended in space, and that movement is consequently everywhere. But local movement is the movement of *a body*, and must be extended with that to which it belongs. Virtues, again, exist throughout the whole man, body and soul; but they are nowhere else but where their subject is. When a part moves, the whole may be said to move, it is true; only in a different way (139, 140). Movement thus takes its determination (*individuationem suam*) either from its subject alone, *qua* subject, or from the subject with all its integral parts, or from this with the velocity also taken into account. The third point of view implies the first and the second; but not *vice versa*. Wherever there is a more individual movement, there is also a more universal one; and in this sense, movement as a universal, is everywhere, according to Aristotle (140, 141). God indeed is all truth everywhere; yet truth, as created, is not identical with God, and it were a fallacy to draw such an inference. The sense of words in these questions depends much on their position in the sentence. "It is *now* possible for a given future instant to exist?", and, "It is possible for a given future instant to exist *now*", are two widely different propositions. God's knowledge of everything is absolutely boundless. No time exists for Him. *He is* means *He is yesterday*, or *He was to-morrow*; existing at once in all eternity — an instant to Him, — He comprises all duration in His being (141—143); and therefore His existence is an eternal *Now*. — Again, we have a similar sophism: "That may necessarily be which cannot be necessarily." This is false, but only when understood of absolute, not of hypothetical necessity. A future instant is necessarily "*about to be*", at a time when it cannot possibly be "*about to be*". All this is mere foolish subtlety; we go no farther than to say that, if at any moment it is true that a given being

will exist, the being is in the future (143—145). At different times that which is white is black, a man differs from himself, &c.; but this implies no absurdity. Becoming is a change, not of the subject, but of its ‘suchness.’ An instantaneous change does not imply an infinitely swift movement, for the idea of swiftness implies that of time, not of one instant only (145—147).

A great many fallacies are brought forward against this position, such as that, v. g., if future whiteness be always predicable of an individual, that individual will always be white; so that if at any time he were black, he would have and not have two essential contradictory qualities; or that a king cannot have been baptized, if, when baptized, he was not yet a king; and so on *ad infinitum*. They all belong to the class of *fallacie accidentis*. “What you have bought, you have eaten; but you have bought raw meat; therefore you have eaten raw meat.” The change from black to white is one, not of nature, but of quality. The individual differs from himself modally, not essentially. The ‘being a king’ is in a man a mere accidental quality; the king has been baptized, not as a king, but as a man. “He who is now a king, was baptized when not a king”, is perfectly true. Much depends on the compound or the divided sense in which terms may be taken. “He who is begotten is *David the king*; *David the king* and who is begotten belong, as predicates, to the verb *is*, in the divided, not in the compound sense. Besides, the act of begetting is not instantaneous; it has many preparatory acts (147—154). — There are also several theological arguments on p. 150, concerning the possibility of God’s assuming the personality of all creatures, which Wyclif briefly meets by denying (154, 155) in direct opposition to Aquinas (Sum. Th. p. 3^a qu. III. art. 5, 6).

Are all things together, both in time and place? — Wyclif first of all gives the arguments *contra*. If it were so, there would no longer be any distance between things. The future and the past would exist eternally; a man would both exist and not exist in the same (eternal) time. Again, whatever takes place in any part of space and time, must take place there only and only then; its existence cannot possibly be extended any farther (155). On the other hand, the world is everywhere; yet the *whole* world is not in any part of space; and in like manner, if anything exists at any time, its *then* existence is true in all time; and so also of space (156). — Wyclif thinks that this question arises mainly

from the varying senses of the word *together*. Two things may be said to be together, i. e. both occupying exactly the same space (an absolute impossibility) or contiguous, each being in different places, or both, though separate, being contained in the same larger space. As to time, absolute simultaneity is possible (157). This answers most of the objections. *Always* may be understood as meaning *eternity*, or *during all eternity*, or *in some part of all eternity*. The last sense is of course widely different from the others, and in this sense alone, *whatever is future or past is always* (158). We may see a thing, though we do not see the whole thing; just so, a man may exist in the Xth century, though non-existent during a part of the Xth century (158, 159). To maintain this, however, we must say that time consists of instantaneous elements. For, if instants are not parts of time, then instantaneous events (such as cognition, division, &c.) could not be said to exist at any time, having no duration. And if not at any time, their contradictories would be true in all time, notwithstanding that they also would be true. It cannot be said that, from non-cognition to cognition, there is a change which implies time; for from one contradictory to another, there is no real change. That which is not white now, if at any time it is to become white, cannot receive the predicate of mere non-whiteness: so non-existence in a part of time is not non-existence in that time. After death, a man is neither simply non-existent nor existent: he is non-existent *then* (160, 161).

Corollaries. — Time, the duration of the world, began with the world, and with it must last eternally; necessary to the creation of the world, it does not depend on anything but the general fact of movement. It consists of indivisible instants as its elements; these are absolutely without magnitude, and time itself is everywhere, indivisibly the same throughout the universe (162). As the world is everywhere, so is time, and so is God (163). What begins and ends in time (as corruptible entities); what makes up the very essence of time (as an instant); what has modes of being measured by time (as the heavens), may be called temporal, but in different senses (163, 164). Time is in itself a cause of dissolution, for it causes things to grow older; but occasionally it is a cause of production, since it renders their production possible. Its very essence is change, and no two of its parts can coexist (164, 165).

Three views on the essence of Time. — a) It is identical with God or the world's existence. This view is absurdly erroneous; it would

make all things eternal, and destroy all certitude as to the duration of things (165, 166).

b) Nothing is, but everything either was or will be. This cuts short disputes as to the existence of things during an infinitely brief interval. But then, what never is, never was or will be. To God's knowledge nothing is in the future, so He would know, for instance, movement to exist, and it would not be true. One hour must be the double of half an hour; if so, there must come an instant at which this is true in the present: i. e. when half is past, half future, and the whole hour partly one and partly the other. *Present* may indeed be taken in a wider sense than one single instant. Here Wyclif shows clearly that, in the same way as he assumes the existence of separate individual points as realities, so he also assumes the real existence of instants, joined together to form time, shorter or longer, but also really existing in another time which includes both past and future. Instead, therefore, of a century being a present which is fictitious, consisting only of indivisible instants before and after each of which there is the non-existing past and the not yet existent future, the whole century forms a real present, though real in another sense than that of the instant which is *now*. And Wyclif adds that, if this be not admitted, he does not see how the sacramental words, for instance, "Hoc *est* corpus meum", can be true. Only an infinitesimal part of the proposition would exist; the whole, never; and consequently it never would be true. To say, "Nothing that is past or future exists", is in reality to destroy time. God's immutable knowledge of things, and His free-will, are both contrary to such a supposition. Christ, in the Divine Essence of the Word, saw men long before their temporal existence; but He saw them as existing, and they did truly exist in the reality of long centuries of the future. And thus He is rightly called, Son of David, Son of Abraham, in this real extension of time, by which David and Abraham come to be co-existent with Him. Has a posthumous child no father at all? None, unless we grant the real simultaneity of its existence now with the past in which its father lived (166—170).

c) Time, though a successive quantity, can be lengthened out indefinitely by Almighty Power, so that one instant would be equal to ages. This is possibly the doctrine of the *aevum* or *instans angelicum*, familiar to Mediaeval Schoolmen, which some of them may have supposed

extensible to corporeal beings. According to that doctrine, the duration of Angels, from one thought to another, may last for centuries without change — centuries that are for them but one indivisible instant. This is generally allowed, and I have not anywhere been able to find any trace of the actual extension of the doctrine to bodily substances. But it may be explained as follows: Supposing that, at the present moment, God suspended every movement in the whole universe for a hundred years — like the tale of the Sleeping Beauty on a gigantic scale — and then allowed it to continue as before, there would be no movement, and therefore no succession of time; and one instant would be a hundred years in length. This is in flat contradiction to Wyclif's doctrine of eternal time, consisting of instants, each of which requires another *immediately* following it; so he is at some pains to refute the possibility of such a hypothesis. The instant is an individual quantity, which can neither be lessened nor increased. If it could, it would contain many instants, and thus be no longer one only. A short time would equal a long one; the essence of time would no longer consist in duration alone, for nothing could differentiate the 100-century instant from an ordinary one. In conclusion, Wyclif dismisses this theory with contempt (170—173).

Wyclif's view. *Is* extends itself really to all time, past and future. Whatever is, is always, as has been shown. If not, we deny the very essence of time. Its parts do not coexist, but vanish as fast as they appear; yet they *are*; now in the past, now in the future: and again, in a wider present they may be said to coexist. This is clearly signified by the sense of the verb *Is*, which by itself does not connote any given instant of time, and therefore signifies eternity (173—177).

Objections refuted. — To say that all instants, because they are together in eternal time, are together with absolute simultaneity, is but a sophism. Simultaneity requires that two things be together at the same instant or instants, and at no others. Now one instant cannot exist exactly when another does, but either before or after (177—179). — The often urged ‘necessity of all things’ may be admitted, if understood as merely conditional upon God’s will; for whatever is determinately true, is necessarily true, and there is no such thing as indeterminate truth. Hypothetical necessity, as this is, does not deny contingency, nor the free-will of man, nor chance. The hypothetical fact that God foreknows anything, makes it necessarily exist at some time or other. Given that I exist, it

is not in God's power that I do not exist. But *when* must anything exist? At a moment known to God (179—183). The simultaneity of life and death would, as already stated, require them both to take place at the very same instant. Time exists, but its parts do not all exist *now*, only one at a time. *Now* is but one mode of an existence which *not now* does not destroy. An instant *then*, *now*, and to *come* exists differently, but cannot at any time be called simply non-existent. Antichrist must come: therefore he *has* come . . . in the future. That is a modal, but a real existence. It was never true that *I am not*. To exist and not to exist are contradictions; they may be true of the same being, but not in the same *Now*. God knows past, present and future things with the very same knowledge, yet this does not argue sameness in the object known. Light is not affected by the presence or the absence of the object illuminated. God may know present and future things as past, if they exist in time; things eternal are eternally present; such, for example, as the archetypes of what was, is, or is to be (183—188). Here Wyclif again returns to his adversaries' favourite argument, viz. that black is white, and all contraries identical. But one remark of his is worth noticing. A proposition may be true, and yet false at any finite part of time; as, for instance: 'All the instants of time exist'. This is true only for and in endless time (188—191).

An eternal antecedent does not necessarily cause its consequent in time. — If it did, all things would be eternal. God eternally knows and causes all that which exists temporally. The extrinsic act of God, terminated in the creature, is, as *thus terminated*, neither eternal nor necessary; the intrinsic act of His being is eternal and changeless (191, 192).

A cause produces its effect before that effect exists. That is, before its existence it is producing it, but not now; in the future. The ideal being of the effect depends upon its cause, and is produced by it before the moment when its real existence has to be actuated. On the other hand, cause, *qua* cause, and effect, are simultaneous. Many things are neither instantaneous nor temporal; v. g., certain eternal truths, and beings of which the existence is intermittent. Wyclif here wonders how the writers of his time can oppose his system, which is confirmed by the very expressions they employ; and he blesses God, who has enlightened him that he may escape the difficulties in which they are entangled (192—195). — The necessity of sin depends on our own free-will; the

fact of its happening, on the will of God. — The use of the present for the past and the future cannot be blamed as an abuse of terms, nor as the denial of expositorial syllogisms. No logician should use it thus when he is likely to be misunderstood through ignorance; but it is allowed to speak otherwise to philosophers than to the common people. Neither the expositorial syllogism, nor any other, is denied by Wyclif's theory, which on the contrary admits many forms of syllogism that others deny. — A curious difficulty is raised here by the adversaries (195). Wyclif is certain that he has had no son. Yet perhaps his son *is* wiser than he; for he possibly may have a son yet. If this son 'will be', then 'he is' according to the theory which extends the future to the present. Wyclif denies this conclusion, unless it is certain that he will have a son. At first sight it does not clearly appear how this can be denied in the form given. "*Filius meus ex mihi dubio esset sapiencior me.*" A supposition that depends upon another supposition is quite thinkable. But we must here remember Wyclif's doctrine — that the distinction between extrinsic and intrinsic possibility has no real foundation; that a seemingly possible creature is in reality impossible, if God has chosen never to create it (*See Logica vol. II., Intr. XXIV.*). We have the right to deny the possibility of Wyclif's ever having a son in the future, unless we are certain that he will have one. Perhaps the individual in question is possible; God knows; but we know nothing at all about him (195—199).

Time is the same everywhere. — Our author begins by enumerating the arguments contrary to his own opinion (199—202), and then refutes them one by one. Even if the world were not everywhere, it would not follow that time is not everywhere. But as a fact, the world being (partially) in each and all of its parts, that argument must fall to the ground (202). — It is denied that the world has any unity whatever, being a mere aggregate; and time, an accident belonging to the world, cannot have more unity than its subject. But Wyclif points out that the laws of nature give unity to this aggregate, just as political laws give unity to an aggregate or assembly of men. Besides, the world, notwithstanding changes, remains the same in its efficient cause — God — and also in its material cause — the atoms of which it consists. If we grant that the world is animated, its unity becomes much more evident; now, we have many proofs that it really is an animated

being (202, 204). — If a part of the world could become the whole, then indeed the duration of each part would have separate existence. But this supposition would be true only in case a part of the world were annihilated; a possibility which Wyclif absolutely denies (204, 205). — What is extended is not everywhere the same. True. But is time extended, merely because it is the duration of a body? No. A man's duration does not change, if he happen to lose some part of his body. Movement indeed, though inexteded in itself, is extended in the body which moves. But take away any part of a body in motion, and the whole quantity of the movement is lessened; the same cannot be said of its duration. Thus we may define Time as the universal, indivisible and ubiquitous duration of all temporal things (205, 206).

Another objection, on which (to judge from the length at which it is dealt with) Wyclif's opponents seemed to rely a great deal, may be summed up as follows: Were time everywhere the same, day would be night, summer, winter; fair and foul weather would be identical: for they are parts of time. If Wyclif answers that the same time may be night in one place and day in another, he is met by the reply: How then can time be *the same* in every place? Where there is night, there is no day. If time, which is everywhere, be night, then night is everywhere; or if not, the universals Day and Night have a semi-spherical shape, and pursue each other round the earth! A body moving swiftly westward would enjoy a longer day, and night, being everywhere where day is not, would exist in the interior of every opaque body. All which is manifestly absurd (200, 201). — The answer is obviously that day and night are not time, but times. Time happens to be called day or night according to the circumstance of the presence or the absence of light (206, 207). Time, i. e. that which is here as day, may be (and is) elsewhere as night. To say that light pursues darkness is a mere metaphor which may be admitted or denied as we choose. That night is semi-spherical, because it occupies a semi-spherical space, is not more true than that God is round, because He fills the rotundity of the universe. We ought also to draw a distinction between natural and artificial night and day. Day exists eternally throughout the whole world, except in the interior of the earth, or in its shadow. Night is nearer and nearer to a fixed point on the earth's surface; it does

not follow that night moves, but that the movement of something else (i. e. of the sun) causes night to be nearer. Many quibbles arise from too lax a use of words. We have day after sunset; an eclipse may cause night at noon, it being caused by the moon's shadow, not the earth's; and the moon, if self-luminous, would be the cause of day. Every kind of obscurity may be called night. All these difficulties spring from different meanings given to the same words. Properly, day exists on earth only when the sun is above a given horizon. But this is merely incidental, and quite irrelevant to what time is in itself (207—211).

Time implies movement: objections refuted. — Time requires the idea of a Before and an Afterwards, which are to be found only in movement. If all movement were to cease, time would cease too. It is objected that the mere act of imagining time, without any movement, would suffice to cause time. Imagination would certainly create time by the very fact of its activity; but this is itself a movement, and the hypothesis of a bodily faculty working without motion is utterly absurd (211—215). At this juncture, Wyclif enters into a digression respecting the happiness of the Blessed in Heaven (215, 216) and the misery of the damned (217), which is relevant to the question in so far as, positing eternal time, Wyclif must posit eternal movement of some kind. He asserts that all movement cannot cease in the world; successive knowledge, and (I may add) the feelings of pleasure and of pain, require it (217). Whether the world will continue to move after the Day of Judgement is not so certain. The changelessness which follows upon the attainment of the end of any being, may be called rest, and such rest is not opposed to successive motion. But the rest of a being that can and does not move must be denied for many reasons, one of which is that, applied to the world, such rest would neither be successive nor instantaneous; neither in time nor in any part of time. Lines, &c., may begin and end instantaneously; but this cannot prove that a substance may do so too.

If it be true that the hand of a clock, turning round in exactly 24 hours, would measure time as well as the First Mobile, we have a very slow movement equal to one exceedingly swift, as regards time; therefore movement and time are not interdependent. — This objection, Wyclif admits, contains a point which the imagination is unable to

represent. What is necessary is that the movement by which time is measured should be regular. Our author here gives some rather intricate explanations as to the possibility of a first instant of time, in answer to the objection that, at the first instant, there is either movement or rest; if rest, then no time exists; if movement, that implies a Before, and there is no first instant. The objection might easily be answered by saying that the first instant is not properly a part of time, but merely a *terminus a quo*, a starting-point: only such an answer would contradict the whole of Wyclif's theory. — A last difficulty, viz. that the world, immediately after its creation, might have remained at rest for some time, is met by a flat denial. Rest is a perfection, but not such as can belong to the world. That it will exist eternally is no contradiction to the assertion that it began to exist; but here there is a very considerable difficulty (*non occurrit michi promptus modus explanandi me in ista materia . . . ideo transeo pro presenti*, p. 224). Evidently Wyclif's system, positing the necessity of the world's everlasting existence, because each instant of time requires one that follows, is endangered by the question whether each instant does not require one to precede it: the old objection of Aristotle, who for that reason asserted the eternity of matter, an assertion contrary to faith.

Whether the non-being of the world preceded its being. — This last question arises out of the foregoing one, and seems (though that would contradict other parts of the system) to lead our author to a conclusion like that of Aristotle. For if it be answered negatively by the assertion (225) that the world's non-being never was, and that its being was always, this looks a great deal like the doctrine of the eternity of matter. But in the answers to the objections, we find that Wyclif distinguishes between *to be* and *to be existing*. As *I am* long ages before *I exist* (according to him) so the ideal (though real) being of the world was eternally before its material existence; being before, it was *without its existence*, but not *with its non-existence*. Of course it is very hard to get out of the difficulty, which is on a par with the rest of the system; but the answer satisfies Wyclif's doubts. Ideal being, *that which* is the existing world, really was in eternity before the world existed. It was identical with God's knowledge; so long as God did not know the world to exist *now*, i. e. in the first moment of time.

IV. Conclusion: The gist of the Nominalistic controversy.

With these arguments the third volume of Logica closes somewhat abruptly. Like the rest of the work, it abounds with arguments of striking force, as directed against Nominalistic exaggerations; but, on the other hand, Wyclif's theory of Space and Time lies open to a great number of objections which even his ingenuity is not always able to refute as satisfactorily as might be desired. In many parts, for modern readers at least, it has only the interest of an intricate puzzle.

The problem of the Universals, however, though seemingly as dead as any other philosophical question of the past, deserves a few concluding words. I shall endeavour to show that, under other terms, and until some fuller explanation is found than has yet been given, it is and will remain for ever the great stumbling-block in the path of all metaphysical inquirers.

When we have the idea of *a man*, *an animal*, *a substance*, we conceive something that is universally the same in all men, animals, and substances. Is there anything in the objects of our thoughts that corresponds to it — anything really universal, *universale in re* — or is there nothing? If we answer in the negative, we hold the Nominalistic position; if in the affirmative, we are Realists in the old sense of the word.

But to answer affirmatively, we must, either implicitly or explicitly, lay down the following formula: *What is in our mind exists in itself in the same way as it is in our mind*. Lay this down, and you have Berkeley's denial of matter, German transcendentalism, and modern Idealism in general. *Esse est percipi*; to be is to be perceived. Matter exists as we know it, and as much as we know it; outside of the knower, it has no being at all. The Non-Ego is posited by the Ego, and is identical with it. We can have cognizance of the external world only as a modification of ourselves; and if it exist *as we know it*, it is nothing but this modification.

On the other hand, Locke's conceptualism, the materialism of certain XVIIIth century philosophers, and the empiricism and positivism of our own times, proceed from the negation of this axiom. Locke, in order to affirm the limits of the human understanding, was obliged to deny to certain ideas any value but such as is merely subjective; which amounts

to saying that, however infallible the deductive process, however evident the first principles from which we start, we are still liable to be mistaken, because *things may be otherwise than as we know them to be*. To assert that all is matter, and that even the acts of our mind are material, notwithstanding our conscious certitude that there is an abyss between the two, is to set down that whatever we know, no matter how indubitably, may be false if it goes beyond material facts, and laws relative to matter. Again, the statement (which would ruin Metaphysic, if Metaphysic could be ruined by man) that at the bottom of all our inquiries into first principles, we find self-contradictions and absurdities in every possible assertion on either side; and that consequently though we can know neither space nor time, we must confine our investigations to that which is conditioned by time and space: — this well-known doctrine is based upon the denial that things are as we know them.

The quarrel between Realists and Nominalists is thus an important phase, but only a phase, of the everlasting struggle between two opposite currents of thought. I call it everlasting, for though the forms may vary, it is likely to spring up for ever, or at least so long as human curiosity as regards such high and abstruse matters continues to exist.

Not that there is no answer to the problem, no middle way between the absolute affirmative of one class of philosophical thinkers, and the uncompromising negative of the other class. But in this very answer we find the reason why it is not universally accepted as settling the point in dispute.

Do all things exist as they are known by us? As is a very short word, and (it would seem on a superficial view) not equivocal in the least. But let us consider it more closely. Things seen in a looking-glass both are and are not *as* they are in reality. There is a certain resemblance, more or less perfect; but the difference between them is that between the image and the original. In the same way, so far as any comparison is possible, the human intellect is the mirror of Nature. Our thoughts are the images of things; but we can no more conclude that things are of the nature of our thoughts than we can infer that a nosegay *out* of a looking-glass is of quicksilver amalgam, because *in* the looking-glass it is imprinted upon quicksilver. Thus, things exist as they are known by us: that is, we have the right, they being the causes of our thoughts, to make certain inferences

from the effects to their causes; inferences necessarily vague and indeterminate to a great extent, but none the less true, on account of the necessary resemblance between the image and that which it images. Even a shadow, however distorted and indeterminate, bears some resemblance to the person who casts the shadow. But on the other hand, things do not exist as they are known by us, if *as* means a complete identity of nature between the known and the knowledge thereof. For *that which* is the known, is such only from one point of view, or at best only from a few points: it — i. e. the same *that which* (as Wyclif would say) — is the Unknown from millions of other points of view. All the sophisms in the world cannot get the better of this distinction, by which all similitude of *nature* between knowledge and the known is excluded, whilst similitude of *representation* is carefully maintained.

But it is precisely this answer, though given by many great minds, both amongst the ancients and the moderns, that fails to satisfy by its very moderation. We long to get behind the 'Thing-in-itself', and if we find we cannot, we cry out that there is nothing at all outside the mirror; or, after many a squabble, weary of disputes, we deny that we can know anything of that which the images represent, and that all science ought to be concerned with the images alone and their relations with each other. And thus the disappointment caused by the perfectly natural and simple answer given above leads to two contrary excesses of thought. Some, yearning towards the Absolute, conceive endless systems by which to go beyond the limitations of the mirror: systems beforehand doomed to failure as hopeless as the search after perpetual movement. Others think that the contrary extreme is the only tenable position, and reject even such limited inferences as may justly be drawn, nay, that our very nature compels us to draw. Those aspire to be as Gods; these are content to throw away part of the inalienable birthright of men. Wyclif, I think, belongs to the former category. His system was, partly at least, a mistake; but it was the mistake of a bold, powerful, and comprehensive mind. He and all those of his class were philosophers, gifted with a mighty grasp of thought, and immense mental acumen; whilst the others, however ingenious their subsequent endeavours to reconcile their principles with facts, must, by the laying down of those very principles, strike at the root of all philosophy, and even of human reason itself.

TRACTATUS TERCIUS

Continuatur.

CAPITULUM NONUM.

B 99^b Sequitur de localibus pertractandum. Supponendo primo omnem hypotheticam adverbio loci copulatam cum proporcionali actu esse localem; ut est talis: *Sor currit ubi Plato currit*. Est autem iste species hypothetice (sicut causalis, comparativa, et temporalis), affinis cathegoricis, cum signa coniungendi talia convertuntur cum cathegoricis. Idem enim est dicere: *Sor currit ubi Plato currit*; et: *Sor currit in loco in quo Plato currit*. Et hinc, 2^m auctores, adverbia loci et temporis sumuntur quandoque nominaliter pro denominacionibus cathegoricis a loco et tempore: ut patet de istis: *ubi*, *quando*, *nunc*, et similibus. Sunt ergo tales propositiones quante et quales, ut cathegorice: et per consequens sunt iudicande vere vel false, contradictorie, equipollentes, vel aliter passionate, sicut cathegorice. Unde hec: *Sor non est ubi Plato est*, habet 3^s causas veritatis. Vel quia alter illorum non est, seu uterque, vel quia idem locus non continet utrumque. Illud tamen non est composabile cum *esse* istorum; quia, sicut necessario omnia que sunt, simul sunt tempore, sic necessario omnia que sunt simul sunt loco communi. Unde, quamvis nomen loci sit equivocum, satis tamen est pro nunc cognoscere locum qui est situs.

Pro quo noscendo, notandum mundum componi ex certis atomis, et nec posse maiorari nec minorari nec moveri recte localiter vel aliter figurari, ita quod tantam multitudinem atomorum consequitur tanta quantitas continua et talis figura, propter causas immutabiles

Local propositions comprise all propositions that are joined to another by an adverb of place. This species resembles categoricals, for where can be resolved into *in the place in which*; thus rendering its proposition categorical. They are quantifiable and qualifiable, and have the other properties of categoricals. A is not where B is, may be true either because one or the other does not exist or because their whereabouts is different; but this last is not possible if both exist. Place is equivocal; here we shall deal with it, taken to mean position. The world is made up of atoms, can be neither increased nor diminished, nor moved in

i. Cap. deest; blank space for initial S.

29. ⁹ iunctus in marg. B.

a straight line, nor changed in shape; all this is immutably dependent on the number of atoms.

Site follows matter; where there exists the mass of the world, there is the same place.

The point is the principle of which partial spaces are made up; but that by which we know these partial spaces is the whole extent of the world. If the world has subtle motionless parts, to which is united the Power that rules the world, it becomes easy to distinguish place. Into such parts there can enter different bodies, one after another.

Plato calls place matter, emptiness, &c. There is no difficulty as to compenetracion, since theology teaches that it is not impossible.

naturales. Aliter enim non esset mundus capacissimus et convenientissimus in figura. Et ex illis sequitur situacio mundi et eius duracio. Unde Aristoteles, nominans quantitates continuas, nominat species per ordinem se habentes, ut lineam, superficiem et corpus; et 5 preter hoc locum et tempus, quorum omnium principium est punctus; et unitas est principium puncti. Et tam necessario consequitur locus materiam quod ubique fuerit ista maxima materia mundi, ibi est iste locus. Sic quod, si moveretur recte (per impossibile) 10 in vacuo infinito, foret continue idem situs, cum ad individuationem illius situs sufficit extensio illius materie. Manet autem necessario ista materia, etsi infinite eius partes corrumpantur; quia oportet illas continuari aliunde cum residuo huius materie. 15

Et sic, quamvis species situs punctalis sit principium integrandi omnem situm divisibilem, tanquam minimum metrum illius generis, tamen totalis situs mundi est nobis mensura cognoscendi alios situs particulares, et prior in perfeccione et intencione nature, cum gracia 20 illius situs quem principaliter intendit, ordinat natura situm indivisibilem tocis multiplicari 2^m eius individua. Si ergo mundus habet ad omnem eius punctum partes inmobiles, subtile, comitanter ad speciem in animali, cum quibus copulatur virtus mundi regativa, 25 que facit informaciones vivencium et alia opera latencia; tunc facile est distingwere situs parciales, cum quilibet situs parcialis foret *talem partem situari*. Et | in B 100^m tallem partem ac eius situm possunt quotlibet corpora vicissim ingredi, sicut theologi ymaginantur omnem 30 ultimum inmobile se habere. Et illius opinionis videatur fuisse Plato, vocans locum materiam, ylen, vacuum, vel fraudem fictam crassis tenebris involutam. Et quo ad penetracionem corporum, non plus procederent contra eum quam contra theologos nostros ponentes quod corpora possent transire in celum sine eius alteracione vel corporis sic coextensi corrupcione. Unde Lincolniensis ponit omnia astra esse corpora mixta ex puritatibus

6. locus B. 24. *com^r* completur B. 25. copulatur *in marg.* B.
33. *cly*, B. 36. *lata'co* B. 38. *pui'tatib* B.

24. *Immobiles, subtile*. I suspect that Wyclif here means the space by which the world is measured. See a few lines below: *in talem partem . . . possunt . . . corpora . . . ingredi*. 32. *ylen*. It ought to be *hylen* = *ὑλην*.

elementorum. Et dicit esse probabiliter opiniabile quodlibet astrum per se moveri, toto orbe residuo quiescente.

Relictis ergo istis ambiguis, loquendum est de situ qualiter oportet omnes rectiloquos loqui, quomodo cuncte fuerint probabiliter opiniati. Nam, ponendo quod quelibet pars superlunarum preter polum continue moveatur (et sic de qualibet parte sublunari preter terram vel sibi adherencia, ita quod non sit talis pars mundi supernalis quieta): tunc potest dici quod sicut ad in-¹⁰ divisionem situs mundi sufficit ista materia, sic ad in-divisionem situs cuiuslibet partis sue sufficit quod iste mundus habeat aliquam partem sic positam in comparacione ad polos et centrum; que tria quasi omnes philosophantes dicunt oportere semper quiescere.

Ex quo ulterius concedendum est quod manet continue idem situs in numero, propter idem ptitatem mundi et conformitatem distancie ad duplex quiescens, situato quantumlibet in substancia variato. Si enim datum corpus vel quocunque aliud se habuerit continue per totum eque distanter ad polos mundi et quamlibet partem terre quiescentem: tunc est continuo in eodem situ; ita quod indivisio situs accipitur a gravitate corporis ex hiis tribus principiis, non autem a centro mundi indivisibili per se quiescente. Unde, si centrum mundi et duo poli quiescerent, toto residuo moto, tunc quilibet motum ^{2^m circulum concentricum et eque distante a polo mundi foret continue eque distans ad hiis tribus, et in casu a quolibet alio distante. Sed iam necessario multa terrena quiescant, sicut et multe partes celi, respectu quorum sic motum varie se haberet quo ad distanciam parcium. Sicut ergo continue manet iste mundus propter unitatem istius materie, quamvis illius mundi continue corrumpatur pars, sic propter unitatem mundi habitantis quamcunque partem sic positam, maneret iste situs parcialis, quamvis continue sit nova et nova ubicacio.}

Grave tamen esset videre quid subiectaret illum situm, et quod foret ultimum singulare situs. Cum situs datus sit commune, et cum omnis situs sit *aliquid situari*, videtur quod quotlibet situs possunt esse simul, et unus moveri ad intrinsecum. Et sic locus per accidentem

Every superlunary part of the world, except the poles, is in continual motion.
It's matter suffices for the unity of its site; for that of its partial sites, we have their fixed relations with the poles and the motionless centre.

Place is, therefore, always numerically the same; if any body is always equally far from the poles and from the centre, it is always in the same place.
Admitting the stability of the centre and the poles, any body moved in a concentric circle round them would be equally distant from them; but the distance from the motionless parts of the earth and the sky would vary.

Difficulties.
1. If the space filled by the world is the common place of all things, many places can be together, and there would be no moving from one place to another.

9. spualis B. 9—10. indini^o 3 B. 9—10. indini^o 3 B. 22. ague generabile (?) B. 25. 2^o pro duo B. 28. 3^o pro tribus B.

2. One place would be placed in another: which is absurd. locaretur, et sic in infinitum procederetur in locacionibus, sicut et in aliis quantitatibus, sed non per se essent quante. Ista ergo situacio est *hoc situari*, et non *habere mundi vel relacio*, cum sit quantitas principians ubicacionem alterius generis, sicut tempus principiat ipsum quando. | Et per consequens nil distans a relico B^{100b} potest esse adequate ubi ipsum relicum est, nec aliquid potest esse alibi quam adequate est, nec aquirere locum vel moveri de loco ad locum sibi adequatum. Et sic non specificaretur motus localis per terminum *ad quem*, vel eius materiam, cum nichil potest moveri de loco ad locum.
3. No two things distant from each other could be in the same place, nor could they move from one place to another.

This comes from saying that situation is lost with the slightest variation of the subject, or that place is a hollow in the surrounding body, or denying that there is any other place but that body; and such opinions contradict the very expressions used in speaking of place.

Men and animals know that a moving body changes its place.

As the movement of the world, so its situation presupposes certain fixed points.

Thus these three (the two poles and the centre) cause the situation of the world.

Answers.
1. Situation belongs primarily to every part of the world out of which nothing can go;

Ista et multa similia dependent super isto, quod omnis situacio vel locus pertinenter signandus corrumpitur ad quamcunque modicam variationem subiecti; et idem sequitur, ponendo locum concavitatem corporis locantis, et longe magis absurda ponendo nullum locum preter corpus locans, quia pari evidencia negaretur quodlibet accidens. Et deficerent verba ad exprimendum magnitudinem, adquisitionem vel immobilitatem loci, cum aliis philosophice de loco locutis. Nam tam homo quam bestia habet innatam sibi potentiam ad cognoscendum mobile mutare locum suum, sicut patet de naturali noticia situs, posicionis, distancie, et oppositionis. Ideo sicut in natura omne motum vel mobile innititur alicui fixo, sic non est possibile nos locum cognoscere, nisi in comparacione ad aliquod fixum. Sicut ergo mundus ad eius motum situalem presupponit polos et centrum quieta, sic presupponit ad eius situacionem eadem, saltem 2^m speciem, quieta. Et sic vere dicit commentator quod centrum mundi est causaliter eius locus; et per idem uterque polus, non quod situs indivisibilis sit formaliter situs mundi, sed quod hii 3^s situs principiant, tam quo ad esse quam quo ad noticiam, situm mundi et cuiuslibet sue partis. Cum ergo mens prius cogitat singulare fixum quam situm, non mirum si a tali individuat locum, et si locatum quantumlibet varietur.

Ad primum argumentum, dicitur quod situs parcialis est primo subiective in communi ad quamcunque partem mundi sic positam, et ab illo communi non potest

4. *mdi* B. 8. *aqr^e* B. 9. *locum deest* B. 13. *dependentes* B.
23. *mol^e mūr' B.*

migrare. Universalia enim sunt alicubi, et generabilia, but it belongs et corruptibilia per accidens, ut patet ex dictis superius. accidentally to every particular Sed per accidens subiectatur in quacunque singulari part.

parte mundi sic posita, licet non dependet a tali.

5 Pro 2º notandum quod aliqua forma individuatur a subiecto proximo: ut ista sessio, ab isto homine sedente; aliqua a subiecto remoto: ut ista caliditas aeris, a materia prima. Ideo manet eadem caliditas in numero, aere converso in igne, licet non eadem individuatur quo ad subiectum proximum. Et 3º individuatur forma a suo principio extrinseco, licet sit communis subiecto: ut, iste situs, qui est ultimum singularis loci, licet sibi possunt accidere quotlibet ubicaciones. Nam ubicacio individuatur a subiecto et a loco, qui non est communis predicatione, sed causacione, ad quotlibet tales situs. Ad 3^m

B 101^a dicitur quod deus non potest facere duos situs coextendi, nec duo puncta, vel sua subiecta esse simul in eodem situ indivisibili. Verumptamen contingit duo corpora esse simul in unum ad omnem punctum alterius cum hoc quod quilibet punctus alterius illorum habeat situm sibi proprium. Ex hoc patet quod non oportet, si ubicunque extenditur A extenditur B, et econtra, quod ipsa coextenduntur, sic quod quilibet punctus unius sit in omni situ formaliter in quo est punctus alterius.

25 Est ergo situs per se quantus et immobilis: per se quantus, quia quantus sine alio formaliter ipsum quantificante, copulatus ad eundem terminum communem ad quem pars corporis; ut docet Aristoteles. Est tamen alterius rationis quam profunditas. Ideo non obest 30 illam coextendi cum profunditate sine compositione aliquius 3ⁱⁱ; nec possit moveri, nisi eadem distanca in numero possit maiorari et minorari. Differo autem a soluzione argumenti quo probatur quod, mundi moto recte versus oriens, moveretur quilibet situs eius, quo- 35 usque probatus fuerit casus assumptus. Sicut ergo res universalis est immobilis, sic et locus.

Unde descriptive locus est *quantitas continua, immobilis, permanens, qua corpus formaliter est locatum*; licet auctor sex principiorum extendat locum ad omnem locationem substancie sive punctalis sive corporee; Aristotle autem, 4º Physicorum, vocat locum *ultimum*

2. Some forms are individuated by their immediate subject, others by a subject that is remote, others by something extrinsic, yet also belonging to the subject; as in this last case.

3. God Himself cannot make two different places to coincide; but two bodies may coexist in a third, and yet have all their points separate.

Site is thus a quantity by itself and motionless: by itself, since nothing else gives it quantity;

and motionless; for the argument proving that if the world were moved in a straight line, its site would be moved, assumes what is impossible. Definition of place. Gilbert de la Porree's definition takes a wider view; but Aristotle implicitly says the same.

12. singularis (!) B.
39. aor B.

30. 9poe B.

31. v' nec in marg. B.

corporis continentis immobile primum; quod intelligitur de aggregato ex superficie concava locantis et respectu ad predicta principia loci. Illud enim immobile, et non ultimum convexum corporis locantis, sed ultimum concavum quod est primum et inmediatum continens. 5

Partial site is founded on universal site.

Site differs from situation

not only in form, but in sense: site causes situation.

However, in the universe, the poles and the centre, site and situation are identical.

Six differences of position: up and down, for length; right and left for breadth: before and behind, for depth.

These are absolutely unchangeable in the world and in perfect animals.

There are also other positions relative to different parts of the world: As anything is more distant from the centre, it is higher, and lower as it is farther from the circumference of the universe. Nothing can be above the circumference, nor below the centre.

Ex ipsis patet quod quelibet pars situs mundi est situs fundatus in communi ad quamcunque partem mundi sic positam. Et per consequens tam quelibet particularis situacio quam universalis situacio mundi partis, est alterius rationis quam situs qui est locus. 10 Et notandum quod propter istam differenciam habendam credo quod hec nomina situs et situacio inventa. Omnis enim situacio partis mundi causatur a situ; quia quotlibet tale *ubi* causatur a loco; quod idem est. In mundo tamen et primo subiecto situs idem est situs, posicio, 15 et situacio.

Et sic sunt sex differencie loci vel posicionis mundi: scilicet, *sursum* et *deorsum*, que sunt termini longitudinis; *dextrum* et *sinistrum*, que sunt termini latitudinis; *ante* et *retro*, que sunt termini profunditatis. In mundo autem et quolibet animali perfecto sunt iste sex differencie quorsumcunque ubicantur absolute fixe. Et in aliis dicuntur comparative. Unde, ymaginato homine cuius caput sit in polo antarctico et pedes in polo arctico, manus dextra in oriente et sinistra in occidente; tunc posicio illius hominis corresponderet positioni mundi.

Sed preter istas posiciones est dare alias posiciones parciū mundi respectu sui centri: ut res est eo superior in mundo quo 2^m se vel aliquid sui est distancior 30 a centro, et eo inferior quo 2^m se vel aliquid sui | est B 101^b distancior a circumferencia mundi Ex quo patet quod non est possibile centrum esse supra aliquid vel inferius quam est, nec circumferenciam mundi esse inferiorem vel infra aliquid, aut superius quam est. Unde false 35 fingunt quidam ponentes deum posse rarefacere mundum in infinitum vel condensare versus centrum, aut mouere ipsum motu recto, nisi forte equivocando intellexerint quod ipse habet potentiam ad hoc, *si posset fieri*; sicut ego possum videre bestiam mortuam, ipsa 40

12. *ftt²* B. 22. *v'ca^v* B. 34. circumferencia B *ib.* inferior B.

21. *Animali perfecto.* Because it is able to *perceive* what is before and what behind, &c.

objeta michi. Res autem multiplicatas non repugnat esse supra se vel sub se; et sic de ceteris differenciis, cum tunc sit res multiplicata localiter, quando complete est per diversa loca, sicut deus est indivisibiliter ad omnem punctum mundi, et anima ad omnem punctum sui subiecti. Proprie autem multiplicatur commune in suis singularibus, cum sit eorum singulum; ut punctus communis multiplicatur per totum mundum; et sic, quantum possibile est aliquid extensive multiplicari. Sed de punto, loco, vel quantitate permanente singulari, non est possibilis talis realis multiplicatio, quamvis substancia singularis corporea bene possit multiplicari: sic quod alicubi sit materialiter et alibi intentionaliter vel sacramentaliter.

15 Ex istis patet quod mundus non simpliciter sed ^{2^m suas partes est suprema res et infima possibilis. Sed videtur michi quod superficies extima mundi sit alcior ipso et extra ipsum ^{2^m situm indivisibilem, nisi pars mundi superficialis subiectet illam, et per idem centrum ^{2^m mundi esset inferius quam aliquod permanens continue magnum. Et sic de cuiuslibet corporis termino. Non enim foret substancia superior vel inferior propter eius accidentis terminans, si ipsum non subiectetur in aliqua eius parte pocius quam propter bonitatem, vel alia ^{2^m eius accidentia, quantumlibet distanca, aut propter talem terminum per se existentem in eodem situ quo infimo non continuatum cum terminato.}}}}

Sed pro aliis ^{4^{or} differenciis notandum quod omne animal absolute habens istas differencias habet ^{3^s lineas dimensionales orthogonaliter se secantes in medio; et sex medietates concomitantes divise per tales tres lineas obiciuntur sex differenciis posicionum, sic quod quilibet extra medium talis animalis inter tales lineas, quantumlibet protractas, est comparative dextrum vel sinistrum, et cetera, huiusmodi animali. Et sic conclusio patet quod stat idem non multiplicatum esse sextupliciter positum quo ad differencias animalis; ut idem est dextrum michi, ante me, et supra me etc.; sicut patet de toto residuo mundi extra me. Nam circulare est maxime}}

As for beings multiplied in space, they can be both above and below themselves; as God, the soul, and universals, v. g. the universal idea of a point. But their individuals cannot be thus really multiplied; though an individual substance can be multiplied sacramentally.

Thus the universe is in one place the highest and in another the lowest possible thing.

I think that the circumference is by one indivisible point higher and beyond the world itself; so also of all surfaces.

Every animal that has these positions has three dimensions that intersect at right angles in the centre of its body, and six corresponding halves, upper, lower, &c. Thus the same thing can have six different positions at the same time relatively to that animal;

24. ^{bō^m B.}

27. quom̄smo B.

34. pictas B.

37. d̄s āl B.

27. *Infimo.* The word might read *in summo*, without the sense of this sentence being cleaver or the reverse. When I copied the MS. I found the word was most like *insivero*.

as for instance, the universe and God.
 proporcionatum esse multipliciter positum respectu animalium, sicut et deus est maxime denominatus taliter respectu diversorum quo aliquid potest esse. Nam si aliquod causatum habuerit dextrum, sinistrum etc.; tunc deus est sibi dexter, sinister etc. 5

To the right may signify either absolutely so, as a line produced to my right hand until the circumference of the world; or simply so; as a thing of which no part is to my left; v. g. one half of the universe; or partly so; as a body that surrounds me. The right half of the universe is partially above, below, before and behind me: while it is simply to my right. There are only two absolute positions of a thing.

Sophists say that a thing cannot be called above me unless it be above in all its parts. According to them, to be above means to be higher than.

But if any part of A is above the whole of B, then A is above B according to that part. Thus a man is not above himself, though his head is above his body.

Ex quibus colligi potest quod tripliciter dicitur ad dextrum; primo modo summe dextrum; sicut est quilibet punctus linee dextralis, et omne quod 2^m se totum est ad talem punctum. Voco autem lineam dextralem que protenditur versus dextrum usque ad finem mundi orthogonaliter correctam super lineam longitudinalem. 2^o modo dicitur ad dextrum simpliciter quod sic est dextrum quod nulla eius pars est non dextra, sicut est medietas mundi et quelibet 2^m se totum in illa respectu mei. Et 3^o modo dicitur dextrum 2^m partem; ut omne 15 corpus circumdans me, et sic de aliis differenciis etc. Ex quibus patet quod stat simpliciter dextrum esse quintupliciter positum respectu animalis; quadrupliciter 2^m partes, et 5^o modo simpliciter. Nam medietas mundi est simpliciter dextra michi, et est supra me, sub me, ante me, et retro me; licet partialiter. Sed solum 2^r dicitur aliquid alteri summe positum; ut idem est michi summe dextrum et summe sinistrum; ut patet de puncto terminante lineam dextralem.

Scio tamen quod multe sunt altercaciones sophistice: 25 ut unus dicit nichil esse supra me, nisi 2^m se totum fuerit supra me; et sic mundus nec est supra me nec subter aliquid; quia sequitur penes eos: A est supra B; ergo, A est superius quam B; quia aliter caput hominis esset supra ipsum; et sic esset corpus supra se, sub se, et ita 30 de aliis differenciis. Pro istis alteracionibus suppono quod omne supra aliud est esse 2^m se vel aliquid sui in situ, qui est situ adequato inferioris superior; et sic homo non est supra se, nec aliqua pars quantitativa rei est supra vel sub suo toto; et sic de ceteris differenciis, 35 ut patet ex diffinitione *quid nominis* supra dicta. Sed non video quomodo posset dari quam alta vel quam profunda foret res, nisi ratione sue partis altissime aut profundissime. Unde res 2^m aliquid sui alcior quam

1. alis = animalis? B. 11. errām B. 16. 2^oys pro differenciis B.
18. alis B. 22. alr' B.

36. *Quid nominis.* A verbal definition, that merely explains what is meant by a given word.

reliqua 2^m aliquid sui dicitur esse supra reliquam, et ipsa superior. Et correspondenter de aliis differenciarum denominacionibus. Sed non oportet, si aliqua pars date significat aliqua parte alterius dande superior, eciam quod exinde sit prima res superior. Sed oportet capere denominaciones huiusmodi 2^m supremum vel ultimum talis denominacionis. Ex quo patet non sequitur, si A sit supra B, quod B sit sub A, ut patet de homine et corde suo; et proporcionaliter de aliis 10 consequenciis.

But if A is above B it does not follow that B is below A.

Sed relinquendo ista sophistis et redeundo ad conclusiones priores, patet quod omne absolute habens istas denominaciones habet sex medietates communicaentes, quarum quelibet continet 4^{or} medietates communicaentes 4^{or} parvum aliis denominacionibus subiectorum; ut illud quod est primo sursum in animali continet medietatem partis dextre, et sic de parte sinistra, de parte anteriori et parte posteriori; et sic de aliis medietatibus. Nam ad omnem punctum sic positum continentur quinque denominaciones; et ad medium punctum exclusive concurrunt sex posiciones predicte. Sed medius punctus sic positi non refertur aliqua istarum 6 denominacionum respectu illius positi, sicut nec centrum respectu mundi. Nam medietas inferior mundi B 102^b est ab equinoctiali usque ad polum articum, et alia medietas incomunicans cum illa est pars superior eius; et medietas mundi a Colubro usque ad polum orientalem est pars dextra mundi, et alia medietas incomunicans est pars sinistra. Medietas vero ab oriente 30 usque ad cenit habentibus speram rectam est pars anterior; et relata est pars posterior.

The upper half of any animal contains

(partially) the right, the left

the fore and the hind halves;

for at every point of its extension we find these five positions, while the centre, being their starting point, has none of them.

The lower half of the universe extends from the equinoctial circle to the arctic pole and the other is the upper half; and so on for the other divisions.

Above and below may indicate mere height and depth, or absolute position in the world.

Inmost and bottommost are identical only,

5. ze' pro eciam B. 13. metes B. 14. metes B. 17. met; B.
19. media^{b9} B. 20. et ad B. 27. coluro B. 33. alij B. 38. fom B.

25. *Equinocciali*. This may be a mistake for the Equator.
27. *Colubro*. The constellation of the Serpent. 30. *Cenit*.
The zenith.

for spheres
whose centre
is that of the
world.

All these positions admit of inequality amongst themselves, and also a maximum of each kind. Every place is equal to the greatest quantity that can be placed in it. Place gives dimension to the thing placed, and receives its dimensions from it; it receives dimension formally from the quantity that exists; and it gives dimension as an efficient cause, though not as an active one; it merely is that by which its subject has dimension.

Position, dimension and shape are almost identical terms as concerns the world, but they differ as regards themselves, and are in each other

in three different ways: as the effect in its cause, as the cause in its effect,

esse infimum et intimum. Nam generaliter centrum rei est eius intimum, quia maxime intra illam. Sed non in eccentrico est centrum maxime infra, quia tunc nichil esset eo inferius. Non ergo est infimum.

Ex ipsis patet quod iste difference posicione sustinent magis et minus, et quod est dare summum vel maximum possibile in tali denominacione: ut summe dextrum, summe sinistrum, etc. Patet eciam quod omnis locus est equalis suo maximo locato et adequato; et per consequens mensurat ultimum gradum magnitudinis locati. Sed hic est dubium quomodo locus quantificat locatum et est in illo, cum idem locatum quantificat locum. Sed dicitur quod multum equivoce dicitur aliquid quantificare aliud, et esse in illo: Aliquid enim quantificat aliud effienter, sicut deus quantificat omne quantum, et corpus continens quantificat suum continentum, sicut et locus. Sed quantitas, que est dimensio, formaliter quantificat subiectum suum et effienter requantificatur ab eodem. Unde situs non est formaliter subjective in aliqua parte mundi, nec formaliter illam quantificans, nec ab illa quantificatus. Sed locus ponitur per accidentem effienter quantificare suum subiectum locatum, sicut est generati principium, quamvis non sit de genere activorum. Aliud enim est facere et aliud agere. Oportet ergo omnem locum corporeum coequare sibi suum locum; et de tanto habet locus rationem forme quod ponit locatum in suis limitibus quo ad quantitatem et figuram.

De loco vero mundi, videtur quod sit valde propinquus sue dimensioni et figure. Differunt tamen ab invicem, cum quelibet pars quantitativa loci mundi differt a parti quantitativa dimensionis vel figure sue. Nec est inconveniens, sed necessarium, quod aliqua reciprocere se quantificant in diversis generibus causandi; et taliter sunt reciproce in seipsis. Unde licet in 5^o phisicorum dicatur aliiquid esse octupliciter in alio, tamen tripliciter 2^m genus unum potest dici in alio. Primo modo, sicut causatum in sua causa; et taliter omnis forma est in suo subiecto tanquam in causa suscipiente denominacionem. 2^o modo omnis causa est in suo causato, et omne subiectum forme est in illa forma:

1 infinitum B. 3. ineccl'co B. 23. qnati B.²

ut homo est in substancialitate active vel passive, et ignis in igneitate, homo in humanitate; et sic de aliis similibus. Et 3º modo dicitur in alio sicut in suo extrinseco continente, ut liquor in vase. Et hec dicta 5 pro presenti de loco sufficient. |

B 103^a Habita noticia de loco, incidit pertinenter tractare de motu locali, cuius materia est locus; et contingenter de aliis. Sed incipiendo a priori, supponatur quod motus in communi sit actus vel forma quo mobile formaliter 10 movetur. Et est duplex, scilicet *subitus* et *successivus*. Successivus, ut *motus localis, alteracio, augmentacio, vel diminucio;* et subitus, ut *generacio vel corruptio* sub- stancie. Et patent descripciones istorum.

Motus autem localis, quo ad eius principium subiec- 15 tivum, dividitur in motum *per se* et motum per acci- dens. Quamvis autem impossibile sit aliquid moveri, nisi moveatur per accidens, tamen ad propositum re- stringitur motus per accidens ad motum localem, sine eius per se existencia vel sufficiencia ad replendum 20 locum: ut forme dilate cum subiectis motis, et que- cunque partes quantitative. Sed per se movetur loca- liter quecumque per se substancia corporea que ex in- clinacione eius intrinseca movetur, ut corpora.

Et hoc dupliciter; vel concomitante violencia ab 25 extrinseco, sicut est in pulsione, traccione, vectione, et vertigine; vel sine violencia, ut est in motu celi et ut creditur in elementis motis ad sua loca naturalia cum iuvamine removentis medium prohibens et influencia celi que generavit elementum et dedit sibi talem appre- 30 titum. Probabile tamen est quod omnis motus localis istorum inferiorum est cum violencia; ut aliquod corpus movetur sine quadam naturali inclinacione.

Sed per se motorum aliquid movetur *per se et ex se*, ut animata que possunt principiari motus suos sine 35 motivo extrinseco simul existente cum illis; et hoc vel sine aliquo motivo extrinseco, ut homines et celum (si sit animatum), vel cum movente obiective extrinseco apprehenso; sicut animalia. Inanimata autem mota or proceeding from an naturaliter per se, cum quieverunt, non habent de se 40 sufficienciam ad inchoandum motum; ut lapis non

or as the contents in that which contains them. From the consideration of place, we pass to that of local movement. Definition of movement in general. It is divided into instantaneous (generation and dissolution) and successive (local movement, variation, increase, and diminution).

Local movement is either substantial (as that of a substance) or accidental (as that of an accident).

Substantial movement is violent or natural

(and all movement here below is probably more or less violent).

Self-proceeding (either self-determined or not)

or proceeding from an extrinsic cause.

1. ho^o B; ib. fa^{te} B. 5. After sufficient a blank space for 4 words B.
19. cxn^a B. 23. cor^u B. 28. influencie B. 38. mōlia B.

surgit post quietem, sicut facit bestia memorans obliiti sempiternaliter immutantis. Semper tamen ab influencia celi vel alio sempiternaliter moventur mutabilia nota; ut patet de motis ad generandum sibi simile in certo tempore anni, vel prosequentibus delectabile aut fugientibus tristabile. Homo autem, cum anima sua non subiacet necessitate motibus astrorum, potest movere se localiter contra inclinacionem extrinseci. Ideo celum et homo perfecte possunt moveri ex se. Et movencium se quedam moventur 2^m se tota, quedam sunt subiecta 10 prima motus, et quedam 2^m partem, ut mota quorum partes quiescant.

Some bodies are moved as wholes, some as subjects of movement, some as parts of wholes.

Nothing can be moved locally, unless it be moved by something else.

It is either a body or an indivisible being; if the first it is either moved from without, or from some part of itself which itself requires to be moved by something else. If the second it is moved against or beside, or according to its nature.

This proves that there is a First Mover of all things, motionless, indivisible, eternal.

The sky moves, and it is finite: both are certain truths. The superior parts of the sky move those below, and not vice versa.

Ex istis divisionibus bene notatis patet quod impossibile est quicquam moveri localiter, nisi ab alio moveratur. Si enim sit corpus quod movetur, tunc vel moveretur ab extrinseco et sic ab alio; vel a parte eius mota, cum impossibile est signare totum mobile motum, nisi pars eius per suum motum faciat totum moveri, eo quod talis pars sufficeret per se denominare totum moveri, et non stat illum parcialem motum subduci, 20 nisi vel totum non moveatur vel alio motu moveatur. Ideo certum est quod motus talis partis | est causa B^{103^b} quare totum movetur, et per consequens totum movetur ab alio. Si autem indivisibile moveatur, vel violente aut per accidens movebitur (et sic ab alio), vel ex naturali 25 inclinacione, et per consequens gracia alicuius finis, et sic ab alio.

Et ex istis, cum paucis addendis, concludi potest quod est dare primum motorem immobilem, indivisibilem, et eternum. Supponendum enim est ex sensu 30 corpora celestia moveri localiter, ut patet de astris. 2^o supponatur [quod] totum aggregatum corporum motorum, sicut et totus mundus sit causatum finitum; quia, si esset infinitum, nichil potest ascendere vel descendere, cum non esset aliqua differencia loci supra- 35 dicta. Omnes enim ille differencie supponunt medium. Istud patet de spera corruptibilium mota a celo, et de parte celi inferiori mota ab eius parte superiori, et non econtra; quia tunc moveretur celum valde difformiter quo ad tempus propter diversitatem motorum, 40 et esset mutua dependencia in eodem genere causandi,

2. spūar̄ ī mūt̄ B. 3. spūar̄ B. 30. ex ^h B. 32. quod deest B.

et per consequens idem prius se ipso. Istis suppositis, patet quod est dare corpus ultimum motum ex 2^a suppositione; et illud movetur ab alio ex conclusione, sed non a corpore inferiori ex proxima suppositione; ergo 5 a motore eque primo vel priori dato mobili. Et illum oportet esse primum motum, sicut suum mobile est primum mobile.

There must, therefore, be a first mobile; and this first mobile is moved by another.

Hic potest fangi quod primus motor est forma extensa primi mobilis; vel 2^o quod spera superior movet 10 inferiorem, et econtra propter concathenacionem eorum 2^m concentricitatem vel excentricitatem; vel 3^o quod eiusdem orbis quelibet pars moveat aliam, sicut est de trocho circumducto, qui eternaliter moveretur, si non impeditur a corruptente, nec ab extrinseco collidente 15 nec ab appetitu quem forma habet ad quiescendum. Cum ergo ista non possunt fangi in celo, videtur quod ad perpetuitatem motus celi non oportet ponere intelligentiam moventem, et per consequens non alium deum a corpore celesti.

It may be said that the First Mover is the form of the first mobile coëxtended with it, or that the inferior bodies react upon the superiors, or that one part of the world turns another like a top that would move for ever, were it not for friction.

So God is not necessary.
Answer.

All these subterfuges are met by the fact that the sky moves regularly and yet not with a uniform movement; for which they cannot account. The first cause cannot be extended; it would depend on each of its parts, and be caused by them.

Matter cannot direct itself to its own end; there is therefore one who directs it, and who is not matter, nor form, nor having quantity.

20 Omnia ista tolluntur per hoc quod celum regulariter diffimeriter movetur, ac si esset unum proporcionaliter motum; quod nulla trium viarum potest solvere. Nec est philosophicum ponere talem violenciam in celo. Sed 3^o tollentur dicte ficticie per [dicta] alibi. Probatur 25 quod oportet totum genus cause materialis esse propter causam formalem, et totum genus cause formalis esse propter compositum quod est per se efficiens; et totum genus talium oportet esse propter causam finalem; et sic primam causam oportet esse causam finalem et non 30 corpoream, quia tunc dependeret a partibus et haberet causam ipsa priorem. Omne ergo corpus habet finem ipsum limitantem, gracia cuius est sic activum, cum non potest esse tam ordinatus motus nisi ab ordinante preter corporeo, quem oportet perfeccius cognoscere 35 suum ordinatum quam homo suum ordinatum, sicut operacio nature est perfeccior operacione artis. Corpus ergo primum, cum non 2^m se totum ordinat, habet aliquid in eo quod ordinat alia, quod non potest poni corporeum propter eius operationem et perfeccionem. 40 Est enim perfeccius primo corpore, cum sit finis ordinans ipsum et omnia alia ordinata; et per consequens

Immovable and nec est eius materia, nec forma, nec pars quantitativa.
 cause of
 eternal truths, Est ergo indivisible. Et cum non possit moveri ab B^{104*}
 God is also
 eternal. alio, patet quod sit immobile, et cum sit prima causa
 et necessario sint veritates eterne, patet [quod] est
 eternum, sive mundus incepit esse, sive non. ⁵

Aristotle's view
 on this subject
 is distasteful
 because of his
 strange
 terminology
 and vague
 hypotheses.

The
 philosopher can
 have no doubt
 whatever as to
 the necessity of
 admitting one
 First cause of
 all.

Movement is
 either simple
 or compound;
 simple when it
 is one natural
 movement of
 any physical
 thing;
 compound,
 when it
 proceeds from
 a vital
 principle:
 as walking, &c.

Simple
 movement is
 straight or
 circular.
 The latter alone
 is believed to
 be perpetual,
 and is the most
 perfect
 movement that
 is possible to
 matter.

To circular
 movement there
 is no contrary;
 it can coexist
 with upward or
 downward
 movement,

Sermo autem Aristotelis in ista materia est multum insipidus propter extraneitatem terminorum et suppositiones multas incognitas. Certissimum tamen est philosopho quod, extra totum mundum et totam multitudinem causatorum, oportet dare causam illius tocius ¹⁰ multitudinis, quia aliter esset causatum sine proportionali causa. Nec possunt esse multe tales cause finales illius multitudinis eque primo causantes, quia tunc multiplicarentur gracia speciei prioris et causantis eadem, sicut patet ponentibus universalia. ¹⁵

Secundo autem dividitur motus localis in comparatione ad eius puncta et materiam in ipso aquiribilem; ut aliis est motus *simplex*, et aliis est motus *compositus*. Simplex autem in proposito vocatur motus naturalis, homogenius, corporis naturalis; et motus compositus ²⁰ est motus competens animato a forma superaddita; ut progressio, repacio et volatus competit animali. Et istos motus comitantur multi motus diversarum specierum et multe quietes. Ideo totum aggregatum vocatur motus compositus. ²⁵

Motus autem simplex quidam est rectus, ut ascensus et descensus, ^{2m} divisionem gravium et levium; et quidam circularis, ut motus corporis. Neuti perpetui: solum enim talis motus creditur esse perpetuus. Ideo principalissime competit corpori circumferri perpetuo, ³⁰ propter proporcionalem perfeccionem. Quod si aliqua pars orbis celestis ascenderit vel descenderit, hoc erit ^{2m} proporcionem circuli, et propter inclinacionem alterius cui inexsistit, et non propter situm aliciore vel bassiore in quo appetit quiescere, sicut gravia et levia. ³⁵

Unde, ^{2m} philosophos, motus circularis non habet motum sibi contrarium, quia motus circularis potest per totum inesse corpori moto per totum ascensum vel descensum. Ideo non contrariatur illis, cum eidem

4. quod deest B. 17. pu^a B; ib. aq'ri^{le}m B. 20. ^{104*} after corporis B.

30. pu' me B. 32. cor^{is}; orb above B.

subiecto primo possunt isti simul inesse. Et ^{2^m} astrenomos, motus circularis ab oriente in occidens compatitur secum per totum subiectum sic motum, alium circularem motum ab occidente in oriens; et multo ^{and circular movement from east to west and from west to east may also coexist.}
 5 magis alios motus circulares super diversos poles. As-
 census autem et descensus contrarii sunt; quia sunt due species motus quas impossibile est idem singulariter per se motum simul et semel subiectare primo. Nam stat multipliciter simul tempore ascendere et descendere, ^{But ascent and descent are contrary.}
 10 sicut et corpus non multipliciter ^{2^m} partes, sed non simul per totum. Unde, ^{2^m} philosophos, non solum ^{2^m} terminos contrarios sed penes intencionem finis penes motum medii et motus quibus adquiruntur illi termini, attenditur, motuum contrarietas. Nec sequitur ex istis ^{Not that the same body cannot ascend and descend at the same time; but the same body as a whole, cannot.}
 15 tunc motum circularem esse perpetuum, sed pocius probabiliter infert oppositum, cum motus celi non sit solum propter finem habitum placendum, sed propter finem habendum, ut perfectionem universi in produc-
 20 cionibus animarum; et cum hoc non possit procedere in infinitum, philosophis est ponere quod aliquando cessabit motus celi. ^{Yet though without a contrary, circular movement is probably not eternal; it is for an end, and that end attained, it will cease.}

Sed pro specificacione motuum sunt 3^a notanda. Primo quod aliquis est *per se* terminus ad quem motus, et alias non *per se*. Per se terminus motus est denominacio ^{Three points must be noticed here.}
 25 accidentalis quam oportet mobile ut sic motum ad B 104^b quirere | et in fine motus habere ut ubicacio localiter moti. Terminus autem ad quem, sed *non per se* terminus motus, est quecunque forma que in fine primo ^{1st That the terminus of any movement is so either by itself or not; i. e. terminus to attain which the movement is made; or one which is attained, but which was not the principle of the movement.}
 30 adquirere tanquam principium sui motus, sive insit extrinsece et non formaliter ut locus, sive intrinsece et formaliter: ut sanguis post laborem; et quodlibet contingit esse tales terminos accidentales motui. 2^o no-
 35 tandum quod de motu, sicut de aliis naturis, contingit aliquas esse *per se* species, et alias species *per accidens*; que quidem species sunt capte ab accidentibus separabilibus ac inseparabilibus; ut multe sunt species religiosorum et tamen omnes sunt eiusdem speciei substancialis. 3^o, videtur michi quod species motus naturalis vel ^{2nd There may be essential and accidental species of movement, according as they are distinguished by something essential or accidental.}
 40 essencialis maxime attenditur penes materiam motus; et per consequens penes *per se* terminum *ad quem*, cum ^{What principally specifies a movement is its proper and essential terminus.}

10. milti^u B.

20. phic B; ib. alη B.

32. fuis B.

Movements
may thus be
essentially of
the same
species, while
they differ
accidentally.

omnis talis sit eiusdem rationis cum materia primo adquisita. Ex quo patet quod adquisicio materie, ascendendo vel descendendo, circulariter vel recte, naturaliter vel violente, licet principient motus disparium specierum per accidens, non tamen species naturales. Et patet 5 quomodo contingit motus esse eiusdem speciei naturalis et disparium specierum per accidens; et contingit motus convenire ac differre 2^m plus vel minus de talibus speciebus.

Objections.

1. The same sphere cannot move eastward and westward in its entirety; for while v. g. the part above the horizon turns eastward, the part below must turn westward.
For different horizons, every part of the sky is rising or setting; so it matters not whether we say it moves to the east or the west;
and thus any point is east and west at the same time.
And thus the East moves towards the West; which is inadmissible.

3rd It is confusing to say that anything moves towards a point of the compass, since the whole sky, except 4 points is at once east, west, a north and south.
For instance, every point in the sky, except the antarctic pole, is more or less to the north.

Sed obicitur, probando quod non sit possibile eam- 10 dem speram moveri per totum ab oriente in occidens, et econtra. Iam primo videtur, data possibilitate quod omnis orbis celestis movetur; quia si pars supra orizontem movetur ab occidente in oriens, sequens est quod pars sub orizonte movetur econtra ab oriente in occidens: 15 et econtra. Ergo totus orbis eque movetur 2^m partes versus oriens sicut versus occidens; et econtra.

2^o. Sicut qualibet pars orbis celestis oritur et occidit continue respectu diversorum orizonium: ergo non refert ponere ipsum moveri versus orientem aut 20 versus occidentem. Ymmo quilibet punctus est tantum per instans oriens vel occidens; et cum nullus punctus attinget alium, sequitur quod oriens non movetur versus occidens, quamvis oriens insinicies erit occidens. Quilibet ergo punctus in equinociali, si movebitur versus 25 alium, continue movebitur versus quemlibet alium; et sic continue movebitur versus occidens, versus meridiem, et quemlibet punctum equinoccialem cuiuscunque differentie. Et illud sequitur ponendo istas differentias fixas.

3^o. Quilibet punctus in celo preter 4^{or} est orientalis, 30 occidentalis, borealis et australis: ergo, non est nisi confusio dicere quod mobile movetur versus talem differentiam, cum non sit talis diferencia fixa. Maior probatur per hoc quod in relativis tenet consequentia preter polum antarticum est in comparacione ad ipsum borealis; ergo quilibet punctus preter ipsum est borealis. Et sic de 3^{bus} aliis punctis inicantibus 3^s alias plagas. Non ergo opponuntur terra borealis et australis, sed 35 pocius relative convertibilia [sunt].

40

4. pu'ent B. 28—29 coḡ drie B. 35. 9^o B. 36. ergo
vro est B. 40. sunt deest B.

4^o plus accedendo ad mentes loquencium, videtur quod nulla spera inferior movetur versus oriens, quia est impossibile moveri aliquid continue versus terminum fixum et reccidere continue ab eodem. Sic enim contingere muscam ascendere repente ab uno extremo lancee in aliud per hora, illa lancea 2^m se tota descendente per eandem horam velocius in qualibet proporcione signabili; et sic motus ascensus et motus descensus contrarii inessent eidem subiecto primo.

10 5^{to}, sic. Si planeta motu proprio precise tam velociter moveretur, sicut rapitur per orbem superiorem, tunc non moveretur; ergo multo magis nunc non moveretur. Antecedens patet, quia tunc continue foret in eodem loco; ergo non moveretur localiter. Si enim mobile moveatur propter nisum suum, non adquisita materia motus, tunc omnis lapis vel grave mixtum continue moveretur versus inferius. Sed quid incredibilius de columpnis et aliis quiescentibus quam quod descendant continue?

15 6^{to} sic: si motus remissior impedit aliqualiter reliquum, motus intensor plus impediret, et motus equalis simpliciter impediret. Sed motus orbis planetarum impedit motum raptus, cum longe velocior foret, illo subducto, quam est modo. Ergo motus simpliciter pares simpliciter se impedirent. Ergo multo magis motus raptus, adeo velocior motu proprio inferioris orbis, simpliciter impedit illum. Quilibet enim planeta tanto cicius describeret circulum suum circa terram quam modo facit, quantum est talis ortus porcionis circuli quem describit 20 in die motu proprio sui deferentis: ut sol in anno solarium frequencius quam modo circumrotaretur per unum diem. Et alii planete per plus vel minus 2^m proportionem velocitatis sui deferentis. Et hoc videtur mirabile multum, quod mobile multum velociter movetur versus terminum fixum, et tamen, subducto illo motu, et quo- 25 cunque supplente vicem eius, cicius veniente ad terminum suum quam modo faciet: ut sol in occidente existens cicius veniret ad terminum suum quam modo faciet; ut sol in occidente existens cicius veniret ad orientem subducto proprio motu, cum per motum raptus

Nothing moving towards a fixed point moves away from it; thus none of the inferior spheres moves eastward. Otherwise if a fly crawled up a lance that descended at the same time the same being would have two contrary movements.

5th. A planet does not move so fast as its sphere does in a contrary sense; but if it did, it would then not move at all.

There can be no movement without change of place.

6th. A slower movement of one part hinders the rest; a movement equally fast in a contrary sense would stop it. But then the movement of the planetary sphere, being far swifter, must destroy it entirely. If so, the sun ought to revolve round the earth one day oftener than it does; so of the other planet's, if their movement is destroyed. Which seems astounding.

15. adq^{ta} B. 16. l^p B. 29. ts B. 30. d^{fint} B. 33. d^{fint} B.
34. multum in marg. B.

Thus the sphere has no power of hindering any planet from actually moving.

To say that local movement is merely change of site on the superior sphere, not real change of place, is false.

General answer.
Logically speaking, this cannot be called movement.

But it is equivalent, as regards astronomy; there is a tendency in each planet pass on to a different sign; it matters little whether this be called movement or no.

If we extend the meaning of movement, we shall include actual change of place, tendency, change of position on a surface, delay, &c.

1. The conclusion of this argument is probable; every part of the celestial sphere moves towards all the points of the compass.

quam modo faciet. Non ergo habet illud rationem motus quod impedit eius subiectum adquirere eius materiam. Nec valet dicere quod descripcio concavitatis orbis superioris et non adquisicio situs sit motus localis orbis planete; quia talis descripcio non est motus, sed accidente taliter concomitant motum; ut, si quis applicaret cultellum quiescentem ad lapidem molarem circumductum, quo usque tota superficies extima lapidis sit descripta, talis descripcio non est motus. Ergo per idem nec retrogradacio orbis inferioris nec descripcio sue concavitatis.¹⁰

Pro isto videtur michi quod logice negandum est tales motus esse. Equivalent tamen quo ad conclusiones astronomi et finem quem intendit de uno loco et operatione astri in ista inferiora; sive ponatur talis nisus esse motus, sive non; quia verisimile est quod quilibet orbis¹⁵ planete habet nisum ut sit sub orbe signorum continue dispariter suppositus, saltem^{2m} | planetam suum; ex B 105^b quo nisu defeccio supponitur, modo quo convenit celesti horologio. Aliter enim planete non possent diversimode esse in signis diversis celestibus, sicut experti sunt esse.²⁰ Unde, sic ampliando motum, contingit idem corpus habere quotlibet motus distinctos specifice; ut luna dicitur habere quinque motus, preter duos motus communes omnibus planetis, et quotlibet alios motus contingit ymaginari lunam habere in ymaginacione per diversos orbes motos super diversos polos. Istud tamen non haberet colorem, si omnis motus sit mobile. Tunc enim videndo mobile moveri, non videretur nisi precise illud quod videbatur, mobili quiescente: quod contradicit cuicunque sano iudicio. Extendendo ergo nomen³⁰ motus equivoce ad motum proprie dictum, ad materiam motus, et ad quemcunque modum habendi corporis propter quem ipsum aliter movetur, ut sunt nisus, descripciones, tardaciones, vel quomodocunque aliter vocentur: responderet ad argumenta.³⁵

Ad primum dicitur quod conclusio est probabilis, cum qualibet pars latitudinalis spere celestis mote sequitur ad aliam, et movetur versus oriens, occidens, et versus meridiem: et sic de infinitibus sitibus. Verumptamen, ymaginato quod est dare situs fixos, sive per totum mundum, sive in ultima spera, ut maior pars sapientum

^{15.} quia pro quod B. ^{20.} th^o^a B. ^{25.} in ymaginacione *in marg.* B.
^{27.} cai^e, or cai^r B.

concesserat, et patet sequi ex dictis quomodo de loco vel situ est facile respondere. Nam celum 2^m emspirium supra orizontem nostrum movetur ab oriente in occidens et 2^m emisperium sub orizonte nostro movetur ab occidente 5 in oriens e converso: et sicut idem ascendit et descendit 2^m partes, sic in proposito de motu ab oriente in occidens; et econtra. Sed notandum quod *oriens* quandoque sumitur pro illo situ immobili in quo dextra pars celi creata est, et quandoque participialiter pro quo- 10 cunque quod respectu illius oritur; et sic *occidens* nunc sumitur pro situ immobili in quo sinistra pars mundi creata est, et quandoque participialiter, pro quocunque quod occidit. Et ista equivocatione plurimum laboratur.

Nam notum est ymaginanti polos mundi et axem super 15 quem rotatur, quod alium modum movendi habet quelibet pars orbis mota super orizontem nostrum, quam haberet movendo super eadem principia e converso; quia quelibet talis pars oriretur nobis in situ quem vocamus occidens, et paulatim moveretur versus meridiem, quo- 20 usque advenerit ad situm quem vocamus *oriens* fixum.

Et proporcionaliter de partibus orbis motis sub orizonte. Ideo philosophi, specificantes modum movendi celi 2^m partes sensui suo notas, ut sunt partes supra orizontem nostrum, vere dicunt quod celum movetur ab oriente 25 in occidens, et antipodes nostri vere dicerent quod celum movetur econtra a situ quem nos vocamus occidens ad situm quem nos vocamus *oriens*; sed situs qui est nobis occidens diceretur illis *oriens*: et sic de situ orientali. Ideo utrobique movetur celum versus occidens respectivum.

B 106* Unde non obest illud quod ultimo concluditur. Aliter tamen locuntur illi qui ponunt tales situs fixos, et onerosius ac brigosius illis qui negant tales situs.

Ad 2^m dicitur quod argumentum est verum, cum quelibet pars celestis corporee magna oritur et 35 occidit 2^m partes respectu diversorum. Et sic est tam *oriens* quam *occidens* (intelligendo participialiter); et sic quilibet punctus *oriens* continue erit *oriens* vel *occidens*, quia continue novo ortu et occasu instantaneo respectu diversorum orizoncium. Et sic ortus successivus 40 componetur ex instantaneis. Nec sequitur ex argumento

But let us assume that there are certain directions that do not change. It is true that our part of the sky turns towards the West, and the other towards the East. But *Orient* may mean either *east* or *rising*; *Occident*, either *west* or *setting*.

If the world turned round the other way, every one of its parts would rise and set differently.

We say that the sky turns towards the west; the Antipodes would say the contrary; but what we call the West is the East to them. Thus in both cases the earth moves respectively towards the West.

2. It is true that every part of the sky is rising and setting for different horizons; but here Orient and Occident have the sense of participles.

9. *ptici*^r B. 14. *notū*³ B.; *ib.* *ymagi*⁴ B. 17. *p'nā* B.

We have already postulated that whatever is above our horizon moves westward. And I admit a fixed Eastern and a Western sphere, in each of which the stars have peculiar efficacy. Aries will thus be always in the East, and Libra in the West. Thus every sign in the Zodiac moves towards every other, but never to meet; for they do not move in a contrary direction, as two bodies moving on one straight line towards each other.

It is on account of this movement that we must admit fixed directions.

3. The consequence is false we admit fixed directions; ¹⁰ say they are impossible, but grant something equivalent, is absurd.

Thus almost the whole sky belongs to all the four points of the compass at once.

4. The very same motion may approach

consesso conclusio deducta; quia, ut dictum est, intelligitur quod pars celi supra orizontem nostrum moveretur versus occidens; quod est verum. Unde credo quod est dare oriens et occidens immobile, in quorum primo astra habent ampliorem efficaciam, tanquam partes ⁵ dextere, et in ²° habent efficaciam quasi partes sinistre: sicut et signa et astra appropriata illis partibus. Unde Aries, quorsumcunque volvatur, est in dextera parte celi, et Libra in parte sinistra. Et sic conceditur quod quilibet punctus in equinociali movetur continue versus ¹⁰ quemlibet alium. Nec frustra, etsi nunquam attingat illum; quia non hoc intenditur. Sicut ergo unus insequens alium movetur versus eum, sed non contra eum, sic est de punctis equinocialis, qui moventur ut ponitur. Nec sequitur, si quilibet illorum punctorum ¹⁵ movetur reciproce versus quemcunque relicum, quod moventur contra se; quia solum mota motibus contrariis versus eundem situm moventur contra se: ut A et B, mota super eamdem lineam rectam versus C situm, vel super lineas rectas angulariter concurrentes ad C ²⁰ situm. Tales enim motus sunt incomplete contrarii. Nec video quomodo aliud insequens reliquum et nunquam sibi appropinquans movetur versus ipsum, nisi sit dare situs fixos, locantes mota quibus sit sic appropinquacio. Non tamen dicitur quod idem C movetur versus C vel ²⁵ situm in quo est, quamvis inmediate ante hoc movebatur versus illum situm, et inmediate post hoc sic movebitur: quia nichil movetur versus aliud localiter, nisi a quo distat. Unde probabile est dicere quod aliquid movetur versus aliud per lineam obliquam, attamen recedit ab ³⁰ eodem dum per tempus fiet continue distancius etc.

Ad ³m dicitur quod consequencia non valet. Unde concedo tales esse differencias fixas. Nec dubium quin negantes tales esse differencias, sed [admittentes] quod equivalet ac si tales essent, intricabunt seipso, cum ³⁵ nichil potest equivalere impossibili. Et sic conceditur quod quilibet punctus in celo, preter aliquem ⁴or nominatorum est australis, borealis, orientalis, et occidentalis; ut tangitur in arguento.

Ad ⁴m negatur argumentum; quia non solum per ⁴⁰ diversos motus, sed per eundem, contingit aliquid movere

i. ded^{ta} B. 34. admittentes deest.

versus terminum fixum et recedere ab eodem, ut dictum est proximo. Nec video quin, extendendo nomen motus (ut dictum est), concederetur quod musca moveretur contra lanceam; non tamen ascendit. Ideo illi motus sunt compostibilis, et non contrarii; sicut sunt ascensus, et descensus. Ascensus enim dicit adquisitionem superioritatis, et descensus adquisitionem inferioritatis, que repugnat simul inesse eidem subiecto primo et per se. Nota tamen quod motum recipiois consequuntur multi motus, et multe quietes organorum. Ideo motus contra navem eque velociter contrarie motam non [est] continua precise in eodem situ. Unde differt motus musce contra lanceam a motu orbis inferioris contra superiorem in hoc quod alter primorum est violentus, sed neuter ²orum motuum est violentus. Ymmo uterque illorum motuum est per totum subiectum suum eiusdem rationis, et sic non est de motu animalis repentis vel quomodolibet moventis se contra suum deferens; quia partes eiusdem diversimode movebantur. Unde, ad cognoscendum generaliter motus contrarios, satis est quod sicut motus eiusdem generis propinqui, quorum species possunt successive inesse eidem subiecto primo et per se; sed repugnat quod simul sic insint. De motibus autem individuis non est cura. Unde, ²m Aristotelem, illi motus causantur penes terminos ad quos vel terminos versus quod contrarios. Quamvis enim Sor motus versus borream, et Plato, sibi obvians, movendo contrarie versus austrum, moveantur ad eundem terminum, moventur sibi sub differencias fixas contrarias. Ideo dicuntur motus contrarii; sicut Aristoteles vocat ventos contrarios qui moventur differenter super eandem dyametrum ad differencias oppositas. Nec obest quantumcunque locum distantem a reliquo esse sibi contrarium, quamvis sit quantitas; quia generalis racio formarum est quod sint eiusdem generis propinqui qui non possunt simul et semel, sed successive, adquiri eidem subiecto primo. Et sic omnia privative opposita vocat Aristoteles contraria, quia sunt forme eiusdem generis, una per se et alia per reductionem, qui mutuo se expellunt; et sic contrariantur quecunque loca distanca. Aliquando autem restringitur contrarietas formarum ad rationem contrarie

9. r'pcōis B. 11. nō or aō B; ib. est deest B. 31. duce' = du-
pliciter? pro differenter B.

to and recede from a goal at the same time.

And, in the case put, the fly does not indeed ascend the lance, since that means increase of distance from the centre; but it may be said to move against it.

The movement of crawling is made up of many motions and rests.

The movement of the fly is violent, i. e. against gravity; that of the inferior sphere is not so.

Again the movement of both spheres is of like nature; that of the fly and lance is not so.

Contrary movements are such as cannot coexist in the same subject.

They take place where their termini are contrary to each other.

Every place distant from another place is contrary, in so far as the same body cannot be in both at the same time.

They are privative forms, which mutually exclude one another.

activitatis. Et talis non inest quantitatibus, cum non sint de genere activorum. Loca autem, quamvis non denominent formaliter corpora individua locari, sed communia, tamen denominant efficienter corpora individua locari, causando ubicaciones formaliter denominantes.

Multiplicatum ergo potest simul esse in locis contrariis, sicut et corporeum non multiplicatum 2^m partes. Sed nichil potest simul et semel per se et primo esse in locis contrariis. Et ex istis patet quod sagitta mota recte et vertigine movetur 2^{ci} motu in specie simul, quia motus rectus contrariatur ei qui est econtra ad differentiam oppositam, et non illa circumduccio, sicut patet ex descripcione motuum contrariorum superius posita.

5. The argument is not good. Because there is no movement, i. e. change of place, it does not follow that there is no movement, i. e. tendency to move, whether there is or is not change of place.

This sort of movement has not the same signification as 'ascent'; perhaps none have the same; and there are rests of as many sorts as there are movements.

Rest does not imply no movement at all, but it denies one sort of movement at a certain time; if the earth were simply to descend, it would rest from all other movements. If any body moves, it resists, but not vice versa.

Ad 5^m negatur argumentum. Nec sequitur mobile non moveri localiter, etsi maneat continue in eodem situ; quia preter motum localem quem consequitur adquisicio et deperdicio situs, est dare alium qui est limitacio passiva ad intendum versus aliam differentiam, sive mobile quiescat localiter, sive non; et tali motu 20 movetur lapis et quodlibet grave violentatum a situ quem appetit continue versus deorsum. Nec est talis motus univoce velox cum motibus ponentibus mobile appropinquare fixo, sicut sunt ascensus et descensus; sicut forte non sunt univoce motus cum illis. Et cum 25 tot modis dicitur unum oppositorum quot modis et reliquum, patet quod est dare quietes tot modis dictas istis motibus oppositas | Unde, sicut stat idem alterari B 107^a et quiescere localiter et econtra, sic stat idem per totum moveri localiter et quiescere localiter multis motibus 30 et multis quietibus, sed non oppositis.

Unde falsum est quod *quiescere* includit negacionem omnis motus a quiescente, cum sufficit ad quietem mobilis quod ipsum natum sit moveri tali specie motus pro tempore pro quo non movetur illa specie: ut, si 35 terra naturaliter pure descendit in vacuo vel medio quocunque quantumlibet velociter, tunc ipsa perfecte quiescit a motu circulari vel motu violento contrario. Et sic, si corpus movetur, tunc quiescit, et non proprie

6. multi^ū B.

17. q, B.

23. v^{te} B.

25. v^{te} B.

39. Tunc quiescit. Because it has not all possible movements.

e converso, cum deus potest servare semper corpus a motu proprio, sicut potest movere celum motu despari, et facere ipsum per totum quiescere. Ex quo patet quod quies est naturaliter prior motu tali, cum sit eius perfectione, gracia cuius habendi est actus ille incompletus, quo usque veniatur ad motum perfectum. Nec oportet credere opinioni vulgari, neganti tales motus; quia vulgus non concipit motum et quietem nisi localem, propter famositatem. Unde laicus negaret tale alteratum vel augmentatum, et quietem localiter moveri; nec percipit quod alteracio et alteracio sunt species motus Sentencia ergo vulgi est vera, cum sit naturaliter innatum illis sic cognoscere; sed aliter ampliant philosophi terminos motus quam plebei. Nec omnes philosophi extendunt nomen motus ad tantum ut iam extenditur, sed solum illi qui innituntur salvare motus proprios planetarum.

Unde Alpetragius, negans tales motus, putando salvare omnes experientias per unum motum ab oriente in occidens, sed quod orbis inferiores tardantur, racione cuius retardacionis fiunt coniunctiones et oppositiones, incidit in hoc inconveniens quod omnes planete describerent orbis parallelos polis mundi; et sic planete non moverentur in circulo obliquo, causando estatem et hyemem, eclipses et generaciones tali modo quo experientia docet fieri ab illis; quia motu primi mobilis, quantum in se est, non recipetur ^{2^m circulum non parallelum polis mundi, sed motus partis orbis super polos declinantes a polo mundi, facit illam partem declinare ab austro in boream, et econtra. Ut, ymaginato quod sol nunc sit sub equinocciali, et solum moveatur raptu primi mobilis, non est racio assignanda quo unquam declinabit ab equinocciali; sed quandoque foret sol extra quodlibet 12 signorum; ut per tempus totum quo exierit a Libra quo usque redeat ad Libram.}

Et hoc certum est recte ymagnanti.

We must
neither admit

nor deny as
false the
common
opinion, that
admits only
change of place
to be
movement;
the learned and
the unlearned
use the word
in a different
sense.

There is an
opinion that
denies that the
planets have
any movement
of their own,
but are merely
slower than the
superior sphere.
But this will
not hold;

for then the
planets would
describe orbits
parallel with
the equator, not
oblique, as they
do.

For instance,
the sun, being
in Libra, would
leave the
ecliptic and not
return to it
until the next
year at the
same time.

18. alpetg⁹ B. 35. p^{tem} pro per tempus totum B.

18. I can find no name at all answering to Alpetragius. There is, however, a certain *Albricus*, who died in 1220, according to Franklin's Dictionary. — Some words are probably wanting in this sentence; but as the sense is clear enough, it may be merely an ellipse.

We should, therefore, call movement every change produced in one body by another, which makes it in any way to differ from what it was.
Thus it is said that 'intelligences' are moved by God to give motion to their spheres.

So are all creatures moved by God, in every change that they undergo.

In this sense it is said that every motor is moved by the mobile it touches; i. e. friction changes it, diminishing its power.

Yet there is no necessity for the agent to acquire any new quality; it is enough that it is determined by its object to produce or reintegrate an act.

There is a movement in the mind that elicits its acts, but they are not on that account qualities.

The movement – either of generation or of reintegration

Melius ergo est extendere nomen motus ad omnem limitacionem passivam ab alio; ratione cuius limitacionis dispariter se habet quo ad situm, qualitative vel quantitative. Et isto modo dicunt philosophi intelligentias moveri a Deo, tanquam amato et desiderato, ad movendum active suos orbes: quod si non facerent, cum veris paribus que iam ponuntur, dependerent de bonitate accidentalis, displicendo Deo. Et breviter omnis creatura movetur sic a Deo, saltem per tempus, inveterascendo, perficiendo in bonitate accidentalis, vel deficiendo; et tali motu dicunt philosophi omne movens phisicum communicans in materia cum suo motu quod tangit in movendo, moveri; quia non dubium quin omne tale | continue debilitatur in agendo, et sic B^{107b} continue deperdit qualitatem. Non tamen oportet quod intelligencia, ut sic, adquirat continue successive qualitatem. Nec oportet quod calidum calefaciendo frigefiat 2^m aliquam eius partem; nec oportet motum ab obiecto adquirere continue successive aliam qualitatem; sed sufficit quod limitetur ab illo ad accidentem alteri eliciendum actum vel servandum, ratione cuius est melius vel peius, vel alteri denominatum quo ad acquirendum 3^m gradum materie motus quam foret subducto limitante ad taliter apprehendendum.

Unde vane ponunt aliqui actus anime esse qualitates, propter hoc quod ad illas est motus. Ad illos enim non est motus tanquam ad per se terminos, quamvis necessario omne elicivum actus sit mobile, sicut nec est motus ad *movere* intellective; nec moverentur talia proprie, sed extensive, loquendo de motu. Quod patet ex hoc quod cognitivum movetur continue ab obiecto, dum non continue noviter recipit speciem vel actum ab eo. Ideo motus quo movetur est permanens, et non consistit in successione, quamvis, pro illo instanti quo intendit elicere actum, vel generabit speciem vel servabit speciem aut habitum prius receptum. Ideo tunc incepit tam motus instantaneus quam permanens. Unde,

7. v^{is} B.

32. moverit *in marg.* B.

guat^u B.

35. epit *in marg.* B; ib.

35. *Servabit.* I have used the word *reintegrate*, because Wyclif seems to allude to an idea that, by a given act, is not generated but merely recalled, or as the moderns would say, reintegrated, though the sense is perhaps somewhat different.

cum non sit possibile talem actum elicitor esse nisi vel generetur vel servetur qualitas illo actu, non mirum si auctores dicunt omne elicitorum actus esse mobile (subaudi motu communiter dicto, et non motu proprius dicto).

— exists only at the instant when the act is elicited.

Et si queratur de velocitate talium motuum, dicitur quod aliqui sunt non veloces cum sunt permanentes, et alii successivi sunt veloces; quod mensuratur communiter penes lineas vel materias quas adquirunt sua mobilia. ^{2m} illos motus, si moverentur, illis non impeditis. Sed videtur michi quod pari evidencia omne mobile violentatum continue existendo in eodem situ multum velociter moveretur et breviter; quod omne mobile eque velociter moveretur sicut posset moveri in ¹⁵ vacuo vel in pleno, cum omnibus aliis sequentibus existis. Nam si A motum contra B in ^{2plo} tardius ipso B, intendatur motum suum quoque moveatur in ^{2plo} velocius ipso B uniformiter moto, pro instanti medio movebitur eque velociter cum B; et tunc, continuando ²⁰ illum gradum motus, non mutaret situm suum. Cum ergo omne mobile naturale impeditur ne tam velociter moveat se sicut potest, videtur quod sic velociter moveatur cum impedimentum non impedit a velocitate motus, ut dicit responsio. Ideo videtur michi probabile quod ²⁵ tales motus locales versus aliquos terminos fixos per quos non acceditur appropinquando illis, non sunt veloces, quamvis per accidens taliter sint spacia illis descripta.

It may be asked: What is the rapidity of movement, taken in this sense? Some have no swiftness, others have; and this swiftness is measured by the space they would pass through, if not hindered. A body that is kept in the same place against its natural tendency is thus in movement, for it would move faster were there no impediment.

Ad ^{6m} dicitur quod stat motus impedire se mutuo ³⁰ quo ad effectus extrinsecos, causatos a motibus, sed non quo ad velocitatem vel tarditatem illorum motus ^{B 108*} tuum; | quia, quocunque motu signato, si foret velocior vel tardior, tunc non foret idem motus in numero, eo quod vel variaretur materia motus, vel tempus, vel ³⁵ utrumque. Et per consequens non impedire vel impeditur; quia non esset. Motus tamen communes possunt se mutus impedire. Unde, pro materia argumenti, videtur michi quod non propter egales motus contra se impeditur mobile moveri. Ut, ymaginato ⁴⁰ quod sol innitur moveri tantum motu proprio, quantum orbis rapiens nititur movere ipsum contra

6. Different coëxistent movements only hinder the external effects caused by them, not their respective swiftness. If they did, they would no longer be the same movements, but destroyed.

If the sun went backwards as fast as its

sphere went occidens, ita quod per A tempus sit in meridiano forwards, it would remain seemingly motionless. Both sphere and sun would move, but we could not call that movement properly *swift*. But the sun would move from north to south with an apparent movement. Some deny that movement is possible in a contrary direction to the sphere. But then the sun would have a real movement from south to north, not from west to east. We cannot admit that a movement having a certain rapidity would, if more intense, have none. Thus I think that eastward and westward tendencies contradict each other. And we can fancy circular motions that would be contrary if they existed in the sky; but none of the six movements — ascension, descent, &c. — are contrary to the circular movement.

Ideo dicunt aliqui quod non est possibile orbem inferiorem moveri contra superiorem super eosdem polos, ita quod continue maneat idem punctus in eodem situ, et motus continue localiter. Illud tamen non placet michi, eo quod tunc diceretur sol habere motum ab austro in boream, vel econtra, et non ab occidente in oriens. Videtur ergo quod motus, qui est passio, sit prior quocunque mobili, quam motus formaliter successivus, qui est velox vel tardus; quia si aliquid movetur illo motu, ipsum limitatur et patitur se taliter denominari quo ad quantitatem vel qualitatem; et non econtra.

Ideo non est concedendum quod iste motus, qui iam est velox, erit non velox per eius intensionem; vel econtra motus non velox erit velox; quia isti motus sunt diversorum rationem, cum totum genus unius presupponit totum genus alterius. Et ita videtur michi quod, sicut motus qui est nitus ab oriente in occidens contrariatur nisui ab occidente in oriens, sic motus successivus ab oriente in occidens contrariatur motui successivo possibili qui dicit formaliter adquisitionem. Ymaginabile tamen est motus circulares esse, qui si possent successive inesse celo, essent contrarii. Sed nulli sex motuum localium rectorum est motus circularis contrarius; ut non ascensui vel descensioni, cuiusmodi sunt motus a borea in austrum, et econtra; nec motui recto a dextro in sinistrum vel econtra, ut sunt motus ab oriente in occidens, et econtra; ut motui recto ab ante ad retro et econtra, ut motus a principio Cancri versus Capricornum, vel econtra; eo quod quilibet istorum motuum compatitur secum per totum motum circularem; et sic de motibus circularibus compacentibus se in eodem subiecto, dum non directe fuerit versus differentias oppositas.

One thing is certain; in the sky there is nothing violent. Sufficit ergo philosopho quod celum per totum sit exemptum ab omni violencia; ex quo verisimile est quod tam orbis inferior quam orbis superior describeret tam celeriter circulum sicut modo, subducto alterutro illorum motuum Ideo non est de illis, sicut est in casu

Zenonis, in quo ponitur spacium recte moveri contra mobile motum.

B 108^b Ulterius conceditur quod sol [motus] motu proprio versus oriens, tardatur attingere oriens; et sic de aliis mirabilibus conclusionibus sequentibus. | Si tamen motu proprio dicto precise moveretur versus oriens, tunc non sic tardaretur; quia moveretur 2^m aliam porcionem circuli versus oriens.

Ulterius conceditur quod descripcio talis non est motus, sed unum accidentaliter habens motum. Nec quelibet adquisicio situs est motus, cum stat aliquod subito adquirere vel deperdere situm per continuacionem vel discontinuacionem partis quantitative; ut patet de augmentato vel diminuto, de multiplicato, vel de de-
multiplicato. Motus ergo qui est limitatio passiva etc. est passio; sed motus formaliter successivus et velox videtur michi non esse passio; sed motus accidentis passionis, ut motus localis proprie dictus dicit suum mobile, vel aliam partem primo moveri localiter, et per consequens ipsum, vel aliquam eius partem prius fuisse in situ in quo post non est per successivam et parcialem situs adquisitionem, ad quam sequitur adquisitione ubicacionis. Ideo dicit commentator quod componitur ex multis affirmacionibus et multis negacionibus; quia tales presupponuntur adesse tanquam principiantes, sed non quantitative componentes, cum sit forma simplex.

Sed diligenter notandum quod motus quandoque sumitur aggregative pro multis motibus aggregatis, etiam discontinuis, vel quo ad tempus vel quo ad subiectum; sive sint unius speciei, sive sint disparium specierum: et illo modo dictum est progressionem esse motum compositum. Quandoque autem sumitur simpliciter pro motu cuius quelibet pars divisibilis vere continuatur cum reliqua et est eiusdem rationis, ut motus puncti in equinociali. Primo modo est augmentacio motus, et forte omnis motus citra velocissimum.

Tercio principaliter dividitur motus 2^m suas passiones, ratione temporis mensurantis; ut aliquis est uniformis et aliquis difformis; et uterque subdividitur quo ad subiectum et quo ad tempus. Quo ad subiectum est

We may admit that the sun, moving eastwards by its own movement, delays in reaching the east; and so on.

Also that the orbit described on the celestial sphere is not movement, but a thing that moves.

Movement, so far as it is passive, is a passion; not movement with actual change of place. It implies that the subject or a part of it occupies a place that it did not occupy before. Averrhoës says that it is made up of many affirmations and negations.

'Movement' is sometimes collective, and means many movements;

sometimes it means a movement of which each part is a sequel to the other.

Movement is either uniform or varied; uniform in its subject if each part of the

thing moved
has the same
velocity;

varied in its
subject, if one
part moves
faster;
uniform as to
time, if the
velocity is the
same at every
part of time;
varied, if the
velocity is
greater or less
in the different
parts of time.

These temporal
and quantitative
parts are equal
to the whole
movement;
but the first are
equal in
quantity, and
the second in
duration.

A humble
logician may
grant that the
part is equal to
and yet less
than the whole.
But it is well
to call temporal
parts duration,
and
quantitative,
magnitude.

Magnitude,
if not restricted
to quantity,
might be
inconveniently
applied to time.

Thus a
movement may
be uniform and
varied from
different points
of view — as
the movement
of the sky and
a falling stone.

Another
division of
varied
movements:
a) uniformly

motus uniformis, quando quelibet pars eius quantitativa quo ad molem est eque velox sicut aliqua talis, sicut est de motu linearis per equinoccialem circulum subiectato. Et dicitur difformis quo ad subiectum, quando una eius pars quantitativa ^{2^omolem est reliqua tali velocior, ⁵ut est de motu colubri. Dicitur autem motus uniformis quo ad tempus, quando quelibet pars quantitativa quo ad successionem, que non est pars quo ad molem, est eque velox ut aliqua talis; sicut est de toto motu primi celi. Sed difformis dicitur quo ad tempus, quando una ¹⁰temporis pars successiva est reliqua parte successiva subiecti primo moti velocior; ut motus naturales gravium et levium, qui velocitantur in fine. Omne autem successivum extensum habet ^{2^oes partes quantitativas, sicut ^{2^oem quantitatem; scilicet quo ad molem et quo ad ¹⁵tempus. Et convenienter iste partes in hoc quod utraque subiective, qua pars, est minor suo toto; ut medietas successiva motus est par toti motui et toti subiecto ^{2^omolem, et quantumlibet parva pars motus ^{2^omolem est equalis toti motui quo ad duracionem; et sic ²⁰iste equalitates et inequalitates dicunter equivoce.}}}}}

Humilis tamen logicus, non | querens apparentiam B ^{109^osophisticam, concederet quod infinitum parva pars quantitativa motus et suum totum sunt equalia, et tamen totum illud est quantumlibet maius sua illa parte. Unde, ²⁵propter istas equivocas magnitudines distingwendas, vocatur una pars quo ad successionem vel diurnitatem: et eius magnitudo vocatur diurnitas. Et alia vocatur pars quo ad molem; et eius magnitudo propter famositatem vocatur simpliciter magnitudo motus. Magnitudo enim competit methaphorice magnitudini corporee, ³⁰sicut multitudo convenit numero. Alter enim dicit habens hoc pro inconveniente palam sequi quod quelibet pars celi, eciam indivisibilis, esset quantumlibet magna, quia durative equalis suo toti: quod equivocans sine ³⁵inconveniente concederet. Patet eciam quod motus uniformis est quantumlibet difformis, et e converso. Nam motus celi est uniformis, quo ad tempus, et difformis quo ad subiectum, et motus gravis est difformis quo ad tempus et uniformis quo ad subiectum. ⁴⁰}

Sed motuum difformium est ulterior divisio. Nam aliquis est uniformiter difformis, et aliis difformiter

difformis. Et hoc dupliciter: vel quo ad subiectum, vel and b) *variably varied.*
 ad tempus. Dicitur autem motus uniformiter difformis This too is
 quo ad subiectum, quando cuiuslibet partis sue quantitative regards (1) the
 quanto ad molem gradus intensissimus tante excedit (2) the time.
 5 gradum eius medium, quante alicuius talis partis equalis a) (1) It is
 gradus intensissimus excedit gradum eius medium. Et uniformly varied in the
 talis motus simpliciter uniformiter difformes non move subject;
 ventur nisi lineariter. Nam mota spera, centro eius quiescente, quelibet eius semidyameter sic moveretur: either
 10 sed de qualibet linea secante dyametros difformiter absolutely, as
 mota foret falsum quod uniformiter difformiter moves the diameter of
 retur. Et cum motus corporum secuntur in velocitate a uniformly
 motus suarum linearum et superficierum, patet quod revolving
 partes quantitative talium sperarum oblique valde sphere;
 15 diversificantur in difformitatibus suorum motuum. Est ergo corpus dare uniformiter difformiter motum 2^m quid, quando cuiuslibet sue partis quantitative gradus intensissimus tantum excedit gradum eius medium quante alicuius sue partis equalis et simillime in figura et or partially, as
 20 posizione gradus intensissimus excedit gradum eius bodies of
 medium: cuiusmodi sunt corpora quorum partes lineares which certain
 uniformiter difformiter moventur. Sed uniformiter diffor lines move
 mis motus quo ad tempus est cuius cuiuslibet partis thus.
 quantitative quo ad successionem gradus eius intensissi 25 (2) Uniformly
 mus tante excederet gradum eius medium, quante as much in one
 alicuius talis partis equalis gradus intensissimus excedit as quantitative
 gradum eius medium. Est autem motus difformiter exceeds the
 difformis quo ad subiectum vel tempus motus difformis part as in any other.
 cuius difformitas est difformis. Potest autem dici quod b) (1) *Variably*
 30 motus difformiter difformis, tam quo ad subiectum varied in the
 quam quo ad tempus, est dupliciter; vel sic quod subject; (2) In
 quelibet eius pars quantitative continue magna sit dif time.
 B 109^b formis, vel sic quod quotlibet eius partes sint | difformes; Here there can
 et hoc contingit infinitis modis variari. Et sicut ex be infinite
 35 parte motus quo ad molem, et parte motus quo ad modes of
 tempus potest fieri pars motus ex utrisque composita, variation;
 ita ex motu difformi quo ad tempus et motu difformi and new
 quo ad subiectum et quo ad tempus; et ita mixtim in species of
 aliis divisionibus. movement can be found indefinitely.
 40 Sed ista dicta consecuntur tria dubia hic breviter Three questions:
 pertractanda. Primum, Si possibile est motum vel tale

I. will be dealt with in the next chapter. successivum esse. 2^m: Si continuum componitur ex non quantis, et 3^m: Penes quid ab effectu possunt regulariter attendi velocitates motuum. Primum tangetur proximo capitulo, supponendo talia successiva esse et ampliando verba de presenti, quantum oportet, loquendo de successivis.

*Question II:
Whether
continuous
quantity is
made up of
points.*

1. Points are naturally prior to lines; so they cause them, and intrinsically; so they are parts of the lines.

As the instant is the principle of time and unity of number, so is the point the principle of the line.

2. If not, all the points in a line could be successively taken from it, without shortening its length.

Thus every point would be an accident as regards the substance in which it exists. But this is impossible.

3. There must be indivisible points immediate, i. e. having no space between them; for if two bodies

Pro 2^o argumentatur de punctis que requiruntur ad esse linee, tanquam priores naturaliter toto genere linee. Ergo sunt cause linee, et non extrinsece; ergo intrinsece et per consequens partes. Aliter enim omnes ¹⁰ partes illius continui forent divisibiles; et tamen non haberent partes nec partem, ut prius deductum est. Et sic concludendum esset quod iste partes componunt et causant se ipsas, et sunt priores et posteriores 2^m infinitos gradus quam ipsem sunt. Nec valet dicere ¹⁵ quod non omnia sunt danda, ut alibi dictum est; nec est maior racio quare instans est principium temporis ipso prius, et requisitum ad suum esse, sicut et unitas se habet ad numerum, quin per idem punctus sic se habet ad lineam.

Similiter: aliter contingeret auferri punctum a linea continuata cum alia, non plus auferendo; et per idem quemlibet punctum linee contingit auferri, et sic omnes, cum hoc quod maneat eadem linea; et sic quilibet punctus linee per accidens continuat unam eius partem ²⁵ cum alia. Sed cum punctus sit accidens, oportet [ut] aliquod eius subiectum adequatum per se subiectat tales denominaciones quales punctus accidentaliter recipit; ut moveri, quiescere etc. Substancia ergo per se subiectans punctum continuantem partes linee per se principiat ³⁰ illam lineam; et cum illa non possunt esse sine tali punto, patet quod nullus punctus potest auferri a linea, eadem manente; quia sic contingere corrumperet omnem punctum corporeitatis dande, servando illam. Continuatis ergo duabus pyramidibus, erunt puncta ³⁵ conalia immediata.

Similiter de inmediacione ubicacionum vel situum indivisibilium, patet quod est dare tales inmediatas. Nam est dare duo puncta inmediata, ut patet de corporibus tangentibus se ^{2m} puncta. Sicut ergo talia ⁴⁰ puncta sunt inmediata, sic ubicaciones vel situaciones

corum sunt immediate. Et, cum illi situs manent ex-punctantes alia puncta, patet quod quandocunque alter eorum erit occupatus aliquo punctali intra corpus, reliquo erit occupatus punctali sibi immediato; et per idem sequitur quod corpus pyramidis tangens medium punctum B superficii plane eque distantis superficie orizontes, est superior quam B, cum tota pyramis per totum sit supra B; et per idem, iacente illa pyramide super B planum, contingit ponere punctum conalem alterius pyramidis super primam pyramidem, et sic in infinitum; ita quod ad omnem punctum linee erecte B 110^a super medium punctum B | sit conus unius pyramidis.

Similiter de instantibus; videtur quod erunt immediata, quia est dare duo, quorum unum durabit usque ad B instans exclusive, et aliud durabit usque ad illud instans inclusive, et non ultra. Et certum est quod est dare quandiu utrumque durabit; quia aliter non esset dare quam senex aliquis erit, aut quam diuturnum 20 erit aliquod successivum. Et sic, demitis aliis superius tactis, certum est quod unum durabit diuicius vel ultra reliquum per unum instans; quia aliter non esset senior quam ante fui, cum ante fui ita senex precise sicut homo qui incepit esse pro primo instanti mei, et nunc 25 desinit esse. Et idem sequitur, si continue intendam motum meum vel actum merendi, et stem sub gradu actus quem nunc habeo, et uno alio merente exclusive usque ad hoc instans, et nunc decadente. Deus enim scit tales premiare proporcionaliter ad intensissimos 30 gradus suorum meritorum; quia aliter noceret homini quod continuasset actum bonum, cum plus premiaretur merendo solum 2^a medietate sui actus meritorii. Deus ergo premiabit quemcunque 2^m intensissimum gradum sui meriti, si non ponat obicem.

35 Et conformiter videtur quod contingit unum dare ultra B instans per indivisibile, ut talem veritatem: A tangit aliquem punctum C, posito quod C sit nomen commune ad primam medietatem dati possibilis, et ad quamlibet partem imparem 2^e medietatis divise contra 40 medium punctum; et quod A in B instanti primo

touch each other in one point only, we have two distinct points that touch each other.

If the top of a pyramid is placed on the point B of a surface, its top will be above B; the top of another pyramid may be placed above its top, and so on, till a line is formed.

4. There must be immediate instants; for if two beings last, one till the instant B exclusively, and the other inclusively, the latter will last longer.

The same consequence flows from the idea of merit exclusively or inclusively up to a given instant; God can remunerate one instant of merit.

5. Let us suppose the truth: A touches some point of C, signifying the first half of a line and all the odd divisions of the second half;

1—2. exp̄tates B. 5. tāns B. 20. dem̄t̄ B. 21. et certum B.
26. zīſe pro et stem B.

and that A gets deveniat ad medium punctum, continuando uniformiter to the end of the first half in motum suum super omnes partes proporcionales 2^e met the instant B: dietatis: tunc patet quod A tangere C manebit usque then the proposition will ad B instans, et inmediate post B instans erit: ergo be true duracio sua erit inmediata B instanti, ante et post; 5 before B, at B, and immediately after. se extendencia per descripciones situum punctualium inmediatorum vel quomodolibet alter.

There are also indivisible movements; and, therefore, also indivisible instants to measure them by.

When we divide two contiguous surfaces, v. g. air and water, there must be two distinct divisions, therefore an indivisible movement from one surface to another.

And the division of each must take place at separate instants.

This argument holds in many other cases,

v. g. in the hypothesis that were God successively to annihilate and re-create the same individual eternally, the succession of mediate creations and annihilations would be time.

Note that theologians admit the possibility of this hypothesis, and are yet so inconsistent as to deny that.

11. $\widehat{\text{and}}$; B. 15. $\widehat{\text{d}}\varphi\text{tr}$; B. 28. $\widehat{\text{Imibg}}$; B. 38. $\widehat{\text{ca multim}}$; B.

Similiter est dare motus indivisibilis quo ad durationem immediate succedentes; ergo et mensuras instantaneas, ipsos mensurantes. Antecedens patet de divisionibus superficierum inmediatarum in corporibus contiguis dividendis continue; ut, posito quod A dividens primo, dividat superficiem B aeris, et post superficiem immediatam C aquae: patet quod dividuntur distinctis divisionibus, pari evidencia qua aliqua superficies dividetur appropriata divisione. Et constat, cum divisio ponit dividi aliquid de presenti, quod est dare instancia inmediata in quibus erit ita quod hoc dividens dividit istam superficiem. Aliter enim dividens divideret quotlibet superficies quas nunquam tangeret, ut infimam superficiam B pro illo instanti in quo tanget C. Et nunquam tangeret illam, nisi forte in instanti inmediate precedente; sicut tota divisio B terminabitur inclusive ad illud instans in quo infima eius superficies dividetur, cum continue usque ad illud instans manebit, et non in illo vel post illud, propter nisum agentis. Et idem sequitur de luminibus et quantitatibus qui innovabuntur subito pro quolibet instanti istius hore 2^m se tota, de pyramide circumrotata super multitudine punctorum 30 per se servatorum sine linea; ut posito quod Deus annichilet Sortem, et post vivificet illum, et 3^o adnichilet, et sic sine fine, patet quod, subductis omnibus motibus preter tales, foret tempus; quia prius et posterius successivum; et cum tempus se habet ad divisibilitatem 35 sicut motus et eius materia, patet quod illud tempus componetur ex instantibus.

Et hic miror quare theologi admittunt casum ultimum, et tamen dicunt quod Deus non potest auferre punctum a linea | nisi addiderit aliud, nec continuare duas B 110 lineas ad invicem, nisi corrumpto puncta extremalia

et generando terminum communem, cum summe libere contradictorie agit ad extra; et quilibet punctus potest per se esse dependens ab alio.

He could take one point from a line without adding another.

Similiter, ex modo loquendi de difformitate motuum quo ad tempus, patet idem. Nam motus uniformiter difformis, in quantum talis, terminatur ad gradum inclusive; quia aliter non esset dare gradum eis intensissimus vel medium, et per consequens non esset descriptibilis aliqua descripcione; quia dicere quod gradus ad quem terminatur exclusive, qui non est in mobili, mensurat eius velocitatem vel uniformitatem, est plana contradiccio, cum medium requirat extrema illius cuius est medium. Et dicere quod gradus medius, qui non est extreum vel terminus illius motus, est plane de-

6. Again; every uniformly varied motion must include the degree of intensity at which it arrives.

mencie.

Gradus ergo medius motus uniformiter difformis quo ad tempus, erit gradus utriusque medietatis successiva; quia aliter non continuaret unam medietatem latitudinis cum alia. Continua enim sunt talia quorum ultima sunt unum: ut aggregatum ex 2^{bus} terminis continuatorum est unum commune utrique continuatorum 2^{m} partes eius. Nichil enim continuat primo aliud cum alio, nisi fuerit illius quod continuat; ut punctus non est terminus communis lineis ipso continuatis, nisi sit punctus utriusque illorum. Et ita, generaliter loquendo de continuacione, terminacione et velocitate successivorum incidit homo, velit, nolit, in istam sentenciam.

Thus, when it arrives at half its intensity, there must be the same degree of intensity for the end of the first and the beginning of the second half. Otherwise the movement would not be continued.

Sic enim ponunt auctores quod habitantes sub polis zodiaci habent duos dies in anno, in quorum uno habent instans pro nocte, et in altero instans pro die, emergentibus illis subito ex signis. Et illud plane patet ex hoc quod sol, describendo tropicum estiūm, solum per instans tanget zodiacum fixum illo die; et cum zodiacus fixus sit orizon habitantibus sub circulo artico, sequitur quod solum per instans deficit sol in illa die ab existencia suprahorizontaliter habitancium; et ita per idem instans vel aggregatum ex paucis instantibus, erit illis nox. Supponatur enim [definicio] *quid nominis terminorum, modo quo auctores locuntur.*

Illustration of this by the fact that at the poles there is once a year a night, and once a day, of but one instant in duration.

40 Similiter, ut credo, nullus theologus negaret quin Deus de potentia absoluta potest facere substanciam

7. God can, absolutely speaking make a substance of the size of a point;

29. 30^{ci} B.

32. $t^{\text{o}}\bar{p}ic\widehat{u}$ B.

38. definicio *deest* B.

punctalem, vel condensando, vel noviter causando, vel 3º faciendo spiritum esse in situ punctali et annichilando omnem aliam creaturam preter talem spiritum servatum immotum; et tunc patet quod punctualitas vel punctus, que est substancia huiusmodi *esse* punctalis, est actus 5 positivus [in] illa substancia, sive sit separabile sive inseparabile. Punctus ergo potest esse. Nec dubium quin, si Deus potest unum punctale producere, potest et quodlibet iuxtaponere. Nec dubium quin situs essent correspondenter iuxtapositi, cum situs sit subiectum 10 situari. Et ultra patet quod Deus potest ex talibus non quantis facere unum quantum: quod sic ostenditur argumento ad hominem. Creet Deus ad omnem situm punctalem mundi unam substanciam punctalem, et annichilet post omnem substanciam continuam, servando 15 punctales substancias immotas; et patet quod Deus est adhuc per tantum locum sicut fuit in principio, et per consequens est tantus locus; vel saltem contingit tantum locum fieri ex illis punctalibus, sicut prius. Aliter enim non esset distancia, nec punctuale fluens super alia 20 punctalia posset moveri localiter; ut iste globus successive circumductus, causaret duracionem successivam. Posito ergo quoconque tali accidente continuo, oportet ponere subiectum eius continuum, et illud esset compositum ex punctalibus, quia illa forent eius principia 25 intrinseca. | Nec dubito quin, admisso hoc pro possibili, omnes philosophi mundi non haberent infallibilem evidenciam ad concludendum quod non est sic de facto.

B 111*

And if this is possible, I defy any one to prove that it is not so at present: the arguments against it would have to be refuted then as we refute them now, and are of no more value now than they would be then.

Nam, conformiter sicut tunc respondendum esset ad argumenta in oppositum, respondendum est et nunc. 30 Nec adhuc argumentum plus concludit nunc quam tunc concluderet, nec experientia, vel auctoritas, vel quivis alias locus efficacius probat nunc quod non sic est, quam tunc probaret. Et negans puncta vel talia indivisibilia esse, nec vere loquitur de instanti 35 temporis nec de motibus subitis, et generaliter de continuacionibus accidencium. Nec arguet efficaciter contra ponentes compositionem continui ex non quantis, nisi prius stabiliret nullum huiusmodi posse esse: quod faciendo nimis diu exceptaret principale intentum. 40

The truth that past and future are present to God,

Deo presencia: tunc enim sequitur omne quod erit is of great use aliqualiter, ipsum est taliter; et per idem, si aliquid in this matter dividet superficiem, vel erit summe propinquum ipsum, sic se habet: et hoc multum valet pro intento.

5 In oppositum est philosophus 6º phisicorum, 3º de *First Objection*: Aristotle, in celo, et primo de generacione, per multas pregnantes many places, raciones et consideraciones difficiles contra Democritum seems to et Platonem: ut puta de tactu, de mediacione cuiuscunque continui in contradicthis. cuncte continui, de divisione cuiuscunque continui in infinitum, de continuacione indivisibilis cum alio, et multis similibus que postea tangentur.

Sed ad illud respondet Linconiensis, dicens quod But Grosseteste Aristoteles intellexit nullum continuum distincte sensibile points out that componi ex non quantis tanquam partes eius numeris. Aristotle has in mind that which is sensibly continuous; and that, of course, cannot be composed of inextended parts, such that we can distinguish or count them. But God can; as He knows what part of a right angle is the smallest of all, called the angle of continence. Aristotle admits that the point causes the line. Our view not only is not opposed to his doctrine, but Aristoteles exponit de termino; quia supponit omne tale follows from it. habere ultimum.

Verumtamen unum indivisibile potest tangere reliquum, large loquendo; quia esse ad eundem situm in a wide sense 35 indivisibilem positum cum alio; et sic potest continuari i. e. be in the same place with it. A collection of punctis, vel quotlibet points in odd number can have halves;

24. \widehat{miam} B. 30. \widehat{rrm} B. 31. $\widehat{det'uno}$ B. 34. oe B.

22—23. *Angulus contingencie*. We find further on (p. 48), that the angle of continence is the one formed by a circle tangent to a right line.

for in one
sense, halves
must not
necessarily be
equal,
though in
another they
must.

imparibus, habet medietates; quia sicut medium dupli-
citer dicitur, vel per abnegacionem extremorum, vel
per eque distanciam ab extremis, sic est dare duplum
medietatem: scilicet, medietatem, que est pars simpli-
citer subdupla ad indivisibiliter plus vel minus suo tota 5
(et taliter loquitur arithmeticus de medietate maiori et
medietate minori numeri imparis). Et 2º modo, sed non
primo, habet omnis quantitas medietates, i. e. duas
partes quantitativas incomunicantes, quarum neutra
indivisibiliter excedit reliquam totum equaliter constitu- 10
entes, licet ternarius et omnis quantitas habeat duas
medietates eaeles ad alium sensum.

Aristotle
proves nothing
contrary to
this.

Neither
geometricians
nor natural
philosophers
have anything
to do here, for
they consider
things as
belonging to
experience and
sense.

Now the point
is not sensible,
nor even
imaginable;
it belongs to
the province
of
metaphysics.

No number of
substances or
points can be
infinite; God
alone is so.
God knows
how many
points go to
make up a
square or any
other figure
that can be
perceived by
the senses.

If one
line, v. g. is
twice as long
as another, it
contains twice
as many
points;
but we cannot
know exactly

Nec demonstrat Aristoteles oppositum, sicut nec de-
monstrat, si aliquod sit instans, ipsum est principium
unius temporis | et finis alterius; cum primum instans B 111^b
non precessit instans vel tempus, sed capit alias signifi-
cationes ex famosis modis loquendi philosophorum
naturalium, quorum non interest tractare de partibus
punctualibus in philosophia naturali, in qua demonstratur
causa per effectus, demonstracione *quia est*, cuius prin- 20
cipium est experientia vel sensus. Punctus autem non
est sensibilis vel ymaginabilis; ideo tractatus eius non
pertinerit specialiter geometre, qui solum de ymagina-
bilibus pertractat directe, sicut nec naturali philo-
sopho. Sed illud conservandum est metaphysico et 25
aristotelico.

Unde impossibile est quod aliquis numerus substan-
ciarum vel punctorum, vel aliud preter deum sit simpli-
citer infinitum, cum omnis talis numerus habet deum
finem suum extrinsecus finientem et ultimum eius punc- 30
tuale finiens intrinsecus. Ymmo deus satis noscit quo-
modo omne quadratum per se sensibile integratur ex
partibus minimis et principiis eorum indivisibilibus
cumulatis. Et sic dicitur de qualibet alia figura prin-
cipiata ab indivisibilibus primi numeri, ut figurati. 35
Novit eciam in qua proporcione quicunque numerus
punctorum se habet ad alium; et de istis habemus nos
inseparabilem ignoranciam. Scimus tamen quod, si una
linea fuerit 2^{pla} ad aliam, tunc numerus punctorum
eius est duplex ad numerum punctorum alterius: et sic 40
de similibus. Verumptamen non possumus scire nisi

2. abne^{om} B. 7. isto pro 2º B. 23—24. ymag^{b9} B. 26. aris^e B.

32. 4^{ta} B. 33—34. expt^f B.

sciencia confusa et communiter dicta aliquod tale antecedens; ut nemo mundi scit distincte quantum est hoc corpus, quocunque demonstretur; quam velox est iste motus; quod hoc est medium instans, vel principium huius diei. Et sic de aliis singulis que supponimus taliter se habere, quando contingit nos loqui de talibus illis. Ideo dixerunt philosophi quod de singularibus, propter suam infinitatem, non est sciencia. Omnem ergo numerum qui excedit ingenium nostrum ad aptandum sibi terminum specificum naturalem vocamus infinitum, sicut profunditas maris dicitur in una significacione esse infinita; et talia que sunt hominibus immensabilia et illa voco infinita 2^m quid, vel quo ad hominem, et ita intelligo quandocunque pono numerum infinitum.

Unde, ymaginato quod Deus successive addat ad A punctum alia puncta, continuando unam lineam, est dare instans quando numerus punctorum erit 2^m quid infinitus uni, et quando erit 2^m quid infinitus alteri; 20 et sic diversi (2^m perspicacitatem suam) habebunt diversos maximos numeros illis finitos, et diversos numeros minimos illis infinitos. Nec est inconveniens unitatem additam vel subtractam a numero facere quod quis non sufficiat distincte totum apprehendere confuse, cum 25 cognoscatur de quocunque tali quod illud esset finitum; et si esset duplicatum, quadruplatum; et sic quamdiu scivero numerare. Est ergo dare maximum numerum quem quis potest distincte simul apprehendere, et nullum numerum sibi infinitum excedentem solum per unitatem 30 quem non sufficit distincte apprehendere. Omne enim distincte sensibile continet ultra hoc quod scio distincte calculare indivisibilia 2^m quid infinita. Unde maxima multitudo eorum est numerus maximus possibilis, sed finitus, et per consequens multitudo instantium, ter- 35 minorum, vel parcium talium quarelibet est finita; licet tempus sit infinitum a parte post, quo ad finem intrinsecum, sed non quo ad finem extrinsecum (qui est Deus) omnium novissimum. Et sic dicitur de proporcionibus quod repugnat aliquam esse simpliciter infinitam. Tempus ergo est sic infinitum a parte post; 40 sed non concipio quod aliquid possit esse sic infinitum

that it is twice as long, nor indeed anything relative to size, movement, &c.

'Infinite' is a term we use for denoting a number inconceivably great; it is in this sense of relative infinitude that I employ it when speaking of number.

Suppose that God adds one point to another so as

to make a line, there will come a time when the number is infinite to one man, and then to another, according to his power of conceiving it; and the addition of a single unit makes the difference between infinite and finite, in this sense.

The greatest possible number of ages is a finite number; though time is infinite in the future, it is not so to God, nor is it at all infinite in the past.

I cannot conceive of a straight line infinitely long, forming a circumference or having an end anywhere. We thus admit that the extended is infinitely divisible relatively to us; no other infinitude of division can be proved.

Second Objection.
All 'infinities', according to this theory, contain the same number of points. For if two mobiles pass over spaces respectively equal to 1 and to 2 feet in 1 hour (or the same number of instants) they pass over the same number of points.
Or if the two lines A and B are the circumferences of concentrical circles, then there are as many points in B as there are radii of its circle; and just as many in A; for the radii are the same from the centre.

Answer.
It is not true that either of the mobiles passes over one point in one instant.

a parte prius, nec quod aliquod tempus posset anterio-
rari; nec quod linea simpliciter infinita ^{2^m} unum extremum | possit circumduci vel figi aliter termino B ^{112^a} fixo proprius per eius talem amotionem, ut communiter ymaginamur homines. Unde satis est pro sensu philo-⁵ sophi quod omne continuum sit ^{2^m} quid divisibile in infinitum et ultra omnem numerum finitum a viatore distincte noscibilem. Unde volens argumentare infinitatem simpliciter per communes exponentes, nunquam probabit illum saltum monstruosum: et sic in infinitum. ¹⁰ Sed do ultimum cuiuscunque corporis, superficie, linee, vel finiti termino intrinseco. Et patet solucio ad primam rationem factam.

^{2^o} principaliter argumentatur quod nullum infinitum sit reliquo maius; quia sit A linea pedalis, cuius puncta ¹⁵ sint subdupla in multitudine ad lineam [B] bipedalem; et pono quod C [et] D, uniformiter movendo, describant istas lineas adequate in hora: et tunc videtur quod tot precise puncta tangeret C in ista hora sicut D, quia utrinque precise tot quot instacia erunt in ista hora; ²⁰ eo quod pro quolibet instanti tanget solum unum novum punctum. Cum ergo quecumque sint equalia alicui tercio sunt equalia inter se, videtur quod uterque maximus numerus punctorum sit equalis alteri, sicut est equalis maximo numero instantium huius hore. Et idem ²⁵ deducitur, ponendo A et B circulari concentrice; tunc precise tot puncta sunt in B quot sunt semidyametri ab illo ad centrum; et tot sunt puncta in A: quia quilibet talis dyameter tangeret in A disparem punctum, sicut tangit in B, cum omnes tales primo concurrent ³⁰ in centro, eo quod aliter non esset recte. Et idem deducitur de infinitis punctis existentibus in eodem situ indivisibili applicatis infinitis pyramidalibus ^{2^m} conos ad eundem punctum in aere. Et ad id fiunt multa argumenta mathematicalia et geometricalia, reducendo ³⁵ opposita conclusione ^{10^{me}} et cuiuslibet conclusionis Euclidis.

Et hic dicitur quod claudit contradiccionem C et D pro quolibet instanti huius hore tangere novum punctum, sic tarde movendo. Pro quo notandum quod, ⁴⁰

1. app⁹ B. 16. B *deest* B. 17. et *deest* B. 35. redu^{do} B.
36. gue B.

dato punto velocissime moto qui, gracia exempli, sit punctus equinoctialis; ille pro quolibet instanti temporis adquirit et deperdit situm punctalem et nullus alias tardius motus; sed aliquis exceptat per duo instancia, 5 aliquis per 4^{or} instancia, et sic proporcionaliter 2^m quod tardius movetur illo. Nam motus celi est minimus possibilis quo ad multum de situ describendum in parvo tempore, eo quod est velocissimus possibilis; et ille est mensura omnium aliorum motuum; non solum regulariter dictus mensurare tempus et aliorum motuum quantitates, sed efficiens omnes alios motus proprios, cum, cessante illo motu, cessarent alteraciones et motus locales quicunque mobilium non intellectivorum. Patet ergo quod quilibet punctus recte motus vel circulariter 15 per horam tardius quam punctus velocissime motus, tanto pauciores situs adequate describet, quanto tardius movebitur.

Et ex istis potest patere, cum nichil potest velocius moveri motu successivo quam movetur equinoctialis, 20 et cum Deus non potest creare maiorem mundum quam potest circumducere, sequitur quod non maior mundus potest esse, nisi forte posset moveri successive motu subito, stante continuitate parcium: vel forte Deus posset spissius ponere punctalia in mundo, stante eius circumferencia in eodem situ, ita quod poli possent quantumlibet plus distare sine eorum motu. Conclusio principalis de posizione mundi in magnitudine, situ, figura, et terminis inseparatis consequentibus est multis eligibilior, quam alie recitate.

^{B 112^b} Patet ergo ex dictis quod argumentum 2^m peccat in materia, capiens quod omne punctum | localiter motum pro quilibet instanti adquirit situm punctalem: quod non est verum, cum sicut intercisiones talium adquisitionum proporcionaliter ad tarditates motuum. 35 Sed argumentatur contra illud per hoc quod tales motus non essent continui, cum, pari evidencia vel maiori, mobile per horam quiesceret quiete illis opposita; experiuntur tamen tales motus esse contra nos.

Along the equinoctial point in the sky passes over one point in each instant; all others pass over less, according as they move slower, for the movement of the sky is the most rapid possible and not only is taken to measure, but really does measure all others.

Note that this agrees with the truth that the world cannot be greater than it is; for God cannot create a world too great to be revolved thus, unless under certain hypotheses which are very unlikely.

Thus in this argument the assumption is wrong.

It may be urged that if so, we may just as well call movement during an hour, rest during that time, yet we see the contrary.

10. doctus B. 26-27. Con^o pu^{llis} B. 28. ḡntib^g B.

2. *Punctus Equinoctialis.* Doubtless the point where the equator is crossed by the ecliptic, and which is supposed to turn round on the equatorial circle once a day.

We answer
that continuity
of movement is
apparent, not
real, as all
continuity is.

The senses
often mislead
us in this
matter.

When the time
taken up by a
phenomenon is
very short,
there are many
illusions.

A burning
brand, swing
round, seems
a circle of fire;
a red point on
a white top
forms a circle
too, when it
revolves.

Reason, not
sense, must be
judge in such
matters.

We do not
note the
minute
motions and
rests distinctly,
but there is a
confused
feeling that
produces the
idea of
continuous
motion.
This motion is
thus an
aggregate of
many
movements and
many rests.

Continuity of
motion may
apply either to
movement
without any
intermingled
rest, or to
movement of
which the
primary
measure is
continuous.

Hic dicitur quod loquendum est de continuacione motuum quo ad tempus vel quo ad subiectum, sicut dicendum est de continuitate formarum substancialium et simplicium in mixtis, et de densitate ac raritate corporum. Pro quo declarando, notandum 2^m sentenciam 5 perspectivorum et communem experientiam, quod maxima decepcion contingit in sensibus, in significando continuacionem motus.

Cuius racio est, quia tam ad situs quam ad motus significacionem requiritur tempus conveniens; et ideo parvitas temporis facit quotlibet illusiones; ut 10 tatio circumductus in noctibus videtur causare ignitum circulum, sicut et punctus sensibilis rubricatus in base alba troci celeriter circumducti; ut exemplat Avicenna 6^o naturalium, et Boccius in principio musice sue, et experientia communis de ioculantibus docet idem. Et 15 patet quod non est credendum sensui generaliter in talibus, sed pocius racioni, errorem sensus corrigenti. Unde de singularibus sensibus habemus exilem scienciam, quam aliqui vocant scienciam communiter dictam scienciam putativam, probabilem, thopicam, sive fidem. 20 Ex ista proporcione ergo temporis convenientis, ex uno latere latet sensum talis parvus motus velox, et ex alio latere manet in sensu communi et ymaginativa species et iudicia servata de coloribus et sitibus, dum motus fuerint celeriter repetiti; et hinc fit talis illusio. 25

2^o supponatur ex supra dictis quod sicut motus aggregatus vocatur motus inter cuius partes intercidunt multe quietes vel multa substancialiter illi impertinencia, proporcionaliter dicendum est quo ad intercisionem instantium de quandalitate vel tempore aggregato. Sic 30 enim oportet philosophum loqui, ampliando verba de presenti, quando loquitur de huiusmodi aggregatis; ut patet de stirpe vel genere, de religione vel ordine, de populo vel quacunque alia multitudine.

His premissis dicitur 3^o quod dupliciter dicitur motus continuus; vel simpliciter ut solum motus, vel velocissimus, inter cuius partes non est aliqua invasio quietis opposite; vel motus continuus quo ad eius primam mensuram, licet intercidant multe quietes opposite. Et istum voco motum continuum 2^m quid. Et 40 taliter oportet quemcunque philosophantem ponere

omnem progressionem, omnem tremorem cum suis consequentibus esse continua, ut sunt soni cordarum, et generaliter omnes soni vel loquela; cum quotlibet similibus, in quibus sunt quotlibet intercisiones, ratione motuum reflexorum, licet sensus decepti putant talia simpliciter esse continua.

To the second sort belong progression, and undulatory movement, such as sound, which appears to be unbroken to our senses.

Istis notatis, dicitur quod quilibet motus successivus est modo suo continuus. Unde datus motus est continue per suam primam mensuram, hoc est, aggregatum ex instantibus vel quandalitatibus indivisibilibus, in quorum quilibet movetur mobile talis motus; quia pro nullo signo illius mensure desistit. Et proporcionaliter dicendum est de quiete opposita habente mensuram incommunicantem sed commixtam. Et patet solucio. Sic Development is a continuous motion, though it may often be arrested, because it fulfils itself continuously in a certain space of time. There is nothing absurd in calling indivisible points a substance or a quality.

B 113^a enim est motus augmentacionis continuus, licet multe quietes intercidant (ut vere dicit Commentator); et ita continuat, quantumlibet tarde motum, suam mocionem respectu sue prime mensure. Nec est inconveniens, sed consonum racioni, vocare aggregatum ex indivisibilibus aut divisibilibus distantibus substanciam, quantita- tem | qualitatem, etc. ut alibi patet diffusius.

Ulterius, quo ad 2^m de A et B circulatis concentricis, dicitur quod talis est proporcio numeri punctorum ad numerum punctorum, qualis proporcio circuli ad circulum; et ita generaliter de quibuscumque continuis et multitudinibus ipsa continentibus. Ideo ponunt sapientes concorditer quod prima racio mensurandi est in numeris; et patet quod quotlibet semidyametri et circuli concurrent, antequam deveniatur ad centrum, servando rec- titudinem.

Ideo est assumptum argumenti falsum. Quis namque negaret quin, ponendo puncta A circuli esse immediata, semidyametri initiate a punctis immediatis statim concurrerent antequam procedatur distanca sensibili versus centrum? Unde opinabile est quod circumferencia mundi est maxime regulariter de possibili circularis; et cum ipsa habet graduum remissimum arcualem, opinabile est quod supremus circulus excedit circulum proximo suppositum solo punto. In circulis autem magis curvis, propter irregularitatem ultimo linea circularis excedit sibi proximam multis punctis; et hec est 2^a consideracio quare non potest esse mundus maior, quia quantus mundus potest esse, tantus potest esse mundus circularis; sed non potest esse maior mundus circularis, cum

This again proves that the world cannot be larger than it is; for no circumference less curved is possible, and the world must be a sphere.

This takes nothing from God's power;

an infinite world and a world no larger than a pea, are both equally impossible. No straight line can be longer than the diameter of the world; so there are lines which cannot possibly be straightened.

It is said that if the apices of many pyramids touched each other, many points would be in the same place.

But this is impossible, if we admit that the position of apex A and that of apex B are different. There is just the same impossibility for two points to coexist, as for two volumes.

These apices constitute magnitude, as has been shown;

remississimus gradus circulacionis possibilis sit sue circumferencie ultime conveniens: ergo, etc. Cum enim in qualibet latitudine sit dare gradus immediatos et gradum remissimum 2^m illam viam, patet quod sic est ponendum in latitudine curvacionis. Possibile est ergo deum creare mundum 2^m quamlibet partem sue circumferencie remississime circularem; et cum nemo scit probare quod non sit ita de nostro mundo, patet sequi ex illo supposito et opinione de compositione continui ex non quantis ac aliis necessariis, quod non potest mundus alius esse maior. Nec plus derogat hoc infinitati divine potentie, quam quod non potest producere alium filium, adnichilare suam fabricam, vel producere mundum in specie milius figuratum. Sicut ergo esse mundum infinitum simpliciter propter nimietatem magnitudinis non esset validum nec esse mundum equalem pise propter nimietatem parvitatis eiam non valet; sic videtur quod inter hec extrema intelligibilia est dare optimum gradum medie quantitatis; quoniam verisimile est Deum scire et velle in tam principali fabrica contigisse. Ex istis patet quod non potest esse linea recta longior quam mundi dyametrum et per consequens non quelibet linea est rectificabilis.

Ad 3^m dicitur quod impossibile est multa puncta vel substancias punctales esse simul in eodem situ indivisibili; quia per idem possent multa prima subiecta situs huius esse in eodem situ individuo: quod repugnat formaliter cum hoc posito de A et B subiectis. Patet quod aliud est A situari et aliud B situari; et per consequens situs vel situaciones sue distinguuntur. Et idem sequitur de *ubi* indivisibili, cum sit actus qui multiplicatur ad multiplicacionem subiecti sui primi. Et confirmacio huius est, quod tanta foret racio repugnacie quod puncta forent simul quo ad suos situs, sicut quod quantitates molares essent simul coextense; sed hoc non potest esse: ergo nec primum. Si enim quilibet punctus A potest esse simul cum puncto B, tunc totum A potest coextendi cum toto B, et per consequens totus mundus potest esse involutus in quantumlibet parvo situ. Dicitur ergo quod puncta | conalia pyramidis cumulata constituent magnitudinem, ut tactum est superius, cum

unum distabit ab alio per quotlibet intercepta. Unde to suppose the contrary is to beg the question.
argumenta hominum volencium detrudere quotlibet talia puncta in eodem situ indivisibili petunt pro fundamento quod non sit possibilis composicio continui ex non 5 quantis. Ideo illud 3^m non est probacio, sed petocio principii.

Unde alias dixi quod non possunt plura quam sex puncta immediate circumstare eundem punctum in medio. Et hec est una causa quare septenarius est numerus 10 universitatis. Omnem ergo punctum mundo sensibili- liter intrinsecum circumstat immediate, versus quamlibet 6 differenciarum, unus punctus. Sed argumentatur com- muniter quod quemlibet punctum intrinsecum circum- stant puncta infinita; quia sit A punctus in aere quem 15 solum sex puncta tangunt 2^m istam viam, tunc patet quod A constituit trigonum superficialem, quadratum, pentagonum; et sic de qualibet specie figure super- ficialis, quo ad gradum eius minimum. Ex quo sequitur quod A tangit infinita puncta; quia, sicut tangit punctum 20 directe orientalem et punctum directe occidentalem, ita tangit utrumque immediatum suprapositorum aut suppo- situm illis punctis; quia, sit B punctus immediatus A orientali, et C punctus sibi immediate suprapositus, et D punctus immediate supra positus A B in linea eque 25 distante immediate B C lineam; et patet quod A B C D constituunt unum quadratum minimum, et quod unum quodque istorum 4^{or} punctorum sit immediatum cuilibet eorumdem. Videtur ex hoc quod nullus punctus est fingendus intercidere inter unum et alium. Quod con- 30 firmatur ex hoc quod linea aliquante incidens, que habet punctos angulares intrinsecos, cum sit recta et continua, habet utrobique puncta immediata. Patet ergo quod A, ex una quadrata superficiali, habet 3^a puncta; scilicet B C D sibi immediata, et per idem habet versus 35 occidens alia tria puncta; et sic habet sex puncta inferius tangencia; et per idem, multiplicando pentagonos,

12. dr̄arp B. 14. ac' B. 16. 4^{thm} B. 21. utr^g B. 26. 4^{thm};
and so all along B. 30 a'qe B.

1. *Unum distabit.* Wyclif seems inconsistent here. He all along says that his indivisible points are 'inmediata'; which I cannot understand to mean anything else, except that they touch each other.

exagonos, etc., haberet ex omni parte puncta circumstancia infinita.

To answer this, note that the world, with each of its parts, has positions corresponding to its diameters of length, breadth and height; and these diameters have their points placed differently from all other lines, somewhat like directions of cleavage in wood or stones;

and they influence the position of all points, so that a given point A will be touched by only 6 other points in the direction of the three diameters of the world, and by no others.

It does not follow that any line drawn to a point is bent, unless in this direction; for it will touch that point by means of another that touches it, and belongs to one of the three diameters.

Pro ista consideracione solvenda, notandum quod mundus, sicut quotlibet eius partes, habent posiciones suas lineares et superficiales, quarum posicionum radix est 3^{x} dynamiter mundi; scilicet longitudinalis, latitudinalis et altitudinalis. Iste autem tres dyametri, sicut et quelibet linea ab aliqua istarum eque distans, habet aliam manierem posicionis suorum puncrorum, quam alia linea reliqua obliqua. Sicut enim non esset racio scissibilitatis ligni vel lapidis 2^{m} poros longitudinales pocius quam transversi, nisi ratione disparitatis in continuacione linee naturalis, sic in mundo non esset racio quare una dyameter esset longitudinalis vel latitudinalis, pocius quam quelibet tracta ad quoslibet polos mundi, cum esset racio specialis quam ego pono a michi probabili ex posicione suorum puncrorum respectu puncrorum alterius linee oblique; et hinc videtur radios influxos in ista inferiora habere disparem efficaciam 2^{m} modum disparem incidendi. Dico ergo quod omnis punctus sensibiliter intrinsecus alicui istorum trium linearum vel sibi eque distancium, tangit duos punctos in eadem linea, et nullam reliquum angularem. Ut in casu positivo, si A sit punctus talis linee, tunc illum tangunt solum sex puncta versus 3^{s} differencias supra dictas, ita quod nullius quadrati minimi puncta angularia obliquata a posicione predicta tangunt se.

Et si argumentatur quamlibet lineam [non] directe incidentem quo ad posicionem | predictam esse curvam, B 114^a dicitur quod non sequitur. Pro quo notandum quod quilibet punctus linee primi modi est punctus linee 2^{i} modi, et econtra. Unde linea in medio incidens inter duos semidyametros mundi, dividendo angulum rectum in duo equalia, ut loquitur geometer; ut, gracia exempli, C linea incidens inter A semidyametrum orientalem et B semidyametrum meridianum, tangit per centrum

15. te^{ra} B. 18. v'er B. 20. incedendi B. 22. tānt B. 28. non deest B. 32. lrā B.

28. It is with some hesitation that I have added *non* here, supposing *directe* to mean 'in the direction of one of the world's diameters'. Any line produced to the point A in another direction would form a curve with its last two points, so to speak.

punctum A linee inmediatum centro. Ex quo sequitur quod ille punctus A linee est medius inter centrum et punctum angularem proximo supradictum punctum in linea inmedia. Et sic ascendo oblique 2^m situs individuū sibiles immobiles et sempiternas. Unde, quicunque concedit talem lineam non esse rectam inveniat in mundo alium situm reccius positum vel ponibilem inter extrema. Rectum enim est longitudinaliter positum, cuius nullum medium obliquat ab extremis eiusdem. Et si argumentatur quod non sit racio quare punctus A linee, immediatus centro, sit extremum C tangens centrum, quin per idem punctus B linee, immediatus centro, sit extremum C linee per quod tangit centrum: dicitur quod sunt due tales linee, quarum utraque communicat cum reliqua in omnibus preterquam in signatis punctis. Ideo oportet ex suppositione capere C esse lineam illam que per punctum A linee immediate centro tangit centrum.

Ex istis patet quod non sequitur: *A punctus tangit B punctum*, et *B punctus tangit C punctum*: ergo, *A punctus tangit C punctum*. Ymaginacio autem non sufficit ista capere, cum solum capit sensibile cumulari supra sensibile et per consequens inter illa intercidere angulariter unum minus. Ideo oportet superius ascendere ad aciem intellectus in recte concipiendo compositionem continui ex non quantis. Quod grave est facere, ex hoc quod ymaginacio cogit intellectivum in apprehensione cuiuscunq; ymaginabilis; et cum in toto ambitu sui obiecti non reperit compositionem huiusmodi parcium, non est mirabile si dissentit. Sed intellectus dicit sibi quod est dare parcium indivisibilium compositionem aliam, quam non est suum discutere.

Sed quia dicta posicio videtur plurimum repugnare conclusionibus geometrie cum suis principiis; ideo expedit parum disgregi, ne posicio dicta videatur contraria tam lucidis veritatibus, ex tam firmis principiis demonstratis. Libenter tamen scirem a modernis argumentibus geometrice contra dictam viam de compositione continui ex non quantis, quid ipsi vocant lineam, superficiem, punctum et angulum; si negent talia mathematicalia posse [esse], quomodo non verentur arguere, pec-

No line could be straighter.
None of its intermediate points is out of line with its extremities.
If it be said that it might as well touch any other point that touches the centre, this is denied, because they form different lines, differing by one point only.

This is a sophism: The point A touches B, and the point B, C. .

A touches C. It is true that we cannot imagine these things; but we must transcend imagination by intellect: a work of some difficulty, because imagination cannot find the inextended anywhere, and consequently dissents.

Argument ad hominem against

Nominalists: do they admit mathematical points.

Lines, &c.? If not, how can they urge geometrical difficulties? against us? And if they do, they admit our position as true.

cando in materia, dum sumunt sibi notorie impossibilia? Si autem dicant quod necessarium est esse huiusmodi elementa, ut oportet geometriam supponere, coacti erunt concedere quod talia non possent mathematice sustineri, nisi ponendo sua subiecta indivisibilia, et per conse-5 quens componere substancias sensibiles quarum sunt principium.

- Different
senses:
- (1) *Of a point:* either the minimum perceptible by our senses, or the absolutely indivisible end of a line.
 - (2) *Of a line:* length either without sensible breadth or thickness, or without any at all.
 - (3) *Of a surface:* length and breadth without sensible thickness, or absolutely without thickness.
 - (4) *Of an angle:* either the relation of two natural lines, meeting in a natural point, or of two mathematical lines meeting in a point of the same sort.
- The first sense seems to be employed by Euclid.
- Not every 'indivisible', only that 'indivisible' of which a line is made up, is a point. This is rather a description than a definition;
- Primo ergo notandum quod unumquodque 4^{or} predictorum potest intelligi equivoce. Nam punctus potest significare vel minimum sensibile 2^m 3^s demensiones 10 terminatum intrinsecus quantitatis continue permanentis, vel terminativum linee intrinsece simpliciter sine parte. Et sic linea potest significare vel quantitatem continuam, permanentem, sensibiliter longam, sine sensibili latitudine vel profunditate eiusdem, vel 2^o quantitatatem permanentem sine latitudinali profunditate B 114^b simpliciter. Similiter, superficies potest significare quantitatem huiusmodi longam et latam sine profunditate sensibili; vel quantitatem huiusmodi sine profunditate simpliciter. Et res primi modi vocantur apud philosophos 20 puncta, linee, vel superficies naturales. Et res 2ⁱ modi vocantur puncta linee vel superficies mathematicae. Et diversimode sencientes statuerunt sibi talia naturalia disparium quantitatum; sed omnia huiusmodi, solo intellectu noscibilia, sunt posita in suo termino naturali. 25 Angulus etiam potest significare positionem figure sensibilis 2^m concursum linearum lateralium ad punctum eius signabile naturalem; vel positionem significanter simpliciter 2^m concursum linearum lateralium ad punctum eius mathematicum terminantem. 30

Et iste videtur esse sensus Euclidis et aliorum mathematicorum loquencium de ipsis 4^{or} modis rerum. Non enim potest intelligi omne indivisible esse punctum, quia tunc Deus et quelibet unitas ac principium cuiuscunque generis esset punctus. Ymmo sunt quotlibet 35 indivisibilia situata, quorum nullum poterit esse punctus. Ideo melius et planius dicitur quod punctus descriptivus est indivisible compositivum linee. Et si obicitur quod linea, cum sit puncto posterior et compositivum, cum sit passio vel accidens puncto, non debet cadere 40 in eius definitione: dicitur quod punctus, cum sit extra genus, describi potest, sed non propriè definiri. Nec est inconveniens in tali descriptione poni quodammodo posterius. Verumtamen patet logico quomodo punctus

est prior linea in elementari compositione. Sed linea est prior puncto in finali ratione, cum est finis gratia cuius est punctus. Et sic eadem causant se reciproce in dispari genere causandi. Et oportet proprietates capere logico differenciarum latentium in quotlibet describendis. Ulterius, quo ad descriptionem linee vel superficie, notandum quod longitudine vel latitudine non est eius genus vel species, sed passio aut accidentis; sed sicut punctus aut punctualitas est *substanciam esse punctualem*, sic linea vel linealitas est *substanciam esse linearem*, cui inseparabiliter accedit longitudine; et superficiem que est *substanciam esse superficialem* inseparabiliter consequitur quo ad speciem latitudine, licet eadem superficies posset nunc esse longior aut lacior, et nunc brevior aut stricior eadem, dico 2^m materiam. Pro quo notandum quod in quolibet corpore est dare maximam lineam, maximam superficiem, et maximam multitudinem punctuum, que est prima mensura penes quam attenditur cuiuslibet talium magnitudo.

Ex quo patet quod eadem corporis magnitudo sit equalis sue maxime linee et sue maxime superficie; et per consequens rectificata maxima linea mundi haberet duo extrema cum medio et proporcionem finitam ad quamlibet eius partem, manens continue causata: ut mundus. Hec tamen rectificacio est impossibilis, sicut et posicio linee simpliciter infinite. Talis enim foret infinitum maior mundo.

2º patet quod linea non superaddit multitudini punctorum nisi continuacionem; superficies superaddit linee continuacionem linearum immediatarum, et corporeitas continuacionem huiusmodi superficierum. Unde in predicacione 2^m causam suscipiunt omnia hec 4^{or} de se invicem predicationem, licet non formalem.

3º patet quod longitudine, latitudine, et profunditas non sunt quantitates sed quantitatem continuam consequentes, licet geometre propter ampliorem noticiam et differentiationem accipient longitudinem et latitudinem, loco generum linee et superficie. Nec ista duo et profunditas correspondent proporcionabiliter quantitati. Nam nullum corpus est precise eque magnum, ut longum, | quia tunc ipsum et linea sua longitudinalis essent equalia;

at any rate the word 'line' can enter into it, for lines and points cause each other diversely.

Note also that points, lines and areas are accidents of substances, and mean simply that a substance has position, length, or surface. In each body there is a maximum of length of surface and of number of points.

And its size is thus equal to its greatest length or surface;

though in some cases such lines cannot be made straight.

The line adds nothing to the points but their continuity: the surface is but a series of lines, the volume, a series of surfaces that touch.

Length, breadth and height are not quantities,

and thus nothing is as large as it is long, for then it would be equal to its own length.

1. logico pro linea (sic) B.

28. multitudinem B.

29. lineam B.

et idem esset argumentum de qualibet superficie assignanda. Et de linea patet idem, cum quelibet linea infinitorum punctorum quo ad nos sit alicui corpori equalis cui repugnat esse eque longum cum eodem. Potest eciam deperdere longitudinem per circumlocutionem, ut videtur, stante magnitudine. Ymmo magnitudo et parvitas sunt passiones quantitatis; et idem est iudicium de profunditate. Omnia enim ista suscipiunt magis et minus, 2^m relationem quam superaddunt quantitatibus.

A line may be equal in size to a body; but the body could not be of the same length. Length would be lost by merely turning the body in the sense of breadth.

As for angles, Euclid's definition should be properly understood. If an angle is but a meeting of two lines it is an indivisible point, if it is their union, it is an aggregate of many extended things.

But those who would attack my system require to learn what

angles are. Divisions of angles into those that conclude a space or only an area; the latter into rectilinear and curvilinear, acute or obtuse;

or described on a plane, when one side only may be curved, or both.

Ulterius quo ad anguli descripcionem patet quod diffinicionem Euclidis oportet sane intelligere supra verba. Nam primo videtur ex diffinicione Euclidis quod angulus sit tam contactus quam applicatio linearum; et si sit contactus, tunc indubie est indivisibilis, et post test manere non angulus; et si sit applicacio linearum, tunc est aggregatum ex multis applicacionibus extensis. Ideo vellem quod sollicitantes se ad pugnandum compositionem continui ex non quantis per impugnationem sententie geometrice de magnitudine angulorum essent primo fundati in noticia quantitatis eorum; quia noticiam *quid est* oportet precedere noticia *quia est* de eodem.

Suposita ergo descripcione angulorum phisica, patet quod sicut figurarum, sic et angulorum quidam est corporeus et quidam superficialis; et superficialium quidam est rectilineus et quidam obliquilineus; et obliquilinearum quidam est in superficie convexa ut anguli sperales; in talibus enim habent 3^s anguli 3^s angulos rectos; ut patet de quadratis extime superficie mundi. Quidam autem sunt anguli acuti obliquilinee, et oblique superficialis; ut anguli intrinseci zodiaci et equinocialis; et alii anguli huius sunt obtusus; ut anguli extrinseci illis oppositi. Quidam autem anguli obliquilinei sunt in superficie plana; et tunc vel sunt obliquilinei 2^m unum latus tantum; ut angulus contingencie vel angulus intrinsecus sibi oppositus; quorum primus causatur ex porcione linee circularis et rectilinee eundem circulum contingentis, et 2^{ns} causatur ex eadem porcione linee circularis et dyametri circuli con-currentis. Aliquis autem est oblique lineus 2^m utrumque

12. intelligi (*sic!*) B. 32. 30^{ei} B. 36—37. 9^{lin*e*} B.

36—39. See pag. 35.

latus tantum; ut angulus causatus ex contactu duorum circulorum. Et angulorum superficialium rectilineorum quidam est rectus, quando linee recte super se eriguntur; quidam est obtusus, ut quilibet maior recto; et 5 quidam est acutus, ut quilibet minor recto: et quotlibet sunt proporcionabiles divisiones de angulo corpore, ut patet faciliter adaptanti.

Sed videtur ex descripcionibus supradictis quod quilibet angulus sit multus per totum subiectum, et per 10 consequens multus magnus. Videtur eciam quod ad eundem punctum essent quotlibet anguli; quia quot 15 sunt figure sic posite ad datum punctum, tot sunt anguli. 3º videtur quod nedum descripciones Euclidis, sed eius sentencia, ut plurimum, est neganda.

15 Ad primum negatur assumptum. Pro quo notandum quod cuiuscunque mathematici substancia vel natura est indivisibiliter situata, et per consequens nullus talis angulus est quo ad substanciam suam magnus. Verum tamen 2^{er} potest intelligi angulum esse magnum; vel 20 in natura propria quo ad molem, ut angulus naturalis, vel descriptive quo ad basem; ut quicunque angulus mathematicus; et sic dicunt geometre omnes angu- B 115^b los | rectilineos equales, quorum quecunque bases terminantes equalia latera indirecte incidencia sunt equales. Angulus enim naturalis est principium mensurans posicionem et quantitatem figure angularice, sicut et angulus mathematicus est principium eius. Ideo, sicut virtus, eciam indivisibilis, dicitur magna respectu principiati ab eadem, sic et angulus potissime, cum sit de 30 genere respectuum; ut divisivum, proporcio, agencia, et quotlibet talia dicuntur magna solummodo respective.

Et si queritur de subiecto primo superficialis anguli, cum sit accidens, dicitur quod cuiuslibet talis subiectum primum est substancia tripunctalis, cuius quelibet duo 35 puncta constituant lineam vel basem minimam possibilem et 3^m punctum possibilem dispariter, tangendo utrumque priorum.

Unde patet quod quilibet triangulus minimus habet 3^s angulos, in quolibet 3^{um} punctorum conalium, quo- 40 rum quilibet dicitur angularis respectu basis sibi immediate; et sic angulus mathematicus est situ aliter in puncto mathematico, et essencialiter terminative in

Rectilinear angles are divided into right, obtuse, and acute angles.

Three difficulties.

(1) The angle, belonging to the whole extent of its sides, is indefinitely great.

(2) Any number of angles are in one point.

(3) Euclid's theory of

angles, as well as his

definition, is to be denied.

Answers.

(1) Denied.

No angle can be great, in its essence,

because the essence of things

mathematical is indivisible.

But we may say it has size either as to the space it contains, or as to its base.

We may also call an angle great as to its effect.

Where is the angle of mere area to be firstly found?

In three points that touch each other, of which two form the smallest possible base, and the third the apex of a triangle.

So the mathematical angle is situated at the apex, but has its essence at

the base of this base minima bipunctali; accidentaliter autem tripliciter triangle, and exists accidentally at any part of its produced sides. The solid angle is in the tetragon of four points, the smallest volume possible.

ad quamlibet basem suam. Primum autem subiectum anguli cuiuscunque corporei mathematici est substancia quadrupunctalis, que est corpus minimum possibile. Et proportionaliter dicitur de angulo naturali. Anguli ergo non dicuntur corporei vel superficiales, obtusi, recte vel acuti, nisi quia effectus corporis extensi sunt huiusmodi. Angulus ergo formaliter denominat suum subiectum primum angulatum, et efficienter quodlibet subiectum cuius ipsum subiectum primum est pars. Nec oportet ipsum angulum esse per omnem ipso angulatum. Ymmo sicut non per totum Ethiopem est ita quod ipse est albus 2^m dentes, sed solum ad dentes, sic non per totam figuram est ita quod ipsa habet posicionem 2^m indirectum concursum linearum lateralium ad datum punctum, sed solum ad illum punctum. In eodem ergo situ adequato sunt angulus et punctus conalis figure sic angulate.

(2) As 'whiteness' may be common to many bodies, so angularity may be common without being multiplied. But we may grant that many angles exist in one point.

Et per hoc patet responsio ad 2^m . Sicut enim eadem albedo partis est communis quotlibet corporibus iam participantibus sine eius multitudine; sic motus, angulus, et quotlibet alia accidentia, tam respectiva quam absoluta.

Conceditur tamen quotlibet angulos, tam naturales quam mathematicos, esse ad eundem punctum; sed non oportet quamlibet figuram ad datum punctum conaliter terminatam habere angulum mathematicum in immediate supra priorem: et eius mediatas habet angulum in immediate supra 2^m ; et sic de quotlibet angulis, quoniam constituant unum angulum naturalem, qui est duplicitate divisibilis, ut patet ex dictis de concursu et communicacione linearum, et de quantitatibus angulo-rum. Unde ad omnem punctum mundi est angulus componens aliud, et tamen nullus angulus extenditur per totum mundum, quia non est dare basem aut figuram 2^m aliquid ab eo distante, respectu cuius foret angulus. Sed sicut quidam vocant quamlibet figuram quadrangulam lineam, sic communiter vocarent quamlibet extensam posicionem figure ad conum terminantem et circa basem eius, angulum. Sed ista tercia vulgaris significacio terminorum est extra locucionem congruam geometri. Ex compositione ergo anguli mole magni ex 40

36. Perhaps *lineam* is a mistake for *quadratam*, or some other such word.

angulis inextensis potest patere composicio continui ex non quantis.

B 116^a Et patere potest preterea quod angulus habet magnitudinem tudenem preter molem: quod sic arguitur. Capio | 3^s angulos superficiales, qui equaliter constituant angulum superficiale rectam, 2^m doctrinam prime Vitulonis, que docet angulum rectum datum in 3^s partes dividere equales. Et sint illi anguli A, B, C. Capio ulterius 3^s angulos superficiales equales, qui in 3^{bis} diversis superficiebus constituant angulum corporeum piramidis trilaterale, iuxta sentenciam penultime diffinitionis undecimi Euclidis; et tunc videtur quod angulus corporeus dictus pyramidis et angulus rectus superficialis sunt simpliciter equales, quia eorum tercie sunt euales: quod reputant adversarii maximum inconveniens. Certum est tamen quod 3^s anguli mathematici superficiales constituant quemcunque minimum angulum mathematicum corporeum; quia, ut patet ex dictis, quilibet huiusmodi angulus corporeus subiectatur primo in tetragono 4^{or} punctalium in cuius cono situatur, et ad basem tripunctalem essencialiter terminatur; et cum in illa basi tripunctali sunt 3^s linee minime, patet quod est dare 3^s angulos mathematicos superficiales terminatos ad differencias, 3^s lineas ad constitutionem anguli corporei requisitas; et sic ex talibus insurgitur ad angulum mole magnum.

Angulus autem corporeus mathematicus non est mole magnus, sed habet esse situale in unico punto cum 3^{bis} angulis superficialibus ipsum principiantibus.

Et preter hoc habet esse causacionis in quolibet 30 trium punctorum sue basis causantis. Sic enim vere conceditur similitudinem esse subiective in subiecto simili

quod informat, et causaliter, obiective, vel terminative, in subiecto, quantumlibet distante, a quo dependet. Et hoc habet angulus mathematicus ultra punctum, cum

35 omnis punctus sit absolutus, et angulus respectivus. Differt etiam angulus mathematicus corporeus ab angulo

superficiali, in hoc quod talis angulus integratur quo ad substanciam ex angulis superficialibus, tanquam eius partibus qualitativis, licet non quo ad molem, sed

40 tanquam partibus disparium rationum, convenientibus

An angle has magnitude which is not quantitative. Take a right angle; divide it into three equal parts; then compare it with a trigon of which each angle is equal to one of these parts; the plane right angle will thus equal the trigon; which, if all magnitude of angles were quantitative, would be a flat contradiction.

The solid mathematical angle has no dimensions, only position of its apex and essence in its three triangles; also a causative esse in each point of its base.

An angle has therefore relative, not only absolute being, like a point.

The difference between a solid and a superficial angle, is that the former consists of the latter, as its parts.

6. vitulonis B. 10—11. trilate' B. 12. 3^e (sic) B. 14. mie B.
39. qu^vis B.

6. Vitulonis = Vitellionis. See *Logica*, I, p. 181.

Every physical angle in genere anguli; sicut figura componitur ex finitis. composed of a Non sic autem de superficiali angulo quocunque. great many Angulus autem corporeus naturalis quicunque habet angles and substances. quotlibet angulos et corpora, que ipsum principiant;

The mathematical solid angle has parts, the superficial has none; it can only be divided into the parts of which it is the cause, i. e. the figure that strikes the senses.

A 3^m dicitur quod Euclides, more suo, describit (3) Euclid gives angulum in predicacione 2^m causam. Nam ex ipso quod a generic definition of an angle; when two lines meet, they produce an angle.

He likewise calls right lines and plane surfaces extensions, says that a sphere is the revolution of a semi-circle, and that a line moved parallel to itself makes a square.

A 3^m dicitur quod Euclides, more suo, describit

due linee alternate tangunt se 2^m applicacionem figure quam terminant in differenciam, causant angulum ad terminum utriusque; et quandoque econtra diffinit

Euclides natura prius per suum causatum posterius;

ut lineam et superficiem rectas vocat extensiones; ut

patet primo elementorum. Speram vocat transitum

dimidii circuli, ut patet libro undecimo; lineam ductam

in se dicit superficiem quadratam perficere, ut patet

libro 2^o: et sic de | de quotlibet dictis huius philosophi,

B 116^b que ignorantes sentenciam universalium ignorabunt.

Sensus ergo suus exprimitur per descripciones supra positas, si non fallor.

25

No mathematical angle can be divided as to quantity, but the magnitude of its base can be thus divided.

Every right line may be bisected, and the two sections are properly called equal, so far as our senses go.

Nec obviant hec dicta sue sentencie, etsi finem quo-

rumdam ipsum communicatum contradicant. Nam licet nullus angulus mathematicus dividi poterit quo ad

molem, tamen dividi potest 2^m magnitudinem respec-

tivam captam respectu sue basis, ut docet conclusio

30 primi et quotlibet alie conclusiones eiusdem. Et sic quan-

tamlibet lineam rectam dandam contingit dividere in duas

mediatates, quarum neutra divisibiliter excedit reliquam.

Et omnes tales vocat sensibilis philosophus, satis vere

ad sensum suum, mediatates eequales. Nam, capta qua-

35 cunque linea naturali, contingit significare punctum eius

medium naturale, quia coniunctus utrique parti residue

constituit duo equalia, que integrant suum totum. Talis

enim punctus naturalis continet quotlibet puncta mathe-

matica. Et sic intelligitur de centro circuli. Nam capta 40

15. duō^m B.

34. *Sensibilis*. In the same sense as *physicus*.

dyametro equalium punctorum, nullus punctus mathematicus est eius centrum, simpliciter, sed punctus linee naturalis. Et per hoc solvuntur conclusiones 3ⁱⁱ libri elementorum Euclidis. Nec capit yimaginacio duo puncta esse inmediata in eadem superficie, ut linea; ideo negat talia duo esse sensibiliter inmediata, ut patet ex A primi libri. Unde quererem a volente lineam dividere in duo equalia, utrum medius punctus manebit vel corrumperetur post divisionem. Si manebit: quare pocius cum una 10 medietate quam reliqua? et si corrumperetur utrobique, sequitur punctum quemcunque esse accidentalem sue linee: quod est superius improbatum.

Et idem est iudicium de divisione anguli. Nam nullus angulus mathematicus 2^m molem differre potest, cum sit indivisibilis quo ad molem. Si enim angulus superficialis quicunque esset divisibilis quo ad molem, tunc angulus contingencie est angulus rectus, et angulus intrinsecus oppositus angulo contingencie essent euales simpliciter: quod contradicit in 3^{ium} Euclidis elementorum. Dividere ergo angulum mathematicum ad sensum Euclidis est dividere figuram ipso angulatam 2^m lineas pertractas ad basim et conum dicte figure; et illa vocatur divisio anguli in effectum quodammodo similem; ac si quis divideret potentiam vel virtutem individualem in sua 25 stancia ad divisionem sui effectus. Causaliter enim dicit philosophus, 3^o de Anima, ipsam habere partes virtuales.

Ex istis et superius dictis satis patet quod si A, linea mathematica, cancellat B, lineam mathematicam, equalem in medio punto orthogonaliter; et si, manente utraque recta continue, sed B (inmota A) declinet successive, quousque fuerit directe supraposita B, mediis punctis continue se tangentibus, quod statim cum A incipit declinare ab angulo recto ad acutum, movendo 2^m quemlibet eius preter punctum contactus, incipit A 35 simul tangere multa puncta mathematica in B; quia aliter quemlibet punctum circumstarent infinita puncta, et minimus gradus superioritatis vel cuiuslibet denominacionis continue, sicut et quilibet angulus in sua substantia foret in infinitum divisibilis; que omnia sunt 40 impossibilia; ideo et antecedens.

Et ex istis patet responsio ad illam famosam rationem contra dictam opinionem de compositione continua

23. si libe B.

As imagination cannot represent two points that touch each other, Euclid denies their existence for the senses. If you bisect a line, what becomes of the middle point?

No angle can differ from another in magnitude; therefore it is indivisible in that sense; otherwise the angle of tangency would be a right angle.

Thus if the line A bisects B, equally long, at right angles, and then B is turned round till it coincides with A, the central points remaining the same as before, it is evident that A, from the moment it is no longer perpendicular will touch many of the points of B.

A celebrated argument against our doctrine: the diagonal of a square and its

side would be of equal length, for the number of points in both are equal. If we draw parallels from one side of the square to the other, each will intersect the diagonal in one point; so to each point of the side there will correspond one point of the diameter.

We answer that, as these parallels intersect the diagonal obliquely, they will each touch several points.

If the lines touch each other, some of the points they touch will coincide.

Reply:
1st. These parallels would no longer be straight.

2nd. They do not touch each other.

3rd. Each parallel intersecting the diagonal in a different part of its extent, the points they touch cannot be counted together.

Here we deny the consequence. One line may touch only one

ex non quantis, qua probatur ex illa sequi quod omnis dyameter quadrati sit equalis | suo lateri; quia, si non, B 117^a sit A B C D quadratum cuius A dyameter non sit equalis A B lateri. Contra: precise tot sunt puncta in A B sicut in A D: ergo, sunt equalia. Antecedens⁵ probatur ex hoc quod si a quolibet puncto A B linee protrahatur ex transverso eque distanter ad costam quadrati linea recta usque ad C D, tunc de facto tangeret quelibet talis in utroque latere quadrati et eius dyametri unicum et disparem punctum a reliqua linea.¹⁰ Ex quo plane sequitur cum veris quod precise tot sunt puncta in data dyametro ut in costa.

Istud argumentum peccat in materia, cum quelibet datarum linearum oblique et non orthogonaliter dividit datam dyametrum, et per consequens contingit aliam¹⁵ tangere multa eius puncta, sicut patet ex nota proxima. Nec ex hoc sequitur aliquam linearum illarum esse curvam, vel regulariter dyametrum esse duplam, aut^{3plam} ad costam, propter numerum duplum aut^{3plum} punctorum integrancium. Stat enim illas lineas sic sec-²⁰ tantes dyametrum tangere eadem puncta, cum omnes in immediate tangunt omnia sua puncta reciproce.

Sed argumentatur contra illud, supponendo omnes lineas de quadratis esse rectas et in eadem superficie, iuxta petitionem primam primi Euclidis. 2^o supponitur²⁵ omnes dictas lineas transversales a latere ad latus esse incommunicantes. Et 3^o argumentatur sic: quilibet punctus ad dyametrum est captus in aliam partem alicuius istarum linearum transversalium, sicut et quilibet punctus date superficie quadrate; et aliqua earum³⁰ habet duo vel 3^a puncta date dyametri, nulla communicante cum reliqua. Ergo quilibet habet totidem. Ex quo sequitur quod omnes ille simul habent in 2^{pla} vel in 3^{pla} plura puncta date dyametri quam sunt puncta alterius lateris iniciativa omnium illarum, et 35 stat conclusio; scilicet, quod quilibet dyameter est 2^{pla} vel 3^{pla} ad latus sui quadrati.

Pro isto oportet negare consequenciam. Pro quo notandum, quod si una illarum linearum transversalium caperet in partes multa puncta date dyametri, et alia⁴⁰

10. vnic B. 24. dcq'g B.

28. dyamet' B.

38. Pro — con-

sequenciam in marg. B.

non, tunc non esset color in consequencia. Sed sic est in quolibet quadrato sensibili: ergo, etc. Nam in minimo quadrato, sicut et in quotlibet figuratorum punctorum quo ad nos, dyameter est equalis suo lateri; 5 quia utraque eque punctalis. Tales autem sic, cum sint extra illud subiectum primum geometrie, non sunt directe de eius consideracione. Ideo non mirum si descripciones et proprietates figurarum geometricarum illis non congruant. Et in quolibet quadrato due coste 10 extremales tangunt tantum duo puncta sue dyametri. Alie autem linee intermedie, si ad tantum declinent ab angulo recto quod oportet punctum proximum contactui incidere in suum proximum lateralem, inmediatum puncto contactus, tunc tangunt tria puncta de dyametro, et 15 aliter non. Ad quod concipiendum supponatur ex prius declaratis situs esse immobiles, et quemlibet punctum mundi in eadem superficie circumstare 4^{or} puncta, versus directiones 4^{or}. Ex quibus sequitur quod quilibet 20 punctorum immediate circumstancium polos mundi tantum 4^{or} situs describit in die naturali. Et si queritur in quibus instantibus, dicitur a michi probabili quod, cum punctus equinocialis fuerit in medio inter oriens et meridianum, tunc punctus immediatus polo 25 versus oriens incipit per posicionem vel per remotionem B 117^b de presenti incidere in situm proximum supra polum; et, cum dictus punctus equinocialis fuerit in medio inter meridianum et occidens, tunc incipit dimittere situm illum et incidere in situm proximum sinistrum vel occidentalem; et sic de ceteris quoad sibi. Quorum 30 racio est, quia, cum punctus equinocialis fuerit in medio talis contradictorie, tunc dividit angulum rectum centralem in duo equalia, et per consequens ad neutrum latus declinat. Et cum nichil potest poni in esse ex contingencia equali, patet quod racio est abdita apud 35 deum quare pocius est in uno situ quam in reliquo.

14. $\widehat{ca}nt$ B. 18. dras=differencias B. 29. quadralis? B;
quod s' B. 31. $\widehat{9d}^{\circ}$ B. 32. adne \widehat{r} B.

3. *Figuratorum.* I suppose that Wyclif means a square of points, thus [] in which the number of points of the diagonal and the side are equal.

We should not be ashamed to confess our ignorance of such matters; it suffices that we know that

God has ordered all things for the best.

As soon as the movement begins, it is necessary that the points should change places by a quarter of a revolution; and the same is true of every revolving circle, and lines crossing each other. This explains how two lines intersecting not at right angles, sometimes touch by one point, sometimes by more.

Yet the line crossed is not curved; curvity requires at least three points, as it proceeds from straightness.

Here we see that no one here below can know what the proportion of the diagonal to the side is; for no one can know which lines touch in one point only, and which in more.

Nec verecundetur quantumlibet subtilis philosophus fatere propriam ignoranciam in quotlibet particularibus, specialiter de finitate nature; ut puta quare Deus pocius produxit hoc individuum possibile nunc quam tunc; quare pocius hoc individuum quam aliud possibile, quare 5 pocius ponit polum articulatum in B situ quam in C; et sic de quotlibet aliis, in quibus omnibus dicimus quod Deus ordinat istos propter melius ordinis universi. Et istum gradum melioritatis ut plurimum nescimus exprimere in particulari.

Cum autem inceperit plus declinare ad unum 4^{or} situm semidyametalium, racio exigit quod tunc tangat punctus proximus centro vel poli situm proximo indi- 15 visibilem illius situs linearis semidyametalis. Et eadem est consideracio de quolibet circulo circumducto, centro eius quiescente; et de A linea cancellante B in casu superius posito, cum quotlibet similibus. Et ex istis convincere potest intellectus quomodo linea recta, oblique incidens super aliam lineam rectam, quandoque tangit duo puncta sua, et quandoque unicum. Et per 20 idem in eadem superficie tales linee oblique se sectantes, quandoque communicant in unico punto (ut puta, quando orthogonaliter se secant) et quandoque communicant in pluribus, videlicet quando 2^m medietatem anguli recti se secant, et semper cum acucius sese 25 secuerunt. Nec sequitur ex hoc curvitas alterius linee. Quamvis enim curvitas sit extensa, nulla tamen eius pars situatur in situ punctali, aut in situ bipunctali; sed primo in tripunctali. Ideo oportet quod omnis obliquacio vel curvitas procedit a rectitudine, sicut 30 omnis inequalitas ab equalitate. Quia ergo talia tria punctalia possunt esse eque distanter posita respectu alicuius trium dyametrorum mundi, vel in aliqua eorumdem, ideo stat ipsam servare rectitudinem.

Ex istis patet quod incertum est cuiilibet hic vianti 35 de proporcione dyametri sensibilis ad costam sui quadrati, eo quod dyameter, sicut dividit duos angulos quadrati in duo equalia, sic et quotlibet alia particulaaria per quorum medium incidit 2^m partes: et in tali posizione ignorari oportet que due linee ta- 40 liter se secantes communicant in unico punto, et

que in 3^{bis}; et per consequens ignorare oportet proporcionem, sicut et proporcionem anguli contingencie ad angulum rectum.

B 118^a Si autem quis theologisat dyametrum mundi oportere constare ex punctis inequalibus, cum argumentatur non esse medium mundi simpliciter; nec quemlibet mundi intrinsecum circumstarente precise 4^{or} anguli recti, eo quod, dempto impari circumferentie, ita esset; et sic diceret totum mundum constare ex punctalibus | pa-
10 riter paribus, cum aliter mundus non esset simpliciter divisibilis in medietates 4^{as} etc. (et sic de ceteris partibus, quo usque deveniatur ad indivisibilem unitatem); et posuerit insuper quamlibet circumferenciam circuli, oportere constitui ex punctalibus pariter paribus, sic
15 quod non est dare simpliciter medium quadre, quin angulus dividitur in duas medietates simpliciter: illi nunquam esset racio diversitatis quare, pro instanti divisionis anguli recti in duas medietates, punctus semi-
dyametri proximus centro erit pocius in uno situ
20 proximo centro quam reliquo.

Illi autem qui 3^o ponunt Deum posse ponere iuxta satus punctales lineares alios situs punctales commixtos sine amacione alicuius situs, esset facile quod dyameter quadrati esset 2^{pla}, equalis, vel quomodolibet aliter
25 proporcionata suo lateri. Et tunc nec sensus nec racio convinceret conclusiones geometricas esse necessarias, nisi ex suppositione: quod credo esse verum, si non intelligatur condicionaliter, vel de subiecto intelligibili, sed actualiter demonstratum. Nec probabit geometer
30 quod inter dyametrum quadrati et costam eiusdem servatur utrobique eadem proporcio: scilicet medietas proporcionis 2^{pla}; sicut nec probabit quod dyameter quadrati, costa eiusdem, et medietas prima dyametri, sunt 3^s termini continue proporcionales. Et per hoc
35 medium sequeretur conclusio. In omnibus enim talibus satis est mathematico quod non sit sensibilis defectus, vel quod sic oportet esse, suppositis suis principiis possibilibus; et ad istum sensum concludit. Ideo sciencia est satis necessaria. Nec scio adhuc aliquam istarum
40 3^m responsionum efficaciter improbare.

Et per hec patet responsio ad objectionem geometram, qua obicitur sequi exposizione continui ex non

If we say that the diameter of the world is composed of points unequally distant, denying that there is an absolute central point, and asserting the absolute symmetry of the points of which the circumference consists, there can be found no reason why one point should be in one place rather than another.

Or if we admit that God can add points to those which already exist without taking any away, the proportion of the diagonal to its side might be double, &c., Geometry would then be true only by supposition.

The geometrician cannot prove that the proportion

$\sqrt{2}$
exists everywhere in the diagonal.
I have not as yet been able to refute these two last opinions.

Another geometrical difficulty: in this system

one continuous quantis quod qualitercumque est proporcionabile con-
quantity would be to another tinuum continuo, taliter est proporcionabilis numerus
as one number numero; quod repugnat conclusioni XI^e 2ⁱ Euclidis, et
now this is the conclusioni 26^{te} 9ⁱ libri; et satis expresse diffinicioni
denial of 3^e 5^{ti} libri. Videtur eciam contradicere sentencie Xⁱ 5
incommen- libri que ponit quotlibet quantitates continuas incom-
surable mensurabiles, et quotlibet locis ponit multas passiones
quantities. verificari de continuis que non verificantur de numeris.

Reply:
Whatever is demonstrated for continuous quantities, holds also for the numbers of points of which they consist.
But the geometrician does not resolve quantity into indivisible points, and denies that all quantities have a common measure that is itself divisible.

Two lines, sensibly equal, may each contain different numbers of points, which may be prime numbers.
Of course, if a line were divisible into two *absolutely* equal parts, this would be impossible.

The senses err very much in their consideration of figures, &c., since no surface can be really square unless the number of its points be a square.

This agrees with Euclid's definition of a square — a line moved at right angles to its own length.

Quo ad ista, certum est quod omne demonstrabile in continuis est eciam potissime demonstrabile in discretis, cum totum sit sue partes. Quicquid ergo demonstratur de quovis continuo, demonstratur de numero indivisibilium qui ipsum constituant. Verumptamen geometr habet pro inconvenienti quod quantitas continua ymaginabilis resolvatur in partes indivisibiles [que 15 non sunt] sue consideracionis, vel quod quecunque quantitates, continue vel discrete, communicent in parte sensibili aliquota utrique. Nec aliter vocant communiques aut commensurabiles, si communicant in parte indivisibili. Unde nec in 5^{to} nec in 7^{mo} diffinit Eucli-20 des partem ut descripcio parti indivisibili conveniat. Non ergo sequitur quod omnis numerus totalis punctorum linee sensibilis est par, cum stat totalem numerum punctorum unius linee et totalem numerum alterius sibi paris esse numeros contra se primos, et per con- 25 sequens lineas illas ad unum sensum esse in commensurabiles: ut patet ex 29^a conclusione 7^{mi} Euclidis. Si tamen omne continuum esset simpliciter divisibile in duas medietates equeales, ut 4^{rius}, tunc indubie seque-30 retur contradiccio, si cum hoc omne continuum com- ponitur ex non quantis.

Et ex ipsis concipit intellectus quantus error contingit sensibus, considerando figuras, equalitates, et alias passiones corporum, cum hoc sit indubie verum quod nulla superficies est quadrata, nisi numerus punctorum 35 ipsa constitutivus sit quadratus cuius radix est numerus punctorum sui lateris. Nam ad istum sensum dicit Euclides quod linea ducta | in se constituit superficiem B 118^b quadratam; et si ducatur in se cubice, tunc cubum constituit. Unde, sicut bis duo constituant primum nu-40 merum superficiale quadratum, ita (capta linea pedali)

15—16. que non sunt *deest* sue sue B.

16. 9*ftō* B.

36. 9*dtus* B.

continens tot puncta quot sunt illius linee, constituant superficiem quadratam pedalem; et continens tot superficies, constituunt cubum pedalem.

Ex quo plane sequitur quod non omnis quantitas 5 cubica vel superficialis constat ex punctis paribus; nec omnis ex imparibus. Patet prima pars ex hoc quod omnis numerus circularis cuius quinarius est prima radix est impar, ut patet ex natura numeri circularis.

Not every quantity, whether cubic or square, consists of an odd or of an even number of points.

Ymmo quilibet numerus quadratus videtur esse impar, 10 et per consequens cum quotlibet huiusmodi numeri sint quadrati et cubici, patet quotlibet huiusmodi esse quantitates ex punctis imparibus constitutas. Et 2^a pars patet de quotlibet aliis numeris quadratis, quorum radix est par numerus.

15 2^o patet quod non quecumque proporcio signabilis est quadrati ad quadratum, et ita de aliis speciebus figurarum. Patet, ex hoc quod qualiscunque est proporcio figure ad figuram, talis est numeri ad numerum; sed non qualiscunque proporcio signabilis est inter 20 unum numerum quadratum et reliquum: ergo nec inter unam quantitatem continuam quadratam et reliquam. Ex quo patet quod nec corpus nec superficies quadrati potest quelibet augeri vel minorari, servando continue quadraturam.

Nor are all square or cubic quantities commensurable, since numbers of points are not necessarily so;

thus it is not always possible to change the form of a given square, keeping the same square number of points.

25 3^o patet quod ambiguum est philosopho si omnis circulus sit quadrabilis, et econtra: ymmo si alicuius circuli quadratura sit scibilis. Nam, si oportet omnem perfectum circulum constare ex punctis pariter paribus, iuxta evidencias supra dictas, vel supra tactas, patet 30 quod est impossibile aliquem circulum adequare quadrato, cuius radix est primus numerus circularis: et sic de quotlibet aliis que non constant ex numeris pariter paribus. Ymmo patet intendant quod illo supposito, solum quantitas quadrata cuius radix est quadratus 35 foret circulo coequanda. Si autem ex quolibet numero pari punctorum ultra 10, constat pariter cubus et solum ex tali, adhuc patet illud de quolibet quadrato constante ex numero ipsi circulari. Et ex isto patet quod It by no means follows that, argumentum buffonis non sequitur ex dubio: *cuiuscunque* if we can find a circle (or a

1. cou^s pro continente B. 2. cou^s B. 7. c'cu^r B. 8. c'cu^r B.

29. s^b B. 31. p'g B. 36. p^m culg B. 39. z B. 39. briffonis? B.

number) larger *contingit dare circulum maiorem, dato quadrato, et contingit minorem eodem: ergo contingit dare circulum sibi parem;* sicut non sequitur: *contingit dare numerum parem maiorem, dato numero circulari, et contingit dare numerum parem minorem eodem: ergo, contingit dare 5 numerum simpliciter sibi parem.*

The root of the difficulty is that the number of points is infinite *for us* in each case, and we do not know whether it is odd or even.

The sensible centre of the world consists of six mathematical points taken together. Every line can be circled or squared; thus every square can be equal to a circle; but we cannot here go into details.

Another objection: the smallest square (or other figure) possible is a circle.

These infinitesimals are beyond the province of geometry, and the names of squares, &c. do not properly denote them; or rather these bodies are at the same time triangles (squares, pentagons, hexagons, heptagons) and circles;

tingit minorem eodem: ergo contingit dare circulum sibi parem; sicut non sequitur: *contingit dare numerum parem maiorem, dato numero circulari, et contingit dare numerum parem minorem eodem: ergo, contingit dare 5 numerum simpliciter sibi parem.*

Radix autem ambiguitatis huius materie est ex hoc quod nemo scit de quovis numero sibi infinito, utrum sit par vel impar. Et per consequens non scit de totali numero punctorum mundi sue circumferentie vel dyametri 10 sue, si sit par vel impar; quia videri poterit quod, si numerus totalis punctorum sit pariter par, consequi ad hoc numerum punctorum sue dyametri esse pariter parem, eo quod, diviso totali situ mundi in duas medietates equeales incommunicantes, situs centri indivisi- 15 bilis cum neutra se teneret. Ideo videtur quod 6 puncta mathematica conglobata constituant cum aliis centrum sensibile; et sic quilibet mundi dyameter foret pariter par, cuius una medietas se teneret cum una medietate quantitatis mundi, et alia cum reliqua. Videtur eciam 20 quod quilibet linea sit circularis, sicut quadrabilis, et per consequens quodlibet quadratum equale circulo, et econtra, si non obsit maxima magnitudo. Totum istud requirit sensibile scrutinium diligenter dispositi, quod iste locus ex tam multiplice non permittit. 25

Et si argumentatur ulterius sequi ex oposizione quod quadratum et qualiscunque figura minima sit circulus, dicitur ut supra quod tales figure minime sunt extra consideracionem geometri; ideo descripciones figurarum quas ipsi ex opposito distingunt, non realiter illis 30 convenient; sed sicut figure aliunde sunt in suis premordiis confuse, sic figure corporum in suis primariis ele- B 119^a mentis. Unde prima figura, que [est] triangulus constans ex 3^{bus} punctis, dici potest primus circulus cui insit summus gradus circularis, que est indivisibilis quo ad mo- 35 lem: et illa est simplicissima superficies. 2^a figura est quadratum 4^{or} punctorum, que, posita 2^m 3^s dyametros, constituunt minimum corpus; sed et huic figure convenit circulus, sive spera, et illa sphericitas est maxime arcuosa, multiplicata per totum, cum sit primus gradus 40

8. deq'uis B.
deest B.

25. m̄et B.

30—31. r̄atit' illis ḡut B.

33. est

et simplicissimus. 3^a figura est pentagonus qui 2^m or if one point diversam posicionem potest esse circulus vel pyramis. of the four last Si enim punctum aliquem immediate circumstent 4^{or} puncta in eadem superficie, tunc ille punctus est centrum three, four, five 5 circuli habentis duas dyametros tripunctales; et quia and six sides) illud centrum communicat cuilibet earum, ideo est All these may quelibet 4^{or} semidyametrorum bipunctalis, et circulo also be in line. circumference ex 4^{or} rectitudinibus et 4^{or} curvitatis causata. Si enim 4^{or} punctis, constituentibus primum 10 corpus, addatur conaliter 5^{us} punctus, tunc erit confusa pyramis, 4^a figura est exagonum constans ex sex punctis; et illa potest esse linea, superficialis, vel corpus, sicut due proxime, 2^m diversitatem posicionis suorum elementorum. Et potest esse superficies 4^{angula}, vel 15 exagonum; et sic confuse circulus vel triangulus habens quodlibet laterum tripunctale; et patet consideranti figuratas numerorum, de quibus 8 Euclidis et secundo Aristotelice Boecii. Et in casu quo sit corpus, potest esse spera, vel pyramis, vel exagonum imperfectum. 5^a 20 figura est eptagonum, ex 5^e punctis constans; et illa potest esse linea, superficies, vel corpus, 2^m diversum modum posicionis; sibique competit perfectius racio spere, dum versus 6 differencias circumstant 6 puncta, 7^m quoad centrum.

25 Unde 2^m istas 5^e figuratas numerorum primorum posuerunt antiqui 5^e species corporum simplicium, secundum 4^{or} elementa, et 5^{tum} neutrum; et istas 5^e figuratas appropriarunt ordinate istis 5^e corporibus, ut patet per Themistum super 3^{um} celi et mundi. Et ad 30 exemplar istorum sunt tantum 5^e figure corporee regulares, ut patet 13 elementorum, conclusione 17^a; et hinc sunt tantum 5^e figure replete loci; ut patet 3^o de celo 68°. Hinc etiam exemplantur 7^{em} species speculorum regularium, ut patet libro 5º Vitulonis, 35 clusione 8. Ex ipsis colligitur quod prima omnium figuratum, quo ad elementarem compositionem, est triangulus; et prima ac perfectissima quo ad finalem causacionem est circulus. Unde licet Euclides prius The ancients according to these five figures, admitted five simple bodies: four elements, and a fifth primal matter? that was neither; there are also only five regular volumes; and there are seven sorts of regular mirrors. The triangle is the first of figures as to simplicity; the circle, as to perfection.

18. .2. f.^o ap^{ce} boeⁿ B. 24. q B. 25. a^m B. 27. 5^o B.28. ap^parut B. 29. f^r B. 33. 68^o B.

34. Vitellionis. See above, pag. 51.

tractat de triangulis quam de circulis; tamen primam passionem trianguli demonstrat per diffinicionem circuli, innuendo quod circulus sit triangulo prior perfeccione causalitatis.

Sense cannot conceive this,
and must always give us trouble.

Even our intellect can but confusedly perceive this, here below.

In omnibus istis oportet sensum sollicitari, cum non 5 capiat ista dicta. Licet enim longitudine linee mathematice et latitudine superficie mathematicae capiantur a sensu in aliis, non tamen in subiectis suis primis: sed et intellectum viancum oportet subtilitatem istius materie plurimum ignorare. Necesse est namque duas 10 lineas rectas inmediate poni in divisione mundi, et ab eisdem terminis oportet duas lineas indentatas progredi sic, quod una habeat in partem quemlibet datorum punctorum parium linee inmediate supponente; et econtra de altera; sic quod, quot sunt combinaciones 15 parcium talium rectarum linearum, tot sunt diversitates possibles linearum equalium terminatarum ad eosdem terminos, sine hoc quod aliqua diversiter sit curvata; sicut eciam corpus mathematicum componitur intrinsece | ex superficiebus, punctis, et lineis, sic stat cor- B 119^b poris mathematici unam terciam esse corporeitatem, 2^{am} superficiem, et 3^{am} lineam sive punctum; et sic de quotlibet combinacionibus. Nec est hoc plus inconveniens, sed longe plus patulum, quam quod figura, numerus, vel relacio, componatur ex partibus disparium 25 specierum. Et racio est, quia subiecta inmediaata istorum sunt substancie materiales, corporee, superficiales, vel lineares, que omnes (eiusdem speciei specialissime) integrant idem. Ideo oportet quod adequata eorum accidencia coextensa integrent eandem magnitudinem vel figuram. Non autem componitur accidentis extensum de accidentibus disparium specierum, que quidem accidentia informant subiecta inmediaata disparium specierum; quia talis forma foret etrogenia et non simplex.

The greatest possible angle is the angle in the centre of the world, caused by two lines, each of which is tangent to half of its diameter;

21. 3^{am} B. 38. o^{tp} B.

10. *Intellectum . . . ignorare.* As if to illustrate this truth more clearly, Wyclif gives us a long paragraph that seems incomprehensible. There is no doubt, however, that there are mistakes in the text; as, *supponente* (l. 14), agreeing with nothing.

angulus est figure cuius basis est bipunctalis, et cuspis quantumcunque linealiter prolata. Angulus autem contingencie datur, sicut et quicunque alias corporeus; et cuilibet angulo in proporcione finita noscibili, si non 5 obasset ignorancia comparandi.

Quotlibet sunt talia argumenta, quibus multi nituntur inpugnare dictam sentenciam. Sed ex predictis sumi potest responsio ad maiorem partem arguciarum quas alii multiplicant in hac parte. In ista namque materia 10 particularius et diffusius sum disgressus, ut hic dicta occasionem dent posteris ad considerandum subtilius compositionem continui ex non quantis.

Tercio, videtur sequi quod nichil potest rarefieri, nec duo corpora coextendi, cum materia prima non potest 15 componi ex suis partibus intensivis, et sic non esset dare situm corporis subtilis, immobilis, quem ingredi potest quocunque corpus glorificatum, ut theologi locuntur. Nec essent elementa in mixtis, sed corpus quantitative compositum ex non corporibus, et motus ex non 20 motibus, et esset status in utroque termino lacionis motus.

Hic dico quod dupliciter est rarefaccio intellecta: primo modo, quod corpus occupans situm corporeum sine adquisitione materie successive occupet situm 25 maiorem ad omnem eius punctum per egressum parcium intensivarum materie, vel quomodocunque alter. Et correspondenter de condensacione. Sed talem rarefactionem vel condensacionem credo non posse esse, sicut nec rarefactionem infinitam vel condensacio- 30 nem ad punctuale. Et sic de multis varie ymaginatis in ista materia. Non enim potest aliquid rarefieri, nisi vel per extensionem, vel per evaporacionem materie inbibito corpore alieno; et econtra de condensacione.

Unde 2º modo dicitur aliquid rarefactum, quod sine 35 pluri sui materia partes eius ponuntur extensius per intrinsecam occupationem corporis alieni. Sic enim spongio compressa dilatatur per ingressum aeris; et simile est iudicium de lana, farina et cinere, et quotlibet similibus in quibus est intercapedo notabilis corporis 40 continentis. Econtra autem, condensatur corpus, cum arte conprimitur extruso corpore alieno, ut aqua vel

the smallest has two points for its base, and its apex as far off as possible.

We have now answered the principal arguments drawn from geometry, and have gone into this question more at length, that it may be properly studied.

Third Objection.

a) No rarefaction or condensation is possible;

b) nor any space through which glorified bodies can pass;

c) the elements are not in their compounds;

a body, a movement, is made up of that which is neither.

Answer.

Rarefaction and condensation may mean that, without any addition or loss of matter, a body may occupy more or less space; which I consider to be impossible.

Or the words may signify that a body occupies a greater or less space on account of the presence or absence of another body;

aere; nec aliam rarefaccionem vel condensacionem convincit racio, experimentum vel auctoritas.

It is foolish to believe that a house is really filled with smoke and 'no air, or that nothing but mist can fill a large space. There are a great many interstices filled with subtle bodies, air and water. All bodies are said to have pores, even glass; this must be so, as the lighter elements in every compound fill its pores.

Rarity and density sometimes signify the spaces left between the parts of a given body, and sometimes the bodies which occupy those spaces. Aristotle and Gilbert de la Porée do not make this distinction. In the first sense, only compound bodies are rare or dense; in the second the sky is the most rarefied, and the earth the most dense of all things. Rarity is in direct ratio with the proportion of the rare element in the compound, and in inverse ratio with that of the dense element,

Unde fatuum est credere quod, stamine humido, unctuoso, vel alio combustibili resoluto in fumos, tota domus impleatur fumis huiusmodi sine commixtione aeris inclusi. | Et idem est iudicium de nebula exalata, B 120^a que videtur sensui decepto occupare regionem notabilem sine commixtione corporis alieni. In omnibus enim locis in quibus fiunt tales motus, sunt corpora subtilia commixta cum materia terrestri, ut aer vel aqua. Nec 10 est dare in loco nostro, de aliquo illorum, partem sensibilem que sit elementum purum, sed est quidam imperfecta mixtio ubique locorum nostrorum. Unde Urso et alii philosophi ponunt omne corpus esse porosum; in tantum quod philosophus dicit vitrum esse 15 porosum; quod eciam oportet concedere, cum elementa oportet habere loca propria in mixtis, et per consequens iuxta elementa grossa oportet ponere elementa subtilia, quorum situs porus vel porositas nominatur.

20

Unde notandum quod rarum et densum dicuntur equivoce; nunc de posicionibus mixtorum, quorum partes sparsim aut unite iacent cum mixto corporis alterius speciei; et nunc de subtilitatibus aut corpulencii, quibus corpora dicuntur subtilia vel terrestria. Et in 25 ista equivocatione laborant Aristoteles et Gilbertus Porretanus, hoc est, auctor 6 principiorum. Quorum primus ponit raritatem et densitatem esse posiciones, et non ponit ipsas esse qualitates. Primo modo loquendo, possunt raritas et densitas solum mixtis competere. 30 Sed 2^o modo celum est rarissimum; et sic gradatim usque ad infimum elementum, ita quod terra pura sit summe densa, et celum purum summe rarum. Et certum est quod isti sensus sunt valde equivoci, et pro ista materia cum diligentia memorandi. Raritatem 35 autem primo modo dictam dixi quandam attendi penes magnitudinem situs quem rarum cum corpore alieno commixto occupat in comparacione ad peneitatem sue materie; sic quod raritas positive intelligitur quo ad situm, et privative quo ad multitudinem materie. Econtra 40 autem densitas privative quo ad situm et positive quo

ad multitudinem materie. Unde non opponuntur private, sed quodammodo relative, ut magnum et parvum, intensem et remissum, cum ceteris similibus.

Sed obicitur per hoc quod, iuxta hanc viam, quodlibet elementum, proporcionaliter ut esset maius, continet plus de materia. Consequens falsum. Probatur 3^r. Primo, quia tunc ignis iuxta communem proporcionem in 1000^{lo} plus contineret de materia quam terra. Patet deduccio, supposito quod omne elementum superius sit ad proximum inferius 10^{lum} quantitate. Consequens tamen falsum; quia elementa, ut superiora, minus habent de materia et plus de forma. 2^o, quia tunc omnia corpora simplicia essent precise eque densa et eque rara: consequens contra communem scolam que ponit ignem in ea proporcione rariorem terra, in qua proporcione est ea maior; ut sic servetur equalitas multitudinis sue materie. 3^o videtur esse contra experimentum, quo experiuntur de quantumlibet parvo denso generari quantumlibet magnum leve: ut ex uno pugillo aque, 10 pugilli aeris; et proporcionaliter de aliis elementis, in quibus videmus materiam duci ad circumferenciam, sicut econtra in generacione aque ex aere, ducitur ad centrum: ut patet in pluvia. Cum ergo non sit dare vacuum, sequitur quod elementum purum superius sit naturaliter inferiori rarius.

Ad primum conceditur conclusio principalis. Et ulterius conceditur quod, supposita proporcione tacta unius elementi ad reliquum, ignis est in 1000^{lo} plus habens de materia quo ad multitudinem quam terra; et cum omne elementum proporcionaliter habet de forma ut de materia quo ad multitudinem, patet quod in 1000^{lo} habet plus de forma, et proporcionaliter de aliis elementis. | Nec derogat hoc perfectioni mundi, sed pocius atestatur quod plurimum sit de elemento perfectissimo, et minimum de elemento imperfectissimo integrante. Verumtamen elementa ut inferiora plus habent de condicionibus materie, et elementa [ut] superiora, plus de condicionibus forme: ut terra inter omnia elementa est

6. gus^m B. 34. perfectissimum B. 37. ut deest B.

8—10. 1000^{lo} 10^{lum}. We must remember that the *natural* place of each element was as follows; *earth*, nearest to the centre; then, *water*; then *air*, and *fire* last of all.

Thus earth is the most apt to receive impressions, most palpable, least active and least productive of movement; while the superior bodies are less mobile, and more transparent.

The first heaven can move only with one simple motion, the others with more; but none can be moved against their nature. The sphere of fire is the most like that of the sky, and so downwards.

Sight, colour, &c. are vital qualities, by which the intellectual soul is joined to the body as its mover. As men who have more lucid spirits are more intelligent, and all animals love light, so the extinction of natural warmth and moisture causes death. 2nd. It is quite the contrary. The superior bodies have more rarity and transparency; the inferior, more opacity and density. But, in the sense of closeness of particles, only compounds are rare or dense.

maxime possibilis impressionibus peregris, ideo ordinavit naturis ipsam constantem in medio mundi ad terminandum copiosius incidencias varias angulares lumen luminum celestium. Unde est tactui naturaliori sensuum noscibilior, minus activa et motiva; que omnes noscuntur 5 esse condiciones materie et a condicionibus forme plurimum elongate. Econtra autem corpora superiora sunt paucioribus modis mobilia, perspicua ad recipientum lumina celestia, ut sic sint media ad modum corpora terrestria. 10

In tantum quod primum celum ponitur moveri uno motu simplicissimo, et alii celi inferiores pluribus. Omnes celos tamen ponunt philosophi exemptos a violencia, in spera servare eundem situm totalem, nec aliqua materia motus habente contrarium transmutari. 15 Et de spera corruptibilium ponunt regionem supremam ignis multum conformem superioribus lacionibus, et sic gradatim usque ad terram: in tantum quod propter elongacionem istorum superiorum a sensibus, quidam ponunt ipsa vacua, alii puras formas, et alii corpora 20 multum formalia. Unde lux, color, et huiusmodi sunt qualitates vitales, cum quibus anima intellectiva, suprema forma naturalium, copulatur corpori tanquam forma et motrix. Sic enim homines plus habentes de spiritibus lucidis sunt magis ingeniosi; et in luce et claritate 25 proporcionali extrinseca tam homines quam bestie naturaliter delectantur, horrentes tenebras; cumque calor naturalis et humidum subtile extincti fuerint, cessat animacio qualitatibus mortificantibus ad centrum ducentibus. Ex multis talibus potest attendens convincere 30 quomodo elementa superiora plus habent de condicionibus forme, etsi longe plus habent de natura materie.

Ad 2^{am} rationem, dicitur quod oppositum sequitur, cum raritate, que est qualitas superhabundantis, dyaphana [excedunt]; et inferiora, ut excedunt in oppacitate, ita in 35 densitate, que est qualitas. Non sic quod in uno corpore equalis quantitatis sint punctalia spissius posita quo ad locum quam in quolibet sibi pari. Et quo ad raritatem et densitatem, que posicionem sonant, multas impelia ipsi participant extra mixta. Pro mixtis autem sunt elementa 40 superiora magis pauca, et per consequens rarius posita.

1. pe'gris B. 34. excedunt deest B.

8. *Perspicua*. The "crystallines", for instance.

Unde, sicut semen est rarum in terra, dum paucum semper dignitur in magna area; fides autem virtus est rara in populo, dum in multo populo sit parum fidei, sic in mixto terrestri est parum ignis aut aeris, dum natura paucos igniculos spargit cum multo terreo. Nec oportet quodlibet elementum in mixto continuari cum alio sue speciei. Nec obest tali dislocacioni quod corpuscula distinuant unam substanciam corpoream; quia res communes dicunt nunc collectionem suorum suppositorum, et nunc dicunt simpliciter naturas huiusmodi, sic quod tam homo quam materia prima, 5 etsi partes dividantur ab invicem, manent perpetuo; et sic elementum, quantumlibet fractum in minucias in mixto, manet continue eadem substancia. Et per hoc 10 patet responsio ad communem conclusionem qua queritur utrum elementum mixtum sit rarum, vel totum compositum ex elementis. Nam utrumque est rarum 15 B 121^a communiter, sive elementum sit unum continuum per totum, sive discretum minutanter sparsum. Et utrobique 20 est multitudo parcum rari, subiectum raritatis, quo extenditur modo suo.

Ex quo notandum quod elementum quocunque, 25 commixtum cum altero, est precise eque rarum vel densum in mixto, sicut foret sine mixtura quo ad raritatem vel densitatem 2º modo intellectas; quia ad omnem eius punctum intrinsecum correspondet tanta raritas vel densitas absoluta. Sed super huiusmodi raritatem habet raritatem respectivam de genere posicionis, quam non haberet, si esset a quolibet commixto penitus depuratum. 30 Unde, ad concipiendum talem commixtionem, oportet primo capere unam multitudinem corporum disparium specierum, constituentem quoddam unum; 2º oportet attendere ad totalem situm quem occupat talis globus; et oportet 3º attendere ad quantitatem partis illius 35 situs occupate per unum illorum, et penes paucitatem talis multitudinis disperse in comparacione ad quantitatem loci oportet attendere illius multitudinis raritatem.

Unde raritas respectiva non solum dicit posicionem, sed etiam relationem ad mixturam [et ad] constituencia 40 quoddam unum; quia stat eandem terram inmotam quo ad situm esse respective raram, et desinere esse

Seed is rare in the ground, when there is little on a wide extent; faith is similarly rare in a people, and in a terrestrial compound there is little fire or air, when their proportion to the amount of earth is every small.

This breaking up of the elements does not destroy their substantial unity.

Both the element and the compound are thus rare.

The element is in the compound just as rare or as dense as it is out of it, though not in the sense of porosity or of closeness; but it is also porous when not completely pure of any mixture of any other element. Take a mass of different sorts of bodies, note the space occupied by the whole, and by each part of a different sort: thus alone can we judge of its density.

1. *fem* B. 2. *git* B. 23. *mixtum* B. 33. *gleb*, (!) B. 37. *attendere* illius multitudinis oportet B. 39. et ad *deest* B; *ib.* *osticula* B.

sic raram per gravacionem terre ex commixto relico
It is quite false to fancy that elemento. Unde falsa et infundabilis est ymaginacio
the rarer any qua putatur elementum, eo quod rarius, eo paucius
element is, the materie continere; ut precise tanta sit multitudo materie
less of matter spere ignis, quanta est multitudo materie spere terre,⁵
it contains. vel alterius elementi.

3rd. There is no experience where the senses err. I once was so foolish as to think that a pigment mixed with earth was coextended with it, because the colour was apparently everywhere.

The forms resulting from combination are not quantitatively everywhere in the compound. When wood is burnt, the fiery and gaseous parts ascend on high, but never become larger than they were.

In this case a great quantity of fire and air is generated, and seek their natural spheres, while the previous form (of wood) perishes.

Heat unites homogeneous and disperses heterogeneous substances.

Ad 3^m dicitur quod error sensus excludit experientiam; nam errando putatur quod gravatum manet utrobique inmixtum corpori alieno. Unda ad tantum desipui quod putavi zimare, id est videre eciā vel alium ¹⁰ pulverem colorantem, cum terra liquata vel alio miscibili coextendi; quod tamen est error intellectivi maniacus, cum minuta corpora iuxta posita causant fantasiam coloris disparis; sic quod credens solo sensui iudicat quod per totum subiectum fit disposicio uniformis,¹⁵ sicut in mixtis pannorum et quotlibet aliorum artificialium contingit fieri: multo magis ergo in subtiliori compositione nature. Et isto modo contingit de omnibus qualitatibus ^{2^{is}} vel formis resultantibus, quod est dare mixtum aggregatum eis subiectum; et non cuilibet parti ²⁰ quantitative subiecti sui primi correspondet appropriate pars aliqua talis forme; sed satis est quod cuilibet parti quantitative illius nature correspondeat talis forma. Sic ergo, quando lignum comburitur, partes ignee et aeree sparguntur superius, et commixte cum medio manent ²⁵ continue eque magne, etsi exalerentur usque ad celitudinem spere ignis. Nec credo quod experimentator ex noticia sensuali convincet oppositum.

Hic tamen ingeniatur natura, quod mixtum, multum terre habens, dummodo habeat parum ignis vel aeris,³⁰ cum sint per contrarium dissolutum, tunc generantur multe minuticie ignis et aeris; et ipse, cum aliis quadam violencia cathenatis, petunt ^{2^m} multas dyametros loca naturalia, pereunte forma superaddita continente. Sic tamen congregat calor homogenia ad invicem et ³⁵ disagregat eterogenia ad invicem, dans generato proportionaliter de loco dicto, ut de forma. Econtra autem in resolucione gravium que ^{2^m} angulum descendunt ad centrum. Et, propter istam interceptionem medii, inter levia que ^{2^m} dyametrum moventur ab angulo,⁴⁰ et extrinsione medii inter gravia que moventur ad

1. ^{2^o} B. 4. otine' B. 10. zimar' i. vide' et^e B. 35. cum vro tamen(!) B.

B 121^b angulum versus centrum, creditur quod hinc inde sunt
absoluta | raritas et gravitas adquisite, computando cum
summo aereo totum medium interceptum.

Ex istis facile est videre quomodo pluvia gravantur; How rain is
5 nam nubem vel unbeculam, sive nebulam, in qua sunt sometimes heat,
4^{or} simplicia cathenata, dissolvit nunc calor, nunc sometimes cold,
frigus; et, segregato subtili terreo ratione conveniencie subtle
cum igne et aere, exsudat aqua formam spericam. terrestrial part
Et quia deficit sustentans, quo usque ex illis guttulis goes off with
10 aqua notabilis magnitudinis sit unita, ideo guttatum the air and fire,
descendit secundum formam maiorem aut minorem, remains, which
proporcionaliter ut exalacio commixta celerius vel tardius takes a
segregatur. Aquam enim, ratione sue fluxibilitatis, stat larger or
colabi: sed terra, ratione constancie et siccitatis, diu- smaller,
15 cius catherenatur. according as the dissolution is more or less rapid.

Ex istis colligitur quod nullum corpus potest esse It is clear that
maiis aut minus quam prefuit, nisi propter adquisicio- whenever a body takes
nem aut deperdicionem materie, quamvis putatur quid- more room
libet rarefactum esse maius quam prefuit, ignorando than it did, it
20 situs quos perdit intrinsecus, sicut et ignoratur com- is because of particles
mutacio situum extrinsecorum pro intrinsecis in par- added to it;
tibus condensati. Et patet quod vera sententia de rari- and the converse is true
tate et densitate non obviat huic vie. for condensation.

Ulterius videtur michi probabile quod non est possi- I do not admit the possibility
25 bile duo corpora coextendi, cum nulla materia prima of two bodies
potest componi ex suis partibus intensivis. Patet sic. occupying the same space.
Conclusio opposita non posset verificari, nisi materia If that were possible,
punctalis componeretur ex partibus intensivis; et tunc, matter must be more or
rarefacta materia vel condensata per totum, vel rare- less intense, which is not
30 faccione vel condensacione durante per tempus, ut admissible;
adversarii locuntur, sequitur quod corpus motum in infinitum rarefieret, vel in infinitum condensaretur, ante
quocunque instans signabile; quia si non, da A pedale
terre uniformiter rarefactum per horam 2^m totum, et
35 patet (cum in quolibet instanti illius hore exhibat a quo-
libet punctali materie unum aliquod iuxta positum)

1. hic B; ib. m B. 8. aliquando pro aqua B. 13. Aqua B.
14. colab^f B.

26. One great division of *parts* is into extensive and intensive parts. Matter, as such, must be extended. Heat, cold, intelligence, virtue, etc., having no extensive parts, and yet admitting of more or less intensity, are said to be made up of intensive parts.

quod unice quocunque instans dandum erit totum infinities quo ad nos duplicatum in magnitudine; et opposito modo sequitur de condensacione. Illud patet in paucioribus, ponendo quadrupunctale, si sit possibile incipere per totum rarefieri, cum hoc quod non ⁵ incipiat rarefieri ad sui duplum; et patet iuxta communia principia adversancium quod hoc incipit esse maioris quantitatis quam prefuit, et cum non sit racio quare una medietas, quin per idem et quelibet, sequitur quod hoc incipit esse ^{2^{pl}um} ad illud quod prefuit: et ¹⁰

that is, it contradicts my system of composition of the Extended.

No philosophical argument has value against this theory.

b) Theological arguments.

(1) Absolute (i. e. spiritual) forms can be coextended with matter; therefore, *a pari*, matter with matter.

(2) Glorified bodies are coextended with the medium through which they pass.

(3) Position, an absolute accident, might possibly exist by itself; if so, God might coextend two material substances in that space.

An infidel logician would say that one absurdity here proves another: but Catholics must answer differently.
Others say:

eadem est racio de condensacione. Ex quo patet quod repugnat compositioni continui ex non quantis quod aliquid per tempus vere continuum rarefiat vel condensetur per totum, in adquirendo vel deperdendo continue quantitatatem. Nec scit philosophus fundare casus calculatorios istius materie, in quibus quondam multum inaniter insudavi.

Sed pro fundacione parcium intensivarum materie, argumentatur theologicice isto modo: forme absolute, tam substanciales, quam accidentales, possunt ad invicem ²⁰ cum materia coextendi, cum ergo idem sit iudicium de substancialiis materialibus, eo quod forme huiusmodi poterunt per se esse, ergo per idem materie poterunt coextendi. ²⁵ 2^a consideracio est de glorificatis corporibus, que ponuntur sicut lumina cum medio coextendi. Et ³⁰ 3^a consideracio est quod situs aut locus, cum sit accidens absolutum, potest de dei omnipotencia per se esse; sicut conceditur de corporeitate et aliis quotlibet quantitatibus, que videntur magis a substancia dependere. | Cum tali ergo loco prius vacuo potest Deus B ^{122*} coextendere substanciali vel quodlibet accidens sensibile, ex pari evidencia duas materias; cum repugnacia, si qua foret, oriretur ex impossibilitate coexistencie dimensionum in eodem situ illis adequato, vel ex duorum indivisibilium possibilium per se esse coextensa in eodem ³⁵ situ indivisibili.

Ad ista diceret logicus cui non esset cura de creditis nostre legis, quod impossibiliter petitur antecedens pro alio impossibili inducendo. Sed quia necesse est totam fidem catholicam esse veram, ideo oportet professores ⁴⁰ huius fidei aliter respondere. Quidam autem dicunt

quod assumpta, cum sunt supernaturalia vel miraculosa, non subiacent iudicio racionis; ideo est satis ipsa credere, nec oportet racionibus impugnantibus respondere, nisi forte responsione illa famosa vulgarium quod Deus, 5 cum sit omnipotens, potest huiusmodi licet ignoremus mysteria faciendi et subtilitatem obiectibus contrariis respondendi. Sed illud non placet michi, quia per idem posset poni opinatiave quodlibet impossibile, si non dent expectari racionis iudicium, nec argumentorum 10 oppositorum solucio.

Ideo, supponendo necessitatem fidei ac eius probabilitatem 2^m singulas eius partes, suppono 2^o pro descripcione quid nominis, duas res situatiter coextendi quando per locum aliquem dimensionaliter pertendentur. 15 Hoc enim sonat iste terminus *coextendi*. Ex quo patet quod quotlibet accidencia contingunt per idem subiectum situatiter coextendi. 3^o dico quod minor primi argumenti est impossibilis, et radix multorum errorum infundabilis, si non fallor. Si enim materia aut forma 20 substancialis. materialis, vel accidentalis, poterit per se esse, tunc haberet quelibet talis propriam dimensionem, locacionem, et cetera accidencia; vel omnis res foret substancia, vel esset necessarius processus in infinitum in generibus accidencium; ut alias diffuse arguam. 25 Non ergo in infinitum rara est terra ad quemlibet terre punctum, nec suscipit substancia magis aut minus in sua essencia, que est forma. Et idem iudicium de quantitate, ubicacione et situ, que omnia oportet componi ex suis partibus intensivis, si per eundem situm 30 possunt coextendi res omnino distincte, quarum quelibet pars minus potest esse sine coexistencia partis alterius; quia, hoc dato, forent huiusmodi accidencia coextensa; et cum sunt intrinsece presupposita ad accidens rationale, relinquitur quod qualitative aut intensive componunt ipsum; quod tamen superflueret, cum primum 35 officium quantitatis vel loci sit quantificare; quod eque fieret, si non compонeretur ex suis partibus intensivis. Inconveniens eciam videtur quod una pars intensiva numero sit actuata forma ignis, et alia forma terre; et

We must not judge faith; we simply believe, and answer no objections drawn from faith.

But I object to that, because any absurdity might be maintained thus.

So admitting the necessity and reasonableness of faith, I take coextension to signify the dimensional existence of two bodies in the same space; and affirm that Argument (i) is impossible. Any substance or accident existing by itself must have its own dimensions and other accidents; so all would be substance, or we should have accidents *ad infinitum*.

Earth is neither infinitely rare, nor can it become more or less so; and the same may be said of quantity, ubication, and position. They would have to be composed of intensive parts; quite unnecessarily, for they only exist to give dimensions. Nor can one intensive part of the same

5—7. licet—respondendi (sic) B.

23. *nihi pro* necessarius; *very illegible* B.

20. *Materialis*. From here to f. 176, end of Logica, the MS. is written in a very bad, scrawling, flourishing hand.

be the sic de ceteris, quia materia dicitur relative ad materia-form of water, tum. Ymmo, cum materia sit eadem essencia cum form of fire. According to that theory, all bodies would be equally dense. sic de ceteris, quia materia dicitur relative ad materia-form of water, tum. Ymmo, cum materia sit eadem essencia cum composito, sicud et forma, si essent 4 forma extense per eandem naturam, singulum illorum elementorum esset singulum; | et cum qualitas aut quantitas per se existentes haberent proprias densitates, per idem eciam in composito, et sic essent omnia corpora eque densa.

As for (2), it is more difficult to answer;

we may suppose that the substance of the sky gives way on one side, so that the glorified body may pass.

Some philosophers deny, but without proof, that any foreign body can be thus part of the sky, because the sky, being absolutely pure, is incondensable. A difficulty: nothing could be moved without a movement in the whole world; for every point, touching its neighbour, would cause it to change its place.

But this is avoided by the circular movement of the points disturbed. When a stone falls, there is a circular movement of the air round it.

So in the ascension of glorified bodies,

Quo ad secundum, quod est michi plus difficile, potest dici tripliciter: primo, quod celum cedet medium 10 sublimari, et sic corpus sublimatum ascenderet usque ad confinium mundi; tunc cedit a latere et non extumescit, propter nature regulam limitantem. Philosophi autem ponentes nullum corpus extraneum cum celestibus commisceri, ponunt nimirum quod celum non potest 15 condensari vel rarefieri, sed fundamentum est falsum, licet inexpertum sit eius oppositum; nec videtur cessio celi plus repugnare nature quam cessio ignis vel aeris, cum talis cessio non arguit densitatem. Sed videtur generaliter quod nullum corpus potest moveri localiter, 20 nisi ad omnem punctum mundi pars eius localiter moveretur; quia da quod non, et quod post quantitatem tocius mundi A punctus mutetur ad situm sibi inmediatum, cum hoc quod aliquis punctus maneat inmotus (et voco omnia puncta mota; oportet enim esse multa, 25 cum nullum potest exspectare aliud in eodem situ proprio) videtur quod quodlibet expellet proximum, et sic non remanebit aliiquid inexpulsum. Pro illo dicitur quod conclusio non sequitur. Nam motus circularis salvat illam instanciam; ut possibile est quemlibet punctum 30 vasis vel loci dati circularis mutare situm suum, uno inseguente reliquum circulariter, cum hoc quod non extra datum situm, quantum ad hoc pertinet, fiat motus. Et hinc credo quod ad motum rectum lapidis vel alterius concucentis causatur in medio tremor circularis, sicut in tribus elementis nostris et mixtis in eis concussis sensibiliter esset videre; et si non esset talis circulacio, moto uno localiter, omne corporeum moveretur. Nec est vis, quam celeriter circulus per totum moveatur, ut quod motus celi in tali ascensi 40

6. pp'as B; ib. desites B.
tatem(?) B.

11. subluari B.
30. sanat B.

22. 9m^{fe} = communis-

39. quā B.

corporum perturbetur, quia est dare statum corporum particles in this quo ad motum. Nec sequitur motum astri perturbari circle would in tali ascensu, licet ex quolibet motu recto sequitur not hinder any circularis. Quando autem erit generalis assumptione astral movements. 5 stabit celum, quantum nos possumus sensu convincere. And at the Nec repugnat quod sit talis motus circularis insensibilis, cum tamen delectabilis sit beatis. Secunda responsio resurrection, the sky will no longer move, or will move insensibly. 10 dicit quod est dare quantitatem supranaturalem, a qua unum corpus erit penetrativum alterius, ut sint concomititer per eundem situm coextensa. Sed videtur michi 15 qualitas disponi, ut sint quotlibet coextensa. Et stant We may again suppose that one body may penetrate another by a supernatural quality. But I do not approve of this answer, which admits the possibility of compenetration, and is open to all the arguments against it.

B 123^a omnes raciones facte contra coextensiones | materiarum, corporum, vel formarum. Deus enim prebet unam talem 20 materiam coextensam cum alia connectere, cum alia componendo, sicud et quamlibet partem quantitativam unius posset ponere cum parte alterius; quo facto, foret una composita intensive; et sic difformis tam substancialibus quam accidentalibus; potissime cum, ad 25 compositionem quantitatis cum extensis suis terminis, sufficit inmediacio terminorum.

Tertia via dicit quod omne corpus plene sublimatum 30 potest penetrare corpus celeste vel aliud dyametaliter sine hoc quod continens sibi cedat. Verumtamen, in 35 tali penetracione est novi situs generacio utrobique, cum utrumque occupat sibi proprium, sicud sunt incommunicancia quantitate. Sed illud videtur difficile propter tria. Primo, quod non videtur ratio quare Deus 40 posset spissius ponere in parte superiori mundi corpora sic locata, cum hoc quod mundi convexitas sit immota, quin per idem potest ponere quodlibet corpora loco corporum sublimatorum, et alibi, stante quantitate mundi equali continue; et tunc nullum oportet ponere vacuum vel situs noviter generatos ex motu recto. Et per idem 45 mundus posset recte pelli, generando situs consequentes ad motum. Secundum videtur mirabile quod aliquod punctum potest noviter poni distancius ad polum quam ponitur idem punctum, et aliquod punctum potest poni proprius, sed nullum precise eque prope. Nam si precise 50 eque prope, per idem potest poni corpus in toto conformiter ad tria posicionis principia; et per consequens adequate in eodem loco: quod repugnat poni. Tercio

12. desponere B. 13. extensiones B. 23. dyametrum B. 39. pre-

cipue after si B.

And how can a point pass between two others that touch, without having any relation with them?

These questions I leave to be answered by theologians, merely stating that there is nothing against faith or truth in my doctrine. c) I consider it an indubitable fact that the elements remain in the compound. According to Aristotle, a compound implies alteration and union, not destruction and production, as generation does.

Three things are required for a compound: that its elements should be in a state of fine division, that their qualities should be to some extent conflicting with each other, and that there should be a certain quantitative proportion between them.

videtur mirabile quod unus punctus potest interseri inter quecunque duo puncta, nisi ex aggregato, posita una linea, una constitui, et per consequens linea manens recta continue posicionem, cum hoc quantumlibet licet crescere, secante utroque extremo eius fixo. Et sic de 5 suppositione aut corporeitate, ut superius tactum est.

Et tunc videntur parare demonstraciones geometrice de figuris. Scio tamen quod dicendum esset figuras dissolvi ex tali cremento quantitatis, novis sitibus generatis, licet sensus non sufficiat ita discernere. Distincionem 10 illius materie relinquo theologis, hoc asserens, quod nulla pars fidei, nec verum aliquid, opponitur isti vie.

3^{um} argumentum claudicat, sicud et primum. Quantum ad existenciam clementorum in mixtis videtur michi indubie ipsam oportere concedere. Nam Aristoteles, 15 primo de generacione, ca^o de mixtione, movet dubium in terminis; et tenens affirmativam partem, dicit quod diffinicie | *mixtio est miscibilium alteratorum unio*; B 123^b ideo differt a generacione vel corrupcione, ubi alterum corruptitur et reliquum generatur. Differt eciam ab 20 augmentacione, ubi alimentum assimilatur aucto conservanti suam speciem vel naturam in actu. Differt ab alteracione, cum oportet utrumque mixtorum esse substancialia per se separabilem a reliquo, quod non potest competere quantitati. Unde tria requiruntur ad ydon- 25 eitatem miscibilium; primo quod sint bene minutim separabilia, ut sunt liquida et corpuscula terrea. Unde in lapidibus, metallis et omnibus mixtis perfecti novit subtilis experimentator quando componuntur ex minuciis terrestribus, aliis humidis interceptis. Secundo requiritur 30 contra contrarietas vel repugnancia mixtorum; quia aliter non resultarent forme superaddite pocius quam in puris, nisi quadam armonica complexione disposicio ex contrariis resultaret. Et tertio oportet com- mixta esse proporcionabilia in multitudine, ut gutta 35 aque propter paucitatem suarum parcium non proprie-

2—5. quecunque—extremo (sic!) B. 10. sp^{us} pro sensus; and so on B. 18. vino B.

19. *Differt a generacione.* I have all along understood *generatio* by 'combination', and also *mixtio*. But the ancients often included under the latter name what we should call mechanical mixtures. Wine and water was a 'mixtio'; but so was also gold and quicksilver. They only spoke of generation, when there seemed clearly to be a new substance produced.

commiscetur cum dolio vini; et proporcionabiliter de aliis est dicendum.

In via itaque generacionis mixti convenient omnes proporcionabiliter sapientes illam materiam, 4 elementa secundum partes miscibiles commisceri. Sed iuxta modum loquendi philosophi negant illa elementa manere in actu, dum forma superaddita est inducta; quod latum est a variis opinantibus, et terminative intellectum. Comentator autem ponit formas substanciales elementares intendi et remitti in sua essencia, cum fuerit media inter substancias et accidentia, et sic manere in esse remisso incompleto cum formis contrariis. Et illud vocat commentator esse in potentia. Patet ista posicio 3º de celo 69.

15 Sed hoc videtur michi impossibile propter tria: primo, quia substancialis, vel essencia que est forma substancialis, non suscipit magis et minus pocius de substancialiis elementaribus quam de mixtis; ut sicut nichil est reliquo magis homo, sic nec aliquid est reliquo magis ignis. Nulla ergo igneitas est reliqua plus intensa. Secundo videtur innuere quod in mixtis sunt forme contrarie coextense, et per consequens tam materie quam qualitates; et tunc nullum continuum componitur ex non quantis. Patet deducio ex hoc quod infinitum remissa foret forma tam substancialis quam accidentalis ad quemcunque punctum elementi; et per consequens in infinitum foret remissa substancia tali forma, et non totum quod est tota essencia materie. Ergo relinquetur quod pars eius qualificativa. Non enim stat quod illud subiectum primo simul recipiat formas contrarias, sicut patet de ratione contrarietatis. Tunc B 124º enim simul | haberet denominaciones contrarias, cum quelibet forma, ut huiusmodi, informat informancia appropriata ut, si est caliditas, tunc est aliquid illa 35 calidum. Et sic de qualibet forma substanciali vel accidentalii, ut patet de quibuslibet earum, cum quelibet forma sit subiectum vel essencialiter vel accidentaliter formaliter se habere. Et tertio videtur quod 4 elementa 40 mero, constituunt aliam substanciam: una quoque foret inmediata materia forme superaddite, et foret formarum

All admit that the four elements are mingled together in the compound; and most of them, taking

Aristotle literally, deny that they exist actually after combination, while Averrhoës says that they remain with less intensity of being.

The latter position seems impossible, 1. because no essence can have more or less intensity; nothing is more or less man, more or less fire.

2. Averrhoës seems to believe that in the compound, contrary forms penetrate each other; which is contrary to our system of inextended points.

In every point the form would be infinitely weak, and the resulting substance would be so too.

3. The elements would become the matter of the resulting form, and would thus be identified with one another.

5. nissib[us] B. 7. latum B. 8. 1^{te} (?) r^{te} B. 16. subalis (sic!) B.
18. elementaris B. 34. caliditas B. 35. callidum B. 40. una que B.

et materiarum processus in infinitum, et ydemptificacio elementorum, cum communicant in eadem materia vel essentia singulari. Sequitur enim, ut supra tangitur: *ista materia est de essentia huius ignis* (et sic de tribus reliquis elementis): *ergo singulum est singulum eorum*. Nec evitabitur quin quelibet pars quantitativa unius elementi huius continuatur cum alia parte quantitativa alterius.

Modern philosophers think that the elements themselves do not remain actually, but say that their dispositions and qualities do.

But 1st, this is contrary to the definition of an element, which must be the intrinsic cause of the compound, and not merely a qualitative part of it.

The first sphere, as a cause non-existent in the compound, would be one of its elements; a stone would have matter and form alone, both simpler than any element.

The human body would be composed only of primal matter and an indivisible soul;

And thus the human body, so complicated in all its parts, would be simpler than an element.

Secunda est via posterius philosophancium qui ponunt nullum elementum actualiter esse in mixto. Sed quot-¹⁰ 15 auctores et raciones ad hoc sonuerunt, omnes sentenciant quod disposiciones et qualitates, quales secundum speciem nate sunt consequi elementa, relinquuntur in mixtis: quod, cum sit verum, non arguit quod elementum aliquod sit in mixto actualiter. Contra istam sentenciam videtur descripcionem termini militare. Nam elementum, ut huiusmodi, est causa intrinseca rei, nec pars qualitativa, ut exponit comentator, primo phisicorum et 3 de celo 6. 9. Aliter enim diceretur celum que elementum sicud aliquod corporum 4 simplicium 20 sublunarium; nec congrue vocaretur lapis aut lignum corpus mixtum, cum habeant materiam primam et formam simpliciorem quam aliquod elementum. Si enim non sit aliquod mixtum, est dare illa ex quibus misceretur. Corpus igitur hominis non misceretur, nisi forte ex anima indivisibili et partibus materie prime; et sic materia prima foret caro, os, nervus, etc. ut alias diffuse prosecutus sum. Ymmo terra pura, vel aliquod elementum, quantumlibet modice alteratum, foret corpus mixtum, et composicius quam aliqua pars 30 quantitativa hominis: quod et componeretur ex materia hominis et forma, et haberet qualitates contrarias, quales secundum speciem nate sunt consequi elementa. Et utrobique est generacio reciproca. Nulla ergo foret causa nisi ficta simplicitas talis corporis supra carnem. 35

Et cum caro, os, nervus, sunt eiusdem speciei specialissime, quia quodlibet illorum materia prima sine forma substanciali formaliter componente, sequitur quod totum corpus hominis, quod est composicius inter mixta, sit simplicius elemento.

40

13. fui ff^m B. 14. sit cum vñ' B. 21. sublunari B. 27. v'mis
= vermis B. 35. non B. 36. u'us B.

2º principaliter experientia phisica videtur repugnare.
 Nam tam arte quam natura cognoscitur ex partibus
 B 124º mixtorum elementa | dispariter resultare, ut in dissolu-
 cionibus lapidum, calcancionibus metallorum, et breviter
 5 de vitro vel quocunque omogenio, quantumlibet fortiter
 commixto contingit partem subtilem aqueum vel aereum
 extrahi, semulento croceo derelicto; et longe facilius in
 vino, sanguine vel alio distillabili omogenee. Et idem
 docet natura patere nobis de carne vel de quocunque
 10 putrefactibili omogeneo, quod iuxta regulam Aristotelis
 humo putrescit; quod humidum unctuosum, relinquendo
 incineratum terreum, petit partes extremos quoisque
 maior pars aerei vel ignei expiret, propter vim movendi
 et convenienciam ad locum debitum ex natura, sicud
 15 in sensibus innominatis; ut queru putrida et similibus
 est videre. Talia enim, scilicet per subtile aereum et
 igneum ad circumferenciam exsudatum splendescunt in
 noctibus, cum naturale sit ex talibus luminosum fieri,
 quod se ostendit in absencia splendidi forcioris: ut in
 20 oculis catticis, squamis piscium, quibusdam vermis,
 et in omnibus conformiter proporcionatis in partibus
 superficialibus in tenebris est videre. Cum enim ex
 contingencia equali nunquam fit accio, patet quod ter-
 reum derelictum et igneum exalatum etc. in mixto fuerit
 25 disparium naturarum, cum oportet esse per se motum
 habere intrinsecus motorem in actu, preter formam
 accidentalem. Et idem patet ex elaboracionibus olei de
 minutis seminibus et de lapidibus silicinis. Et idem
 patet de fructibus, floribus, et quotlibet similibus que
 30 sunt in partibus superficialibus et intrinsecis: multum
 dispariter sapiunt, odorant, et specialiter colorantur.

Sed quo ad isto conceditur quod in talibus mixtis
 est dare partes quantificativas dispares, sed omnes eius-
 dem nature quo ad formam superadditam, licet in

2nd; it is
 against
 experience.
 We get the
 elements out of
 the compound;
 so they were in
 them,
 as is seen in
 chemical and
 metallurgical
 processes;
 we see fire
 proceeding
 from putrefying
 flesh or fish;

in the darkness;
 it comes out
 of the eyes
 of cats, &c.

No action can
 take place
 without an
 efficient cause;
 the appearance
 of this fire
 must, therefore,
 have a cause
 which is not a
 mere accident.
 Many other
 instances of
 like nature
 might be
 adduced.

3rd. But as they
 reply that there
 are quantitative
 parts that differ
 in the
 compound,
 one being

4. calcacōnibꝝ B. 15. ff, bus B. 16. fp B. 20. cattis B.

24. deliciū B. 29. q, l; B.

1. This is the same argument as was lately used (though with all the superiority given by recent chemical discoveries) by those philosophers who maintain the existence of atoms against the revival of the ‘Matter and Form’ doctrine in the Neo-Scholastic system. The idea is the very same. “We get oxygen and hydrogen out of water, therefore they were there before.” The reply is: “Actually, no; potentially, yes!”
7. *Semulento*. Probably derived from *semolla*, bran.

more similar qualitatibus una quo ad unum elementum, et alia ad to one elements, aliud, plus accedit; quia aliter non esset racio quare others to carbo, lignum, et talia combustibilia secundum aliquam others, but all having the same form and partem resolvuntur in cineres, et secundum aliam compound inflammantur. Contra illud 3^o argumentatur. Signo 5 we argue thus: Each element existed separately before combination, and still remains in its essence; therefore no new forms can possibly result from it; or if they do, they will be of a very different nature from the compound. If the action of one simple body on another can bring a new form into being, it must be very different from either.

Hoc multitudinem per C et totam multitudinem per D, que 4^o dicit adversarius corrumpi in adventu forme superaddite. Et argumentatur sic: quodlibet istorum 4^o fuit continue seorsum in loco per se sibi proprio, purum a commixtione cum contrario pereundum, et ad- 10 hoc manet quo ad essenciam, vel remissum paululum B 125^a in qualitatibus, vel ipsis servatis integris sicud prius. Ergo per nullum eorum superducitur forma superaddita; vel si inducunter hec quatuor, habebunt formas superadditas disparium naturarum. Consequencia videtur ex 15 hoc quod ex pari evidencia, in quodlibet simplex conformiter altera tunc induceretur forma superaddita consimilis rationis; et per consequens, ex quocunque simplici contingit per actionem alterius simplicis sine commixtione quamlibet formam superadditam resultare; et, ut videtur 20 michi, in quolibet istorum quatuor induceretur forma superaddita alterius rationis, cum sit subiectum alterius compositionis, sicud fuit inmediate ante inductionem; et proporcionaliter ad materiam datur forma.

Additional proof: qualities that were at first in the elements are now in the compound; as no accident passes from subject to subject, they are in the elements still. It is no use saying that new qualities are produced and the old ones destroyed, why should they be destroyed?

Confirmatur tripliciter primo sic: impossibile est 25 qualitatem vel accidentis quocunque transmutari de subiecto in subiectum; sed qualitates prime, que iam sunt in mixtis, condam et fuerunt in simplicibus: ergo ad hoc remanent in eisdem. Sic enim sonant quelibet dicta philosophorum quod nullum mixtum est calidum 30 aut frigidum, nisi participacione simplicis cui primo competit esse tale. Nec valet dicere quod tot et tante qualitates prime subito generantur, aliis subito corruptis in comitacione forme superaddite; quia non est dare contrarium a quo debeant corrumpi, cum possunt 35 manere in mixtis, nec efficiens, a quo tot et tante subito generentur. Nec superest racio quare forent qualitates prime, quare possunt inesse in mixtis quibuslibet; quia sunt corpora simplicissima sine ordine

5—7. 3^o—4^o (sic!) B. 8. sunt pro super B. 10. peund, B.
23. gonis B. 30. callidum and very often after B. 39. quod B.

6. *Totam*. Evidently some parts of the sentence are wanting here.

prioritatis respectu elementorem se habencia, stante sentencia huius vie. Confirmacio [2^a] est hec. Impossibile est qualitates contrarias coextendi; quod esset, stante illa sentencia: igitur, etc. Et maior patet ex hoc quod omnis qualitas est *subiectum esse quale*, cum non sit potens aliquid per se existere, sed unitate accidentis, cum aliis eiusdem rationis. Ex quo patet, si essent qualitates contrarie coextense, tunc vel nichil esset simul denominatum denominacionibus contrariis, vel [essent] materie coextense. Et patet minor, eo quod, si forme substanciales elementorum sint per totum mixtum, sequitur quod et qualitates; et tota contraria, multis modis contraria. Tercia confirmacio est ex impossibilitate reaccionis duorum elementorum simul et semel secundum easdem partes; ut, posito quod A ignis et B aqua purissima commisceantur in dato mixto, oportet partem A reducere partem B sibi inmediatam ad temperamentum in qualitatibus, et econtra; et per consequens, cum hoc non sit nisi per reduccionem qualitatis contrarie, sequitur quod idem subiectum secundum idem sit simul et semel agens et paciens, in actu et potentia respectu eiusdem. Prius ergo et principalius educeret qualitatem contrariam a se ipso, quam induceret post debilitatem potentie per qualitates instantaneas qualitates suas in corpus | extrinsecum. Ideo, ut alias diffuse ostenderam, reaccio non est simul tempore et secundum idem possibilis; ad quam oporteret qualitates contrarias simul, subito, et tempore reciproce generari, propter talia multa que naturales sciunt adducere. Credo 3^{am} sentenciam in hac parte; scilicet, quod elementa sunt realiter in mixto secundum situs et formas proprias, ut dicit Avicenna, primo causarum, ca^o 3^o, et alibi multis locis.

Sed contra ista instatur tripliciter. Primo, videtur quod proprie non sit mixtio, sed iuxtaposicio corporis cularum; quod sic, habens oculos linceos videret quomodo quodlibet elementum foret seorsum positum; et sic per idem homines et omnia genera corporeum essent commixta in mundo, et nulla foret forma substancialis superaddita, cum nullum mixtum foret vere.

Contrary qualities (i.e. those that remain of the elements when these are no more) cannot coexist in the same subject, and cannot exist separately; now the non-remanence of the elements implies this. Two elements cannot at the same instant act and react on each other.

But in combination, the element A would have to neutralize a quality of the element B; which it could not do unless it lost as much of its own contrary quality; so it would be at the same time and in the same point of view, both active and passive.

Reaction must take place after action. My position is that of Avicenna: the elements exist really in the compound, in their own forms and places.

Arguments contra:
I. This would be no compound but an aggregate of atoms; we could, had we eyes good enough, discern every element apart; men, animals, all would be

2. 2^a deest B. 3. $\overset{\circ}{\text{g}}\text{ritas}$ B. 6. $\overset{\circ}{\text{a}}\text{ccus}$ B. 10. essent *deest*.
16. p'usuma B; *ib.* $\overset{\circ}{\text{f}}\text{uma?}$ B. 29. recipe B. 33. $\overset{\circ}{\text{C}}\text{ar}$ B. 35. $\overset{\circ}{\text{I}}\text{xpo}$ B.

mixed up, and there would be no superadded form to distinguish them.

It is false. The aggregate of atoms is the compound itself.

We cannot see how they are placed, but God does, and the mind knows in general that the essence of the compound depends upon their position. Men and all things are indeed mixed with one another; but they are distinguished by their proper substantial form.

II. The superadded form cannot exist at any point of the compound, (since the element forms are everywhere); it is therefore nowhere. We reply that as substantial forms are more elevated above matter, they are less subject to material conditions.

Each form is indivisibly in the whole of its subject, but partially so.

aliquid unum. Ad illud negatur prima consequentia, cum iuxtaposicio corpusculorum, ceteris requisitis, constituunt vere mixtum, cum omnes vere loquentes de mixtione oportet concedere vel corpora parva, vel materias corporum, iuxtaponi, et per formam superadditam continuari. Licet autem nullus oculus corporalis sufficit cognoscere appropriatos situs corporum commixtorum; Deus autem distinctissime, et intellectus humanus confuse cognoscit posicionem in quolibet mixto perfectione huiusmodi situs dari. Et sic conceditur homines commisceri ad invicem cum aliis, et proporcionaliter de ceteris partibus huius mundi, sed non ad finem quod forma substancialis resultet constituens mixtum substancialis disparis speciei; et solum tale mixtum ad propositum est naturale cuius quilibet pars quantitativa in actu, que potest per se existere sub tali specie vel per se sentiri: quod philosophi secundum gradum minimum vocant minimum naturale. Nec obest materiam formatam suscipere super illam formam superadditam disparis rationis. 20

2^o videtur quod ad omnem punctum materie mixte non sit forma superaddita, et per consequens cum per totum sit eius privatio, sequitur quod nusquam sit talis forma; quia nec indivisibilis, nec extensa. Ad illud dictum est superius, quod forme substancialis, ut a 25 materia eleviores, sic sunt a condicionibus materie remociores; ut forma corporeitatis vel forma elementaris secundum aliquos est situatiter secundum partes punctuales materie; et quilibet forma materialis superaddita determinat sibi certam multitudinem elementorum 30 constitucium minimum naturale; et sic gradatim ascendendo quoque deveniatur ad animam hominis, que est finis formarum de quibus considerat philosophus naturalis, ut patet 2^o phisicorum. Nec extenditur minima forma per subiectum suum primarium, sed est ad 35 quemlibet eius punctum indivisibiliter quo ad molem; et quotlibet tales indivisibiles constituunt formam superadditam mole magnam: Et sequitur quod tota sit ad omnem punctum sui subiecti primi secundum aliquam B 126^a sui partem. Et patet quod falsum assumitur, cum quilibet forma substancialis cuius partes quantitative distant situatiter extenditur modo suo. Nec oportet quamlibet

27. vel forma twice. 34—35. ^{***}una B. 38—39. ad omnem twice B.

partem quantitativam subiecti habere appropriate partem quantificativam forme, sicud forme anulosorum extenduntur. Si partes sue quantitative sint animalia anulosa (et sic de bestiis; si multe quantitative unam constituant

5 forma totalis extenditur modo suo. Ymmo, si duo homines unum hominem quantitative constituunt, forma totalis extenditur sine alia sui parte divisibili vel extensa.

Nec sequitur ex istis quod mixtum solum ligatorie
 10 vel aggregative sit unum, ut cumulus lapidum, domus,
 vel populus; quia ex commixtione propria et perfecta resultat quedam forma substancialis et perfecta specifica; non sic autem de aliis artificialiter aggregatis. In hoc tamen convenient quod, sicut impossibile est
 15 mixtum perfecte poni in specie sine forma substanciali a qua habeat quantitatem, sic impossibile est populum, domum, vel aggregatum quodlibet esse unum, nisi sit forma artificialis vel alia accidentalis in aggregato huiusmodi, a qua accipiat esse unum, ut populus supra
 20 multitudinem dicit consensum hominum, ut obedienti uni legi. Et domus dicit figuram aggregatam ex positionibus suarum parcium, ut defendat hominem ab intemporaneis nocumentis. Et sic de ceteris, cum omnis unitas sit a forma. Et sicud forma substancialis mixta
 25 est per totum subiectum, licet non extenditur nisi per subiectum homogeneum suo toti; sic forma aggregata taliter accidentalis aggregati est per totum suum subiectum. Et de possibili non habet aliquam partem consimilis racionis; sed sicut forma mixta est causaliter in
 30 elemento per quod non extenditur, sic et forma aggregata est in quotlibet partibus eiusdem, que habent appropriatas habitudines ex quibus resultat forma totalis longe disparis speciei. Nec est vis, sive vocentur eius partes, sive forme presupposite ad totalem formam.
 35 Unde similiter intelligendo talia aggregata, concedi debet quod proporcionaliter dissolvuntur ut mixta, ex dissolucione vel deficiencia sue forme.

Sometimes each quantifying part of the form answers to a quantified part of the subject, as in the Annulosa, or where many animals are united together in one whole.

There is a great difference between a mere aggregate and a compound. The mixture is so perfect that it brings into being a new substantial form.

They resemble each other in that in both cases there is a form — here natural, there artificial.

A nation implies the form of authority; a house, the proper disposition of parts in order to give shelter, &c. And in both cases, the form is everywhere in the subject, but without extension.

9. *legacor* B. 10. *anulg* B. 11. *que quia* B. 16. *Et pro sic* B.
 23. *itpa^{ea}la* B.

2. *Anulosorum*. It was formerly a great difficulty for philosophers to explain how the one indivisible principle of sensation can be multiplied by scission, as it is in certain of the Annulosa.

III. According to this, there would be only one being in the world; since everything would form one whole with the surrounding medium. It is quite true that all things form one whole by continuity; otherwise the world would not be one corporal substance. Those parts of a compound which are of the same kind as the surrounding medium, form a continuity with that medium, as for instance the air expired from the lungs. Continuity requires a medium, and is not a thing that can exist by itself. The terrestrial parts of a compound are not continuous, because separated by particles of earth and of water; which, when evaporated, only dust remains. Sometimes, to avoid a vacuum, one heavy body when moved draws another after it. Continuity, says Aristotle, consists in the

3º videtur quod omne mixtum sit continuum cum uno being in the mundi est ens in actu, sed solum potentia; et sic nulla foret continuacio, cum quantumlibet disparia corpora in quantum immediate sunt posita, sunt adunata. Ad illud dicitur, concedendo quod omnis pars mundi corporea continuatur cum alia, cum alias non esset mundus una substancia corporea, sumens ut quoddam totum omnem naturam corpoream parcialem; quod est falsum, cum mundus sit maxima creatura | possibilis, mole magna, circulata, constans ex omni materia possibili, subiecta situ et tempori, et multis aliis accidentibus, gracia cuius perficiende sunt omnes parciales substancie, ut neverunt philosophi, et supponitur in presenti. Mixtum ergo, in quoconque elemento sit positum, trahet quotlibet partes eiusdem speciei ad sui circumferenciam, et per consequens immediate medio continuati; secundum tales continuatur cum medio; ut aer, respiratus a pulmone et corde, continuatur cum spiritibus aeris; et per consequens, cum toto cuius illi spiritus sunt partes precipue. Et indubie aer respiratus continuatur cum medio continuante, quia in aqua, igne vel aere, non potest exspectare successivam actionem per quam ipsa per tempus immediate posita in fine primo continuantur secundum aliud; ut aliqui, volentes continuacionem esse rem absolutam que per se possit existere, false fingunt. Et sic indubie esset de terra, nisi partes aque vel aeris intercise facerent partes distare ab invicem; et hinc mixtum terreum, post exalacionem vel evaporacionem elementorum continuanciam, decidit in pulverem; et partes pulveris de possibili immediate constituunt unum corpus; licet continuacio non sufficit ut una pars ad quemcunque recessum aliisque insensibiliter insequatur. Contingit eciam in casu, pro supplecione pleni, virtute continuacionis, quantumlibet grave sequi aliud immediate amotum, et si fuerit disparis speciei; quod nunquam continget, nisi esset quedam continuacio sic motorum. Unde, ex influencia veritatis, motus fuit Aristoteles phisicorum (forsitan ignoranter) ad ponendum con-

15. *th̄* B. 17. *q̄tū* B. 26. ²*fgunt* B. 31. *plū's* B. 33. *c'teffum* B.
34. *cum pro* *contingit* B.

34. *Pleni*. Probably an allusion to the rising of water in a pump.

tinua descriptive talia: *quorum ultima sunt unum*; ut duo puncta inmediate posita nunquam huiusmodi constituunt quoddam unum, quod est terminus communis utriusque, communicancium parcialiter in eodem. Unde 5 conceditur quod quelibet quantitativa corporeitas est in potentia, non tamen distinguendo potentiam contra actum. Et sic omnia corpora que non sunt continuata cum corporibus eiusdem speciei constituunt numerum actualem. Et continuacio talium cum corporibus disparis 10 speciei, adnascencia vel contiguacio nominatur. Ex quo patet quod hec duo, continuacio et contiguacio, non sunt species distincte ex opposito, sed pocius continuacio est genus utriusque. Contigua enim sunt que cunque se tangencia disparis speciei, quorum ultima 15 sunt simul. Et si sunt corpora disparis speciei, confixa per humidum continuans ad 3^m integrandum, tunc sunt ad hoc nata, ut os, cartilago, nervus et cetera, et omnia genera concurrencia ad integrationem corporis animalis.

B 127^a Ideo vere dicit | commentator quod in methaphysicis 20 non differt contiguacio a continuacione, cum eo ipso quod ultima linearum superficierum corporum, sunt simul unum continuum; et econtra.

limits of two things being identical; but two points that merely touch are not identical. We may grant that all bodies are *potential* (without denying their *actuality*) because they are more or less separated from others of the same kind; the fact of their touching bodies of a different kind is called *contiguity*, which is a sort of continuity, and does not differ from it in a metaphysical sense.

Ulterius notandum est iuvamen elementorum in mixtis, ad constitutionem et perfectionem sui compositi. Oportet 25 autem in omni mixto perfecto terram quo ad multitudinem dominari, propter mixti constanciam. Nec aliter esset iuvatum efficienter sensus tactus. Unde, secundum analogiam, ad suum sensible fundatur sensus tactus plus necessarius aliis in nervo retili terreo, 30 ceteris sensibilibus plus extense. Oportet secundo inesse naturam aquam ad multitudinem terrenam, forcius colliniendam terream, et ad stabiendum in homine sensum gustus, quem oportet fundare in humore aquo, nedum quoad linguam et partes pororum extensius adiacentes. Sed e converso quo ad gustale quod oportet 35 omne humidum aqueum, si gustum debeant proportionaliter mutare, et genera talium obiectorum sensus distingwero, ut sensitum per habens sensus huiusmodi, nedum quo ad noticiam, sed etiam ad esse. Et omnia 40 talia sunt ordinata ad hominem ut ad finem. Ideo non impertinenter reducitur causa mixtionis elementorum in

The elements concur actively to give perfection to their compounds. Earth gives stability and palpability, and must predominate in every perfect compound; it is the basis of touch.

Water joins the particles of earth, and is necessary to the sense of taste in man.

All things are made for man, and the reason of all compounds which are

1. motus quorum B. 6. *ipoita* B; *ib.* ponam B. 18. *genia* B
23. *Iuva^{mō}* B. 29. aliter B; *ib.* *r'tili* B. 38. *spvus* B.

inferior to man is to be found in him.

Air must be present; otherwise the compound would not be sensible to the undulations which cause sound in the air, and move the cavity of the internal ear where the auditory faculty is situated.

Fire is necessary to the animal spirits, that they may perceive light and colours. There is more fire in the eye than in any other part of the body.

Nothing leaves the eye to strike the object, nor can the eye see without something visible, in regard to which it is passive, though active in other ways.

Natural philosophers tell us that earth predominates in ores and stones; water in metals; inflammable air

mixtis remotis sub homine ad hominem, gracia cuius taliter commiscentur. Oportet tertio aerem commisceri, quia aliter non esset mixtum tale sonorum, dilatans se post percussionem, nunc secundum dyametrum longitudinalem, et nunc secundum latitudinem, ad tractum spiritus aerei complantati corpora, causando secundum numerum tremulosum ex dilatacione et constrictione secundum dyametros transversatiles, sonum in aere proporcionaliter continente, qui eciam moveret con naturalem et complantatum aerum in miringa. In tali namque mixto aere complantato, et non in aere alieno contento in spongiosioribus, subiectatur vis anime auditiva. Ignis autem clarificat spiritus alienos, et facit proporciones, ad colores iuvans ut sue speciei cum irradicatione luminis extranei per medium dyafanum sensibiliter differenciantur. Unde in spiritibus animalibus qui subiectant virtutem visivam, ignis plurimum dominatur in proportione admixta alia; ut ex claritate cristal laydis, cum tunicis sufficienter illuminatis in suis superficiebus, et species libere inserantur, et lumen oculi cum virtute visiva commisceatur cum specie visibilis in medio e converso, usque ad solidum terminans visionem. Non autem egreditur corpus ab oculo ad terminum; nec sufficit hec multitudo ocularis sine coexistencia speciei visibilis obiecti, a quo organum, recipiens speciem, specialiter paciatur. Unde passionem visus declarat Aristoteles | in De sensu et sensato et 2º B 127^b De anima. Actionem vero sensus ponit, 19 De animalibus et 3º Metaphysicorum.

Alie autem sunt quotlibet commoditates in existencia elementorum in mixtis; quorum tractatus ulterior pertinet naturali, qui ponit inter mixta perfecta terrea habundancius dominata; ut in minera, vel lapide; aquam, quo ad opus liquacionis dominari generaliter in metallis; 3º unctuosum aerem, qui est causa inflammabilitatis, ponit in vegetali quo ad illud effectum

7. $\widehat{\text{cofac'one}}$ B. 14. $\widehat{\text{sue sicu}}$ B. 24. $\widehat{\text{m̄lti}}$ B. 30. existencie B.
33. lapide vel B. 34. $\widehat{\text{loqconis}}$ B.

35. *Untuosum aerem*. I have rendered this in the note by inflammable air, which was one of the first names given to hydrogen; an element that is really abundant in plants, as is well known.

dominari; quarto aerem puriorem in sensibus, specie aliter quo ad spiritus aminales; et quinto ignem habundancius in homine, propter maiorem copiam istorum spirituum, et alias operaciones ad quas natura ornat intentum. Et sic et species et genera mixtorum, que cunque genera corporum simplicium in maiori mundo proporcionaliter coaptantur. Nec tollit tale dominium aliorum elementorum super terram ampliorem terre multitudinem, vel dominium terre quo ad aliqua super illa; sed satis est quod unum elementum quo ad aliquid super reliquum dominetur, et quod mixta totaliter perfeccioribus formis substancia, habet plus proporcionaler de superioribus elementis. Conferat ergo protervus textum Aristotelis alio, mediate in fine, cum dictis eius, primo De generacione, 4º Methaphysicorum, et alibi ad significacionem debitam, et videbit quod nullum dictum philosophicum sit obvium huic vie. Causa precipua quare illa via abhorretur a pluribus est quod non per sensum percipiunt adcompositionem continui ex non quantis.

Tercio et ultimo restat videre de velocitate motuum quo ad signum penes quid attendi debeant. Et primo de motu locali. In qua materia recordati sunt moderni quod non attenditur penes magnitudinem situs corporei acquisiti in corporacione, ad tempus; quia stat aliquid subito acquirere vel deperdere talem situm per adnascenciam vel discontinuacionem. Stat eciam columnam rotundam, 2 pedum in longitudine, et 8 pedum in latitudine, sicud hasta est, descendendo uniformiter in hora, describere in hora situm secundum longitudinem duplum ad hastam; et aliam simillimam in figura volvi latitudinaliter precise eque velociter, describendo situalter plus quam octogintupliciter ad priorem, sicut patet calculanti: ubi certum est quod quilibet punctus unius precise eque velociter movetur, sicud aliquis punctus alterius. Non ergo esset possibile aliquid corpus moveri uniformiter quo ad subiectum, supposita illa tria repugnancia.

in vegetables, to render them combustible; a purer air constitutes the animal spirits and fire is abundant in man. Each element predominates somewhere for some special purpose. If Aristotle's words on the subject be properly examined, he will be found in agreement with us.

Question III.
What is the measure of the velocity of any motion?

It is certainly not the space covered by the mobile in a given time. Two cylinders of the same size are moved with the same rapidity, one parallel to its diameter, the other parallel to its length: if the length be to the diameter as 2 to 8, the space covered will be eighty times greater.

2. Exḡmto B. 5. ga B. 11. totalia B. 21. Io; B. 33. octo-
gincopl̄ B. 38. ta' B.

33. *Octogintupliciter*. As I understand the case, the difference would not be so great; only as 16 to 64. But I cannot help thinking that the marginal note renders Wyclif's meaning.

It is generally and rightly believed that in every mobile there is a point that moves, swiftest of all, and measures its motion. This implies the existence of points, having distinct degrees of movement.

Ideo dicitur communiter et bene quod in omni corpore mota localiter est dare punctale velocissime motum, quod est mensura velocitatis tocius motus, | cum B 128*

omne motum tam velociter movetur sicud aliqua pars sui; et sic patet quod sequitur ex illo punctum, lineam, et 5 superficiem esse et motus sibi proprios, et per idem situs et alia accidentia. Ut, posito quod latitudo alteracionis et eciam motus localis uniformiter, et diffimeriter a non gradu usque ad gradum ut 4^{or}, extendetur per B corpus: est dare gradum intensissimum motus alteracionis, sicut et 10 motus localis, qui gradus solum est ad extremam superficiem totaliter; sicut et qualitas sic intensa sicut est color vel lumen solum per superficiem corporis spaci, quod luminosum transpicit solum secundum talem superficiem totaliter et primo. Aliter enim ageret color 15 intrinsecum quantumcunque parvus per medium opacum, cum sit dare primum agens, sicut et nisum [et] difficultatem quam produxit ad maximum. In omni ergo corporeo moto, pars naturalis primo mota est punctate.

The degree of intensity of movement is only complete at the surface of the body, as colour is also only at the surface.

20

Et sic patet quod sequitur ex illo punctum, lineam, et 5 superficiem totaliter et primo. Aliter enim ageret color 15 intrinsecum quantumcunque parvus per medium opacum, cum sit dare primum agens, sicut et nisum [et] difficultatem quam produxit ad maximum. In omni ergo corporeo moto, pars naturalis primo mota est punctate.

There is also a point of minimum movement in every being that moves itself; as in sensitive movement one faculty moves another and is moved by another.

Every part helps another as one part of the world aids the movement of another, and thus of the whole world.

20

Et preter hoc est dare minimum naturale in quodocunque per se moto; quod minimum non potest moveri secundum partem reliquam respectu opposite quiescentis; ut in motu animalis obiectum movet sensus extrinsecos et intrinsecos; at illi movent appetitum 25 sensitivum; et ille movet virtutem secundum locum motivam, et illa calorem vel humiditatem quod in musculis et lacertis; et forte in corde est minimus calor primo motus, quamvis quelibet pars animalis iuvet reliquam quamlibet ad agendum, sicut quelibet pars 30 mundi iuvat quamlibet aliam. Et per consequens homo variatur qualibet parte mundi. Sicud enim cumulus silve vel arene ostendit se, quantumlibet distanter, per communicacionem parcium, sic tota terra (et per idem totus mundus) ostendit se per communicacionem par-

35 cium. Nam si quelibet pars iuvat reliquam ad integrandum suum totum, quod et equivalent finaliter per quamlibet partem materialiter communicantem, sequitur quod quelibet pars coadunat reliquam et suum totum ad omnem posterius esse causatum.

40

8. difformis B. 17. et after nisum deest B. 22. quod non B.
27. huic¹⁶ (?) B. 24. quiescente B. 28. mistulis B. 37. equivocant B.

Parum tamen locutum est de illo colore vel colorato, quod primo appropriate agit speciem et terminat distanciam visionum. Non enim oportet, si unum iuvans agit, quod coagit cum eodem. Nec oportet, si hoc sentitur vel noscitur a noscente, quod distincte sentitur vel noscitur ab eodem. Sed hoc forte evenit ex dicta communicacione parcium universi, quod quelibet eius partem apprehendendo, apprehenditur ipsum totum intencione confusa; et ipso confuse appre-
henditur eius quelibet pars; ymmo primum principium, quod omnia appetunt, ad minimum confuse.

Remark respecting colours, how they act to aid vision.

Sed reliquendo hoc, ut hic impertinens, alibi per tractandum, prosequendum est de mensura velocitatis motuum. Sunt ergo duo modi dicendi in materia de velocitate motus localis. Nam aliqui dicunt quod attenditur penes lineam descriptam a puncto velocitate motus. Contra quod 4^{er} argumentatur. Primo ex hoc quod omnia puncta mota in ultimo celo, sicut et omnia puncta intrinseca cuiuscunque mobilis, nullas lineas

B 128^b describunt: ergo non generaliter | penes hoc attenditur motus localis velocitas. Et si dicitur quod equivalet, modo ac si omnes isti puncti describerent lineas istis motibus siderum, assencio quod, si sic describerent ista puncta istis motibus lineas proporcionaliter ad velocitates istorum motuum, tunc in infinitum velocius moverentur quam modo; et sic in infinitum tardius, cum antecedens implicat substancias duas corporeas coextendi, unam continue quiescentem localiter, et aliam corpus quiescens continue penetrantem: quod cum sit impossibile, patet quod illud consequens verum nullius est efficacie, sed oneris respondenti.

Two opinions regarding velocity of movement. Some say that it is measured by the line described by the point of greatest velocity.

Four arguments contra.

1. The points of the first mobile and the points inside every moving body describe no lines at all. If it is said that it comes to the same as if each of the points described a line, that implies penetration; which is absurd.

Similiter, planeta movetur multis motibus, quorum aliquis est velocior, aliquis tardior; et tamen, quamcunque lineam vel situm longum describit aliquis eius punctus uno illorum motuum, describit et quotlibet. Non enim est dare situm quem describit punctus linea, motu orbis superioris, vel motu sui, proprii orbis, vel epicicli, quin eundem describit quolibet istorum motuum; sicud patet attendendo diligenter ad figuram 40 situs quem describit planeta.

2. A planet has many movements, some swifter, some slower, and each of its points describes them all at the same time; it is impossible to find any one line described by a point in this case.

Item, in motibus difformibus quo ad tempus, non tenet illa regula. Ergo est diminuta. Antecedens patet

3. Neither does the rule hold for motions

18. sunt B. 22. quod modo B. 34. aliquid B. 35. puntos B.
39. di^r B. 42. dimi^{ta} B.

that are varied ex hoc quod contingit infinitos esse motus horales, in time, for a given length may be traced in a given time by mobiles of infinitely varying velocities. et tamen primum esse uniformem ut duo, secundum eque intensem gradum ut 4, et tertium gradu ut 8; et sic in infinitum. Ut, posito quod in infinitum intendat aliquod 5 istorum suum motum super aliquam partem sue linee, tardando diuicius super reliquam; sicut loquentes communiter in ista materia admittunt, et quibus solet queri quam velociter moveretur corpus motum primo uniformiter gradu ut 4 pro medio instanti inter illos duos 10 motus, et quam velociter descendit grave in confinio inter aquam et aerem.

4. We can give a case of a body in which the swiftest point does not exist.

Similiter, aliquid contingit movere per tempus continue, in quo non est dare punctum eius velocissime motum. Ergo regula non est generalis, cum tamen, 15 dicendo sic regula generalis, eo quod motus difformes quo ad tempus sunt univoce velocius cum motibus uniformibus quo ad tempus, sicut sunt univoce motus cum illis. Ergo dicenda est illis racio eadem. Assumptum huius argumenti foret evidens illi qui poneret in cor- 20 pore rarefacto per totum, et cum hoc continue circumducto pro qualibet instanti, aquiri novam quantitatem per totum; sed quia illud est impossibile, ideo adducitur argumentum de corpore circumducto, in quo continue corrumpantur puncta extrema: ut posito quod Sor, 25 continue expansis manibus et brachiis, circumducatur et quod continue afferatur de extremo medii digiti corelativa moti, tunc non est dare punctum velocissime motum in Sorte: et per consequens vertigo Sortis non mensuratur penes illud.

If a man is whirled round with out-stretched arms, and a point continually cut off from those extremities, it is impossible that his movement should be thus measured.

The movement would not be measured by the line just outside the body, for (1) the adversary who replies thus does not admit a definite number of points.

(2) No point can move faster than another to an infinitely small extent.

Sed hic dicit taliter | opinans quod talis motus velo- B 129^a citas attenditur penes lineam quam describeret punctus, qui indivisibiliter velocius movetur quam aliquis 30 istorum omnium punctorum motorum in mobili. Sed de isto dicto amiror propter multa: primo, quia iuxta sic opinantem non est dare omnia puncta in illo moto mobili, sicut nec est dare infinita, ut dicit. 2^o, quia claudit contradiccionem aliquem punctum indivisibiliter velocius moveri quam movetur aliquis 35 istorum, cum non sit possibile penes ipsum unum excedere aliud per indi- 40 visibile: quod tamen oporteat, dato tali motu puncti

2. que (or quo) libet describe B; ib. bis pro linea B 5. aliud B.
13. aliud B. 15. 16. in ddo B. 19. ddo B. 28. corlomo B.
33. induit B. 35. promo propter B; ib. multo pro B. 38. indim B.

indivisibiliter velocius moti. 3º, quia tale circumductum (3) It is non movetur velocius quam aliquis eius punctus; quia a body could tunc moveretur velociori gradu motus; et per consequens, than any of its cum gradus iste sit dandus, esset dare illud quod own points; 5 primo movetur illo gradu. Sicut ergo non est dare implied, if the precise quam velociter precipue movetur aliquis punctus measure of its sic moti, ita nec est dare quantum velocior precipue velocity is a movetur totum mobile. Et quarto patet, quia ymaginato line outside it. quod Sor circumductus derelinquat post se, per totum 10 in quo fuerit aliqua pars eius [caliditatis, ipsam] caliditatem vel aliud accidens quocunque, et non extra illum situm, patet quod completa circumduccione est dare totale accidens derelictum, et per consequens est dare eius circumferencia, cum solum finite situaliter 15 extenditur. Quero igitur utrum circumferencia talis accidentis sit maior quam triangulus descriptus a B punto (indivisibiliter velocius moto continue) quam aliquis punctus in instanti, vel minor, vel equalis? Non dubium quod sequitur, pro quolibet instanti intrinseco 20 motus, aliquem punctum Sortis velocius moveri quam B uniformiter motum. Sed miror quare non erit motus B tante velocior, quam circulus descriptus ab eo erit maior? Et cum uniformiter movebitur, sicud et B, ut suppono, sequitur cum dandis quod in qualibet 25 parte talis temporis, B excederet Sortem per indivisiblem. Ergo non solum indivisibiliter movetur B velocius S. Et hic videtur quod, circumducta a B linea A, extremo continue quiescente, causaret per B motum circularem, sicut describeret situm circularem; et amoto eius puncto 30 extremali sine pluri, in 2ª eius circumduccione describeret circulum inmediatum priori: et sic sine fine. Et sic componeretur circulus ex circumferentiis inmediatis. Nec est dubium quin est dare totale situm per quem Sor fuit pro tempore sue circumduccionis. B 129^b Et sic de A et B linea, quocunque parte mundi, | eo quod est dare maximum situm in mundo, ad cuius

10. caliditatis ipsam deest B. 3º plū B.

8. *Et quarto.* Of the whole of this paragraph and the following ones, I have been able to understand nothing relevant to the question discussed. Readers should bear in mind that the MS. is unique, frightfully illegible, especially in this part, without any corrections from here to the end, and bearing upon a subject which is itself particularly hard to understand.

nullum punctum intrinsecum tunc fuit Sortes, et residuum situs mundi, et maximus situs ad cuius quemlibet punctum intrinsecum tunc fuit Sortes. Et idem sequitur de quolibet parcialiter situato, eo quod totalis situs mundi integratur ex duobus talibus sitibus. Et 5 patet quod motus Sortis erit continue extensus per dandum situm continuum; et sic usque ad illius situs circumferenciam. Si ergo quilibet punctus extremalis movebitur quando erit extremalis, et solum instans ante erit extremalis, tunc motus circumferencialis erit com-¹⁰ positus ex motibus instantaneis. Et si quilibet punctus talis non movebitur quando erit extremalis, tunc continue ad circumferenciam illius situs erit non gradus motus, ex hoc quod continue ad extremum Sor, quod velocissime moveretur, erit non gradus motus: quod ¹⁵ esset mirabile, quia tunc non esset dare quam velociter mobile aliquod moveretur pro quolibet instanti intrinseco; et tamen, dato motu, oportet dare magnitudinem eius mobilis, sicud et diuturnitatem; et per consequens eius extensionem usque ad eundem terminum inclusive,²⁰ ad quem inclusive terminatur eius primum subiectum. Et sic videtur quod tam velociter diminuitur motus quo ad molem, sicud et eius subiectum, cum continue erit precise par suo subiecto; et eadem diminuzione divisione minuetur utrumque; sed subiectum inclusive²⁵ a gradu magnitudinis usque ad gradum magnitudinis quem habebit tunc, et motus coextensus terminabitur inclusive ad eosdem; quia aliter subiectum deperderet maiorem magnitudinem, et aquiret maiorem parvitatem in equali tempore quam faceret suus motus. Et tunc³⁰ non esset dare quam velocior diminueretur ille motus vel quantum diminuetur, vel quantum durabit; sicut nec est dare quam magnus vel parvus erit ultimate. Et per idem non esset dare quantum extendetur pro aliquo instanti; cum tamen totus situs mundi integratur³⁵ ex situ per quem non est iste motus, sequens est residuum situs esse maximum situm per quem est iste motus. Et idem argumentatur de futuro.

Et per idem sequitur, posito quod A, lapis albedine saturandus solum secundum contactum, moveatur usque⁴⁰ ad finem illius hore extrinsece, in quo anichiletur,

^{10.} tunc erit B. ^{17.} quod *pro* aliquod B. ^{22.} divisibiliter B.
^{25.} dumet^r B. ^{26—27.} a—quem (*sic!*) B. ^{40—41.} alb^e la^{d^g} B.

servatis eius accidentibus (quod est impossibile, toto colore servato), est dare situm per quem est anichilatio, et per consequens, ubi A erit ultimate sicut est
 B 130^a dare usque ad quem situm | pretenditur color et defertur
 5 accidens per A lapidem. In fine ergo erit verum quod
 A sit B, et per consequens quod fuit ita quod est hic.
 Si ergo A erit ad B, punctum extrinsecum, tunc tanget
 ipsum, et erit ita quod est ad illum. Et habet colorem,
 si de longinqua extensione temporis habet concedere,
 10 scilicet, si aliquid aliqualiter se habuit vel habebit,
 tunc si se habet. Non enim est color in isto zophis-
 mate: *ad istum terminum A est et A non est ad istum terminum.* *Infinitum propinquum est A hinc termino et A non est infinitum propinquum hinc termino;* quia est
 15 dare totum situm, per quem adequate nunquam est A,
 quem situm motum est esse inmediatum termino dato.
 Si usque ad istum terminum A movebitur, et pro illo
 instanti pro quo A fuerit in termino inclusivo illius
 situs, erit A ad illum terminum et super ultimam
 20 partem proporcionabilem illius situs.

Nec vereor dare ultimam partem proporcionabilem
 alicuius continui; quia a signato A, corpore columpnati
 possibili, uniformis grossicie ut virgulto correspondenti, ali-
 25 dividendo illud in suas partes proporcionabiles geo-
 metricas minores, versus B extrinsecum. Ut capio duas
 lineas girativas, incipientes in extremis dyametri C
 reliqua basis, et circumgirent quamlibet istarum parcium
 proporcionabilium versus B extremum continue proprius
 sibi ipsis, usque ad B basim, et signo corticem inter-
 30 ceptam inter illas duas lineas per D: tunc patet quod
 deus potest corrumpere omne corpus in ista columpna
 preter D vel partem eius. Stat enim quod D sit magnum
 corpus ut 4^a vel 5^a tocius A. Ideo nemo qui ponit
 deum posse tot mirabilia facere negabit ipsum posse
 35 separare D et ponere per se; quo facto, eciam pono
 quod E veniat ex adverso, condensans vel flectens partes
 graciliores D versus extremum suum laci. Tunc patet
 quod est dare instans in quo C tangit D, in quo
 oportet quod tangat extremum gracile illius D et per
 40 consequens est dare communiter quantumcunque longam
 vel brevem partem determinatam ad illud extremum.

6. h' B. 8. calorem B. 9. longi^m de B. 23. v'g^o B; ib. cor*n*li B.
 35. c *pro* eciam B.

Data ergo una parte eque longam, sicud gira circum-dans grossiciem columpne, patet quod illa cinxit ultimam partem proporcionalem. Nec oportet nos sollicitari de acucie anguli talis corporis, nec de situ in vasi ad quem terminatur; quia non est nostrum distincte cog-noscere. Unde si D, pyramis ferrea, tangeret primo secundum communem punctalem F planum per G postea, operatam constantem, videtur quod D abstractum, stante posicione parcium G, haberet in latere applicato plano unum foramen punctale, quamvis non sufficeremus distingwere tale foramen H; sicud nec radium huius transeuntis per illud foramen; nec punctum sibi extreum talis radii incideret.

Tales multas evidencias B 130^b feci alias pro et contra. Sed tamen communicando cum theologis, querendum est si deus potest de potentia 15 absoluta facere unum situatum non quantum, post illo habito; si potest anichilare multa talia simul et convertere, faciendo unum quo ad appareniam continue magnum; et habito quod sic, queratur ut racio, experimentum, vel auctoritas [doceat] quod non omne 20 continuum constat ex talibus de facto. Nam omnia argumenta de ratione vel experientia ducenda in medium eque moverent ad improbandum talia posse esse, sicud ad improbandum talia esse.

Supposito ergo quod sit talis composicio, redeundum 25 est ad regulandum velocitates motuum. Redeundo ad punctum propositum de mensura velocitatis motuum quo ad signum, necesse est tria supponere; primo distinctionem de uniformitate; et sic de aliis divisionibus motuum supradictorum. 2^o, supponatur quod solum 30 motus temporalis qui primo tempore mensuratur, sit velox vel tardus; velocitas enim motus respicit temporis

8. opācā B. 20. doceat deest B. 25. Suppono B; ib. redditum (!) B.

25. *Composicio.* We have had no mention of any composition of any sort. It may be a mistake of the copyist; it may be a mistake of my own. Possibly Wyclif refers to the *composicio continue ex non quantis*. But when, for instance, there are only three letters, op^o, so indistinct that 9 may be q, p, f, and o, a, the only thing to be done is to take the nearest guess in harmony with the *form* of the word. To try and guess what *ought* to have been there would have taken up years of labour in merely transcribing the MS. And, where one out of two or three words might stand for several others, it was no longer practical to note down all the abbreviated forms.

diuturnitatem, sicud magnitudo molis vel parvitas permanencium divisionum; ita quod motus subito non esset velox vel tardus, sicut punctus non est parvus vel magnus. 3º supponatur quod possibile sit motus et 5 quotlibet alias formas contrarias eidem simul inesse secundum partes quantificativas diversas; ut sicud contingit unam partem columpne descendere et aliam ascendere, sicud contingit unam partem subiecti calefieri et aliam frigifieri; et sic de aliis alteracionibus oppositis. Et correspondenter contingit simul tempore unam partem dati corporis condensari vel minui, et aliam augeri. Ex quo plane sequitur quod stat idem simul tempore denominari secundum partes formis contrariis: ut signata A columpna, cuius B medietas sit concentrica, tunc concluditur quod subductis impedimentis, A simul ascendit et descendit; et sic de aliis denominacionibus a formis contrariis. Quicunque enim concedet aliquid denominari secundum partem quantitatивam forme habentis contrarium informatam oportet concedere 20 totum eque inter se denominatum cum parte huiusmodi, sive contrarium insit secundum plus vel minus, sive ratio insit secundum aliquid; ut eque velociter calefit vel descendit A secundum partem millesimam a toto residuo moto contrarie, sive similiter quiescente, sicud 25 pars fuit talis, mota per totum; et ita sciendum est de quibuslibet formis que habent contraria.

Unde patet quod vanus sit calculus de proporcione inpedientis forme date secundum eius multitudinem vel paucitatem, respectu forme contrarie. Nam eque velo- 30 citer calefit A corpus cuius solum millesima pars calefit B 131^a per totum gradum alteracionis, ut | toto residuo interim frigefacto gradu ut octo, sicud illa pars millesima; et sic simul tempore sit calidum et sit frigidum; et ita de quibuscunque denominacionibus a formis contrariis etc. 35 quo ad omnes auctores vel raciones in contrarium allegandas. Ex hoc patet solucio; quod impossibile est idem subiectum simul et semel secundum idem esse sic contrarie denominatum; et sic specificat Aristoteles et antiqui philosophi rationem contrariorum. Sicud 40 enim est univoce album [et equivoce nigrum, uno tempore album] et alio tempore nigrum, et secundum aliud

temporal movement alone can be swift or slow.

3rd, that contraries can exist at the same time in different parts of the same subject.

12. permanenter B. 5. quodlibet (!) B. 8. sicud (!) B. 19. ha-
bente B; ib. sed pro oportet B. 34. ex (!) pro etc. B. 38. Aristotelis (!) B.
40—41. et —album deest. 41. a'os B.

It is, therefore, useless to attempt calculating in what proportion the velocity of the whole is hindered by a contrary form, since there is no real contrariety between speed in one part of a body, and slowness in another;

just as the same thing may be white and black in two different

senses, or
times, or parts.

pro uno loco album et pro alio nigrum simul, ut volunt
admittentes multitudinem corpoream satis admittere:
sic idem in numero est idem secundum unam partem
quantitativam album, et secundum aliam partem nigrum.
Et sic de similibus.

5

Why this is
denied; on
account of
Nominalistic
doctrines.

Unless you fix
movement
precisely as to
sense, time,
and part, you
have a
universal
movement
which may
coexist with
any other
without
contradiction.

Otherwise,
nothing could
be moved in
part.

Solution of the
question.

Every
movement is as
rapid as its
swiftest part,
and is
measured by
the swiftness of
that part,

This
answers the
length of the
line described,
relatively to the
time.

Answer to the
first argument
contra.

Racio autem difficultatis ad assenciendum iste sententie est fluctuacio in rebus communibus, et [doctrina] illorum qui verbis negant communia preter signa. Nam Sortem moveri aut esse album aut aliter formatum est commune ad quamcunque formam talis speciei que ¹⁰ Sorti pro aliquo tempore inexistit. Ideo, loquendo de forma ultime singularitatis, oportet contraccius specificare: ut iste motus Sortis est *ipsum moveri isto tempore secundum illam partem acquirendo istam materiam motus*; quia aliter esset iste motus multiplicatus per ¹⁵ totum, sicud est motus communis. Sicud ergo non repugnat istum *Sor moveri nunc secundum istam partem acquirendo istam formam* et simul cum hoc *moveri nunc secundum aliam partem acquirendo formam contrariam moto opposito*: sic stat Sortem moveri simul ²⁰ et semel motibus oppositis non commixtis, ut per consequens non se impedientibus a denominacionibus propriis. Aliter enim non esset possibile aliquid moveri secundum partem; quod est contra philosophum ^{1º} et ^{5º} phisiocorum, et contra communem et venerabilem sentenciam ²⁵ logicorum.

Istis tribus premissis, dicitur generaliter quod quilibet motus velox est ita velox sicud aliqua eius pars, et per consequens cuiuslibet talis motus velocitas attenditur penes partem eius velocissimam mensurantem; ut motus ³⁰ primi mobilis est eque velox sicut motus punctalis partis in equinoctiali, licet quomodounque tarde moveatur aliqua pars eiusdem. Et ita generaliter, quantumcunque velociter movetur aliqua pars punctalis per se mobilis pro quaunque parte temporis, ita velox est ³⁵ totus motus eiusdem, etsi non secundum quamlibet eius partem; et patet quod motus localis velocitas attenditur penes longitudinem situs linealis descripti a punctali per se mobili velocissime moto in comparatione ad tempus mensurans; et sic tollitur instance ⁴⁰ de

7. doctrina *deest* B. 20. 8 *pro* Sortem (S?) B. 22. ad *pro* a B.
32. *equinoctiali* B. 39. *mote* B.

linea superius facta. Nam probatum est superius quod No point of the nullus punctus ultime spere describit lineam; quod describes a line, conceditur. Verumtamen non moveretur nisi describeret but that which situm in mobilem punctalem linearem. Et si capitur is equivalent to a line.

5 quod multiplicius describit eundem situm in numero, et per consequens est per quantumlibet tempus magnum in describendo situm circularem, conceditur conclusio;

B 131^b sed sequencia descripcionis tanti situs equivalet | ac si continue de possibili describeret novum situm. Ideo causatur pars successiva talis motus, qua velocissime movetur, describendo partem situs huiusmodi sine redicione super illam partem spacii. Et ab illa parte servatur velocitas tocius motus.

Quo ad secundam difficultatem tactam de corpore To the second: every planet, by reason of the epicyclic movement, describes a larger circle than it otherwise would do; and thence it is possible for the astronomer to predict that a planet will, at a given time, be in a given place.

15 simul moto localiter motibus non componentibus unum motum, sicud contingit de astro moto in suo epiciclo, dicitur quod maiorem situm circularem describit quodlibet eius punctale motu epicicli; et alium motum orbis experigencia. Quod patet, quia astrologi sciunt se per-

20 cipere instrumento quod planeta pro dando tempore erit in situ celi signato, et in fine temporis sensibilis immediate succendentis, et orientaliter retrogradiendo; quod non erit motu orbis. Et ista experigencia movet eos ad aponendum epiciclos qui sunt circuli non lacerantes

25 orbem suprapositum, propter eminentiam eorum supra circumferenciam orbis astri; sed includuntur secundum eorum punctum altissimum infra orbem. Quod si non esset talis retrogradacio, sed delatum moveret vertigine, ut describendo situm girativum (ut contingit de sagitta),

30 videtur michi quod omnem partem situs circumscripta circumduccione describit mobile motu certo; et sic est unus motus habens rationem diversorum motuum, cuius velocitas attenditur penes longitudinem situs girativi.

Ex quo sequitur quod velocius movetur quam si, cum paribus, sine circumduccione attingeret terminum *ad*

35 quem adequate in eodem tempore. Sed longe alius est motus nunc quam esset tunc, ut patet de partibus

motus quo ad molem, capientibus individuationem a situ.

If there were no such retrogradation, the velocity of the planets would be measured by the length of the space through which they revolve.

5. $\widehat{m}leus$ B. 17. \widehat{m} B. 19. experigēa B; *ib.* qua B; *ib.* fēūt B.
26. includatur (?) B. 31. tracto (?) B. 37. esse (?) B.

19. *Experigencia.* Probably for *experiencia*, and belonging to the next sentence: *quod patet experientia*. Cf. I. 23.

To the third: note that a circular space is described by the movement, and note the total number of punctal movements which together describe the circle; the velocity that is common to each of the movements will be the measure of the whole.

Objection.
The doctrine
that the
Extended
consists of
inxended
points, is
against this
velocity of local
movement.
For take the
Equator, the
circle
immediately
above and
that
immediately
below it, with
all their points:
the Equator
moves the
quickest, and
the other two
must stop at a
certain moment,
while it is
moving. This
renders it
impossible for
them to be
continuous
with it; and so
of all the other
circles, down
to the poles.

Quo ad 3^{am} difficultatem, ubi non est dare punctale aliquod per tempus permanens in circumferencia circumducti, oportet primo, notare situm circularem circumferencialiter descriptum iuxta declaracionem premissam.

Oportet 2^o notare totam multitudinem punctalium conferencium instanter ad huiusmodi circuli descripcionem. Et velocitas motus punctalis partis, que est communis ad omnia illa, erit mensura velocitatis tocius motus. Tale enim est commune citra speciem, et supra ultimum singulare; ut patet alibi. Nam punc-

talium extimum huius mobilis, simpliciter intellectum, est commune ad quodlibet illorum. Et patet solucio ad raciones superius tactas, que videntur refugere veritatem.

Ulterius, videtur quod assiendo composicioni continui ex non quantis, infringitur sententia de velocitate motus localis. Nam, capto equinociali circulo, et circulo sibi immediato, | sive altrinsecus versus polum, sive B 132^a circulo immediate supposito, videtur quod omnes hii 3^s circuli, sicut et omnia sua puncta, continue eque velociter moventur, quia quilibet uniformiter quo ad 20 tempus et subiectum, et angulum motus alicuius; istorum aliqua pars quantitativa est eque velox sicud aliqua pars alterius. Ergo conclusio. 10^m sic plura sunt puncta in equinociali circulo quam in altero circulorum signatorum; et pene tot situs punctuales occupat circulus 25 equinocialis, quot puncta habet. Ergo plures situs punctuales occupat circulus equinocialis, quam aliter sibi immediatus. Et quilibet punctus alicuius istorum circulorum describit adequate in die omnes situs punctales sui circuli. Ergo velocius movetur quilibet punctus 30 in equinociali, quam aliquis reliquorum. Et hic videtur quod sit discontinuacio in celo ad quemlibet eius punctum; quia est dare instans in quo punctus in equinociali describit situm punctalem; et punctus (scilicet immediatus) non, sed permanet per tempus in eodem 35

11. extinū B. 15. sentenciam (!) B. 17. alt'ue⁹ B. 21. an-gulus B. 23. p̄la B. 33. inꝝ pro instans B. 34. f' B. 35. no' B.

1. I suspect Wyyclif mixes up the answer to the 3rd and the 4th argument. At all events, I take it that his rule applies to bodies which revolve with varying velocity, as each of the points in a top, for instance. Note that he does not answer the 4th, but passes on to another objection. 23. In my copy of the MS. there is 10^m (!). If we could change it to *probatur*, or *major probatur*, it would make sense.

situ; ergo, oportet illos discontinuari. Et cum in qualibet circumduccione tante elongabitur, videtur quod per processum temporis quantumlibet distabunt. Et per idem sequitur quod ad omnem punctum circumferentie ultime celi erit discontinuacio.

Ad illud dicitur quod impossibile est aliquod indivisible velocius moveri localiter quam continue in quolibet instanti temporis describere situm suum punctalem; quod cum facit quilibet punctus in equinociali (ut supponitur), sequitur quod quilibet eorum inovetur sibi motu velocissimo possibili. Non enim velocius potest moveri, nisi pro eodem instanti posset esse simul in duobus sitibus, ut dictum est superius; quod est impossibile, quia tunc idem corpus posset dimensionaliter multiplicari per loca. Et ex hoc sequitur, cum veris supra dictis, quod quilibet alius circulus ab equinociali movetur diffimerit quo ad tempus. Nam totalis multitudo punctorum in quolibet minori circulo equinociali est minor totali multitudine punctorum in equinociali; et sic de sitibus. Ex quo sequitur quod quilibet circulus sic inmediatus equinociali ad minimum per unum situm punctalem plus describit de sitibus, quam aliis extra illum; quod conceditur. Et ultra conceditur quod quotlibet alia puncta eque velocius citer moventur uniformiter quo ad tempus. Sed vanum est nobis solicitari quando talis punctus quiescit; cum oportet nos hic ignorare si orbis astri movetur, aut quiescit, astro moto de possibili, ut iudicamus. Supponimus ergo quod in qualibet revolucione, puncto in equinociali existente in oriente fixo per unum tantum instans, punctus situ inmediatus in qualibet istarum linearum sit in situ suo inmediato per duo instantia; nec sequitur ex tali diffimitate discontinuacio, quia B 132^b non superius situs mundi pertranscendens. Sed si pro 35 quolibet instanti continui pertransiet unum situm cum puncto equinociali (et sic de punto immediate versus polum) tunc describeretur situs mundi teres vel lenticularis et non sphericus, cum eque amplum situm circumarem describeret quilibet talis punctus sicut aliquis. 40 Ideo oportet ex carencia situs fixi quem describeret

To this we
refer that the
swiftest
possible
movement of a
punctal
substance is
one point per
instant;
and as
this is
the rate at
which the
Equator travels,
it is evident
that every other
circle must
move slower
by at least one
point in the
24 hours.
We also admit
that the
movement is
uniform,
for each
of all these
points.
But we can
never know at
what moment
one of the
points is at
rest.
While each of
the points of
the Equator
changes its
place every
instant, one of
those in the
nearest circle
remains two
instants in the
same place;
but this does
not hinder them
from touching.
If each of the
circles were to
describe the
same space as
the Equator,
the world
would not be
round, but
cylindrical.

28. iudic^m B. 30. equinocialis (!) B; ib. exnte B; ib. p^vun B.

32. lar^r B. 37—38. describeret B; ib. teres vel lenti^r B. 38. spūs
= spiritus B.

punctus extra equinoccialem, cessare talem situm describere unum pluries et alium paucius, secundum limitacionem nature ordinantis talem posicionem parcium situs mundi.

It is easy to understand why the centre is absolutely fixed, and the point next to it changes place without separating from it; in the same way the movement of two points in two instants, and of only one in the same time, do not imply separation, as they follow from the idea of a smaller circle, which supposes a smaller distance to be passed over in an equal time.

Nec est difficile intellectum concipere quomodo punctus centralis manebit fixum et punctus sibi immediatus suppositus in revolutione diurna acquireret 4 situs adequate sine discontinuacione eius a centro; quia non est situs qui intercederet. Et per idem, A punto equinocciali orientali pertranseunte duos situs punctales in 10 duobus instantibus; et B, sibi punto inmediato, pertranseunte tantum unum in altero illorum instantium, non foret discontinuacio illorum punctorum, cum posicio circularis situm punctalium requirit quod non intercidat alius situs punctalis. Et idem contingit 15 quando unus punctus movetur, et alius sibi immediatus quiescit. Si ergo duo puncta signata, in equinocciali et circulo sibi inmediato, haberent pene tot situs punctales materiali tempore distribuendo, et unus pausaret per instans et alius non pausaret, tunc facta continua- 20 cione revolutionum distarent, ut innuitur. Sed modo, proporcionaliter ut punctus pausabit, habebit pauciores situs, describet situm punctalem in quo pausabit; non in primo instanti pausacionis, quia per idem in casu aliquid describeret situm punctalem super quem prope 25 quiesceret; nec in 2º instanti, quia tunc esset dare primum instans motus pro quo mobile esset in termino aliquo.

Ista autem est difficultas logica, postquam homo moverit scienciam veritatis inveniuntur, ideo menciantur 30 multi verbaliter concedentes. Michi autem videtur quod omnis descripcio situs punctalis est pro illo instanti pro quo mobile punctale est in illo situ, et in proximo instanti subsequenti est in alio, et per consequens in

12. \widehat{im} B. 18. \widehat{pe} B. 19. \widehat{meli} B.

29. *Logica.* This sentence. I have not the slightest doubt, is the exact reading of the MS.; but it has no sense whatever, so far as I can see; probably an important omission. No one who studies this pages can doubt that the copyist was as negligent as his writing is illegible. Dr. Rudolph Beer thinks it was a student's copy, for his own use.

casu positio, in 2º instanti, et non in primo, describitur datus situs. Et sic queritur ut sequens: sequitur ex posicione continui ex non quantis quod est dare primum instans cuiuslibet talis motus; quia, si non, in tali 5 instanti in quo punctale est in situ punctali, sed in-
B 133º cipit | derelinquere ipsum, describit illum: tunc oportet Difficulty about quod instanti primo, cum pertransiret illum. Et sic the movement from one point describet punctus motus in casu puncta constituencia to the next. lineam successivam, solum pro mensuris quibus non 10 essent, posito quod successive generabuntur puncta, subiecta puncto subito fluenti, et continue corrumpen- tur; ita quod continue sit unus eorum in actu a puncto supposito, et sic in fine, quando mobile foret in termino ad quem foret ultima distribucio divisibilis 15 proximi: quod est irrationale. Secessus igitur indivisi- Wyclif
bilis ab indivisibili est *mutari*, et successivus indivisibili distinguishes between proximo est *mutatum esse*. Verumtamen pro illo instanti changing and non foret *mutari*, nisi immediate succederit *mutatum* having changed places. esse. Et ita in casu notato: pro illo instanti quo indi- 20 visible circuli proximi equinocciali incidit in situm At the instant leaves its place, one point indivisibilem orientis, est *mutatum esse* respectu indivi- it changes; at the instant it divisibilis proximi precedentis; et pro illo instanti pausant comes to the instanter, cum non inmediate post illud instans erit next, it has situs descriptus post illud instans; sed inmediate post 25 illud describitur. Nec est ista pausacio instantanea quies This is true of proprie, sicud nec *mutari* est motus aut quies. Et ita all instantaneou changes, potest dici in omni mutacione subita, quod res pro instantaneous illo instanti pro quo subita sic non est facta, sed incipit as the acts of esse facta; ut contingit de linea, et anima, ac similibus 30 que fiunt in instanti. Et sic non est, quandocunque creature est facta vel est creata. Nec oportet, si res This is true of all changes, nunc non est facta, et fiet, quod nunc sit illa vel as the acts of the mind; aliquid eius fiendum; sed bene sequitur quod ipsum est fiendum in tempore suo. Et ita homo moritur pro also of death. 35 ultimo instanti *esse* sui, quando patitur mortem, que est *mori*, et inmediate post est mortuus, et mors est lapsa sua; et sic de similibus.

Notandum tamen quod hoc nomen, *mors*, equivoce intelligitur apud multas: ut quedam dicitur *mors spiri- 40 tualis*, et quidam *mors corporalis*. Sed de primo membro et eius subdivisionibus foret hic inpertinens nobis sermo. Digression concerning death; its divisions: spiritual and corporal (which we may omit);

11—12. corrumptantur (*quite plain*) B. 15. Laccessus B. 26. quietes B.
41. hinc B.

absolute or relative;
absolute, when the being is no more,
relative, when a part of the body dies;
in this there are degrees;
first the animal heat only partly assimilates;
second, if altogether fails to assimilate, or to keep together the parts;
absolute death is instantaneous.
Death and life are opposed; so the same body or part cannot be in the same sense dead and alive, either absolutely or relatively.

Life is first in the heart, and leaves it last.

The change from life to death is, like dissolution, one from living being to non-living being; the term *ad quem* is the non-entity, the term *a quo* is the entity.

It is argued that at the moment of death, the living and the non-living entities are together.

Mors autem corporalis vel dicitur *simpliciter*, vel secundum quid. Simpliciter, quando unum simpliciter desinit univoce 2^m partem eius corpoream. Sed mors secundum quid est cuiuscunque partis viventis mortificatio; ut a tempore status [sanitatis] animalis usque ad eius 5 mortem simpliciter, moritur animal quasi continue quo ad partes, dum calor naturalis, primo claudicans, non plene assimilat, sed in parte digerit ad natam pinguedinem. 2^o plus depauperatus, nec assimilare sufficit, nec assimilatum servare; et tunc defluunt partes continue, 10 quoque vita simpliciter extingwatur. Et illud idem ultimum *mutari* est mors, indivisibilis quo ad tempus, cum sit motus subitus quo aliquid unum denominatur mori simpliciter.

Et cum mors et vita sunt opposita privative, sicut 15 repugnat idem simul secundum eandem partem vivere et mori, eciam morte 2^m quid, que est divisibilis successiva; sic repugnat quod idem simul, secundum eandem rationem, vivat simpliciter et simpliciter | moriatur. B 133^b Moritur autem corpus simpliciter, quando secundum 20 quamlibet eius partem quantitatивam [que] vivit in illo est mortuum. Et primo in animali vivit cor, vel aliquid cordi proprium; et sequentur alie partes ordinatae, secundum earum dignitatem. Et breviter, pars cui primo vita adiungitur, ab eadem ultimo separatur; ideo, cor 25 vel minimum eius naturale expectat ultimum *mutari* quod est mors. Et simpliciter vivit secundum rationem positivam quod habet esse viventis; et simpliciter moritur secundum rationem qua mutatur ab esse viventis ad omnino esse huiusmodi mutationem, ab esse vivi ad 30 non esse vivi. Sic enim generacio et corruptio specificantur ab Aristotele penes suos terminos contradictorios utrobique; ut terminus *a quo* generacionis est non esse, et terminus *ad quem* est esse. Econtra autem est de corruptione. 35

Nec oportet logicum timere instancias sophisticas, quibus aliqui arguunt quod tunc sunt simul esse et non esse eiusdem. Nam constat extendentibus verba, et intelligentibus negaciones participialiter in suo tempore,

5. sanitatis *deest* B. 9–10. nisi assimilatum *pro* nec assimilatum.
10. *s,raj'e* B. 11. *int'a fm'* B. 15. *sic(?)* B. 17. *z' pro* eciam B.
20. *vñt pro* moritur B. 21. que *deest* B. 21–22. illa . . . mortua *ppor* B.
24. *b̄vñt(?)* B. 27. *fr* B.

quod non obest idem generatum quod eternaliter est But this is not secundum esse intelligibile, habere pro dato instanti inconvenient for one who esse actuale et pro proximo instanti. Vita enim non knows how the present may be dicit formaliter mutacionem, cum analogice inest deo. extended to the 5 Sed mors, ut huiusmodi, dicit precedens non esse be eternally actual; quia infinite intelligendo, est aliquod non esse, possible, and et secundum totum huiusmodi, generari. Et si idem actual only at in instanti proximo subsequenti habet non esse actuale, if the next tunc simul cum hoc, ut sic, corruptitur vel moritur, more, then the preceding one 10 ut [non] sit vivum. was that of death.

Notandum tamen quod vita potest intelligi equivoce pro forma substanciali permanente qua vivitur, vel actu eius successive individuato a tempore. Et de illa que consistit in successione, ratione temporis adiacentis, 15 quod est plurimum individuans eam longam vel brevem, individuated by est nunc nobis specialiter sermo. Sicud igitur eidem time; we mean simul insunt incepio et desinicio privative opposita, Life and death primum 2^m negacionem de preterito, et ultimum secundum negacionem de futuro; sic vita et mors, cum non 20 sint pure privative opposita (ut visus et cecitas, et privaciones formarum substancialium et accidentalium, que non simul compaciuntur inter se secundum aliquem gradum), sed pocius sicud generacio et corruptio, magnitudo et parvitas, intensio et remissio et forte lux et 25 tenebre. Et patet quod si aliquid moritur, vel mors If anything dies sibi inest altero dictorum modorum, tunc vivit pro eadem in any sense, it lives at the mensura temporis, licet dispari ratione. Illi autem qui same instant, but in a negant compositionem continui ex non quantis dicunt contrary sense. Those who deny our 30 vite exclusive, vel 2^o est simpliciter et primarie privacio doctrine of the vite in corpore quondam unito. Prima est ita in primo composition of the instanti non esse viventis; et 2^a est quantumlibet longa; continuous, say that death is the change 35 nec est in ista variacione, dum tamen sciatur fundare of a subject after the end of life, or the absence of the soul from the body. I prefer the first answer.

B 134^a Si autem queratur quando datus punctus movetur tardius quam punctus in equinoctiali vel difformiter

Return to the main subject. The question as to when one point moves slower than

5. precedente B. 10. non *deest* B; *ib.* vum B. 13. individuate (!) B.
22. imr^r B. 2 . aliud (in full) B. 26. bit^r or tuc^r (!) B. 31. quod^r B;
ib. beneath ita B. 36. quo^r B. 38. adp^{rta} B.

another in the quo ad tempus, dicitur quod in quolibet tempore cuius
above instans pausacionis est intrinsecum, et solum in tali;
mentioned circles, is et cum nulla pars quo ad tempus, vanum est verificari
absolutely useless. pro quo instanti vel per quod tempus foret motus
huiusmodi. Multe enim sunt iste, et in nulla eius 2^m 5
completam et propriam existenciam. Nullus ergo motus
est temporaliter difformis in instanti; et per consequens
nec per tempus; sed in tempore quo primo est, et
quomodolibet alio cuius ipsum est pars. Si autem
tal is difformitas habet esse incompletum in causis 10

The movement suis continue vel non, est huic in pertinens. Ex quo
is varied (in is patet quod non oportet, si talis motus sit secundum se
the subject) if it be not as swift totum difformis, vel velocissimo remissior, si utraque
as possible; it matters nothing that it medietas dicti motus et quelibet alie eius partes aliquo
is not varied in tempore non sunt difformes. Quod exinde totus non 15
itself. sit difformis. Patet eciam quod contingit eundem motum
nunc esse velociorem et nunc tardiorum, non descendendo ad instans, sed ad parvum tempus; et semper,
dato tempore, est dare quam velox est, dare motus
pro illo tempore et gradus velocitatis. Est velocitas 20
danda que non mensuratur instanti, sicut nec velocitas
vel motus cuius est passio.

We must remark that many words represent both movement and relation at once, as *ascent &c.*; and the words *earliness* and *rapidity* are taken to mean the same, whereas the former indicate only a relation of precedence in time. What is early may be very slow; a thing that is very late may be extremely rapid.

Sed ulterius est diligenter notandum quod sunt aliqua aggregata ex motu et relacione; ut ascensus et descensus, ortus et occasus, et similia. Et in talibus decipiuntur plurimi propter ignoranciam distinctionis inter citoitatem et velocitatem, seroitatem et tarditatem. Contingit enim sex signis aliquibus oriri subito, vel occidere, quantumlibet tarde mota; quia celeritas vel subitacio talis non recipit velocitatem motus, sed quam cito 20 erit sub orizonte vel supra orizontem. Nam quantumcunque festinans vel citus erit quantumlibet tardus motus; et quantumlibet sero erit quamlibet velox motus. Nam citissime vel celerissime est quicquid est in primo instanti temporis; et plus sero ut ab eo distancius etc. 35 Contingit idem, quamlibet celerius ascendendo, tardius moveri, et econtra.

3. *veri* B. 15. *after* tempore X B. 17—18. *descedo* B. 18. *fp* B.
23. *dir* B. 32. *situs (!)* B. 36. *afte'do* B.

13. *Difformis*. Note above the definition of movement varied in its subject; a distinction of no value in modern Mechanics.

Sed contra dicta de posizione situum indivisibilium primo celesti videtur sequi quod non sit realiter circulare, eo quod non est racio quare unum situm circumferret et duos situs inmediatos in ultima circumferencia mundi ex uno latere, quin per idem esset sic ad quemlibet punctum eiusdem circumferencie, cum sit uniformissime curvitatis. Et tunc continue pertrans-

B 134^b saret punctus maioris circuli duos situs, | dum punctus minoris circuli describeret unum solum; et sic in eadem 10 superficie circumferrent eidem punto 6 puncta, et per consequens infinita mundi circumferrent eidem punto quotlibet puncta ex omni latere. Que duo sunt mathe-

Objections:
1. If the first mobile could move two points in one part and in another only one, being perfectly spherical, it ought to do so everywhere, and we must either deny its sphericity, or admit that at an infinity of points an infinity of points is moving round each.

15 Item, proporcionaliter ut circulus est minor, est curvior; sed ad omnem punctum circumferencie mundi est infinitum magna parvitas, et est uniformis tota curvitas per totum composita ex non quantis: ergo, illa tota superficies est summe curva; quod est summe impossibile. Maior argumenti patet, ex hoc quod si circulus maior mundi diminueretur ad non quantum, stante continue circularitate, ille foret proporcionaliter curvior sicud minor: ergo, etc. Aliter enim quelibet porcio equalis foret precise eque curva sicud ipsa circulata;

25 quod est impossibile, cum tunc tantam curvitatem contineret, quanta est curvitas tocius equinocialis circuli. Minor argumenti facti est patula cuicunque qui videt quod circuli paralleli equinociali versus polum, ut sibi propiores, sunt minores. Cum ergo quilibet punctus 30 dicte circumferencie sit polus respectu alicuius maioris circuli, sequitur quod periret iudicium de parvitate circuli ad quemlibet eius punctum.

Item, circulus equinocialis est uniformiter curvus, ut sepe captum est, si sub aliquo gradu sit curvus; 35 sed aliqua eius quantitativa pars curvabilis non est curva; ergo, totus circulus non est curvus. Maior patet ex hoc quod quelibet 4^a, vel alia pars, eque distat a centro secundum quemlibet eius punctum: quod non

2. As a circle is smaller, it is more curved;

now the pole of the world is a point equal to a circle infinitely curved; and each point of the world's circumference is the pole of a circle; this circumference then, though the greatest possible circle, ought to be infinitely curved every where!

3. The Equator must have the same curvature everywhere; but somewhere it is not curved; so it is curved nowhere.

2. p'mo ceⁱⁱ B. 3, 4. c'cūta B. 4. īm^t B. 7. vñform^e B.
10. circūta et circūtae^t B. 12-13. mat^e B. 13. 9poni B. 17. ñta B.
23. pte' B. 28. palelli B. 28. l' pro sibi B. 33. e^t B.

esset, nisi servaret equalem curvedinem; ut patebit igitur maior. Sed minor, sic assumpta, sic probatur: pars quantitativa tenet tripunctalis huius circuli; non est omnia; et per idem nulla pars finitorum punctorum quo ad nos oportet quod curvitas sexti punctalis partis,⁵ si detur, esset mole divisibilis, et per consequens habet multas medietates partes, et per consequens (cum ad omnem punctum circuli sunt tres ternarii punctorum) sequitur quod ad omnem punctum forent tres gradus curvitatum. Et sic curvitas foret linearis extensa¹⁰ per arcum ad quemcunque eius punctum, secundum unum gradum indivisibilem. Nam si multiplicetur per tria puncta, tunc in arcu sextipunctalis essent 4^{or} curvitas habentes positionem; et per consequens constiterent linearem curvitatem. Sic est de formis super-¹⁵ additis, quod si detur aliquam proporcionem dicti arcus esse rectam, tunc signata illa per A B, et signato centro mundi per C, sequitur quod triangulus A B C habeat duos angulos rectos, contra 32^{am} primi.

This is proved by the fact that the line is formed by a succession of groups of six points, which can be resolved into triangles, of which no part is curved.

Taking moreover two apices of one of these triangles in line with the circumference, and the centre of the world, the three points would form a triangle with two right angles.

General answer.
God alone knows the composition of those indivisible things of which the world consists; but we suppose that there is first the central point; this with two others constitutes the smallest possible triangle; another makes the square; then the pentagon, that first begins to approach circularity; afterwards the heptagon, similar to a sphere; and so on.

Pro isto oportet | supponere, sicud supra, quod situs B¹³⁵ mundi cum componitur ex non quantis, habeat eorum compositionem, soli deo notam quam nos intelligendo convincimus insurgere ex puncto centrali duobus altrimenti secus copulatis, constituendo triangulum minimum possibilem, et post quadratum A, ac 3^o pentagonum qui²⁵ primo habeat rationem circuli, cum omnes semidyametri bipunctales ducte a centro ad circumferenciam sunt³⁰ euales. Eptagonus autem primo habet complecius rationem spere; et sic de omnibus aliis numeris circularibus ex hiis dictis. Nec individuatur parcialis situs³⁵ ex isto vel isto parciali corpore situato, sed totus situs mundi individuatur ab hoc in mundo et eius principiis. Parciales autem situs individuantur simpliciter a parte mundi sic magna vel sic posita. Et ita situs parciales immobiles a nullo singulari suo subiecto dependent, sed⁴⁰ ex materiali substancia et figura secundum respectum ad immobiles differencias huius mundi. Et tales situs immobiles possunt ingredi quecunque partes mundi

1. ptēt B. 3. t₃ B. 4. oīa B. 5. esse pro oportet B.
 13. p̄tā B. 19. f_{ut} B.; ib. 93 2^{am} p'nn B. 23. giuti⁹ B. 24. coplat² B.
 29. deo ubus B. 29 - 30. t'ubg B. 32. iundo B. 37. after
 mundi B.

proporcionales alii egredientibus a communi aggregato, acquirendo et deperdendo ex illis sitibus sua ubi.

Ad primum dicitur quod quilibet circulus maior mundi est uniformiter minime curvitatis, et quemlibet eius punctum circumstant in eodem circulo duo puncta; et per consequens in alio circulo maiori intersecante recte speraliter ad punctum datum tangunt ipsum ad duo puncta; et punctus semidyametri mundi proxime sibi directe suppositus in quinto ordine tangit ipsum; 10 et sic quinarius qui 2^m Aristotelicos est primus numerus circularis sic est principium positionis punctalium, sic et finis. Alia autem puncta que lateraliter ipsum respiciunt, sive puncto medio illius ordinis incidente, non sunt sic inmediata vel ipsum tangencia, nisi forte 15 equivoce, ut supra dicitur. Et correspondenter de compositione indivisibilium situum est dicendum. Concluditur igitur quod quemlibet punctum circuli inmediate equinocciali supposite superstant tria puncta, unum directe terminando dyametrum, et alia duo lateraliter, 20 que non tangunt nisi indirecte vel equivoce supra. Et tamen totus circulus equinocialis non excedit datum circulum suppositum, nisi solummodo uno punto; quia nec oportet nos sollicitari quis sit ille dispar punctus terminans dyametrum solo punto ab alio differente, 25 vel credere quod in illa porcione circuli tripunctali sit maior curvitas vel declinacio a rectitudine.

Et patet quod nec sequitur quod quemlibet punctum circumstant puncta infinita, sed et omnia puncta mundi, sic et tota est universitas materialiter finita. Ymmo 30 ex compositione continui ex non quantis videtur patulum quod omnium ysoperimetrorum figura circularis sit capacissima; quia da B quadratum, et A circulum punctorum parium, et cum hoc, quod precise tot puncta B 135^m contineant prime superficies intercluse; | et patet quod 35 linea quadrata proximi proxima intra B habet in 4^{or} angulis 4^{or} puncta, communicata 4 suis lateribus; et sic usque ad quadratum centrale minimum. Et per consequens, cum quelibet linea quadrata proxima inferior continet per 4^{or} puncta paucius quam sua exterior; 40 in circulo autem est excessus solummodo uno punto;

1. Every great circle has the smallest possible curvature, and each of its points has only two others, one on each side, in that circle. This point is touched by two others, belonging to the great circle that intersects the former circle at right angles; and by a fifth, which is the end of the radius of the sphere; the quinary number being the end as it is the beginning of position in space.

Three points only are immediately above every point of every circle that is tangent to the Equator; yet the whole Equator has but one point more.

Thus there is not an infinity of points touching each point.

Here our system gives a proof that the circle is the most capacious figure of all, on account of the angles of the other figures, which necessarily have points common to the intersecting sides, from the outside to the centre.

2. sua vbi B. 8. scuu^v B. 9. quito B. 10. Ar^{cas} B. 21. cum
pro tamen B. 34. pē B. 37. qrtū B.

patet quod est crementum multitudinis punctalium in figura A circulari, racione uniformitatis linee et amplitudinis angulorum supra illud quod est infra B, racione uniformitatis linee et strictitudinis angulorum. Et ita creditur esse radicalis causa demonstracionis in hac⁵ parte.

2. It does not follow, that the more angles a figure has, the less space it contains; quite the contrary.

Nor that a circle can be infinitely curved or small.

Nor that the least curved circle has less curvature than that which is most so; all the points are in both cases equally distant from the centre.

Thus the compound of two points is properly neither straight nor curved; they begin in the compound of three points, which is the cause of both.

We need not trouble about the angle of tangency outside of the world, until it be proved that space is possible there.

A part of a quality cannot be so intense as its whole;

Nec sequitur ex istis quod triangulus magis, et multi-
angulus minus contineat, sed pocius oppositum. Sed
bene videtur dicendum contra quod par porcio minoris
circuli minorem curvitatem continet porcione maioris¹⁰
circuli superius; sed omnes completi circuli equalē
continent curvitatem. Nec est verum quod in curvitate
vel parvitate circuli descendit infinite, cum status
utrobique ponitur ad finitum. Nec obest ad omnem
punctum dati circuli minime curvitatis esse gradum¹⁵
curvitatis maximum, qui non sit gradus minime curvi-
tatis. Cum enim quilibet punctus equinocialis eque
distat a centro, nullus est supra alium, sicut nec puncta
circuli cuiuscunque concentrici. Unde, sicut nec rec-
titudo, sic nec curvitas est formaliter in continuo²⁰
bipunctali; sed primo ad minimum in tripunctali cau-
saliter, que est in qualibet eius parte. Ideo non oportet
sollicitari circa partem punctalem rectitudinis aut cur-
vitatis, sed intelligi oportet quod nulla sensibilis porcio
cuiuscunque minoris circuli minus curvari poterit quam²⁵
par porcio circuli magni mundi, cum gradus sit proximus
non gradui curvitatis. Et credo quod non sit
dare infra mundum situm conformissime curvum cum
situ porcionis circuli magni mundi. Nec est rectitudo
per aliquam partem dati circuli, licet nobis videtur³⁰
superficies proporcionaliter curva et constanti colore
visibilis summe recta, ut patet de superficie spere
aque.

Nec oportet sollicitari circa quantitatem anguli con-
tingencie tante ex contactu recte linee extra mundum;³⁵
quia, ut alias dictum est, differendum est a solucione
talism argucie quoque positum sit probatum. Nec
yimaginari est de curvitate, vel caliditate, vel qualitate
simili uniformi quod quilibet pars quantitativa sit eque
intensa cum suo integro, cum curvitas eiusdem circuli⁴⁰

1—2. infra A (?) B.

11. s'p⁹ B.

15. omnem pro esse B.

31. calore B. 32. su^o B.

39. que pro quod.

maior mole sit minori intensor, et curvitas cuius-
B 136^a cunque | completi circuli summe intensa possibilis.

Unde ista consideracio de extensione curvitatis vide-
tur michi differenter contra quodlibet militare, cum
5 quocunque curvo signato, ad omnem eius punctum
intrinsecum est non gradus curvitatis, et proporcionaliter
ut pars circuli est minor, sibi correspondet gradus
remissior curvitatis. Et sic habent adversarii dicere
quod totum circulum et quodlibet curvatum est non
10 gradus curvitatis et infinitum remissius in qualibet sui
parte. Et hic vellem quod diligenter considerarent
metaphysicam de puidditate et passionibus curvitatis et
anguli. Tunc enim non mirarentur quomodo curvitas
extensa est maior, nedum movetur mole, sed intencione,
15 qualibet sui parte. Nec dubium quin tota curvitas
quantitative componitur ex parcium curvitate, cum
quelibet pars habet situaliter propriam curvitatem, que
causat intrinsece propriam curvitatem.

Sed 2º si dicatur quamlibet partem circuli eque
20 curvatam qualibet et cum toto, eo quod curvitas atten-
ditur penes curvitatem anguli ad punctum extrinsecum
curvitatis (ut circulus maximus est minime curvus; cir-
culus autem in quantum minor fuerit est plus curvus):
contra illud videtur, primo, quod quelibet curvitas con-
25 sequens angulum acutum figure rectilinee foret maior
quam curvitas cuiuscunq; circuli, licet in infinitum
magna sit alia. Nam sicud angulus contingencie est
infinitum minor quam angulus rectilineus alias acutus,
ut appareat, sic angulus intrinsecus sibi oppositus est
30 maior quam alias angulus rectilineus. Sic videtur quod
triangulus rectilineus sit infinitum curvior quam cir-
culus, et est comparacio curvitatis ad curvitatem, sicut
anguli ad angulum, quam geometer admittit. Et tunc
esset querendum utrum curvitas trianguli sit mole
35 magna. Sed videtur quod stat A lineam triangularum
ad omnem eius punctum acquirere curvitatem, et nullam
deperdere; et tamen non esse curviorem in fine quam
in principio, posito quod ysosceles curvetur secundum
partem circuli usque ad F ad angulum exclusive. Et

thus the curvature of a larger circle is greater than that of a smaller one. This question is a difficulty for my opponents too. At every point of every circle possible there is no curvature; and as a proportional part of a circle is smaller, its curvature is less.

Let them examine with care what a curve and an angle is; they will then

understand how a larger curve is more intensely great than a smaller one.

If they say that each part of a circle is as curved as the whole, and that the curvature is measured by the angle of tangency of each circle, it would follow that any curve tangent to an acute angle would be greater than that of a circle, and that a rectilinear triangle would be infinitely more curved.

12. q̄te B.

18. propriam curvitatem (sic) B.

20. curvatum B.

25. minor B.

28. a's B.

30. a's B.

34. ēē B.; ib. quend, B.

patet conclusio, cum omnis linea sic eque curva sit aliqua eiusdem pars, et quilibet angulus acutus rectilineus sit acucior angulo supra arcum. Casus videtur possibilis, cum linea non potest secundum partem curvari, nisi usque ad punctum terminans exclusive. 5

Besides, in this view circularity and curvity would be identical, and as all circles are equally circular, all curves would be equal, and the circle would be more curved than any one of its arcs, yet incommensurably so; but the semi-circle would be as curved as the circle.

Curvature has no quantitative part of the same nature; but it is made up of many different curvenesses. In each point composing a curve there is the least possible subjective curveness, which partial principles of the curve are everywhere united in the circle.

30 Sic quelibet circularitas est per se curvitas, sed nulla circularitas est maior circularitas quam quelibet; ergo, nec maior curvitas. Et sic sunt omnes circuli eque curvi. Ex quo plane sequitur quod circulus sit curvior qualibet sui parte, et pars eius, ut maior, 10 sit curvior; et nulla curvitas porcionis circuli parificabilis circulo alteri, sed quod sit proporcio irrationabilis curvitatis circuli ad curvitatem cuiuslibet porcionis, sicud trianguli rectilinei ad angulum continencie et angulum sibi oppositum; sed, quibuscumque circulis | B 136^d annotatis, tantam curvitatem continent semicirculi, et omnes sunt correlative proporcionales, licet partes pares circulorum inequalium dispariter sint curvate; ut puta porcio minoris circuli, magis curva. Sed recuperacio est de maioritate proporcionalis porcionis maioris minoris circuli. Nunquam tamen venitur ad paritatem curvitatis porcionis circuli et curvitatem cuiuscumque circuli, cum sint disparis rationes.

Ex quo videtur quod curvitas circuli non habet partem quantitatiam omogeneam, sicud nec figuracio eius; 25 sed habet quotlibet partes quantitativas, que sunt curvaciones. Et est dare certam multitudinem punctualium Deo cognitam in quibus ad minimum est minima curvitas subiective, et in quolibet illorum punctorum; et illa curvitas taliter erit multitudine. Et sic ad omnem punctum 30 circuli communicant in suis principiis parciales curvitates, ut superius dictum est de formis. Et hic est dare maximum circulum possibilem, et minimum, gradusque minorum punctalium Deo cognitorum, in quibus consistunt, dato circulo minimi gradus curvita- 35 tum. Nec est putandum quod in quolibet tripunctali circumferentie mundi sit curvitas subiective, que tunc foret per totum summe aspera atque curva. Sed satis

1. \widehat{c} B. 17. sut B. 18, 19. utp porco B. 19. r'cpa^o B.
 19—21. magis —circuli twice; ib. rcupa^a B. 20, 21. d'r'p b'q B. 26. quodlibet, and so on very often B. 27. c'ca B. 28. de' B; ib. cognita B. 30. cater B.; ib. et B. 37. fbmeq; B.

est quod quelibet pars [sit eque] curva cum qualibet sibi pari; penes hoc attenditur uniformitas curvitatis circuli.

Et si dicatur quod quandocunque due linee recte applicantur ad idem, indirecete causantes angulum, ille 5 angulus est rectilineus, verum est si non sint partes circuli causantes ad omnem punctum sui intrinsecum, elementaliter sed non formaliter, angulum circuli qui correspondenter est multiplicatus intrinsecus sicud cur- vitas.

It is true that two straight lines, meeting in one point, form a rectilinear angle; but only if there are no parts of a circle at that point.

10 Ad 3^m patet ex dictis solummodo quod prima con- sequencia non valet; quia satis est quod quelibet pars curva sit eque curva cum qualibet sibi pari quod est sperale. Et ulterius de rectitudine angu- 15 lorum duorum trianguli rectilinei, eo quod quelibet semidyameter circuli causat ad eius circumferenciam angulum parem cum qualibet, et per consequens, una dyametro stante orthogonaliter super arcum, tangendo angulum rectum, causabit et quelibet: quotlibet sunt peticiones, descripciones, et conclusiones geometrice 20 que videntur refringere istam sentenciam; sed omnes, ut dictum est, intelliguntur de illis angulis et figuris ymaginacioni subditis; nos autem loquimur de illis que a solo intellectuali nosci possunt, ut docet Augustinus in *De Quantitate Anime*. Quod si quis dicat quod eque 25 verificantur omnes conclusiones geometrice de pure intelligibilibus, sicut de ymaginibus, leve verbum est et B 137^a sine probacionis efficacia eructatum; | et ideo non cre- ditur sibi, nisi efficaciter approbetur. Quod si dicitur capacissimum et multos alios expositores Euclidis illud 30 asserere; revera multi subtiliores, ut Pitagoras, De- mocritus, Plato, Epicurus, et inter moderniores Lincol- niensis cum aliis, sequentes tramitem veritatis, con- stanter asserunt oppositum. Ille tales topice raciones 35 indicant defectum garulum argumentorum. Sic dico quod nulla est conclusio demonstrabilis in continuis, quin sit demonstrabilis in lineis [et] numeris; sed forte non econtra, propter ampliacionem subiecti prioris.

3. As for the third objection, the first part proves nothing; every part of the Equator is curved, and equally so.
 As for the argument of two right angles in a triangle, the radius falling at right angles on two points touching each other, there are many other *dicta* of geometry seemingly against our system; but they only concern such figures as can be imagined, not those which are only conceivable by the mind, and there is no foundation for asserting that these latter are subject to geometrical laws.
 In that respect, authority is in our favour; and to bring forward such arguments proves a want of better ones.

1. sit eque *deest* B. 2. pes *pro* benes B. 4. illius B. 7. *electer* B.
 11. quelibet *pro* qualibet B. 17. *cāndo* B. 20. *refu'g'e* B. 23. *mteu* B.
 25. verificantur B. 27. *erugatum* B. 29. *capam* B. 30. *pita-*
go'ess B. 32. *trinitatē* B. 37. *quā* B; *ib.* et *deest*.

We have already pointed out that geometry goes no farther than to insure sensible, not absolute, exactitude. No one can ever give the exact value of

$\sqrt{2}$
(relation of the diagonal to the side of a square) nor prove the commensurability of one arc with another, nor find the relation between the diameter and the circumference. All we can do is to get at such probability as is either truth or beyond correction by the senses.

All scientific certitude lies in numbers; things sensible are liable to confusion and error, and therefore we are not happy

here below. It may be said that we can get absolute exactitude thus; if A is divided into B and C, B exceeding C by one point, then we have

$$A = \frac{B}{2} + \frac{C}{2}$$

Some will answer: It may be called the double, but it is not the double of either.

But you cannot call anything that which is impossible,

Et patet quod conclusiones geometrice non demonstrant cum precisione, sed cum exclusione erroris sensibilis; sicud dictum est de divisione cuiuscunque continui date linee, vel dati anguli in duo equalia. Sed modicus in principio error maiorem efficit in processum in fine. Patet quod nullibi demonstratur cum precisione medietas proporcionalis duple, cum petitur quod quanta sit proporcio cuiuscunque dyametri quadrati ad suam costam sicud alicuius quadrati dyametri ad suam costam, quod arcus sit de numeris et per consequens de continuis claudicare. 10 Ymmo, capto quounque quadrato, cum sit quotlibet dyametri 2^m capcionem punctalium variate, incertum est cuilibet geometrico de quantitate et proporcione intelligibilis dyametri; sicut, secundum Lincolniensem, incognitus est sibi numerus punctalium sibi compo- 15 nencium; et de dyametro sensibili habet conjecturam probabilem vel veram, vel veritate in propinqua, a sensu incorrigibilem. In numeris ergo cognitis absolutis consistit certitudo sciencie; et in sensibilibus langwet erroneus et confusus. Quamvis, secundum Augustinum, 20 scimus quod corpus omogeneum, eo quo numerosius est, mellius aut magis esset; sed cum ignoramus numerum adequatum, et per consequens bonitatem atque magnitudinem numerati, non possumus vere dici cum tot langwidis ignoranciis hic beati. Ideo vere dici- 25 tur quod beatitudo non consistit obiective in aathomis Epicuri.

Et si dicatur quod sicut variatur medietas maior continui, que indivisibiliter plus excedit, sic potest dici quod totum habet se in proporcione dupla ad utrumque; 30 quamvis zophista concederet conclusionem, dicens quod tam proporcio 5 ad 3^a quam quinque ad duo potest erronee dici dupla, non tamen exinde sequitur quod sit dupla: videtur tamen michi quod nemo potest dicere proporcionem huius esse duplam, sicut nemo potest 35 dicere vel intelligere quod non potest esse; ut hic supponitur ex alibi declaratis. Cum ergo prima racio mensurandi reperiatur in numeris, excludens cum precisione quantitatem ad quantitatem proporcionalis, attinet errorem quemlibet secundum superhabundanciam vel 40

defectum; sic quod si A est duplum ad B, non est plus vel minus quam eius medietas; et sic de aliis B 137^b proporcionibus est senciendum. |

if A is the double of B,
B cannot be more or less than its half.

Of velocity in the movement of augmentation.

1. It is the movement by which a substance becomes larger.

This distinguishes it from diminution and focal movement, and both it and the latter from alteration; for instead of different qualities, they only imply a new site acquired.

Consequenter restat dicere penes quid velocitas augmentationis attendi debeat; primo tamen supponitur quod motus augmentationis sit motus secundum quem substancia maioratur. Ex quo patet quod distingwitur a diminucione et motu locali, cum nichil diminucionem formaliter maioratur, licet diminucio unius faciat ipsum vel aliud maiorari et habet tam terminum *ad quem* quam materialem quantitatem. Et multo evidencius, nec motus localis nec augmentacio est alteracio. Licet enim motus localis sit ad quantitatem continuam, quia ad locum illum, non tamen acquirit sibi [qualitatem] formaliter sive intrinsece, sed ubicacionem, que est septimum genus entis. Ideo dicunt philosophi quod tantum in 2^{bus} predicamentis, scilicet in quantitate, et qualitate, et ubi, est motus, ut per se materiis motuum priorum.

20 2º supponitur quod, augmentatione large accepta convertibiliter pro maioracione substancie, est aliqua augmentacio communiter dicta et aliqua proprie dicta augmentacio communiter dicta est maioracio inanimate substancie. Augmentacio vero proprie dicta est in mai-

oracione substancie animate per corporeum nutrimentum quod sibi assimilat. Prima autem maioracio nomine rarefaccionis, et 2^a nomine augmentationis appropriate exprimitur. Et differunt, ut patet ex dictis. Nam iuxta sentenciam Aristotelis (primo De Generacione), ad aug-

2. There are two sorts of argumentation; in a wide sense it includes expansion even of an inanimate body; but it strictly means only the increase of an animal by nutrition. Aristotle says that in this movement the same subject must be increased,

30 mentacionem proprie dictam requiruntur 3^a per ordinem: primo, quod moveat idem subiectum a principio usque ad finem motus inclusive; sed hoc commune est cuilibet motui successivo, cum motus capit unitatem a subiecto.

that the sensible increase should bear on each part of it;

2º oportet quod quelibet pars quantitativa sensibilis primo aucti secundum formam eandem sit aucta; et consimile oportet contingere in quolibet motu successive. Et 3º oportet quod fiat per alimentum cor-

and that it should be

11. materiam B. 14. qualitatem *deest* B. 16. est (!) cutis B.
20. auḡmativa B.

9. *Diminucio faciat ipsum . . . maiorari.* As, e. g., the pruning of a tree causes it to grow more vigorously

caused by the poreum adveniens similanti; quod speciale est augmentacioni. Sed iste due posteriores condiciones habent assimilation of food.

We must remember that every individual is individuated by what causes it, and that the form which actuates a substance is indivisible.

caused by the poreum adveniens similanti; quod speciale est augmentacioni. Sed iste due posteriores condiciones habent difficultatem apud irretitos in singulis principiis. Ideo notandum, ut allibi diffuse exponitur, quod omne superius possumus speciei capit individuationem ab omni illo quo 5 capit causacionem; et sic est dare gradus individualibus singularium secundum ydemptitatem numeralem unius vel plurium causarum a quibus individuationem huiusmodi sorciuntur. Sed notandum quod quelibet forma substancialis mixti et specialiter anima quecunque, 10 subiectum suum inmediatum actuans, est indivisibilis quo ad molem. Sed et illud declaratur alibi diffusius.

3. So long as an animal exists, its form remains the same, but its matter may vary,

and must do so; increasing therefore at a certain time.

Digestion begins in the mouth and stomach; it continues in the liver and the midriff (?); whence a part is expelled into the bladder; and it terminates in the heart.

In the capillary vessels there is an action going on which is the last compliment of augmentation.

Ex quibus 3º potest convinci quod, manente eodem animali, manet eadem forma, a qua caput vel aliud organum habet propriam quantitatem. Et per consequens, 15 licet nova materia adveniat vel antiqua defluat, tamen manet eadem pars quantitativa in numero secundum formam, cum manet eadem forma in numero licet materia varietur. Nec exinde sequitur migracio forme vel eius incorruptibilitas alium infinitans. Quamlibet ergo partem quantitatивam | primo aucti sensibilem ma- B 138 nentem eandem in numero secundum formam, oportet in aliqua parte temporis augmentari.

Nec obest quotlibet elementorum in humidorum inimicicias generari, cum sita prima digestione in ore 25 et stomacho, et separato in puro terrestri ac per intestina demisso, oportet in epate celebrari digestionem secundam subtili, a quo in epato mitricori expulso a venibus ad vesicam; et 3º in corde alimento decocto, vel subtilius primo virtus regitiva distribuit per arteries 30 et venas spiritus triplices cum sanguine membris augen- dis, quantum exigunt de natura. Et adhuc in venis capillaribus secundum rorem causabilium et glutinum est quantum sensibilis destillatio, et membrorum attrac- cione, ad motus augmentacionis ultimum complementum. 35 Et sic semper manet membrum spermaticum apparentibus

3. unt'os B.; *ib.* finlis B. 24. humor^e B. 27. tolebrari B.
28. sub^{st*ut*} B; *ib.* agō B; *ib.* mit'co'i B. 33. ^{cālū} cambium (?) B.

28. *Mitricori* and below, *mit'ti*. I have rendered this as the 'midriff', but only on account of the peculiar resemblance of sound with the word, for I have not succeeded in finding it anywhere. The whole passage is very corrupt.

contractum, humido cibali comixtum; sic quod nunquam est pars huiusmodi secundum formam ex pure cibali humido *integra*, sed ex humido seminali quod est subiectum inmediatum et essenciale vite vel anime. The semen, given by the parents always remains in the body, combined with the humours produced by alimentation; and this compound seminal humour is the immediate subject of life. The matter of the body is not itself increased; but the form (or soul) takes new matter to itself, and each member is increased by assimilation, so long as the assimilative power of the midriff remains entire. But this assimilative force diminishes as more matter is assimilated.

5 Forme quidem complexionales inducuntur in cambium, quod continuatum cum membro augmentato, nec augetur, nec membra materia; sed membrum manens idem, non secundum materiam, sed secundum formam multiplicatam per totam materiam antiquam et novam, est per 10 assimilacionem factum maius; et quamdiu manet vis assimilativa mititi ut membrum secundum terre dyametrum fiat maius, tamdiu manet augmentacionis potencia. Unde, sicut vis vini per aque infusionem adeo ebeatetur quod non sufficiat ulterius aquam commutare; 15 sic vis augmentativa, per infusionem cibalis huiusmodi, paulative remittitur; ut in pueris quidem propter membrum molle, commixtioni obediens, sic quod propter virtutis fortitudinem est augmentatio satis velox. Et ad terminum status augmentati, claudicante calore, assimilacionem completant, in adipem vel arvinam animam; et demum in seminio, mortificatis corporalis spermaticis, defluit cibale humidum cum humido naturali, quo usque subiectum anime sit consumptum ad imum naturale.

Et patet quod augmentacio differt a nutricione, a mixtione, et a corporis inanimati assimilacione. A nutricione, cum sit maioracio, et sic nutricio; a mixtione, cum auctum non ut sic confunditur, sed quantificatur; et ab inanimati assimilacione, quia nutrimentum digerit, preparat, distribuit, et ad sui complementum 30 convertit. Unde, si lapis aut vinum haberet vim attrahendi humidum cibale, et convertendi ad sui conservacionem, ut habent vivencia, proprie augerentur. Nunc autem fit totum novum, et naturaliter deest virtus et organum, cum natura in [in] animatis non intendit vital changes it produces.

B 138^b talem finem | .

Ex istis tamen potest caveri error in quo quondam desipui, quod humidum cibale sit in aucto inbibitum, usque ad coextensionem alimento cum aucto; et sic humidum cibale foret eiusdem complexionis vel

It is a mistake to think that the alimentary humour is not distinguished from the being which it nourishes;

5. canibm B. 11. mit*u* B; ib. terram B. 17. et *pro* sic B.
19. calor est B. 20. armnā B. 21. fcn*u* B; ib. morti*u* B. 23. qfup*u*
adim*m* B. 29. dⁱgit = dirigit? B. 34. animatis B. 36. in quod, B.

temperancia cum humido naturali quod natura ex propria materia et virtute informativa in matrice dirigit. Et sic posset homo pro statu lapsus naturaliter perpetuari, cum anima foret indifferens habere humidum naturale vel humidum cibale pro subiecto: quod est impossibile.⁵ Oportet ergo quod sit unum essenciale subiectum vite vel anime, cui cibale humidum sit continens, et illud subiectum oportet debilitari continue, cum commixtio sit tam tenera quod necessitatur dissolvi et ab extrinseco dissolvente et ab intrinseco; sic quod, posita ¹⁰ optima conservacione possibili nature sic tenere, dum medium continens celum cum suis qualitatibus sic ipsam respiciant, est inevitabile quin vel ocios vel in fine sue peryodi corrumptatur. Sed sicud segetes infra annum naturaliter maturescunt, et, quantumcumque bene servate,¹⁵ ad ultimum dissolvuntur; sic senciendum est de homine et de quounque animali. In quolibet enim anno solari, deditus optimo regimini, inevitabiliter veterascit. Tunc vero foret accio tardissima inter calorem naturalem et humidum ²⁰ mocionem celi per medium continuatis et nutrimentum appositum instrumentaliter transmutatis, et istam mutacionem celi limitantis periodes, ex ²⁵ De generacione. [Hoc] pretermittunt pueri, putantes ex proporcionis equalitate, vel eius diminuzione, actionem in mixto posse cessare similiter, vel remitti, vel tardari ³⁰ eciam ad omnino [non] gradum. Sed indubie oportet tunc prohibere celum difforme, ne sic, secundum diversos angulos radiorum variatorum in fortitudine, currat sibi opposito in circuitu, et percuciat sic varie partes mixti; et quod partes hominis uniformis mixtionis haberent continue alimentum eis adequatum: quod est impossibile propter necessitatem et omogeniarum parcium, et propter impossibilitatem motuum quibus paulative partes alimentum attrahunt, conglutinant, extendunt.³⁵

The alimentary humours binder this action of the spheres.
If the heavens

Sicud ergo humidum unctuosum, superfusum liquori, non impedit simpliciter eius consumpcionum, sed mitigat; sic huiusmodi cibale non impedit simpliciter consumpcionem huiusmodi radicalis. Quod si celum

2. mat'ce B. 11. ^rten'e B. 13. vtia notia? B. 20. 90^o B.
 23. Hoc deest B. 26. adomio; *ib.* non deest B. 29. ¹sbioto B;
ib. pertuciat B. 36. Ach^{mō} B. 38. sed *pro* sic B.

staret, et clementa in homine essent ad tantam equalitatem proporcionaliter sublimata quod non dissolveretur per actionem ab intrinseco, nec egerent influencia celi ad regulandum modum sue peryodi, nec extrinseco alimento, tunc, inquam, compatitur secum, ymmo consequitur mortalis corporis ad anime unionem, non solum immortalitas, que est dispositio cum qua corpus hominis stat non mori; sed disposicio cui repugnat mortem succedere vel coesse. De istis autem dispositionibus, quomodo sunt philosophice possibles, est theologorum discutere.

Quo potest caveri error quo creditur auctum, a principio augmentationis usque ad finem, continue augeri. Tunc enim foret omne auctum per tempus sensibile summe magnum; quia si in quolibet eius instanti intrinseco per continuacionem cibalis humidi, eciam secundum minimum naturale, foret tanta quantitas novi corporis aquisita, oporteret ut aggregatum in fine servatum excederet totum mundum. Oportet ergo quod in certis instantibus, finitis eciam nobis, licet incognitis, fiant continuaciones minutarum parcium alimenti. Et per consequens oportet quod finite mutaciones instantanee principient motum augmentacionis, quem commentator ponit componi ex multis motibus et multis quietibus. Unde superfluum est credere quod augmentacio pro quolibet instanti a suo principio usque ad finem maneat continue, cum multis morulis intercisis. Sunt motus augmentacionem preparatorii, ut alteratio, motus localis, rarefaccio, condensacio, mixtio, nutricio, et conversio alimenti: ex quibus (ut principiis) augmentacio resultat. Nullus enim illorum motuum est augmentacio vel eius pars quantitativa, sed requisite ad augmentacionem concomitans.

Et quantum ad continuacionem augmentacionis temporalem, dicitur ut supra, quod ipsa est adequate per tempus compositum ex instantibus intercisis, et pro mensuris mediis non existit; in quibus tamen habet dispositionem vel potentiam propinquam ad existenciam actualem. Et correspondenter dicitur de servacione,

were motionless and all elements in perfect equilibrium in man, then man could not only escape death, but death would be impossible. How far such conditions are possible, is a question of theology.

We must not suppose that this movement of growth is continual from first to last, for then the body would grow larger than the whole world; it must take place at certain instants, by no means infinite in number, and thus it is composed, according to Averrhoës, of many movements and rests.

There are different acts which prepare it, none of which is augmentation, but a necessary accompaniment thereof.

During the instants at which it does not take place, it merely remains in abeyance; so also of conservation.

5. $\widehat{\text{it iuq}}$; B. 6. mortalitas B. 10. $\widehat{\text{coec}}$ B. 18. oportet; ut
deest B. 21. in concretis B. 23. augonis B. 28. ppato'y B.
30. nut'co B.

That augmentation can recommence after disappearing, proves nothing; for we know that undulatory movement, the act of walking, &c. are not continual motions.

que ex magna augmentacione elicetur. Nec movet quod augmentacio vel ens post sui corrupcionem reincipit; quia talia successiva, tempore discontinua, 2^m partes frequenter desinunt et incipiunt sicut continua, licet non possint, postquam totaliter deficerent,⁵ reincipere eadem in numero. Nec illud negabitur circumspete ab aliquo qui concedit tremorem, sonum, saltum vel motum aliquem ex reflexis motibus aggregatum. Sicud ergo progressus vel saltus per stadium requirit multas quietes interpollatas requisitas pri-
marie ad partes posteras, et ex omnibus illis fit una progressio agregata seu cumulata; sic proporcionaliter de augmentacione est ponendum. Unde, qui negat talem motum, negare debet omnem sonum, omnem populum, et acervum. Evidencias autem que videntur
in oppositum militare, facillimum est deceptis solvere.

It is a collective entity, like sound, or a people, or a heap of things.

Objections.
1. A movement, past or future, is non-existent.

2. Every movement must either be continuous, or not be at all. Our system solves these very easily.

3. If a movement does not exist at a given instant, its contrary exists then; two contraries

in the same subject.

But two contraries can exist in their time and place.

4. We must guard against thinking that the subject of the augmentative force is a continuous quantity.

It is said that if it were so, no increase would be possible.

Primo quidem creditur, sed nimis erronee, quod motus in instanti preterito vel futuro eo non est quod in hoc instanti deest. 2^o false creditur quod motus talis non est nisi secundum quamlibet eius partem sic 20 vere continuus. Sed hoc non sapit vere ponentibus compositionem continui ex non quantis, et ponentibus omne totum ex partibus esse collectim, omnes illas quantumcunque fuerint separate. 3^o probatur erronee quod, si motus pro dato instanti non fuerit, pro hoc 25 tunc est quies sibi opposita; tunc non similiter vel si est, sicud et quies; et, quia motus et quies sunt contraria, tunc eidem subiecto duo opposita | simul insunt: B 170^b ignorando quod duo opposita, sicut suis temporibus, sicut et suis locis, utrobique sunt sic simul. 30

Quarto, caveri debet de subiecto motus augmentationis, ne credatur ipsum esse mole continuum aut quantum. Condam enim putavi istam rationem demonstrative procedere per omnem partem antiquam aucti est quies augmentationis continuencia, et per 35 omnem partem assimilacione alimenti noviter generatam. Est eciam continue augmentationis privacio, quo ad omnem punctum augendi, est continue augmentationis privacio, et per consequens non est possibile aliquid augeri; cum hoc oporteat, si aliud debet augeri, oportet 40

2. mlens *pro* vel *ens* B. 16. ddecept^o(?) B. 26. t^o B. 31. c^{cō}
pro quarto B. 32. aut non B. 37—39. Est — et (?) B.

quod per totum sit continue non gradus talis motus. Nec valet dicere quod aliquis motus multiplicetur; quia per idem quilibet; et sic per idem nullus foret difformis quo ad subiectum; sed habens motum non movetur,
 5 cum motus quilibet sit ubique. Et hic oportet notare minimum subiectum augmentabile, et per ipsum oportet intelligere gradum augmentationis mole indivisibilem multiplicari, ut dictum est de aliis formis, que individuationem suscipiunt a subiecto, et quotquot sunt
 10 partes huiusmodi primo aucte, tot sunt augmentationes mole indivisibles que constituant totum motum.

Unde, ad cognoscendum fundamentum huius materie, oportet scire quod parcium hominis sunt quedam simplices, et aliae ex eis composite. Simplices autem
 15 spermaticae sunt os, cartilago, et ligamentum, nervus, arteria, et vena; et quandoque non spermaticae, ut caro, pinguedo, adeps, auxongia, villus. Et ita secundum de medulla, pilis, et ungibus, que ab aliquibus vocantur membra, et ab aliis partes superflue. Cuiuslibet enim talium quelibet pars quantitativa per se sensibilis [est] eiusdem rationis cum toto. Ideo dicuntur simplices quo ad alias quantitates. Unde vene, corda, panniculus, et cuncta que sunt mere spermatica, musculus et lacertus, que sunt partim spermatica di-
 20 cuntur consimilia; quia multum accedunt ad omogeneitatem membrorum simplicium.

Membra autem composita sunt, que ex istis quantitative specialiter componuntur, et ex illis integrantur: membra officialia, intrinseca et extrinseca; ut cor, ce-
 30 rebrum, epar, testiculi, caput, brachium, tibiae, cum sibi similibus. Post 3^s quidem digestiones, generatis 4^{or} humoribus et 3^{bis} spiritibus, augentur tres manieres membrorum constancium. Sed membra simplicia et
 35 membra consimilia, membra composita communiter; et cum quodlibet istorum membrorum habent quotlibet

But the smallest possible subject of this force implies that one indivisible degree of augmentation can be multiplied, like all other forms individuated by their subjects.

Certain parts in man are compound organs, and others are elementary tissues. To the first belong bones, cartilage, tendons, nerves, arteries and veins; also flesh, fat, and villi; each part is of like nature with the whole.

To the second belong organs composed of the first, as the heart, the liver, the testicles, the head, the arm, the thigh, &c. The latter are augmented by digestion, but the former have many parts that cannot be augmented.

9. quodquod B. 10. aucta B. 16. vere or non (?) B. 17. auxigi^g B.
 21. est deest B. 23. panīclūs B; ib. cunctis B. 34. gut' B. 35. habet B.

15. It is not easy to understand what Wyclif means by *spermaticus*. Possibly the word signifies those tissues, that (as he supposes) have been formed directly from the semen; and then we must understand in the same sense the expressions 'membrum spermaticum', and 'humidum seminale' which he says is the first (or direct?) subject of the augmentative force.

partes quantitativas (quia elementa) que non potuerunt augeri; sicud ubique est non gradus motus nature immobilis, et tamen ubique est motus mundi. Sic ergo ubique per subiectum primo auctum est augmentacio, cum uniformiter quelibet pars quanta primo aucti pro tempore augmentacionis augetur proprie; et per consequens habet in se augmentacionem | huiusmodi successive; vel aliter est principium intrinsecum ita aucti, et tunc habet augmentacionem multiplicatam per se totum. Et patet quod assumptum argumenti peccat in materia, cum multa membra antiqua augmentur, et per consequens partes quantitative inaughmentabiles non subciantur quieti ab augmentacione, cum eius oppositum non sit natum formaliter inesse. Conceperit tamen quod tam per partem novam quam per partem antiquam est augmentacio modo suo, et simul cum hoc eius privacio, sicud Deus qui natus est inesse menti per graciā, deest menti peccatrici ob eius culpam, licet assit secundum eius essenciam conservanciam. Sic augmentacio deest elemento secundum formalem et denominativam inherenciam, licet insit secundum naturalem causanciam.

The rapidity of increase is measured by the size acquired, and the time taken; so too for expansion.

Time is indicated by the first and last instant; during the interval the action is going on but not complete.

Of Alteration:
its velocity.
Properly speaking, this

Et quo ad velocitatem motus augmentacionis, dicitur quod attenditur penes quantitatem aquisitam primo aucto, in comparacione ad tempus. Non enim est continue nova quantitas per totum, ut sompniavi quando negavi compositionem continui ex non quantis. Et proporcionaliter dicendum est de rarefaccione. Illud enim rarefit velocius quod per equale tempus vel minus occupat cum corpore inbibito plus. Et tantum de situ corporeo. Et de tempore notandum est primum instans et ultimum; et in mediis instantibus dicendum est motum esse, vel 2^m existenciam mutari, aut mutatum esse, vel secundum dispositionem aut potentiam propinquam in suis causis proporcionaliter, sicud motus dicitur inesse corporibus.

Et de istis incidit tractandum de velocitate motus alteracionis. Sed primo, supposita communi noticia

3. Sc^e B. 26. nowa B. 33. exua^ñ B.

37. *Alteration* often sounds badly here, hardly agreeing with the usual English sense of the word; but the other expressions — change, mutation, modification, &c. — do not render the precise meaning any better. It is a *material*, but not *substantial* change.

Everywhere increase takes place by means of the first subject of augmentation, without its being necessary that the rest should increase in itself.

Yet the rest increases in one sense, though it does not in another; as God has essential presence in the soul of the sinner, while He is absent from it by His grace.

de alteracione, quod est et quid est, notandum quod solum substancia sensibilis est proprie alterabilis, cum totum genus motus successivi sensibile commune sit. Substancie autem sensibiles, ut forme et materie; et intelligencie sunt alterabiles alteracione communiter dicta, acquirendo bonitas, sciencias, et alias qualitates spirituales non habentes contraria, sed privative opposita. Sed fundamentaliter cognoscendo substanciam alterabilem, oportet cognoscere materiam vel formam et earum compositionem, cum substancia sit prior accidente, cognitione et definitione et tempore. Quo ad noticiam, ymaginandum est igitur unam essenciam corpoream, in principio productam, esse ex indivisi-
 bilius composita, et occupare omnem locum possibilem nec esse secundum eius partem aliquam corruptibilem, nisi forte per divisionem vel separationem unius parti a reliqua. Sed cum oportet illam totam essenciam habere quamcunque partem talem aliqualiter continuatam, patet quod illa essencia simpliciter est incorruptibilis; et illa essencia primo fuisse concipitur sub ratione qua ens simpliciter, et nec ut ignis vel aer, vel cuiuscunque alterius generis vel speciei; quomodo grammatici dicunt pronomen singulare meram substanciam. Sed philosophi, ulterius considerantes,
 B 140^b quamlibet | talem essentialem essenciam esse unum absolutum cui per se competit substare accidentibus, tribuunt sibi substancialitatem. Et post modo, considerata eius extensione, attribuunt sibi corporeitatem quam Linconiensis vocat lucem. Et 3^o formam generis proximi, ut animalitatem, lapiditatem vel aliud huiusmodi. Et quarto, considerata ratione sufficienti, attribuunt sibi forma specialissimam; ideo dicunt philosophi quod substanciarum alia materia, alia forma, alia compositum ex hiis. Unde substancia corporea, que est genus, non univocatur, nisi et compositione ex materia et forma. Sed quando loquimur de materie et forma tantum, vocamus ipsas ipostases, vel naturas, vel supposita.

Considerando ergo specialiter partem sublunarem Restricting our
 40 mundi esse in potentia ad esse ignem vel aerem (vel speculations sic de aliis sensibilibus corporum), posuerunt potentiam

being a successive movement, only matter can be altered; but intelligent beings undergo alteration in a wide sense.

There is one material essence, created in the beginning, composed of points, filling all space, and incorruptible, except in so far as one of its parts may be separated from another.

We conceive that this essence was firstly mere being, just as the singular personal pronoun denotes mere substance.

Philosophers call it substance or body because of its extension.

Matter, form, and compound, are different sorts of substance, but this corporal substance is of the same nature as the compound.

to the
sublunary
world we see
that every part
of it *may be*
fire, air, &c.:
this possibility
is *matter* —;

fireness,
airness, &c. is
form; and the
resulting whole
is fire, air, &c.

Each are
different and all
three are the
same
essence.

Matter is the
first out of
which
necessarily
proceeds form;
nor can form
be without
matter; nor
can the two be
without the
compound.

I grieve to
have once
fancied that
matter and
form were
absolute
separable
realities,
forming a
compound by
mixtare, like
two liquids,
with
superadded
accidents:
I repudiate
this opinion.
Every bodily
substance is
not one, but
three.

Plato's opinion,
admitting that
the same
matter (or
essence) is now
fire, now air,
&c.,

is tolerable,

esse talem materiam; et igneitatem, aeritatem vel la-
pideitatem (et sic de aliis), esse formam. Et compo-
situm qualitative ex hiis, quod est composicio, vocant
ignem, lapidem, vel aliquod tale. Et istam potentiam
eternam, que nullam speciem corporis sibi determinat,⁵
vocant materiam primam, fundamentum nature, vel,
secundum grecos, ylen; et formam dicunt subsistenciam
vel usiasim; compositum vero ex hiis vocant super-
stans. Quarum quelibet differt a reliqua, et omnes
ille sunt eadem singularis essentia; ut materia prima,¹⁰
vel potencia dicens relationem ad formam vel actum,
est primum horum trium, ex quo procedit actus, cum
claudit contradiccionem quod talis materialis potencia
sit sine forma vel actu, sicud econtra claudit contra-
diccionem aliquam formam corpoream fore sine ma-¹⁵
teria; et claudit contradiccionem illa duo reponi, nisi
sequatur ex hiis composicio vel compositum, quorum
trium quodlibet est eadem essentia singularis vel
essentia corporea.

Unde, inter alias occupaciones varias quas habui,²⁰
doleo de sollicitudine mea superflua, yimaginando for-
mam et materiam esse absolutas res quarum utramque
posicionem existere per se, et ex illis coextensis resul-
tare unum ad aliqualem motum quo duo liquida yma-
ginantur ad invicem commisceri. Et illis superad-²⁵
didi accidencia, tanquam res abstractas que possunt
per se existere; sed procul a me ista posicio! Quelibet
ergo talis substancia, vel corporea essentia, est trina,
et per consequens non ultimum singulare, cum sit
multorum singulorum, scilicet materia et forma et 30
earum connexio ad invicem, que vocatur complementum,
composicio, vel quietacio aut finis intrinsecus.

Sed diversimode locuti sunt philosophi in illa ma-
teria; ut Plato voluit | concedere eandem materiam vel B¹⁴¹
essentiam quam appellavit hylen, tenebram, vel caos,³⁵
nunc fore ignem, nunc aerem, et sic de ceteris ele-
mentis ac mixtis; quia in nulla accione nature super-
additur negativa essentia absoluta 2^m totum, eo quod
generacio esset tunc creacio, et corruptio esset an-
nihilacio. Et est sententia huius viri satis bona 40
sicut et sententia philosophorum ponencium latenciam

7. ypostasim *in full pro* ylen B.
24. motu B.

21. ydo B.

23. p̄it̄om B.

formarum, negancium generacionem esse in corporibus,
sed solum alteracionem.

Sed sermo Aristotelis est michi placencior, quia ma-
teria est eterna cum illa essencia, sed forma et com-
5 positum simul incepertunt. Et sic salvatur generacio
substancie, et tollitur annichilacio cum creacione forme
extense.

but I prefer Aristotle's,
stating that
matter is
eternal, but
that form and
compound
began
simultaneously.

Three
arguments
contra.

I. Matter and
form are parts;
they cannot
therefore be
the whole.

II. On one
hand
everything
is eternal,
if matter is so,
for it is
identical with
the rest;
or on the
other, on
account of this

identity, matter
is corruptible.

III. And we
have all sorts
of
contradictions
together, if the
same essence

*is matter, form
and compound.*

Sed contra illud tripliciter argumentatur: primo per hoc quod cuiuslibet corporis materia et forma sunt partes integrantes, et per consequens non ista tria sunt eadem essentia singularis, cum totum sit perfeccius quam aliquod elementorum suorum. Similiter, expiatorie sequitur quod quelibet talis substancia generata fuit eterna a parte ante, creata in principio instanti temporis, eo quod tam essentia quam materia, que est idem corpus, sic se habent; et ex alio latere sequitur quod tam essentia illa quam materia sunt naturaliter generabiles et corruptibles; quia tam forma quam compositum est corruptibile, et utrumque illorum est essentia illa: ergo, illa essentia est corruptibilis. Si militer, iuxta illud sequitur quod generabile est in-generabile, corruptibile incorruptibile, sive sensibile in-sensibile, calidum non calidum; et sic de quotlibet oppositis predicatis. Nam illa essentia est ingenerabilis, incorruptibilis est, et generabile, et corruptibile; quia illud compositum quod incepit esse per quantumlibet; quia tempus post illam essenciam; et alias cor-rumpetur, illa essentia manente. Et conformiter patet (cum ignis sit calidus, et materia prima eius non calida), si essentia eadem sit utrumque, tunc calidum est non calidum: et sic de aliis oppositis.

Quantum ad primum dicitur quod prima conse-
quencia non valet, sed bene sequitur quod illa tria differunt ab invicem; quod verum est. Sicut igitur pars quantitative differt a suo toto, tam quo ad sin-gularem essenciam quam quo ad suppositum (sed pars quantitativa est simultanea); sic pars qualitativa mediat in hoc, sed differet a suo toto, sed est eadem essentia.

Differt autem iste modus trinitatis a trinitate anime et a trinitate que Deus est, specialiter in hiis tribus.

Answers I.
Matter and
form merely
differ among
themselves, and
from the whole
as an integral
part, which is
the same
essence as
the whole.

This is a sort
of trinity;
but the
distinction

4. $\frac{f}{3}$ B.

14. app^u B; pūⁿ B.

33. unde *pro* sed bene B.

37. sim^{lām} B.

between it and that of our soul or of God is threefold.

1. Matter is eternal; form and compound exist in time; whereas in the other Trinities all three must coexist.
2. In God nothing, in the soul, no agent but God, has an external influence on the emanation of one from the other; while for bodily things it is otherwise. As for those who say that matter and form, essence and body, can be separated, and that combination is a mere accident, let them enjoy their discovery.
3. Form is more perfect than matter, and the compound than either; whereas in the other trinities, all three are equally perfect.

If. We deny the conclusion; logical sequence is wanting, there being four terms to the syllogism. Nor does it either follow that matter is generable or corruptible. Of what species then is this essence? Sometimes of one, and sometimes of another;

Primo, in hoc quod claudit contradiccionem aliquod suppositum illius trinitatis esse non coevum cum quilibet eorum. Sed hic primum est eternum, et utrumque 2^o in hoc quod primum suppositum per se est, producit continue 2^m; et illa 5 ambo tertium ad intra, sine aliquo cum producente alio in Deo, et sine aliquo preter Deum a producente in anima. Sed primum suppositum in trinitate corporea est potencia susceptiva, non potens actuari sine extrinseco efficiente; sed illis positis, sequitur 1 2^m forma- B 141^b liter de natura rei. Qui autem dicunt quod forma potest exi a materia per se, sicut essentia a corpore, dicunt quod composicio est accidens utriuscompositorum, cum forma prius creatur quam producitur a natura 2^a. Sed gaudeant illi de invencionibus suis, 15 quia puto me scire quod nunquam probabunt materiam vel formam esse res distinctas ab essentia que est illa 3^a. 3^o in hoc differt illa trinitas ab aliis supradictis, quod in ista 2^a res est perfeccior, quam 1^a et eius finis; et 3^a est perfeccior quam priores, cum sit 20 finis eorum et sic reciproce causant se in diversis generibus causandi. In trinitatibus vero prioribus tollitur omnis accidentalitas unius ad aliud, omnis excellencia in perfeccione vel bonitate vel accione ad extra, omnis reciproca causacio, et inequalitas in aliquo attributo. 25 Ad 2^m argumentum negatur conclusio et aliud argumentum factum ad probandum illam; sicut non sequitur: hoc esse fuit eternum, et hoc esse est ignem esse: igitur, hoc esse ignem fuit eternum. Igneitas autem (et per consequens ignis) incepit 30 esse quando incepit esse quod *hoc est ignis*. Et per idem non sequitur quod materia illa vel natura generatur aut corrumpitur, quamvis illud compositum sic se habet, et sic de syllogismo expositorio. Et si queratur cuius speciei est illa essentia, dicitur quod nunc 35 est individuum unius speciei et nunc alterius; et tunc individuum non potest sic mutari; ab essentia enim procedit individuum, cum sit esse substancialis essentie, ut essentia ut huiusmodi est in aliqua specie. Ideo dicunt autores quod ipsa et materia non possunt demonstrari, nec sunt quid, nec quantum, nec quale, nec

3. h' p'm B. 4. quid(!) B. 26. ad pro aliud B. 34. et B.
39. before essentia nec pro ut (?) B.

aliquid aliorum encium. Plato tamen demonstravit illam, quod illa nunc est individuum unius speciei, et nunc alterius, quod est verum. Nec sequitur ex hoc quod ignis erit aqua: et sic de ceteris.

as Plato says.
But this does
not prove that
one element
will be another.

5 Et istis est quodammodo simile illud quod antiqui sapientes theologi dicunt de incarnatione Christi, ponentes quod due nature sunt unum suppositum, sicud una natura est 3^{a} supposita; et illarum naturarum una est eterna (ut divinitas) et alia temporalis (ut 10 humanitas). Nec sequitur verum incepisse esse, desissem, vel factum defuisse, etsi illa natura *que est* verbum sic se habet. Conceditur tamen quod ille homo qui est verbum, est tempore creatura factus, minor patre; et sic de quibuscumque que convenienter illi humani-
 15 tati. Et cum verbum sit illa humanitas, ipsum est unum factum, una creatura; et sic de ceteris predi-
B 142^a catis per se substantivatis, et non de predicatis | tem-
poralibus substantivatis signo proprio verbi. Et sic deitas est homo, sed non humanitas; sic verbum as-
 20 sumpsit hominem, quia humanitatem, sed non personam. Cristus tamen, qui est persona, est vere assumptus, sicud allibi diffuse declaravi. Non ergo sequitur: *illa essencia est generabile et corruptibile naturaliter*: ergo,
sic generabilis et corruptibilis. Nam essencia significat 25 absolute, ante eius genus, rem integrum, sed natura significat concrete materiam vel formam, vel 3^{o} , integrum essenciam esse hic vel illud in speciali.

Ad 3^{m} , patet ex supradictis quomodo unum oppositorum predicitur de reliquo, et quomodo non. Nota tamen quod materia prima nec est calida nec est frigida; et sic de aliis denominacionibus accidentalibus, quamvis sit subiectum remotum huiusmodi qualitatum. Omnis namque qualitas est forma qua subiectum est formaliter accidentaliter quale; et sic est subiectum

The Incarnation is
a case in point
Christ is two
natures, and
one person;

The Word did
not begin, nor
end; yet the
nature
which is the
Word did.
The Man who
is the Word is
a creature,
and thus the
Word is in this
sense a
creature too.
Deity is man,
but it is not
humanity, for
the Word did
not take upon
himself the
person of man.

III. We have
already pointed
out how
contraries can
be predicated
of the same.
But primordial
matter is
properly
neither hot or
cold, &c.;
qualities are
accidents

18. videtur (?) pro verbi B. 20. pam B. 21. pa B. 24. non
tamen (?) pro nam B. 25. ems B. 26, 27. in tege B.

3. *Nec sequitur.* Wyclif's position will perhaps be clearer, if we state it in modern terms. The same essence that is now a mere mixture of oxygen and hydrogen, will be water; but it does not follow that water is a mere mixture of oxygen and hydrogen. Admit (as some chemists do) that there is only one primordial element, and Wyclif's assertion can extend to everything.

belonging to substantial form; so matter is not directly their subject.

They cannot exist by themselves; for there are bad qualities, which then would be created by a bad Principle.

Light is the fact that a seeing subject can see a visible thing by means of something luminous and is either reflected or transmitted.

It is inseparable from the luminous thing; and I was once in error when I believed that light could pass from one subject to another.

Heat is the being hot of a subject; but hot has different meanings.
1st Having a natural property to create the feeling of heat and disgregate bodies: as fire.
2nd. Having this property only imparted and not natural; as a body in which there is much fire.

The two preceding are formally hot.
If a body not hot itself, produces heat from a distance (as the sun)

esse quale, et non res que potest per se esse. Nam universaliter infirmitas, vicium et talia ponuntur qualitates; que si per se essent, haberent deum malum causam eorum. Ideo omnis qualitas, quantumcunque realis, ponit subiectum esse quale accidentaliter, sine 5 pluri preter illa que consecuntur ad hoc: ut lumen potest esse subiectum capax esse dispositum ad videndum visibile per aspectum luminosi; et illa disposicio vocatur lumen, sive sufficiat ostendere se ipsum distincte (ut disposicio in mixto terminato, que vocatur lumen reflexum); sive sufficiat confuse ostendere se et suum subiectum; ut disposicio in medio dyaphano ad ostendendum visibile extra medium, sicud que dicuntur species lucis, que lumen dicitur, vel species illud que similando coloris appellatur. Lux autem est forma substancialis in per se lucido, vel accidens inseparabile, cum in aliis sit accidens, et *lucere* est eius actus, et fervor est terminus in quo quietatur. Unde videtur michi quod illa que quondam credidi de migracione luminis et de eius realitate sunt impossibilia. Statamen luminosum applicari medio et non illuminare illud, vel per indispositionem luminosi vel medii suscipientis vel medii intercepti.

Et sic caliditas est subiectum esse calidum. Hoc tamen intelligendum est equivoce; ut ignis est calidus 25 2^m naturalem proprietatem, cum ex iuxtapositione et situ atthomorum vel incognitam habet efficaciam immutandi tactum, calefaciendo et disregando. Et ex talibus modis miscendi atthoma habent lapides terre, naescencia et alia mixta specificas sufficiencias, virtutes, 30 vel potencias occultas, que qualitates dicuntur. Sed secundo dicitur aliquid participative calidum, de quanto est mutativum tactus, ut mixtum igneum, quod non oportet ad omnem punctum habere ignem, sed sufficit quod spissius habeat quam sensus sufficit discernere: 35 ut est aer eque calidus ut ignis; nec ignis natus est plus caleficere | aerem naturalem, cum deficit sibi B 142^b capacitas. Omnia igitur que sic sunt calida, dicuntur formaliter calida a caliditate in actu. Alia autem sunt efficienter aut virtualiter calida que habent efficaciam 40 calefaciendi a remotis, et tamen non immutarent

tactum calefaciendo, etsi tangantur: ut sol et alia astra. Sed potencia, virtus et sufficiencia a qua calefaciunt, non vocantur caliditas, sed una qualitas supereminencior. 3º modo dicuntur aliqua calida quo ad 5 efficaciam quam habent calefaciendo corpus animalis. Et hoc dupliciter; vel ut sunt immutativa gustus, ut piper, galanga, et alie species: que certe calefacte immutant gustum et non tactum; vel ut sunt mutativa complexionis 2º humores generatos ex illis; ut unum 10 dicitur apud medicos calidum et siccum, quamvis tactui sit frigidum et humidum. Et conformes sunt divisiones de frigido, et humido, et sicco. Ex quibus patet quod stat equivocando in denominacionibus calidum esse frigidum, humidum et siccum; et unum reliquo calidius 15 tot modis potest dici, quot modis dicitur calidum.

Notetur ergo denominacio univoca subiecti, et videatur quante distant lateraliter gradus denominacionis a non gradu; et penes hoc mensuretur intensio qualitatis; et penes intensionem qualitatis mensuretur 20 intensio corporis simplicis, ipsum primo subiectantis.

Et in mixto habente qualitates contrarias, oportet notare excessum dictum unius qualitatis supra alia, ut quidam asserunt; et penes illum excessum in comparacione ad subiectum primum, attenditur mixti intensionis.

25 Et quo ad velocitatem notant latitudinem qualitatis acquisite vel deperdite 2º se totum subiecto suo toto primo; et penes illam in comparacione ad tempus attenditur velocitas alteracionis. Et illi dicunt quod, sicud non omne corpus est eque longum vel latum, 30 sicud aliqua eius pars; sic nec qualitas quo ad eius extensionem. Et sicud pars qualitatis est disposicioni ad operandum proporcionaliter ad eius magnitudinem quam totum in comparacione ad eius magnitudinem, sic pars qualitatis est suo toto intensior. In aliquibus 35 tamen formis difformibus non oportet partem excedere suum totum; quia tanta est accuies lancee, quanta est acuies sui cuspidis; et sic est de motu et aliis que non habent formas positivas vel privativas inpedientes, accidentes denominare suum subiectum remotum eque 40 intense sicut suum subiectum primum.

this is not heat, but a superior quality.
3rd Having the power to produce heat in the animal body; either in the taste (as pepper and ginger), or in the internal humours, as certain medicines.

Cold, Wet and Dry have similar meanings.

We must in researches keep to the same meaning, when alteration occurs, and see by how much one degree of a quality exceeds another of the same.

Some say that in compounds we should note the excess of one quality over another. As for velocity, they note the time and the extent of the quality gained or lost.

They say that qualities differ in extent, so that the more extended the subject, the greater the quality in proportion to its intensity in each part: with certain exceptions.

1. tangatur B. 12. fudo B. 17. latiter B. 18. intencio and so on B. 21. habentes B. 38. p'natinas B.

But I think
that the
quality of the
whole always
depends on
that of each
part;

so that each
smallest
possible part
has a
certain degree
of quality,
which is
inextended,
belonging
entirely to the
whole and
partially to
each part.

Qualities may
vary in their
manner of
action, so that
for some
purposes heat
in iron is more
active than is
fire, &c.

Aristotle's
position, that
the four
elements result
from the
combinations of
the four
qualities, is
quite right,
for there is no
contradiction
among these
qualities, thus
combined.

Sed michi videtur probabile quod generaliter omne difformiter qualificatum, vel intensem quo ad subiectum, est tantum intensem sicut aliqua eius pars quantitativa usque ad minimam partem cui gradus secundum modum indivisibilis correspondet. Et sic ^{B 143*} mixta dicuntur calida, frigida, vel humida, vel sicca, equivoce quodammodo respectu simplicium; cum qualitates ille remisse resultant ex mixtione simplicium ex quibus resultant. Et minimum naturale habet unam qualitatem ^{2^{am}} mole indivisibilem; quia per subiectum ¹⁰ multiplicatam. Et nulla pars eius est adequatum subiectum huius qualitatis. Et sic videtur caliditas ignis, que est in genere suo intensor caliditate aeris que est disparis speciei; sicut siccitas terre in genere suo est intensor frigiditate terre. Manet autem in transizione ¹⁵ subiectorum illud genus propinquum qualitatum huiusmodi, et idem secundum subiectum essencie extra genus, non autem secundum idem individuum substancie. Et sic, ratione raritatis aut densitatis, est unum elementum dispositius converti in sibi proximum quam in aliquid ²⁰ plus remotum.

Nota eciam quod qualitates, tam prime quam secunde, suscipiunt multas denominaciones ^{2^m} manieres accionum: ut calor in ferro est in aliquo activior calore ignis puri. In aliis autem calor humidi ignei; et sic ²⁵ de aliis qualitatibus, vocatis vulgariter primis, sicud mixta imperfecta vocantur communiter elementa. Nec peccat suasio Aristotelis quod sunt quatuor elementa secundum combinaciones ^{4^{or}} qualitatum. Sufficit enim quod iste ^{4^{or}} coniungaciones non aut contrarie, sed ³⁰ omnes alie coningaciones qualitatum primarum faciunt contrarie. Ideo solummodo insunt in mixtis; nec attenditur proporcionalitate absolute penes intensionem vel multiplicacionem huiusmodi qualitatum respectu passi, quam proporcionem motus alteracionis consequitur, ³⁵ sed penes sufficienciam huiusmodi qualitatum ex dispositione subiecti, ex influencia et aspectu celi, cum

14. frigiditati B. 15. trūone fiblōr̄ B.

28. It ought to be rather: *6 qualitatum*; or, if we do not admit the negative qualities, *3 qualitatum*. Thus: *Earth*: heavy, dry, and cold. *Water*: heavy, moist, and cold. *Air*: light, dry, and cold. *Fire*: light, dry, and hot. Perhaps *4* should be read as grammatically belonging to *combinaciones*.

similibus actuantibus actionem propter proporcionem voco ydoneitatem ad agendum. Et sic potest eadem qualitas dici intensiva quo ad denominaciones et acciones multiplices.

Nec obest idem inanimatum alterari per tempus, cum essentia manet continue in quotcunque minucias sic divisa, et mixtum (quod est illa essentia alterata) licet quodlibet eius indivisibilia corrumpuntur; quia pars illius mixti que remanet secundum disparem mixtionem recipit quotlibet qualitates ^{2^{as}}; et illud mixtum alteratur ^{2^m} partem. Et quandoque manet essentia composizione [ut in] fumo, igne, aqua, terra, et aere; quandoque non manet, illa divisa. Et sic simplicia mixta possunt variare mixtionis gradus, stante eadem forma, quia aliter non haberet mixtum permanenciam agendo vel paciendo.

Unde, pro leviori locuzione in illa materia, notandum, secundum modum loquendi Platonis et scripture, quod essentie possunt accipere denominaciones ^{2^m} species diversas. Et sic concedi potest quod ignis est

B 143^b aqua, terra, et sic de quotlibet speciebus. Vel | si peripateticus ob favorem Aristotelis hoc negaverit, tunc potest primo supponi totum esse suas partes. ^{2^o} quod omnia, preterita vel futura, sunt. Et ^{3^o}, quod qui-
25 cunque numerus corporum sit corpus. Quibus sup-
positis, potest dici quod corpus successivum, ex parti-
bus vicensim generatis compositum, alteratur et recipit
quantumlibet disparem denominaciones ^{2^m} partes huius-
modi, licet non sit aliqua earumdem. Ut, ponente
30 quod aggregatum, ex corporibus quantumlibet disparium
specierum successive generatum, apponatur combustioni,
tunc illud corpus successivum durat in calefaccione
aut combustione in casu per quotlibet annos. Sic enim
dicit Aristoteles ignem crescere per appositionem com-
35 bustibilium infinite. Et ita secundum polliticos manet
idem collectivum, et eadem aqua mediterranea; et ^{2^m}
Aristotelem idem manere eternum, que diversimode in

12. ut in *deest*; ignis fumus; *ib.* aer B. 14. mixtionis B.

2. *Ad agendum.* Some words are evidently wanting here.

5. *Inanimatum.* This paragraph deals with the difficulty of reconciling identity with change in non living things. The identity of the soul, or form, as Wyclif has above pointed out, obviates this difficulty for living things.

An inanimate thing may continue the same, yet altered to a certain extent, because its essence remains.

Sometimes the essence of each element remains in combination, sometimes separate and there may be various degrees of composition.

We may, in this matter, follow Plato and Scripture, and say that fire is water, earth, &c.

Or, not to contradict Aristotle, note that the whole is its parts; that what is past or future, is; and that a collection of bodies is a body.

If so, a body composed of different successive parts can receive different qualities, and remain the same; thus a succession of combustibles burned is one body that can continue burning for years, the Mediterranean changes and remains the same sea,

and things that suis partibus alterantur. Non tamen video quod idem are altered in corpus stet simul quantumlibet parvum et magnum their parts diversifieri, sicud est simul 2^m partes dispariter qualificatum; quia quantificacio respicit totalitatem sicud can apply to parvificationem uniformitas; et sic de aliis multis, de 5 the 2^m quibus non sequitur: *hoc est uniformale magnum vel denominations of small and parvum* (et sic de ceteris denominacionibus condicionatis) big. 2^m partem: ergo *hoc est similiter huiusmodi*. Sed We can say de qualitatum denominacionibus, concedimus hominem that a man is esse album, quia secundum partem, ut faciem. Sed 10 white, but not that he is big, because his tamen negamus hominem esse sic parvum vel magnum face is so. ut facies; quarum denominacionum distinctionem relinqu posteris.

Neither matter nor form is hot (calida), but that both the primitive essence and the ultimate compound is that which is hot (calidum). If it were possible for heat to exist by itself as a form, it would indeed be hot; but this is impossible. A difficulty: how, if fireness can be either present or absent from a given body, can it be a substantial form?

Every substantial form is accidental as concerns primordial matter, but it is itself a substance. The substantial form is what primarily

Redeundo igitur ad propositionem dicitur quod nec materia prima nec forma est calida, sed tam essentia quam compositum ex materia et forma est calidum, sicud compositum per se generatur et corruptitur; quia taliter eadem oportet habere, tam materiam secundum quam subiectat calorem, quam formam quam consequitur calor, a qua est subiectum calefactum. Et 20 si dicatur quod calor per se existens foret calidus et calefactivus; ergo, non oportet calidum dicere tam materiam quam formam tamquam eius principium: hic dicitur quod claudit contradiccionem caliditatem esse sine subiecto: ideo, si sic esset, tunc calefaceret et non 25 calefaceret; et econtra, quidquid volueris habere. Sed conceditur calorem vel caliditatem esse calidum, sicud quantitas quantum. Sed tunc supponit terminus concretus similiter, ut patet allibi.

Ulterius queritur quomodo ignetas (et sic de qualibet forma substanciali extensa) non sit accidentis, cum denominat illam essenciam accidentaliter formatam, eo quod talis forma potest sibi advenire et abesse preter eius corruptionem. Huic dicitur quod omnis forma substancialis est accidentis materie prime et illi essentiae, 35 sicud et humanitas est accidentis verbo; utrumque tamen est in se substancia, licet diversimode, et per consequens nulli inherens. Sed nulla essentia, sub ratione qua essentia, dicit vel genus vel speciem substancie, cum oporteat | hoc fieri per substancialem substancie B 144^a

2. sit B. 3. dim'fi' B. 4. tolitatem B. 5. puifis B. 6. unifore B.
7. 8. foli'p B. 16 a31m (?) B. 14. Reddendo B. 26. frigefaceret B.

qualitatem, ut igneitatem, vel lapideitatem. Unde, per hoc quod est ignis, est species substancie; quia non est dare aliquam substanciam, speciem, vel qualitatem substancie prius inexistentem illi essencie cui accideret 5 igneitas. Sed illa est prior quam caliditas, levitas, siccitas, vel aliud accidens in communi. Ideo est substancia faciens subiectum aliud, et non aliquantum, vel aliqualem, vel alicuiusmodi formaliter. Ideo, quecumque forma prius naturaliter inexsistit illi essencie, 10 est substancialis forma; et alie naturaliter consequentes sunt accidentia. Omne ergo formale quod nulli subiecto accedit, nisi materie prime, est substancialis; et composito ex tali et materia accidentum accidentia tanquam substancie alicuius certe speciei. Unde 2^m grammaticos, *esse* vel essencia dicit substanciam meram, modo quo pronomina et verba substantiva substanciam meram significant. Sed quilibet terminus in genere per se supperaddit qualitatem propriam vel convenientem.

20 Sed adhuc obicitur de inducione forme elementaris, quomodo qualitates prime inducuntur, et tam dispariter consecuntur formas elementares, nec non et [quomodo] elementa sunt tam dispariter activa. Sed pro isto dicitur quod elementa, sicut et omnia corpora, 25 habent certas regulas agendi et quomodolibet aliter se habendi, limitatas sibi a natura: ut ignis, sicud est purissimum et perfectissimum elementum, sic est maxime activum, et minime violenter susceptivum peregrine impressionis; ut non putrescit, non fit humidus 30 aut frigidus, sicud cetera elementa extranea disponuntur; ut terra humescit et calefit; aqua calefit et siccatur, vel saltim induratur per congelacionem; aer frigescit et putrescit, sicut duo elementa inferiora. Omnia tamen illa sunt per impropias mixtiones corporum 35 extraneorum, dum oportet vel quo ad sensum totum esse elementum.

Sed dubitatur an aer sit frigidus, vel exalacio inmixta; aqua, calida, vel igneum immixtum; terra humida, vel aqueum imbibitum; et sic de mixtis, habentibus 40 elementa talia. Admodum probable autem est quod terrea mixta imperfecta aggregata sunt talia, et non

classifies a being in its proper species: for we can conceive nothing substantial or qualitative prior to fireness in a body; and it is itself prior to everything else.

Every form that determines only primordial matter, is substantial; all others are accidents.
Being denotes the substance; generic terms add qualities.

Difficulties about the great variety of qualities that proceed from the same elementary forms. We answer that each element has its own natural law of activity. This is seen best in fire, the purest of all; it neither rots nor is moist nor cold, which is contrary to its nature; earth may be moist and warm, &c. only because it is not pure. And so of the other elements.

It is extremely probable that if water is hot, it

10. eciam *pro* est B. 23. quomodo *deest* B. 40. *admo* B. 41. terra B.

owes it to fiery pura clementa. Non enim est possibile quod contraria particles present; &c. How could contrary qualities coexist (v. g. cold and heat in water)? Thus heat in earth or water is a violent state; and we have proofs that such a state implies much activity, because of the tendency to return to the natural state. Yet the same element, in different circumstances, does not act in the same way; fire acting on water produces, not fire, but vapour, and then takes its proper form.

cere se ad dispositionem | naturalem, quam sufficit B^{144b}

non violentatum agere. Agit tamen in virtute superioris regulantis. Et ideo non mirum si dispariter agat cum disparibus circumstanciis. Apparet ergo nobis qualitates esse per totum, cum tamen non sit ita. Unde ignis, agendo in terreum vel aqueum, non inmediate producit ignem, sed resolvit materiam in vapores vel fumos, et sic subtiliat ad aerem; et deum inducit formam ignis. Non quidem est possibile quod forma substancialis sit reliqua remissior^{2m} partes²⁰ eius intensivas, cum substancia non suscipit maius aut minus; sed partibiliter inducitur quo ad subiectum. Et subito consecuntur qualitates nove in toto formas novas, cum impossibile sit qualitatem ultimam singularem in utroque elementorum manere symbolorum²⁵ parcialem; ergo commixtione contrariorum dicuntur elementa remissa, dum talia sunt mixta imperfecta, et non elementa. Et sic per rarefactionem disponitur materia ut sit sub forma aeris vel ignis; et econtra per condensacionem, ut sit sub forma aque vel terre, et hoc frigus, constipans aerem, generat ex eo aquam; sicud econtra calidum rarefaciens aut resolvens in fumos aut vapores, generat aerem aut ignem. Non tamen scio quod ex aliquo tali elemento inmediate generatur terra, sed ex commixto, quod est terreum³⁵ admodum.

Thus the elements are said to have less of their essential qualities, when in reality they are not elements but combinations with contrary qualities.

The arguments which assert that in this case one

sint extensa, sed dum unum elementum agit in reliquum, subito generantur et corrumpuntur atthoma^{2m}

totas quantitates et formas substanciales; et cum idem

quod dat formale dat tamen hoc correspondenter quantum debitum est de loco, nisi impediatur; hinc

apparet sensui erranti terreum vel aquum per tantum esse calidum, cum violentum est activius in agendo

quam foret, ipso non violento; sicud patet per multa experimenta, quibus scitur violentum vigorosius redu-

to

non violentatum agere. Agit tamen in virtute superioris regulantis. Et ideo non mirum si dispariter

agat cum disparibus circumstanciis. Apparet ergo nobis qualitates esse per totum, cum tamen non sit ita. Unde ignis, agendo in terreum vel aqueum, non inmediate producit ignem, sed resolvit materiam in vapores vel fumos, et sic subtiliat ad aerem; et deum inducit formam ignis. Non quidem est possibile quod forma substancialis sit reliqua remissior^{2m} partes²⁰ eius intensivas, cum substancia non suscipit maius aut minus; sed partibiliter inducitur quo ad subiectum. Et subito consecuntur qualitates nove in toto formas novas, cum impossibile sit qualitatem ultimam singularem in utroque elementorum manere symbolorum²⁵ parcialem; ergo commixtione contrariorum dicuntur elementa remissa, dum talia sunt mixta imperfecta, et non elementa. Et sic per rarefactionem disponitur materia ut sit sub forma aeris vel ignis; et econtra per condensacionem, ut sit sub forma aque vel terre, et hoc frigus, constipans aerem, generat ex eo aquam; sicud econtra calidum rarefaciens aut resolvens in fumos aut vapores, generat aerem aut ignem. Non tamen scio quod ex aliquo tali elemento inmediate generatur terra, sed ex commixto, quod est terreum³⁵ admodum.

Et argumenta que arguunt in ista materia quod unum elementum consumeret reliquum, quod calidum inducit per totum frigidum, caliditate remissa (et sic de aliis)

4. idem B. 5. formi ["] very illegible B; ib. tñ B. 7. tam B.

14. Oportet B. 23. non^o (?) B. 26. symbolor^p ptal^m B. 34. im^{te} B.

36 admd B.

omnia supponunt elementa agere sine regula limitante, element would
 et continue unum durancius tollere de suo subtriplo, destroy
 et reliquum se habere, ut oportet, [ad] sensum; racio another, ignore
 tamen contradicit talibus ymaginibus. Probabile tamen the fact that all
 est quod elementa possunt taliter misceri in mixto, elements follow
 quod nunquam unum aget in reliquum; ymmo quod certain laws.
 anima sufficiat elevare corpus suum quantumlibet Elements may
 celeriter; et omnia corpora mundi fiunt incorporalia, perhaps be
 propter novum modum componendi illa ex atthomis,
 et cessacionem motus celi. Quis, queso, philosophus so mixed that
 scit virtutes corporum quas possunt habere ex diversis none of them
 mixtionibus et diversis formis, que adhuc latent in should act on
 visceribus nature incognite? another, so
 that the soul
 could act at
 will on its
 unresisting
 body, and all
 bodies become
quasi
 incorporeal.

Consimiliter ymaginandum est quod elementa, unita
 debito modo, constituunt fumos ac vapores; et illi
 grossati, tanquam mixta imperfecta, constituunt mixta
 grossiora, ut sulfur et argentum vivum, que principiant
 lapides et metalla secundum dispare gradus humidi,
 exalacionem terrestrem, et vaporem aqueum. Quod si
 aer et ignis abundancius participant in mixtis imper-
 fectis, principiant vegetabilia et sensibilia, secundum
 quotlibet gradus. Unde, inter sensibilia animata et
 B 145^a inanimata, sunt quedam de quibus | dubitatur utrum
 nutruntur vel non; ut fungus terre inter vegetabilia.
 Et sensibilia sunt quedam de quibus dubitatur, utrum
 habent motum dilacionis vel constrictiois a sensu; ut
 spongia marina. Et sic mediant inter racionalia et
 irracionalia illis minus perfecta. In omnibus ergo
 procedit natura ordinate, tam quo ad modum miscendi
 ex elementis et mixtis, ut resultet forma superaddita
 cum suis qualitatibus 2^{is}, quam quo ad modum du-
 randi et recipiendi influenciam a celo; et breviter
 quomodocumque naturaliter se habendi.

Et conformiter ymaginandum est de generibus for-
 marum substancialium: ut infima est forma elementaris,
 et proxima forma inanimati mixti, post quam forma
 vegetabilis, 4^o forma bruti, et 5^o anima hominis. Et
 in quotlibet istorum sunt multi gradus, 2^m quod plus
 vel minus recedunt ab extensione. Nam anima hominis
 40 creatur a deo, et est multiplicata per totum hominem

We may suppose that the elements are united and form vapours; which, condensed produce sulphur and quicksilver, principles of stones and metals
 If air and fire predominate, plants and animated beings are produced, in many degrees of perfection; so that we may sometimes doubt (as in the case of the *fungus terrae* and the sponge) whether they live or feel; and there may be beings between man and brute. Of all beings, the lowest is the element; then come inanimate compounds, plants, brutes, and men.

3. ad *deest* B. 8. sunt B. 16. 9^o:ffati B. 20. *ptites* B.
 24. *untr'ut^r* B.

24. *Fungus terre*. May not this be the truffle?

Man's soul is
immaterial:
that of the
higher animals,
indivisible
but dependent
upon matter.

Each superior
form includes
those inferior
to it.

As for the
forms of the
Annulosa, they
are, as above
mentioned,
extended in a
certain sense,
but not
infinitesimally
so; the parts
cut must have
a certain size.

They act
together as the
Souls of men
of whom the
body is double
above the
waist.

I leave a
deeper
examination
of this to the
learned, but
beg those who
read not
to condemn me,
because I do
not agree with
modern
theories,
but strive to
reconcile the
dicta of the
ancients with
reason.

incorporalis, cum eius propria operacio non dependet a corpore. Forme vero brutorum perfectorum sunt indivisibilis, multiplicate per totum, sed requirunt corpus organicum ad suum esse, sicud non habent operationem independentem ab organo corporali. Verumtamen 5 omnis anima multiplicata est cognitiva communis multiplicati ut transcendentis et communium accidencium. Sed non est possibile animam distinete cognoscere substancialiam rationalem sub ratione substancialiter, nec animam multiplicatam et separabilem substancialiter a corpore 10 sibi accidente. Et semper forma superior continet inferiorem; ut anima presupponit formas elementorum et formas superadditas in partibus sui subiecti. Impossibile tamen est quod forme diversarum specierum actuent primo eandem materiam, vel sint proximo per 15 eandem materiam adequate. Forme vero anulosorum sunt quodammodo extense, modo quo dictum est superius, sed solum finite in uno animali, cum una forma requirit certam multitudinem materie, recte dispositam ad cuiusquemlibet punctum esse illam. Et sic com- 20 municant in actuando, sicut anime hominum habencium duo corda et ceteras partes geminatas supra diafragma, et sub diafragmate solum membra qualia convenienter uni homini.

Sed de omnibus istis relinquens subtilibus logicis et 25 naturalibus profundum scrutinium, rogo perlegentes illud capitulum non condemnare vel deridere hec dicta tanquam [in]probabiliter opiniata. Scio enim quod multis autoribus discreparant, et argumenta calculantium interimunt multas opiniones et multas ymaginaciones 30 modernorum. In omni namque veritatis examine precellit racio, cum auctores trahendi sunt ad concordiam rationis iuvamine, non e contra. Nam non dubium quin racio docuit Aristotelem, Platonem, Parmenidem et Democritum, vel quemcunque alium hominem, quidquid invenerit veritatis.

1. *īcōrt* B. 6. *guūs* B. 7. *tñtφ* B; *ib.* *guūw* B. 15. *p'o* B.
20. *ēē ēē (?)* B. 28. *in deest* B. 30. *īt'luūt* B. 33. *libācē pro iu-*
vamine B.

CAPITULUM DECIMUM.

Sequitur iam ultimo de propositionibus temporalibus tractandum. Cuiusmodi sunt yppothetice adverbiis temporis copulate, cum correspondenti actu anime | ; B 145^b ut sunt tales: *Sors est quando Plato est, priusquam Plato est; postquam ipse est, fuit* etc. Istarum autem propositionum veritates, quantitates et qualitates, cognoscende sunt sicud proprietates localium. Idem enim est dicere *Sor est quando Plato est* et dicere quod *Sors 10 est in tempore vel in instanti in quo Plato est.*

Unde sophiste concedunt quo *omne quod fuit, est;* et sic de *fore;* quia in magno tempore eterno. Et sic sciunt dicere quandocunque talia fuerunt, sed nulla pro precisa mensura, sicut tamen limitatur in communi modo loquendi. Nec sequitur: *Ego scio ubi vel quando adequate hoc est: ergo sum ibi vel tunc;* sicud non sequitur: *Ego video vel non video locum in quo Sor est: ergo, sum ibi. Scio quod chymera non est: ergo, scio chymeram que non est.* In omnibus enim talibus tenetur terminus subiectus 2º verbo infinite, ita quod actus prioris verbi denotetur cadere super conclusionem, ut sit ille sensus exemplorum: *Scio de aliquo loco vel quando quod hoc est ibi, vel tunc Sors est; video de aliquo loco quod in illo est Sors; scio de aliqua chymera quod illa non est.* Et sic de similibus. Non enim oportet omne scitum vel cognitum esse ubicunque quodlibet sciens ipsum vel cognoscens, sicud nec oportet quodlibet signatum esse ubicunque suum signum est, sed sufficit quod sit ubilibet. Nam, iuxta sic opinantes, quidlibet esset ubique communitatum cum Deo, qui ubique scit de quolibet quod

Of temporal propositions. They are such as are joined by an adverb of time representing a similar act of the mind: *A is when B is.* They are similar to local propositions.

According to sophists, All that was and that will be, *is;* i. e. in eternity; so they know when anything is, but not exactly, according to the usual sense of *when.* To know when a thing takes place is not to be at that time. In such cases the meaning of the verbs *know,* &c. bears on the whole of the dependent proposition. Nor is it true that whatever is known is wherever the knower is, for then everything would be everywhere with God,

1. Cap. *deest;* blank space for initial S. 9. q̄ pro quando B.
18. ego B. 20. vocatur B. 22. exore B.

all distinction
of place would
disappear,
subject and
accident would
be motionless
everywhere.

This opinion
is therefore
inadmissible.

Three
arguments in
its favour:

1. All truth,
being in God,
who is
everywhere,
must also be
everywhere;

for even
negations and
assertions of
what does not
now exist,
exist in God.
Thus Christ's
humanity and
all substance

would really be
everywhere.

2. That a man
is, or moves,
has no
extension in
space, and
yet it must be
somewhere;
therefore it is
everywhere.

3. Wherever it
is true that
a man is, there
is a man; but
the first is true
everywhere;
therefore the
second too.

For God
knows all

ipsum est, et infinitas alias veritates; et per consequens nullus locus esset, cum confuse quelibet pars loci esset ubicunque alia esset, sed omne subiectum vel accidentes esset immobile, quia esset ubique; cum tamen ex alio latere sequitur quod omne accidentes acquisitum alicui sit acquisitum cuilibet subiecto, et sic quodlibet agens sufficit quantumlibet distanter agere, movendo omnem substanciam, mota substancia una, eo quod omnem motum vel materiam motus quam haberet aliqua substancia, haberet et quelibet. Ideo sic opinantes haberent pessimum mundum. Non ergo est color in hoc dicto.

Sed argumentatur tripliciter quod omnis veritas sit ubique, primo per hoc quod negaciones et affirmaciones de posse preterito et futuro, sunt ubique per hoc quod sunt in Deo qui est ubique. Ergo multo magis affirmaciones positive que sunt in Deo principalius, sunt ubique, sicud accidentia eukaristicie conciduntur a theologis concomitantem multiplicari cum Christo. Et multo magis humanitas Christi esset ubique, et per idem omnis substancia, cum vere in illo sit, commultiplicatur cum illo ubique. Et sic conversaretur in celo, ymmo a nullo distaret.

Similiter, *te esse* non est extensum, sicud nec *te moveri*; et est alicubi, ex hoc quod est. Ergo est multiplicatum vel punctale; et cum non sit ratio quare alicubi multiplicatur, quin per idem ubique; ergo ubique. Et per idem omnis veritas est ubique. Assumptum patet ex hoc quod *te esse* per tempus abscisionis brachii | tui erit adequate ubi est residuum corporis tui, et non movebitur ad illum locum: ergo nunc est ibi; conformiter mota parte tui, et residuo quiescente ad omnem punctum tui, foret tam motus quam quies contraria, quia ibi foret ita: *et hoc moretur et quiescit*.

Similiter ubicunque est ita quod homo est, ibi homo est; sed ubique est ita quod homo est: ergo, ubique homo est. Minor, ex hoc quod si hic non est ita quod homo est, hic falsum est esse ita quod homo est, et per consequens falsum est esse ita quod homo est, et sic non est verum quod homo est. Si ergo hic non est ita quod homo est, hic falsum est esse ita. Si

11. modum B. 16. *ne pro* sunt B. 20. sit (!) B. 28. ptg
abscisso B. 36. h' B. 37. h' B. 39. h' B. 40. h' B.

ergo Deus ubique cognoscit omnem veritatem, tunc ubique cognoscitur et est cognita omnis veritas, et cum esse cognitum sit res cognita, sequitur quod ubique sit omnis veritas res cognita. Si ergo negative veritates sunt in omni loco, cum quelibet affirmacio habeat suam rationem essendi in quocunque tali loco, sequitur quamlibet affirmacionem esse ubique, sicud ubique causat relaciones et quotlibet alias veritates; et per consequens est ibi secundum efficaciam et conservationem.

Ad istud dicitur quod tripliciter dicitur esse alicubi: primo, potencialiter, sicud rex dicitur ubique esse in regno, ubi est eius potentia, vel habitus agendi et disponendi. Secundo presencialiter; sicud rex ubique dicitur esse in aula sua presens, dum habet actualem noticiam ex sua presencia que ibi sint, et ad omnem punctum illius cognoscitur esse presens. 3º modo essencialiter quo ad locum in quo est adequate. Et michi videtur quod duo modi primi essendi alicubi sunt figurativi et negandi a loyco, si desit ibi modus essendi 3º modo, quia tunc quidlibet esset ubique. Unde Deus potencialiter et presencialiter est ubique, quia essencialiter est ubique: quod cognoscitur ex hoc quod conservancia et causancia sua sint ubique, et difformes in diversis, sicud difformiter causat diversa: quod tantum sonat sicut hoc: conservancia vel causancia Dei est difformis: quod nullo modo potest esse, nisi causancia Dei esset alicubi et per idem ubique. Cum ergo sequitur *hic causat Deus: ergo, hic est causans Deus;* et 30 per consequens vel existens hic per essenciam, vel eius instrumentum medium causandi; patet, cum Deus immediate causat ad omnem punctum mundi, est ad omnem punctum mundi. Sol autem causat distanter ab illo per lumen vel aliam influenciam instrumentalem; 35 ideo dicitur esse potencialiter ubi causat, et non essencialiter. Sed est ordo secundum quem prius causat lumen sibi proprius quam lumen sibi distancius; sed est longe aliter de causacione Dei.

Ad primum argumentum audivi 4 responsiones, quarum prima dicit quod tales veritates nullibi sunt, sed in Deo causaliter. 2ª dicit quod sunt in Deo et in

truth
everywhere,
and so all
truth is
everywhere.

To answer these, note that *to be somewhere* means either to be there by power (as a king throughout his kingdom) or by presence (as a king in his hall), or by essence, filling a certain place entirely. The first two are metaphysical, not real, and require the third; God is everywhere in all three senses, because his action in everywhere, and not the same everywhere.

God is everywhere the immediate cause of all; the sun, causing at a distance, acts potentially only.

To the 1st there are four replies.
1. That such truths are in

God only as in mundo, sed in nulla parte mundi. 3^a dicit quod tales their cause.

2. That they pretericiones et futuriciones solum sunt ibi ubi fuerunt are in God and vel erunt illa quorum sunt pretericiones vel futuriciones. the world, but in no part of 4^a via dicit quod tales veritates sunt ubique, quia it.

3. That these past and future truths are only where they were or will be true. ubique inmediate causant quotlibet alias veritates; et 5 per consequens, cum non habent instrumenta per que causant, sed inmediate per se ipsas, sequitur quod sunt ubi causant. | Si enim aliquis esset locus in quo B 146^b

4. That they are everywhere; A non causaret, tunc totus ille locus distaret ab A, et per consequens ad omnem punctum illius loci causatur 10 distancia inter ipsum et A; et cum utrumque extremum cuiuslibet relacionis causat 2^{am} relacionem, sequitur quod per illum locum causat A quotlibet relaciones; et sic est potencialiter A per illum locum; et cum non habet esse absolutum, vel instrumentum potenciale, aut 15 alium modum essendi secundum quem foret alicubi, sequitur quod sit ubique: et hoc videtur michi probabile.

which I think probable.
For if we do not distinguish between the meanings of being anywhere, and take it to signify any sort of causation, then everything is everywhere. But we must speak with the many, and think with the few; so we shall admit that habens alium modum essendi quam per causacionem only filling up a certain space is being in that space.

So Christ's humanity is not everywhere, though that which is His humanity (the Word) is so.

Nor is the quantity, &c. of Christ's Body in the Eucharist; yet the body is not without size.

Some admit that

8. ubique B; *ib.* Si enim aliquid esset | si enim aliquis esset B. 31. affl^t B. 34. correspondentis B. 35. sequitur nec sequitur B.

Et sic conceditur affirmaciones positivas prius esse ubique, sed non omnes, cum affirmacio habens effectum 20 replendi locum, vel informandi, solum est ubi informat. Si enim equivoce accipiatur esse in loco, secundum quamcunque causacionem (dimitendo tamen famosorem modum essendi 2^m replecionem loci vel informacionem) non video quin ad illum sensum posset concedi quod- 25 libet esse ubique; et sic esset corpus in loco a quo distaret et versus quem movetur. Sed quia loquendum est ut plures, et sapiendum ut pauci, conceditur quod in aliquo loco, solum est ubi illo alio modo est; ut 30 replecione loci, actuacione in loco, vel alio tali affinio.

Unde negatur quod humanitas Cristi sit ubique, quamvis verbum, quod est illa humanitas, sit ubique; negatur etiam quod quantitas vel qualitas corporea correspondens Cristi sit in Eukaristia. Nec sequitur 35 ex hoc quod illud corpus sit ibi non quantum nec quale, sed bene sequitur quod est *illud quod* non est quantum ibi. Alii tamen dicunt quod corpus Cristi est quantum, et quale, et quomodounque accidentatum in Eukaristia quo ad accidentia absoluta independencia a 40

loco, sicud est in celo ubi extenditur; et sic omnis quantitas est figura, vel numerus parcium, et omnis continuacio parcium vel posicio (que est differencia quantitatis) cum ceteris qualitatibus, est concomitanter in Eukaristia; sed non est sic de accidentibus respectivis.

Et ex hoc subtiliantur quotlibet conclusiones.

Probabile vero videtur quod omnes partes correspondentes Cristi sunt in Eukaristia sine posizione, figura, vel quantitate harum continua, sicud humanitas Cristi non concomitantur ubique existenciam Verbi quamvis sit eadem persona; et quo ad permanenciam correspondentis transsubstanciati soleo dicere quod non anihilatur vel corruptitur ex vi conversionis, sed manet unum corpus subiectans accidentia panis, quod voco corpus mathematicum in abstractum. Sicud enim substantia prius non est ens quam est quid, sic panis prius natura est corpus quam est panis vel cuiusunque alterius speciei specialissime. Et sic idem esse, quod prius est panis, manet corpus sub illo gradu quidditatis generalis; sed non manet pure corpus Cristi nec panis pure, sed panis convertitur in corpus Cristi; quia panis manet corpus Christi sacramentaliter, existens sub illis accidentibus sub quibus formaliter panis fuit.

Unde, quia panis non est corpus Cristi primarie existens per illum | situm, sed subordinatur ut sit sacramentale signum corpori inibi principalius existenti; ideo non manet post conversionem panis; sicud quidam dicunt propter talem causam elementa non manere in mixtis in actu, sed tantum in potentia. Quia vero ista materia isti loco est inpertinens, ideo non tracto eam ulterius, sed exspecto determinacionem tractare de speciali quidditate illius sacramenti sensibilis remanentis. Accidens autem est sicud quelibet creatura est substantia, quia per se illis accidentibus que videmus 35 subiectata; quia aliter foret nimia sensus illusio.

2. figura B. 3. que^r B. 7—8. corr^e B. 25. per illum | per illum B. 26. ibc? B.

15. *Corpus mathematicum.* See, as to the successive stages of Wyclif's opinions on the subject, *De Benedicta Incarnatione*, by Dr. Poole. *Int. IX.* 31. *Tractare.* Wyclif kept his promise in *De Eucharistia*, but at a time when his ideas were much more developed than here.

Christ's Body has in the Eucharist all the accidents that are independent of place.

But I think that the different parts of Christ's Body are in the Host without position, figure or quantity; and that the bread is not annihilated, but remains a body which is the subject of its accidents, and which I call a mathematical body.

The bread is not Christ's Body, but is the sacramental sign of that which exists principally in it; therefore it cannot be said to remain after transubstantiation. But this being irrelevant matter, I prefer dealing with it separately.

We thus admit Redeundo ergo, concedendum est res esse valde
 that things are said to be in equivoco in locis et temporibus, ut patet tam de
 different times corporalibus quam de spiritualibus. Res vero que simul
 and places sunt corporalia et spiritualia dicuntur locari equivoco,
 most equivocally; secundum disparem rationem verborum; ut heroyci⁵
 as we see for spirit, matter, sensibili modo dicuntur esse in celo, cum non solum
 and compounds of causant in celo relaciones, sed supereminenter afficiuntur
 both. The soul is et laborant in terris circa celestia. Unde, secundum
 more where its Lincolnensem, anima est verius cum illo cui atficitur
 desire is than where its quam ubi informat; et illo modo dicunt philosophi¹⁰
 body is; virtutem visivam (et alias) subito egredi et esse cum
 the power of sentitis: quod sane intellectum non habet calumpniam.
 vision is with Et sic aliqui vocantes species sensibiles in medio dicunt
 its object, and may be said to go forth quod ipsum multiplicat se intensius per totum medium;
 towards it. It disposes the intervening space to become visible, quia aliter non esset res principaliter naturalis, ubi-¹⁵
 and this is the image that we see confusedly. sic disponi est species illa quam homo sic confuse videt
 When we look in a glass, we see the mirror's shape, size, &c. confusedly and distinctly; but conversely for what we see in it; and Christ's Body in the Host is thus. Nor does it follow that anything is everywhere as God is, for He is essentially in every point of the universe; other things are there only in imagination,

Sed in speculo videt distincte dispositionem speculi²⁰
 quam vocat ymago. Et sic videt speculum confuse quo ad eius colorem vel figuram, sed distincte quo ad situm. Sed illud cuius est ymago videt distincte quo ad ista et erranter quo ad situm. Tali ergo sensibili modo est corpus Cristi in Eukaristia, et non extensive. Et ideo non oportet ipsum moveri, sed multiplicari, ut sit ibi.

Nec sequitur aliquod reliquum equiparari deo in essendo ubique, quia ipse secundum nichil sui deest ab aliquo puncto mundi; sed omne creatum ibi existens³⁰ causat inmediate et essencialiter ultimate; et taliter claudit contradiccionem aliud aliud esse ubique. Ideo, de quanto sic causat omne causatum in aliquo loco, dicitur replere orbem terrarum, dum alia que sunt secundum solum fantasticam relacionis causacionem³⁵ alicubi non dicuntur nec fantastice esse ibi; ideo nec active replent omnem locum ut deus, nec causant illud quod subiective replet locum. Ideo dicuntur ab

5. heroyci B. 14. intensor B. 21. ygo B.

5. *Heroyci*, i. e. the Saints. The first condition of canonization is 'heroic virtue'.

aliquibus nusquam esse. Mundus autem cum sua quantitate, licet sit ubique, hoc est ad omnem situm cum multis eius sitibus, desunt quotlibet eius partes temporales. Et licet secundum se totum sit ubique, 5 tamen pro quolibet instanti eius desunt quotlibet eius partes. Sed secus est de deo.

Ad 2^m dico quod omne corporeum est extensum, sicud et omne *moveri* corporeum. Nec sequitur; A adequate est sic in illo loco, et iam non est adequate in 10 illo loco; ergo, movetur vel movebitur ad illum; quia antecedens potest verificari per ablacionem parcum A, cum hoc quod residuum illius A fuerit continue in isto loco. Unde non oportet ex antecedente tali quod A aquirat aliquem locum; sed solum sit ibi secundum se 15 totum, ubi continue fuit eius pars per reliquam partis ablacionem; ymmo stat animam multiplicari per alimento adveniens noviter assimilatum, et demultiplicari per partem corporis abscisionem, et sic aquirere et deperdere locum sine motu locali per se vel per 20 accidens. Habet tamen unum equivalent, quod dicitur multiplicacio vel demultiplicacio. Conceditur ergo quod te esse est ibi ubi iam est pars tua, quia ad illum locum, sed non secundum se totum in illo loco, sed erit per partis ablacionem, cum idem sit quodcunque 25 ens et ipsum esse.

Nota tamen quod non repugnat, sed est necessarium pocius, omnem hominis partem esse divisibilem, et cum hoc esse animam eius indivisibilem, cum quelibet talis persona sit divisim corpus, et anima, et connexio 30 ambarum. Quod patet ex hoc quod hominem esse sanum est qualitas multiplicata, et hominem esse iustum. Et sic de quotlibet virtutibus: iam oportet subiectum illorum accidencium (quod est hominem esse) correspondenter multiplicari, ut est satis notum. Nec 35 potest dici quod aliquod tale accidens habet partes extensivas, cum manet eadem virtus, abscissis partibus que insunt ipsis adunatis.

Sed ulterius de *moveri* et aliis denominacionibus accidentalibus 2^m partem, reliqua parte opposite in- 40 formata, est difficultas perplexior; ut, posito quod brachium meum per totum moveretur localiter, toto

and the world itself, though everywhere, has not all its temporal and local parts everywhere in all time.

To the 2nd we reply that what is bodily is extended and is the movement of a body. To be partly absent from a place once occupied does not necessarily imply change of place.

The soul can occupy fresh space by the assimilation of food, without changing its place.

You are where your part is, so.

Every part of a man is divisible; his soul being indivisible; for in every part you find body, soul, and union of both. Health, justice and all virtues are qualities that exist throughout the whole man.

There is another more serious difficulty about movement. When my arm moves, does the truth

I move exist in all my body, or only in my arm?
 Wherever I am, I move. But I move applies to more space than My arm moves, since it can be true though the arm is at rest. Thus a whole of which only a part is moved, and he part itself, are moved differently.

residuo similiter quiescente, tunc est difficultas, si per totum corpus meum est ita quod ego moveor, vel solum ubi brachium meum movetur. Et videtur quod ubicunque ego sum ego moveor; tum quia ibi motus sum alicubi, cum eciam quia *me movere* (quod differt⁵ a motu brachii mei) est extensus quo ad situm quam est *illud brachium moveri*; cum stat, brachio illo quiescente, quamcunque partem mei residuam moveri, faciendo eundem motum continuum quo ego moveor formaliter. Supponendo ergo quod motus individuatur a subiectis¹⁰ que primo denominat formaliter, patet quod alio motu movetur formaliter motum secundum partem et alio motu pars. Et sic variantur motus ad variacionem parcium sic motarum. |

Three sources of individuation of movement.

1. The subject alone, without considering the parts or the velocity; such movements exist in the whole of their subjects;
2. The subject together with all its quantitative parts;
3. The former sources, together with velocity and time.

In this sense movement is extended.

A mobile that has motion of the third, has that of the first sort: but not conversely. Every accident exists at every point in the universe.

Aristotle perhaps meant

Sed ulterius notandum quod motus potest capere¹⁵ individuationem suam tripliciter. Primo modo unice a subiecto sine specificacione motus partis vel materie talis motus. Et omnes huiusmodi motus more universalium multiplicantur per subiectum, cum sufficit ad eius existenciam mobile moveri secundum quamlibet²⁰ sui partem. 2º modo contingit motum individuari a suo subiecto quod primo denominat et omnibus eius partibus quantitatibus, sic quod, quecunque pars defuerit a suo motu, non foret idem motus in numero. Sed 3º modo strictissime individuatur motus a suo primo²⁵ subiecto et singulis eius partibus ac materia motus, cum tempore mensurante; et isto modo motus extenditur; ut patet 6º Physicorum: sed non motus mobilis 2º partem.

Ex quo patet quod si mobile movetur formaliter³⁰ motu extenso, movetur motu multiplicato, et non econtra. Nam omnis motus extensus partis facit unum motum cuiuslibet sui tocius multum per suum totum: ut patet noscenti gradus rerum communium. 2º sequitur quod ad omnem punctum mundi sunt omnia genera³⁵ accidencium. Cum enim omnis substancia causata sit mundus vel pars mundi, omne autem accidentis subiectatur in creata substancia, sequitur quod ad omnem punctum mundi sit species accidentis; quia quod ille mundus est sic accidentatus 2º totum vel 2º partem est ubique.⁴⁰ Et sic forte intelligit Aristoteles quod universalia sunt

B 148^a

ubique. 3º sequitur quod de omni specie extensorum accidencium, mole indivisibilia et extensa accidentia simul sunt eiusdem speciei. Nam sicud species et suum individuum sunt eiusdem speciei; sicud species est sua quiditas; species autem multiplicatur, et individuum non sic; individuum accidentis mole magnum causat per totum mundum accidentis eiusdem speciei quo mundus est secundum partem accidentatus. Et patet quomodo refert accidentis causare, quia efficienter 10 denominare subiectum et ipsum formaliter denominare idem subiectum. Nam omne accidentis partis mundi efficienter denominat totum mundum, sicud individuum causat suam speciem, et per consequens suum genus tanquam pars subiective. Et sicud hic causat, sic hic 15 est, secundum modum loquendi essendi equivocum ab esse dimensionaliter in loco.

Et sic forte intellexit Anaxagoras quodlibet esse in reliquo in quolibet; et sic non refert dicere *hic est* quod *hic vivit* et *hic hoc vivit*; *hic est ita quod hoc est futurum*, et, *hic hoc esl futurum*, cum quodlibet sit ubique. Sed cum in equivocis non sit contradiccio, et modus essendi in loco sit causa equivoce, patet quod huic non obviat via que dicit *hoc vivere hic*; hoc est, secundum partem vivere ad hunc locum. Et tamen, est

B 148^b mortuum *hic*, quia secundum partem existentem in hoc loco. Et *hic est quod hoc est futurum* et *hoc non est futurum*, hic subintelligendo secundum molis extensionem.

Et iuxta istum sensum dicitur ad 3^m quod minor est falsa, nec valet consequencia deducta per eius proportionem. Sed bene sequitur: *hic non est ita quod homo est: ergo, falsum est quod homo est hic*, ymmo ubique falsum est quod homo est hic, quia non est quod homo est hic. Unde iste terminus "falsum", est terminus realiter negativus; ut si *falsum est quod homo est*, 35 tunc *hic est ita quod nemo est*, et econtra; et si *est hic falsum quod homo est*; tunc *hic est ita quod nemo est*; et econtra.

Ulterius conceditur quod deus ubique cognoscit omnem veritatem, sicud et ubique omnis veritas est 40 cognita. Ymmo ubique omne ens est, cum omne ens sit deus, et per consequens omnis veritas, et sic de

this, saying that the universals are everywhere. All extended accidents are of the same species.

This may be the meaning of Anaxagoras, saying that everything is in everything else; it being so in different senses, there is no contradiction.

3. The minor is false; so there is no consequence. But we may say: *Here it is not true that a man exists; so it is false that a man is here.*

God knows all truth, everywhere.

Besides, aliis analogis significantibus meram essenciam sine universal being qualitate substanciali vel accidentalii. Nec sequitur ex God; yet not isto quod sic omnis substancia vel qualitas sit deus, when limited to created truth and being. Et noticia fallacie figure diccionis solvit obiecta: ut patet in 5 Thus God, knowing himself alone, knows all things. materia de ydeis. Et sic deus cognoscit solum seipsum, et tamen cognoscit omnia; quia non cognoscit ens quod non est ipse. Verumtamen cognoscit aliud a se ipso, sed secundum esse suum intelligibile vel secundum essenciam in intellectu secundum quod non 10 It is a sophism to deduce from this that every creature is God. est aliud a deo, ut patet 12 metaphysice. Nec sequitur: quelibet creatura, secundum esse suum intelligibile, vel secundum suum esse intencionale, aut secundum esse quod habet ad intra, est deus: ergo quelibet creatura est deus. Loquendo autem de creaturis secundum suas 15 existencias, conceditur quod deus est ubique, cognoscit singulas creaturas, licet ipse creature non ubique cognoscantur, sive sint cognite, cum deus cognoscit res creatas ubi ipse non sunt, ut nunc loquimur de esse nunc. Et ita non sequitur: *Hic hoc est cognitum; igitur 20 hic hoc est res cognita.*

We must note in these allacies which verb determines the adverb. It is now possible for a future instant to exist, but it is not possible for that instant to exist now. There are also other foolish and useless fallacies of like sort.

As, that we shall know something to be when we do not know it to be, and when it is unknown to God Himself.

But blessed be God, who has delivered us from these fallacies!

Unde pro zophismatibus oportet loycum diligenter notare verbum vel participium quod adverbium loci vel temporis determinat; quia hoc notabiliter variat intellectum. Ut: *nunc* possibile est medium instans 25 crastine diei esse, et tamen non est possibile ipsum esse *nunc*, cum nullum instans vel tempus potest esse, nisi quando est. Sed ulterius fiunt in talibus zophisticaciones per capciones que videntur michi modo inutiles; ut in talibus: *tu scies aliquid esse quando non scies illud 30 esse, ymmo, quando non est possibile deum scire illud esse, quamvis quilibet sciolus poterit tunc scire illud esse.* Illa probatur, capiendo istam temporalem: *aliquid est quando tu non scies illud esse;* que videtur verificari pro hoc instanti quod tu scis esse in seipso, et tamen nichil sciet illud esse, cum non erit; et cum, sciendo ens analogum, sciet illud esse tantum nomen; et cum sciendi ens analogum, | sciuntur omnia. Patet pars B 35 ultima conclusionis. Benedictus autem sit deus eter- naliter intuens omne tempus preteritum vel futurum 40

2. ^{9^{to} B. 9. omne B. 10. ^{oc̄;} pro essenciam B; *ib.* ^{īte} B.}

11. addeo (!) B. 19. utn̄c B. 20. de ce u^o B. 22. <sup>p30^b B.
37. ^{t^{am} noⁿ B.}</sup>

sibi presens, qui nos liberavit a talibus. Deus enim semper scit quodlibet esse, fuisse et fore; quia verum est quod quodlibet est, fuit, erit pro tempore suo. Et per idem tu nunc scis quod hoc instans fuit et erit, licet non ante hoc, nec post hoc; et patet quod in capcione falsum assumitur pro hoc instanti et quo-cunque instanti in quo tu nunc existis. Sed pro quo-cunque instanti precedente esse tuum, est verum quod tu scis illud esse, quando non scis illud esse. Et ita conceditur quod tu scis aliquid esse quando tu non scis illud esse, ita quod *ly* "quando" determinat pri-mum *esse* et non verbum *sciendum*.

Sed 2^a pars conclusionis est impossibilis; cum semper fuit, et est, nedum possibile sed verum, deum 15 scire omnia fore, esse, et fuisse. Deus enim nunc scit quod dies iudicii fuit et quod mundus generabitur, quia omne verum deus semper scit vel cognoscit; utrumque istorum est verum, igitur utrumque istorum deus nunc scit. Sed non sequitur: *deus nunc mundum scit*, vel 20 *cognoscit hoc*: igitur *hoc nunc existit*; sed satis est quod hoc sit pro aliqua mensura. Unde ante mundum et tempus est verum quod ipse fuit. Nec est magis incongruum proiecto quod deus est heri et fuit cras, quam quod Cristus sanitates perficit hodie et cras. Illis 25 autem qui nesciunt elevare intellectum suum, videndo quomodo apud deum omnia que fuerunt vel erunt sunt presencia, eciam secundum existenciam suam, iuge forent tales locuciones incongrue. Nec sequitur: *mundus est generandus*; igitur *mundus non est*; sed bene 30 sequitur quod mundus non est pro mensura precedente eius generacionem, que est eternitas in qua non potest esse formaliter. Semper tamen est, quia in omni tempore et eternaliter est generandus, quia in eternitate; et tamen in nullo tempore vel instanti temporis 35 est generandus. Et sic in eternitate non est, intelligendo formaliter; cum non potest esse immutabiliter eterna eternus et tamen in eadem eternitate est totaliter, sicut quelibet creatura.

Consimiliter dicitur de hoc sophismate: *Necessario aliiquid erit, quando ipsum non necessario erit*. Falsum

It is clear that there is a confusion between the time of our present and that of our possible being.

But that there can be anything unknown to God is absolutely impossible. He knows now the Judgment Day as past and the creation as future.

God's knowledge of anything does not prove that it exists, but that it has a certain measure of being.

God is yesterday and was to-morrow; if all things are present to Him, these expressions have nothing absurd in them.

The world is to be; therefore it is not in the duration that precedes its existence; and yet *it is*, always, for 'always' means in all time, not eternity.

We answer in like manner the sophism which posits that

4. *muc* B. 12. *scid* B. 16. *gab'r* B. 23. *p vecto* B. 25. *clere* B.
37. *et'a et'uns* B. 39. *sophisma*(!) B.

23. *Proiecto*. To one initiated.

'something will quidem est, cum omne quod erit necessario erit pro be necessarily, when it will not be necessarily., Only absolute necessity is opposed to contingency of every sort.
 cuiusmodi est omne verum preter necessarium absolute. Et ita creata est necessitas in ista: *hoc erit* (demonstrata quacunque re contingente sicud in existencia sue speciei); et cum hoc habet causatam contingenciam ad utrumlibet in utroque; sed in permanencia, in prioritate, in maiori utilitate excedit unum commune suum singulare. Qui autem aliter in prioritate, in maiori utilitate excedit unumquemque suum hoc non solet. |

B 149^b

Loquebar in hoc tractatu, fuit ex ignorancia huius sententie. Nec decet pueros aut proiectos sic loqui, nisi sciolos, cum circumstanciis requisitis. Ideo expedit scire utramque scolam; sed puerilis scola imbrigabiliter onerosa. Scola autem, eciam theologorum, est levis, dissensiones sophisticas statim excuciens correspondenter ad condiciones hominum quibus convenient iste scole. Nunc autem sum nimis senex ad penaliter incacerandum me in scola priori. Ideo, propter facilitatem indulgendum senibus sequor 2^{am} intelligendo scripturam, et colloquentes quando equivocando locuntur ut parvuli.

We may, however, grant some of the conclusions urged against us.

V. g.
 Something is necessarily in the future when it cannot possibly be in the future. This is verified in the case of the instant. But when is here taken in two different manners, now determining the verb, now the participle.

Verumtamen notandum quod zophismata concedenda possunt commisceri in illa materia, ut sic, *necessario aliquid erit futurum quando non poterit esse futurum*.

Nam quodlibet instans est pro mensura sui ipsius, ne sit in infinitum processus in mensuris huiusmodi, ut patet 4^o phisicorum. Quodlibet ergo instans est futurum pro mensura sui ipsius; et pro illa mensura non poterit esse futurum, cum nullum instans anteriori poterit vel differri. Ista tamen oratio est amphigorica, secundum quod *ly* "quando", geminatum, potest diversimode determinare verbum vel participium. Ut illa: instans iam est futurum in seipso et continue usque ad illud exclusive est futurum in seipso, sed non participle.

3. 9^{int*e*} B. 5—6. demonstrata B. 9. 9^{int*e*} B. 12. fol*t* B.
 31. antrorai B.

13. There is no gap here, but it is evident that one sentence at least has been left out. The negligence of the copyist seems to increase as he approaches the end, as may be seen by examining the mistakes in the MS.

poterit in seipso esse futurum ad istum sensum, quod poterit esse quod in isto instanti *A* est futurum. Et sic signum temporis potest determinare verbum illud erit, vel participum futurum. Igitur super illa equivocatione contendunt loyci, in suis apparenciis gloriantes. Sic ergo quodlibet instans temporis necessario erit, quando non poterit fore vel esse futurum. Nec sequitur, *hoc erit, quando non erit ita quod hoc erit, ergo, hoc erit quando hoc non erit*. Sed bene sequitur quod *hoc erit quando non est futurum*. Et adhuc in quolibet tali potest zophista contendere secundum sensum equivocum.

And logicians do battle upon these equivocations, and glory in vain appearances.

Quidam autem inaniter subtiliantes concedunt quod quandocunque aliquid erit futurum, tunc erit; quos (ut videtur michi) oportet concedere *Omne quod erit inmediate post hoc 'fore'*; ymmo, *omne quod erit, nunc erit*; sicud semper erit antequam erit, tolletur prioritas inter instancia vel quecunque futura, et sic parum finitum magnum tempus erit aliquot instancia; et quilibet, ut diucrius est futurum, diucrius erit. Et sic patres in fine mundi longe diucrius vivent quam vixerant patres in mundi principio. Et sic nichil posset senescere, alterari, vel moveri, cum inmediate post hoc habebunt omnem denominacionem quam unquam habebunt. Et sic de preterito. Quolibet talia sunt obicienda vel dissona; concedendo quod *si tunc est ita quod B erit, tunc B est futurum; et tunc est 'fore' ipsius B*; et econtra. Si autem *tunc B erit, tunc erit ita quod B est, et tunc est esse B*; et econtra erit. Et ita de preterito.

Some, with foolish subtlety, grant that whenever anything will be in the future, it will be; it would then be before it would be, all order of priority between different instants would vanish, nothing could become old, or change, or move.

We, therefore, say that if at a certain moment it is true that *B* will exist, then *B* is future, and its futurity exists then; but if at that moment it will exist, then its existence is. Nor can we admit that what is becoming is always becoming, nor that white is black, &c. White, however, may be black and at the same time not

30 Et sic non oportet concedere quod omne incipiens esse vel desinens esse, semper incipit et desinit esse; B 150^a et quod | album per totum sit nigrum, et sic de aliis denominacionibus contrariis, pro diversis loco et tempore eidem inexistentibus, cum non pro eodem instanti est 35 hoc album et nigrum per totum; quia tunc foret pro illo instanti *ita quod hoc est simul sic album et nigrum per totum, et pro illo instanti inesset huic albedo et nigredo per totum*. Nec obest, album esse nigrum, et tamen illud pro eodem instanti differre a nigro, et esse 40 aliud quam nigrum, quia ad talem differentiationem vel alietatem sufficit quod pro aliquo tempore vel pro

5. appucis B. 15. pt' B. 17. pu B. 18. Φ B. 20. vinet B.

black, provided that the thing which is white should not be black then. Thus the old man differs from himself as a boy; a man is different in the theatre and in the marketplace, melancholy persons in autumn are less sane than themselves. All this merely means difference from a certain suchness of self. We must admit a universal subject to which different accidents belong, and which is at different times differently affected by them; we also admit quality, quantity and accidents that change successively.

Movement is sometimes more, sometimes less rapid; the same quality is more or less intense; and even if they have no parts in themselves (as the virtues of faith, hope and charity) they can change suddenly into a more perfect quality,

aliquo instanti sit album, pro quo ipsum non sit nigrum. Et sic formaliter senex differt a se puero, Sors est alter in teatro quam in foro, melancolici sunt demenciores seipsis in autumpno; et sic de quotlibet propositionibus philosophorum, quas quondam putavi 5 fore puram demenciam. Verumtamen non sequitur ex istis quod idem differt a se, licet differat a se tali.

Unde, iuxta dicta de multitudine accidentium et de gradibus rerum communium, est dare unum subiectum commune quod primo subiectat tale accidens multiplicatum; verbi gracia, est dare unum ignem communem ad istum ignem accidentalem, et quamlibet suarum parcium, qui est subiectum motus multiplicati per totum. Nam, posito quod ignis partibiliter generetur a non gradu, quounque fuerit plene generatus, et abhinc 15 incipiat corrupti, ubi desit generari, est dare unum ignem ex omnibus istis ignibus aggregatum, subiectantem omnem illam generationem et istam corruptionem. Et ignis communis ad singulum istorum componencium est nunc magnus, nunc parvus, nunc sic accidentatus, 20 et nunc modo opposito. Et est dare qualitatem, quantitatem, accidentia successiva, que nunc sunt magna vel intensa, et nunc opposito modo. Et sic quantitas, licet acquirat sibi quantitatem accidentalem, qua sit formaliter magna, acquirit tamen partes quibus quantificatur varie 25 successive. Nec sequitur ex isto quod quantitas illa sit continue eque magna; ut contingit de tempore quod illa quantitas habet differentes scilicet successivas et mole magnas; non sic autem tempus. Et sic habet pro quolibet instanti quodlibet partes simul secundum se 30 totas. Ideo sunt multe manieres successivorum.

Et correspondenter dicitur quod motus nunc est velocior, nunc tardior; eadem qualitas nunc remissior, nunc intensior; eadem etas nunc maior, nunc minor, propter differentes partes. Ymmo, posito quod non 35 habeat tales partes differentes, adhuc suscipiunt successive magis et minus; ut patet de mistica fide, spe, et caritate, que (augmentata materia vel intensa) non componuntur ex suis partibus intensivis, sed est intensione carum continue | nova qualitas indivisibilis quo ad B 150^b

3. Melancolya B. 7. the⁷B. 17. ignis pro ignibus B. 28. dntes B.
39. c³tit³ione B.

partes quantitativas et qualitativas, que tamen per tempus possunt manere; sicut non contingit de partibus temporum, cum nulla posset esse diuturnior vel brevior quam est de facto. Nec sequitur quod talis alteracio
 5 sit infinitum velox, qua subito inducitur talis gradus; and this change is not infinitely rapid,
 quia illa non est velox vel tarda, cum sit subita. since (being instantaneous)
 Alteracio autem successiva est velox, quia tanta latitudo qualitatis aquiritur vel deperditur quo ad tempus, tantum vel tantum; et diu fuit antequam cognovi
 10 huiusmodi successivum.
 It was long before I understood what succession was.

Non autem sequitur ex isto quod quelibet pars corporis sit quelibet; sed commune ad quamlibet eius partem est quelibet. Nec sequitur quod corpus gradatim existens, ille partes sibi succedentes, sit aliqua eorum, 15 sed unum ex illis compositum. Alias autem multiplicavi argumenta ad suadendum quod nichil potest alterari; sed vel saltem quod non est alterum una vice quam alia quacunque. Ut, posito quod Sors, qui iam est albus, et in B instanti erit niger, swadebam quod erit 20 albus in eodem B instanti; et per idem, qualemque aliquid unquam erit ipsum, continue est tale. Nam tantum album erit Sors, et semper erit omne album aliud a nigro; ergo Sors nunquam erit niger. Sic quod non albinus; tunc enim tantum non album erit Sors, 25 cum tamen nichil erit Sors nisi Sors albus; quia si aliud, tunc illud fiet et incipiet esse Sors; et sic non quitquid erit Sors iam est, quia Sors niger erit Sors, qui adhuc non est Sors, et ipse est vel erit aliquid; 30 igitur aliquid erit Sors quod nunc non est Sors. Argumentatur enim ab inferiori ad suum superius, cum constancia subiecti negative postposita.

Similiter, tunc Sor in B instanti differret ab albo; et per consequens tunc omne album tunc differret ab illo, et sic differret a se. Nam intento Sorte in albedine, 35 sequitur in casu quod longe albior erit Sors in B instanti quam nunc est; et per consequens tunc erit albus.

12. f³ B. 18. quod sors twice B. 19. in i⁹ti B. 20. in i⁹pti B.
 24. a³i⁹ B. 34. fore B.

15. *Multiplicavi* and lower down *swadebam*. Here follows a series of arguments to which Wyclif afterwards *replies*; so that we may perhaps consider these words as one of the many negligences of the scribe, on account of which (at least partly) I have been obliged to forego marginal notes in many places.

^{2.} An individual that, after being white, has become black, would be different from whiteness: whiteness would differ

from him, and Assumptum patet ex hoc quod, quam album erit Sor, consequently tam album erit in B instanti, cum omne album quod from itself, since the individual was identical with whiteness. erit minor erit Sor in B instanti quam nunc est; et per consequens tunc erit albus. Assumptum patet ex hoc quod, quam album erit Sor, tam album erit in B instanti. Sic enim locuntur illi qui concedunt quod infinitum minus albus incipit Plato esse quam Sor est albus. Et tunc habetur quod, quam senex vel cuiusmodi cunque erit aliquid in aliquo instanti, erit et in quolibet in quo erit. Sequitur enim in Dabitibus: *quidquid vel qualecunque nunc est Sors, illud et tale in B instanti erit Sors; sed album iam est Sor: igitur, Sor in B instanti erit album.*

3. A king cannot have been baptized, or engendered, since he was not a king at that time.
A man is much less a king than he is a man.

If an accident could be separated from its substance, the two could not form a single whole, and we should no longer feel the thing by means of the accident, but the accident that would itself be a thing.

4. Other arguments and conclusions.

Similiter iuxta illam zophisticacionem, sequitur quod nemo generavit istum regem, baptizavit vel percussit istum sacerdotem, vidit istum episcopum, et sic de aliis. Et tamen iste rex fuit genitus, et ille sacerdos fuerit actualiter vulneratus, ille episcopus a quotlibet hominibus visus; et sic de similibus. Et tamen fiebat rex; et omnis faccio est generacio; sicud homo est longe minor rex vel papa | quam ipse est homo. Ymmo, si accidens sit res absoluta que per se potest existere, impossibile est corollarie quod fiat unum ex subiecto et accidente informato, cum accidens haberet propositam quantitatem, densitatem, et alia eius accidencia, sicud habet propriam entitatem. Et tunc sine dubio nemo sentiret substanciam propter tale accidens, sicud nec sentiret animam vel materiam propter sensacionem continui, aut indumentum propter sensacionem indumenti. Quilibet enim talis sensacio posset manere terminata ad accidens, corrupto subiecto. Cum igitur non accidit sensatum terminare ad quemcunque terminum suum, sequitur quod solum sentitur ens esse sensible; quod est verum.

Similiter, sequitur quod Sors non est indutus cappa Platonis, et erit indutus illa inmediate post hoc; et tamen Plato nunquam habebit aliam cappam quam nunc habet, sicud nec Sors erit indutus aliquo quo nunc non est indutus, nec umquam movebitur versus cappam, nec econtra; et tamen iam distat a qualibet cappa Platonis per mille milliaria. Et per idem sequitur quod iste carpentarius fuit facturus istam domum, et

1. a³⁹ a^{3m} B. 2. a^{3m} B. 4. a³⁹ a^{3m} B. 8. her B. 18. ac't' B.
20. lo⁶ miōr B; ib. 23. c'olle' B; ib. quin B. 40. mili'ac'a B.

tamen nec facit nec faciet istam domum, posito quod faciat istam domum antequam erit carpentarius. Et sic esset possibile quod Sor incipiat esse res nigra, et tamen non incipit esse res nigredine colorata. Et in casu 5 incipiet esse res que coloratur, et cum incipiet esse res et tamen non incipiet esse res que fuit, vel erit, nigredine collorata. Et tales zophisticaciones reputantur subtiles illis qui concedunt de qualibus specie, quod illa per accidens est illa species. Ut conceditur in casu 10 theologico possibili quod in fine istius hore fient infiniti homines; et tunc nec fiet aliquid, nec quale, nec res aliquo modo se habens, posito quod Verbum ssumpsit infinitos homines racione et dimittat eos in fine hore. Et ita possibile est illis quod iam est tantum unus homo, 15 et infiniti homines corruptentur vel annichilentur, et nichil absolutum generabitur; et tamen in fine istius hore erunt infiniti homines, posito quod deus assumat duas multitudines infinitas naturarum humanarum, et unam postmodum annichilet; et reliquam dimittat in fine 20 illius hore. Et in alio casu est possibile quod in hora generabuntur infiniti homines. Et tamen nullus eorum generabitur ab aliquo, quod non est deus nec a deo. Ymmo deus non sciat quando ad istorum hominum; et, posito quod ista hora dividatur in suas partes pro- 25 porcionales minores usque ultimum instans, et quod in quamlibet istarum parcium deus dimittat naturam unam de illis infinitis assumptis, et post illo modo in 2^a medietate eiusdem partis anichilet eandem, tunc enim nunquam foret aliud istorum hominum, iuxta conse- 30 quenciam logican. Et sic est possibile quod duo filii fuerint geniti de A muliere in B instanti, et tamen tunc non genuit nisi unum filium; et sic potest esse in B instanti, nec genuisse duos filios in B instanti, nec aliter se habuisse tunc quam habuit se. Posito namque B 151^b quod natura assumpta dimitteretur, | tunc fuisse genita a muliere, cum tamen illa non genuit illam, sed aqui- sivit per unam puram negacionem.

Comiscendo eciam alios terminos accidentales cum terminis quos vocamus substanciales, contingit in

We can vary
ad infinitum
our fallacious
conclusions,

5. colorata B. 6. cipiet B. 7. collerata B. 8. que B.

13. *romē* B. 23. *qu aditorp* B. 27. *pōtō* B. 2^a *met^a* B. 29. aliud (sic!) B. 31. *mlie'* B. 38. *gmscendo* B.

23. The text is certainly corrupt here.

by bringing
in other
but similar
confusions
between
substantial and
accidental
terms.
Examples.

infinitum procedere sophisticando: ut infinitum magnum spaciū in ista hora futura erit pertransitum a Sorte; quod spaciū 2^m totum formaliter in eadem hora et neutrius spaciū corrumpetur, nec alter retrocedit; et tamen, in quacunque proporcione volueris, Plato in 5 eadem hora movebitur velocius Sorte. Ymmo non plus quam semipedale est pertransitum a Sorte, quamvis inmediate post hoc infinitum magnum spaciū erit pertransitum ab illo; et sic maius spaciū erit pertransitum ab illo quam ille pertransibit, tamen non plus 10 pedali pertransibit. Et sic in infinitum magnum fuit pedale, et per consequens nichil fuit maius quam fuit pedale, quamvis non maius quam pedale fuit illud pedale, cum solum in infinitum magnum fuit in B instanti in quo fuit solum pedale; quamvis non minus 15 centipedali umquam fuit. Ymmo stat quod infinita loca replebuntur per istum hominem, in quorum nullo iam est iste homo; sed quilibet istorum distat ab isto homine, et tamen nec iste homo movebitur ad aliquem istorum, nec econtra; nec est multiplicatio illorum. Ut, 20 posito quod sint infiniti homines admodum corporee dispositi, et quod verbum assumat successive omnes naturas eorum, ypostestate natura humana unita in celo non mota; sequitur similiter de possibili quod deus, faciendo 3^s eternos homines qui potuerunt fieri, 25 tantum perficit genus humanum sicud potest, nec plures homines quam illos 3^s potuit produxisse: ut, posito quod 3^s persone divine omnem humanitatem possibilem assumant yppostatice, que maneat eternaliter unite. Ultima particula patet 2^m eos qui ponunt personam 30 per subiectum fieri quotlibet homines, assumendo diversas naturas. Si enim subtiliant quidam, ponendo unum hominem posse esse infinitos; et contrarie homo de possibili in A instanti est infinitum minus carus deo quam erit in B, sine hoc quod unquam demerebitur 35 vel aliquod positum deperdet. Et sic idem homo potest esse pater et mater et tota parentela sui ipsius.

In all these cases we have the *fallacia accidentis*,

Et ut breviter dicatur, cum omnis terminus per se in predicamento connotet negacionem, sic quod suum

- | | | | |
|-------------------------|--|--|--------------|
| 2. futa ^r B. | 3. for B. | 20. rālti ^o or mlti ^o B. | 21. coree B. |
| 22. afmp̄mat B. | 29. assumat B. | 32. quidem B. | 33. grie B. |
| 35. quod B. | 38. dicitur B; ib. persone (?) pro per se B. | | |

significatum positum manere eadem res non existens sicut qualificatam, patet quod cum omnibus talibus terminis faciendum esset zophisma, et paralogizandum secundum fallaciam accidentis; ut natura humana, que humanitas 5 dicitur, potest esse, ut homo per hoc quod dependencia ab aliena suppositacione. Et proporcionaliter dicendum est eciam de omni termino specifico. Et in tantum extravagantur nostri theologi, quod ponunt deum non solum posse multiplicare corpus per diversa loca, sed 10 eciam idem punctale singulare multiplicare per spacium infinitum, et idem singulare plurificare ad tantum numerum sicud est maximus numerus mundi, et quodlibet mixtim ydemptificari, et sic de multis impossibilibus.

15 In ista materia, respondendum differenter, iuxta opinionem restringentem tempus et non laxantem tempus presens ad omne preteritum vel futurum. Ad primum dixi quod prima consequencia non tenet; ymmo, tantum album, nigrum, non album (et sic de aliis) erit Sortes; 20 et sic aliquid erit Sortes; aliqualiter non erit Sors albus; ideo erit aliud ab albo. Sed nichil aliud ab albo erit Sortes. Et istud argumentum sequens peccat in fallacia accidentis que peritissimos fallit ex premissis.
B 152^a Igitur sequitur | quod aliquale aliquando erit Sortes, 25 quale nunc non est Sortes; quia *esse album* non est esse *aliquid*, sed est esse *aliquale*. Tunc enim, faciendo hominem, fieret ipse aliquid: quod est impossibile.

Ad 2^{am} negavi primam consequenciam; sed bene se-
quitur quod omne quod erit album in B instanti differet 30 a Sorte. Et pro ulteriori responsione in illo arguento est notandum quod, tam a parte subiecti quam a parte predicati, contingit terminos similiter supponere pro accidente, vel (ut aliis placet) pro aggregato ex subiecto et accidente. Et specialiter, si fuerit terminus abstractus, 35 vel terminus qui non [potest] bene per se supponere verbo. Sicut enim concederet philosophus quod statua et es differunt in *esse*, et cum aliis concretis, sicud *esse statuatum* est aliud quam accidentatum, fiant equivocaciones 2^m suppositionem simplicem aut personalem.

which can be extended even to all specific names.

Our theologians go far as to admit that a point can be multiplied throughout infinite space, &c.

The answer to these difficulties must differ, according as we do or do not admit of a present tense including past and future.

1. The change from white to black is a change of quality, not of nature; so that an individual, when not white, will be in some wise (not something) different from white.

2. It is not whiteness that would differ from a given individual that is black in the instant B; but all that is white; a very different thing.

A statue and the brass that is the statue differ entitatively.

1. pom B. 5. uc B. 8. errāgent^r B. 15. rūdēdi diffuse B.
16. tpūc B. 20. adte^r = adicere (!) B. 30. responsioni B. 35. potest
deest B. 36. vo^r B. 37. drūt ce B. 38. accim B.

Nota ergo: albior vel albus erit Sortes in B instanti, quamvis album tunc erit Sortes. Nec sequitur ex hoc quod "tam album tunc erit Sor quam album umquam erit Sortes", quia si minus albus, magis albus, aut eque albus tunc erit Sortes, sequitur quod Sortes tunc erit 5 albus. Ex quo, ad syllogismum in 1^o prime figure, dixi quod premissae concludunt quod Sor tunc erit illud *quod est vel erit* album.

3. To make a king is but to produce an accidental quality, and a king (*minus this quality*) may be engendered or baptized.

Judges ought to apply this point of logic when questioning witnesses.

I do not believe that such accidents can be absolute entities;

when I perceive whiteness, I perceive the thing as affected by that quality; substance is perceived only by means of its accidents.

There are different questions concerning the sensitive act,

into which I do not enter at present.

Ad 3^m negavi primam conclusionem, cum faccio regis sit generacio accidentis, sicud elecciones creant papam, 10 cesares; et ita est dare baptismum vel mundacionem, quia continue baptizatur immundus. Nec obest quod generacione substanciali vel baptimate aque (et sic de similibus) generabatur vel baptizabatur iste rex vel sacerdos. Unde decet iudices nosse loycam suam, ne 15 examinent testes de accidentibus; ut puta si accusatus percussit illum hominem; vel si iste sacerdos fuit percussus a reliquo. Non ergo credo fore possibile accidens fore tale absolutum; quia sine dubio oporteret, illo dato, ponere quamdam informacionem mediare, a quo 20 formaliter et inmediate subiectum est taliter accidentatum. Et ita, senciendo album, vel quocunque aliud accidens, senciam rem taliter accidentatam. Utrum autem illa res sit substancia, homo vel quecunque alia species, non est sensus discutere, sed virtutis superioris. Ideo 25 dicit Aristoteles quod substancia non sentitur, nisi per accidens; quia accidens sentitur sub ratione qua huiusmodi; et accidit substancie taliter esse accidentatam.

Sed dubium an quilibet habens unum actum de sensibili habeat infinitos actus de partibus eiusdem, quarum 30 deperdicionem vel aquisitionem ille non participiet, ablatis vel generatis ipsis substanciis. Vel an est dare unum per se sentitum, ad quod per se terminatur actus et per accidens ad quotlibet alia. Et si eadem species potest vicissim sentire naturaliter et singulariter infinita 35 similia presentata, et per consequens nulla talis certificat evidenter de obiecto. Vel an solum manet species in presencia obiecti, vel an non est ponenda, 3^o, si idem actus in numero et eadem species potest manere, nunc intensior et nunc remissior. Ista dubia relinquo alteri 40 loco, gracia brevitatis.

37. 4. before albus all B. 32. a^r B. 35. potest vicissim twice B.
38. a^e B.

Sed notandum secundum viam veritatis quam modo I assert that a profiteor, quod possibile est, ymmo verum, quod homo man can truly genuit datum regem. Sic enim 2^m locucionem scripture beget a king, according to et philosophorum: *Ceci rident, Sortes senex differt a se* the expressions of Scripture and philosophy. But such propositions can be understood in two senses — in the compound or divided sense,

B 152^b *puero; per idem Yesse | genuit David regem*, quia genuit eum qui terre sue est rex. Unde proposiciones huiusmodi sunt equivoce, ex hoc quod potest fieri composicio in sensu composito; ut pro eodem instanti sit inherencia predicati ad subiectum, vel divisim quod suppositum in alterum extremum insit supposito reliqui extremi, 10 ipsis pro diversis temporibus sic accidentatis. Unde, sicud deus simul tempore dampnat et beatificat pro diversis locis (ut in inferno et celo) sic idem homo pro eodem modo gignitur et regnat, sed diversis temporibus; quia 15 *omnia tempus habent*. Et ita non sequitur: *Petrus nunc gignit istum regem: igitur, ille nunc est regens, vel rex;* As God damns and beatifies at the same time in divers places, so the same man is begotten and reigns at different times. Thus a man may be begotten without any movement consequent on that: i. e. in the future. And man is earth in the same way. The nearer generation takes place after conception, and the nearest when the soul is united to the body.

20 Unde homo, quandoque gignitur, quiescit; utputa quando illud semen est in alterutro parente vel utroque; et sic concedi potest quod quilibet nostrum fuit in lumbis progenitorum nostrorum. Sic conceditur quod homo est terra; propinqua vero generacio hominis fit 25 successive in utero, propinquissima vero in unione yppostatica anime cum corpore; et sic alia corpora inanimata sunt propinqua sue generacionis 2^m partem. Et manet consequencia, dum aliqua pars quantitativa corporis duraverit. Ut, posito quod A ignis incipiat 30 parcialiter generari usque ad finem istius hore, in quo erit ignis octupedalis plene generatus; et quod post incipiat corrumpi, tunc manebit continua idem A ignis qui maneret, subducta corrupcione; ymmo qui maneret, corrupcione concomitante generacionem. Sed a tempore 35 mensurante generacionem videtur quod huiusmodi animalium capit suam individuationem; ita quod, si aliud sit tempus mensurans generacionem forme materialis, est aliud generatum. Difficultas autem logica procedit ulterius, si pro instanti gignit datum regem. Et probabilitate potest dici quod non, sed ad minimum pro isto tempore quod includit faccionem istius hominis, et

3. Si *pro* sic B.17. *gignico* B.20. *quest* B.39. *gignit* B.

faccionem eiusdem ut sit rex. Et sic nemo incipit gignere ipsum regem, nisi sumendo gignacionem pro constitucione dignitatis regalis, quam deus vel populus diu post facit postquam est genitus ut homo.

4. I at first admitted the four conclusions of this argument, but now find them very childish.

It does not follow that because something is now, and is to have another quality, it has that quality now; because now qualifies is, not is to have.

As or the other conclusions taken from theology. I do not see how the marvels alluded to can be done by God. Some say God can do so, because He is almighty; some, because it is pious to believe of God whatever can be sustained without contradiction;

Ulterius quo ad 4^m concessi 4^{er} conclusiones tamquam 5 possibles. Nunc autem videtur michi subtilitas nimium puerilis. Nam Sor est pro tempore suo indutus cappam Platonis. Ymmo iam est inmediatus cappe que est Platonis, quia induitur cappam que alias est Platonis. Et ita in casu 2^o ille qui alias est carpentarius iam 10 facit istam domum; et ita Sor erit res nigredine colo- rata. Et correspondenter de conclusione 4^a.

Unde notandum quod idem est dicere, "Johannes nunc incipit esse album et Johannes nunc incipit albari. Nec sequitur: Petrus nunc est homo qui tempore suo est rex, 15 album vel aliter quomodounque accidentatum; ergo Petrus modo est rex, album; quia tunc quidlibet semper foret quomodounque foret unquam. Quando ergo sic dicitur: Petrus nunc rex est, adverbium determinat hoc totum predicatum, est rex. Nam verbum cum suo apposito 20 predicatur. Non ergo sequitur: Petrus est mortuus et hoc instans est; igitur in hoc instanti est mortuus. Sicud non sequitur cum adverbio loci; sicut omnis locus preteritus vel futurus est, licet non sit modo: sic omne preteritus vel futurum est in magno tempore secun- 25 dum se vel aliquam eius | partem, licet non modo B 153^a ulterius.

Quantum ad conclusiones deductas cum tribus evidentiis sequentibus, deum contestor et numina quod non capio adhuc evidencias ad cognoscendum illas, vel quomodo 30 poterit probari deum posse talia. Et, ut sepe dixi, quatuor modi arguendi, quibus nostri temptant hoc probare, hoc non movent efficaciter. Quidam enim arguunt quod deus potest talia, quia est omnipotens et potestate infinite; quidem per locum *a simili*, quia 35 fecit magis mirabilia; quidam per locum ab auctore; et quidam, dum deficiunt argumenta, assumunt predi- cando quod pium est credere deo quod sit tam omni- potens quam potest sustineri sine repugnancia ipsum esse;

2. finūcda B. 8. i met⁹ B. 9, 10. Platonis quia induitur cappa que alias est cappa Platonis quia, etc. B. 20. apptō B. 29. nūma B. 30. quo B. 37. quidem B.

sic, induendo habitum responsalis, utuntur suis fictis invencionibus. Ista ergo humanitas, que est natura humana et non divina natura, est assumpta, et illa est deus, et incipit esse, sed non deus: ut patet nutritis 5 in recta logica, ut allibi declaravi diffuse.

Ulterius dubitatur si omne quod erit simul est cum quolibet quod est, tam quo ad locum quam quo ad tempus. Et videtur quod non, quia tunc omnium terminorum forent ultima simul; et per consequens nulla 10 foret distanca, eo quod nichil esset solum, cum omnes viri et omnes mulieres simul habitarent, et comedarent, et dormirent, et quomodocunque aliter se haberent.

Similiter, tunc omne instans futurum est, quando quodlibet reliquum erit; et ita, ut videtur, omne futurum 15 semper erit, quia tunc dederimus tempus eternum, et tunc erit semper; ergo, omne futurum erit semper. Et per idem inmediate post hoc instans, quia tunc. Et illud tunc est inmediate post hoc; cum tamen deus erit semper, quia in hoc instanti quod est presens, non erit, cum 20 per idem omne quod est inmediate post hoc est, et nec incipit nec desinit semper esse. Nec videtur color igitur michi negando consequenciam istam: *in B instanti hoc non erit et idem instans est vel erit aliquando: ergo aliquando hoc non erit.*

25 Similiter, iuxta illud sequitur quod in magno tempore eterno Sortes est et non est, eo quod per idem quo Sor in illo erit (quia in aliqua parte eius), in illo eciam non erit (quia in aliqua eius parte). Confirmatur tripliciter; primo per hoc quod in illo tempore scietur 30 non esse, et nunquam scietur non esse, nisi quando non erit. Igitur in illo tempore non erit. 2º per hoc quod, quandomcunque illa proposicio sic primarie significans est falsa: *hoc est*, tunc hoc non est; sed in illo tempore erit falsa: igitur in illo tempore non est. 3º

35 per hoc quod hec est falsa *per illud tempus, hoc est*, If a thing takes place in a certain part of a given time and space, et sibi contradicit hoc; *in illo tempore, hoc non est*, contradictriae time and space, it takes place then and there. igitur illa non est vera. Non enim contradicit sibi ista *per illud tempus hoc non est*, quia tunc contradictorie essent simul false. Propter talia communiter conceditur 40 quando *illo tempore vel loco hoc est*, et *in illo eodem tempore hoc non est*, quia in aliqua eius parte.

thus shifting the burden of proof.

Whether all things are together, both in place and time.

Arguments contra.

1. If so, the extremities of all things would touch; distance would exist no longer, and all would be in confusion.

2. All future things would exist eternally, and immediately, after the present instant.

And God, being in the future, would not be in the present.

3. A man would exist and not exist in the same eternal time; in a certain part he would, in a certain part he would not.

Proofs.

On the other hand, if a thing is non-existent at any time, it is always non-existent; and yet it is existent at a certain time.

What is non-existent at any time is so in eternal time, i. e., always; and what is existent, vice versa. We could also say that the world is not everywhere, because it is not in every part of space; so it is everywhere

and nowhere; and so too of everything divisible into parts.

It would follow that a man could exist after dissolution; that all things future are simultaneous; that as we shall exist when we are no more, we were before our conception; that everything will come to an end after it is ended &c.; which destroys the very notion of priority in time.

Sed contra illud videtur primo, quod si aliquid aliquando non est tunc ipsum semper non est, et per consequens nunquam est; et tamen aliquando est. Videtur quod ista singularia contradicunt. *In illo tempore hoc non est et in illo tempore hoc est.* Mirandum enim esset 5 quod in omni tempore quo hoc est, hoc non est, et tamen in omni tempore quo hoc est, hoc est (demonstrato instanti vel alio quocunque subito). Omne igitur quod aliquando non est, in tempore eterno non est, et illud est semper: | ergo, omne quod aliquando non est B153^b semper non est. Et correspondenter dicendum esset quod mundus in omni loco non est, quia in qualibet parte maximi loci. Et sic ubique est et ubique non est iste mundus. Ex quo videtur quod significatum primarium huius propositionis: Iste mundus etc. non 15 ubique esset, quia cum illa sit universalis negativa: *In illo loco mundus non est*, videtur quod equipollat isti: *In nullo loco ille mundus est*: ex quo sequitur intentum. Et per idem sequitur quod omne divisibile in omni loco et per omnem locum non est; cum Sor in loco 20 sibi adequate non est, sic per totum istum locum non est, iuxta opinionem istam. Et sic in omni loco abest. Omne tamen indivisible non ubique non est, quia est dare situm indivisibilem in quo sic esset quod nulla pars eius foret in quo non esset. 25

Similiter, pari evidencia vel maiori, *post hoc non eris et ante hoc non fuisti*, quia tunc non eris, et 'tunc' erit post hoc. Quo dato, sequitur quod post corrupcionem tui eris; quia tunc (demonstrando tempus eternum), et tunc post corrupcionem tui: igitur. Sic enim conceditur 30 quod omnia que erunt, simul erunt, quia in tempore eterno; quamvis in nullo eius instanti. Dato ergo quod post corrupcionem tui eris, et ante generacionem tui fuisti, sequitur per idem quod infinitum diu post corrupcionem tuam erit corrupcio tua. Et breviter, omne 35 temporale post desicionem sui erit, et quodlibet instans post seipsum et ante seipsum est, et quidlibet quod incipiet esse, ante quidlibet et post quidlibet erit; et sic tollitur omnis prioritas vel posterioritas temporis, cum quilibet quod est semper erit, sicut omne quod est 40

15. etc. *deest* B. 26. *h^e p^g* B. 36. *defηcoʒ* B.

27. I think that 'tunc' is here taken as a substantive.

ubique est. Et per idem corruptibile ante omne instans non fuit; et per consequens post omne instans non est; que contrariuntur prioribus.

Quantum ad illud dubium constat quod difficultas stat in significacionibus terminorum. Videtur ergo michi probable quod nulla sunt simul tempore, si non sunt simul in eodem instanti temporis, licet omnia sint simul secundum esse intelligible pro instanti eternitatis. Aliqua autem esse simul in loco possunt intelligi 3^r. Primo, quando sunt per eundem locum, sicud deus et creatura, forma et suum subiectum. 2^o modo, quando ultima locatorum inmediate constituantur; ut corpora, vel quaecunque alia se tangencia. Et 3^o modo, quando idem locus, quantumcunque amplius, continet utrumque; et 15 in quolibet istorum trium sunt quotlibet gradus. Et sic omnia sunt localiter simul in mundo, et non temporaliter simul secundum exigenciam in genere; quia idem indivisible temporis continet quotlibet temporalia secundum se tota; non sic autem de indivisibili loco. Ideo noviter 20 restringitur simultas temporis plus quam loci. Quod si locus non contentetur de casibus huiusmodi, dicat quod omnia simul sunt temporaliter sed non instanter, vel in quoconque tempore; sed in maximo tempore sempiterno non contendo. Sicut enim omnes partes mundi 25 collective sunt simul localiter, sicut exercitus, quamvis per se distarent ab invicem, sic omnia instance et partes temporis possunt simul dici in magna tempore eterno. Stat enim duos comites ire simul, licet non sint inmediati; nec differt talis simultas a simultate qua 30 locata sunt in quantumcunque magno loco, nisi secundum magis et minus.

B 154^a Tenendo ergo istam logicam, potest dici quod tota prima deduccio non procedit propter equivocationem. Extendendo ergo hoc adverbium, *simul*, ad omnem essentiam in loco et tempore, potest dici quod prima deduccio non procedit propter equivocationem in simultate, cum illa tangunt se que sunt posita secundum se vel aliquas earum partes sine aliquo situatiter intercepto, ut sunt res inmediate habentes partes. Unde stat quantumlibet 40 distanca habere aliqua eorum simul, cum cuiuslibet subiecti accidens sit per totum mundum. Nec sunt

This is a question of which the difficulty consists in the sense given to words.

I think that simultaneity must

imply the same instant of time.

But beings may be in the same place,

either (1) coexistent throughout the whole, or

(2) touching each other in a given part of space, or

(3) merely contained in any way in space.

All things are together in space, but not in time; many things

can be simultaneous, i. e. at the same instant,

but no two can coexist in the same point.

Or we may say that all is simultaneous, but not at the same instant, only in eternal time.

Answers to arguments.

1. This is solved by noting the difference of sense of words.

If together be extended to all space and time, extremities of things will not necessarily touch.

19. nou^o B. 21. quent^r decais B. 26. dist^{ent} B. 32—33. Tenendo—equivocationem sic (!) B.

Together
is used now
in a wider
and now in a
stricter sense.

2. Everything
future must
exist in eternal
time; but
there is a
quibble in
the argument.
Always may
mean "eternal
duration", or
"throughout
eternal
duration", or
"in eternal
duration".
What is future
is always is
true in the last
sense only.

Past, present,
and future are
not contrary
but relative, as
magnitude and
smallness;
it is only
impossible for
the same time,
relatively to
the same
instant, to be
completely
present, past
and future.
Always and
now may be
taken either as
substantives or
as adjectives,
usually
without change
of sense.

3. It does not
follow, because
a man is
non-existent in
a certain part
of a time,
that he is
non-existent
in that time;

conclusiones posterius reducte et inconvenienter, cum
sint quilibet gradus in simultate; ut aliqui sunt simul
in provinciis, simul in patria, aliqui in villa et aliqui
in domo, et aliqui striccius.

Ad 2^m conceditur quod omne futurum est quando⁵
quidlibet est, quia eciam magno tempore eterno, sed
non sequitur quod *hoc tunc est*, et *tunc est semper* vel
immediate post hoc; ergo, semper est, propter equivo-
cacionem in *li* "semper". Nam ipsum potest teneri in
habitudine nominativi casus, vel ablativi casus, vel ac-¹⁰
cusativi casus, ut sic: *hoc est semper unum sempiternum*
quando vel per omne quando vel in omni quando. Tenendo
ergo minorem argumenti facti ad secundum sensum,
tenet consequencia; et alter equivocando non valeret.
Ulterius facilius est videre quomodo deus, mundus, et¹⁵
similia, semper erunt; quia in omni tempore vel in-
stanti; et per consequens omne tempus vel instans erit;
et sic hoc instans (quod est presens) erit quod post
hoc instans quodlibet ipso presens; primum autem
instans mundi est post instans eternitatis, quia natura-²⁰
liter posterius. Nec sunt iste differencie temporis con-
trarie, presens, preteritum, et futurum; sicud magnum
et parvum non sunt differencie contrarietas quantitatis.
Sed bene repugnat idem tempus respectu eiusdem in-
stantis temporis esse secundum totum presens, preteritum,²⁵
et futurum. Idem tamen tempus quod iam est presens,
prius fuit futurum, et postea erit preteritum. Notandum
tamen quod hoc adverbium, *semper*, sicud hoc adverbium
nunc, potest nunc sumi adverbialiter nunc nominaliter,
et ut plurimum non est differencia quo ad sensum.³⁰
Unde semper potest nunc sumi pro quocunque tempore
perpetuo, et nunc pro maximo tempore similiter, et
3^o pro quacunque completa periodo. Ex quo patet quod
stat Petrum et quocunque perpetuum quod incipit
post primum instans temporis, semper esse; et tamen³⁵
ali quando non esse, accipiendo primo modo et 3^o
modo.

Ad 3^m dicitur quod non sequitur: *Sor in aliqua parte*
illius temporis non est, igitur *in illo non est*; eo quod
consequens convertitur cum ista: *Sor non erit in isto*.⁴⁰
Nec sequitur argumentum *a simili*; ut si aliqua pars

illius videtur a te, et tamen non oportet si aliqua pars if you do not
 illius non videtur a te, quod hoc non videtur a te. see part of a
 Ad primam confirmationem negatur maior, quia ne- thing, it does
 gacio, si est, est eterna. Per idem negatur assumptum not follow that
 5 2^e confirmationis. Et ad 3^{am} dicitur quod universalis you do not see
 affirmative asignate confirmationem contradicit hoc: the thing.
 per aliquam partem istius temporis successivam hoc
 non est, et neutra assignata ibidem.

Hoc tamen non potest teneri, nisi a concedentibus To maintain
 10 continuum componi ex non quantis; quia motus ter- this, however,
 minatus ad dandum instans exclusive non durabit per we must
 tempus terminatum ad illud instans inclusive, nec per grant that the
 aliquam partem illius temporis non est, nisi ultimum Continuous
 instans ponitur pars illius temporis. Et conformiter consists of
 15 dicitur, capiendo divisionem, mortem, vel unum tale non-continuous
 cuius non est dare mensuram in tempore, 2^m negantes elements.
 compositionem continui ex non quantis. Nam tale semper If we do not,
 non erit, sicut semper scietur esse falsum quod hoc instantaneous
 est; et tamen aliquando hoc erit, quamvis nunquam events, not
 B 154^b erit ita quod hoc est, ut | communiter dicitur. Illi enim forming part of
 assencient semper tali proposicioni, *Semper scietur hoc time,*
non esse; et tunc oportet eos concedere quod, dato illo will always be
 tempore, in illo scietur hoc non esse, et in illo non non-existent
 scietur hoc non esse, et per hoc tempus a principio and yet will
 25 usque ad finem, et in illo non scietur hoc non esse. exist at a
 certain time, as in the case of cognition,

Et per hoc tempus a principio usque ad finem iam and division.

divisio non erit vel complecio pertransisionis, vel unum

tale cuius non est dare mensuram adequatam; et in

illo tempore, et in infinitis partibus eiusdem, hoc est.

30 Non enim contradicunt ista, nec talia in similibus ter-

minis huius vie assignata; per *hoc* tempus, *hoc* non

dividetur. Notum enim est quod pari evidencia quo

mundus durabit per tempus sibi adequatum, eadem

evidencia hoc semper non dividetur; quia per omne

35 tempus et per omne instans, et aliquando dividetur, sed

nec per tempus nec per instans. Ideo oportet concedere

quod in aliquo tempore hoc dividetur in quo non

dividetur; et per consequens omnia superius reducta

sunt sequencia ex illo. Vel mutando proposiciones in

40 contradictorias qualitates est undique difficultas dare

There is in
every case a
difficulty to find
the

contradictories of such propositions, if we do not admit that the instantaneous is a part of time; for though God must always know when a given line is not divided, He can never know it, supposing that the division takes place. I grant that if division takes place, it is either temporal or instantaneous, and an instant is a part of time. So it does not follow that to be in a certain part of time implies to be in that time; nor that to be non-existent in a part of time implies to be non-existent in time. There cannot be a change from one contradictory to another. Change implies infinite opposition, and we must expound it thus: from that which is not A, B, . . . &c. at a given time there is a change to that which is A, B, &c. But we cannot infer that a thing is not A, B, &c., because it is not so at a certain time. contradictoria. Ut sic dicendo: *semper scietur istam lineam non dividi*, et *semper non scietur istam lineam non dividi*. Certum enim videtur, secundum communem opinionem, quod quandounque deus erit, sciet illam, lineam non dividi in casu communi, quia in omni tempore et in omni instanti. Et notum est quod oportet particularem negativam quantumcunque aliquam horum trium in aliquo tempore, vel in aliquo instanti, vel per aliquod tempus vel instans, non scietur istam lineam non dividi: relinquitur quod in tempore non scietur istam lineam non dividi. Constat quod non est signare tempus, quin in illo scietur istam lineam non dividi. Relinquentes igitur istam difficultatem contrarie opinantibus, concedo quod si divisio vel aliquod tale est, tunc est per tempus vel per instans; et concedo quod instans est pars temporis; et repugnat ista, *semper*, et *aliquando non*; *per omne quando hoc est*, et *per aliquod quando hoc non est*, accipiendo hoc adverbium *semper*, ut generaliter dicunt, pro tempore vel instant. Et patet quomodo non sequitur si *in aliqua parte temporis vel loci Petrus est*, tunc *in illa est*. Ergo per idem, si *in aliqua parte talis mensure non est*, tunc *in illa mensura non est*. Nec deus unquam scit aliquid non esse quod nunquam fuit, vel est; quia cum deus non potest incipere vel desinere quidquam scire, sed omne quod scit eternaliter scit, sequeretur quod deus simul sciret illud esse et illud non esse. Ideo, ut alias sepius dixi, nulla negacio potest incipere vel desinere esse; nec est mutacio de contradictorio in contradictorium, cum non sit contradiccio ex parte rei. Sed mutacio est ab infinite opposito (ut sic loquar) ad infinite oppositum; ut a non albo, a non vivo, et sic de aliis negacionibus ad album, vivum, et sic de aliis terminis positivis. Tunc autem tenetur negacio infinite, et debet proposicio inferri expositorie; ut sic: *ab aliquo quod est non album vel non vivum etc. pro danda mensura est mutatio ad album vel vivum, etc.* Sed non sequitur: *hoc non est album vel non vivum pro illo tempore*, et *illud tempus est: igitur, hoc non est album vel non vivum*. Sed potest concedi quod idem ut album et non est album, licet

i. contradicta B. ii. f. refre B. 23. aliud quite plain B. 32. mutationibus pro sic de aliis negacionibus B. 33. terminis twice B.

non simul et semel, sed divisim. Et talia opposita vo-
B 155^a cantur contradictoria | incomplexa.

Tenendo ergo negacionem utrolibet pure negative, et non infinite, negandum foret aliquid una vice album 5 esse non album, licet sit non album tunc. Et patet quod non est concedendum quod divisio illius linee aut equalitas Sortis ad Platonem semper secundum partem; quia in omni tempore et in omni instanti temporis, sed non in omni tempore nec per omne 10 tempus erit secundum se totum; quia in magno tempore est 2^m se totum. Nec sequitur: *in aliqua parte illius temporis hoc non erit*; igitur, *in omni tempore hoc non erit*. Nec sequitur: *in aliqua parte illius temporis hoc non erit*; igitur, *in omni tempore hoc non erit*. Nec 15 sequitur quod in quocunque tempore aliquid desinit esse, quia in illo tempore ipsum non erit, sicud non sequitur, si A in aliquo loco deest, quod in illo loco non est. Non ergo sequitur: *Aliquando non erit A*; igitur *in maximo tempore non erit A*, cum idem sit tunc non 20 erit A et ipsum A non erit tunc. Nec est color in illa deduccione: *tunc eris*, et *'tunc' erit post corrupcionem tui*; ergo *post corrupcionem tui eris*, demonstrando tempus eternum. Sicut in *a simili* non sequitur: *super illud spacium ambulabis*, et *illud spacium est de ultra 25 mare parisius*, igitur *ibi ambulabas*. Et sic de similibus demonstracionibus dicendum est.

Sed notandum quod, ad loquendum logice in illa materia de temporalibus, preexigitur noticia temporis. Quamvis homo in infinitum laborando non cognoscit 30 quid est tempus (loquendo proprio de quidditate temporis, ut dicit absoluta essencia que potest per se esse), tamen contingit cognoscere quod tempus sit quantitas successiva, mensurans motum: quam quantitatem alias declaravi esse duracionem mundi in *esse transmutabili*; 35 intelligendo per mundum maximam multitudinem creaturarum quecunque fuerint. Et sic tempus nostrum est mundum durare in *esse transmutabili*.

Et ex ipsis cum aliis veris sequitur quod tempus incepit cum mundo et manebit eternaliter cum mundo; 40 posterius tamen est naturaliter quam mundus vel motus

In this sense we cannot admit that anything which is at any time white can be simply not white; it is not white now.

And thus non-existence in a part of eternal time cannot be called non-existence in that eternal time.

And thus it does not follow that a man can exist after his dissolution because he exists in time, and time is endless.

Here we require to know something of time; not what it is in itself; that is impossible; but that it is a measure of successive motion, and the duration of the world in its mutable entity.

It follows that time began with the world, with which it will last eternally, and

16. quod B. 18. aly B. 23. assimili B. 25. prifuis B.
32. q^us B.

to which it is posterior in its nature.

It was necessary to the creation of the world, as space was, but not to its essential being.

Thus time is not necessarily dependent on the First Mobile, since that might cease to move.

An instant is an indivisible part of time, which consists of instants as its elements. The duration of the world, at first one instant, became greater by the addition of many more; every one requiring another to succeed to it.

Time and its instants are absolutely without bulk: the duration of our world is absolutely the same everywhere in the world, and without parts. If the world is animated, then its soul is immaterial and ubiquitous; but the duration of the world itself is not the same as that of any of its parts, of which it is itself the cause.

iugis. Licet enim preexigebatur tempus ad creacionem mundi, sicut locus ad incepcionem sue locacionis, neutrum tamen preexigebatur ad esse mundi, sed econtra. Et sic credo quod non est possibile mundum esse sine tempore, et per consequens quemcunque motum in- 5 differenter potest consequi illud tempus. Non enim potest creatura esse mundus, nisi fuerit duracio eius in esse transmutabili: quod est tempus.

Et patet quod non essencialiter sequitur motum primi mobilis; quia possibile est motum istum cessare, to manente eodem tempore. Unde prius naturaliter est motus dictus communiter quam est motus orbis celestis.

3º patet ex dictis quod instans diffinitive est indivisibilis pars temporis. Non enim est possibile continuum 15 esse, nisi componatur ex non quantis, et per consequens non restat nec quantum [quod] componeret tempus, nec instans. Unde duracio mundi causata primo ex indivisibili aquisitione variatur instans; ut mora mundi, dum unus est punctus, aquirit situm indivisibilem. Ex 20 quo patet quod non est de ratione instantis quod compleat tempus preteritum cum futuro, nec potest instans per se | esse instans sine successione novi in- B 155^b stantis.

4º patet quod necessario sunt tempus [et] instans 25 non divisibilia 2^m molem, et per consequens secundum latitudinem et profunditatem. Nam *istum mundum durare* est ad omnem huius mundi punctum, et non habet partes mole magnas, ut motus; ergo multiplicatur per totum mundum. Quod si mundus habeat animam, tunc 30 mundus est due nature, quarum altera est incorporea et multiplicata per totum mundum sensibilem, sicud dictum est de homine. Non enim est duracio mundi continua ex duracionibus suarum parcium; tum quia quelibet duracio mundi est tempus vel instans, et sic 35 alterius rationis quam duracio partis mundi, que est quando, causatum a tempore; tum eciam quia, corruptis (per impossibile) partibus mundi, manet continue idem mundus, et eadem est duracio. Ideo duracio mundi non aquirit motum istius partis nec dispositionem 40

1. iuge B. 17. non B; ib. *q̄v̄m*(?) B; quod *deest* B. 19. mo'a B.
25. fūt B; ib. et *deest* B. 37. qū cātū aī^o B. 38. manēt P.

alterius accidentis extensam, sicud requirit motus sensibilis esse. Ex isto patet quod idem tempus est, et idem instans aut instancia sunt ubique, sicud ubique est duracio mundi huius.

5 Unde alias dixi quod 5^{ter} ens dicitur esse ubique: primo modo, ex hoc ipsum est maximum mole, replens omnem situm, sicud mundus; ab omni tamen parciali situ deest aliqua pars mundi, cum ipsum non secundum totum sed secundum partes sit ubique. 2^o modo dicitur 10 accidens mundi multiplicatum esse ubique secundum informacionem et efficienciam, ut tempus et relaciones subiectate in mundo sunt ubique. 3^o modo dicuntur universalia esse ubique, ut universale corpus, universalis quantitas, que ubique habet singularia, infinitas tamen 15 partes subiectivas habent talia universalia, secundum quas non sunt ubique. Quarto modo veritas dicitur concomitanter esse ubique, ratione sue cause illimitantis ipsum ad situm parcialem, ut dictum est de negacionibus et aliis veritatibus. Sed quinto modo et validissimo 20 dicitur esse singularis essencia ubique, que nulli loco potest deesse 2^m aliquam eius partem possibilem: et tale dicitur replere mundum, quia est prima radix quare aliquid est ubique; et, si sit aliquid [quod] sic sit ubique, tunc ipsum est deus.

25 Sexto patet quod tripliciter aliqua dicuntur esse in tempore; primo modo ut corruptibilia, que iniciata sunt post tempus, et desinent in tempore. Talia enim includuntur in tempore, tam quo ad inicium quam quoad finem sue duracionis. Ideo proprie sunt in tempore, 30 sicut aliquid proprie est in loco quod replet locum undique circumdantem. Talia enim habent tempus extra suam duracionem et continue veterascunt cum tempore; ut patet de corporibus mixtis et aliis corporibus. 2^o modo dicitur pars temporis, ut instancia qua vel alienas 35 partes continue esse in tempore, non tamquam extrinsecus mensurata, ut motus et alia extra essenciam temporis; sed tamquam partes inexistentes principiantes

A being may be said to be everywhere 1. as the world, of which, however, each part is only somewhere.
2. As time and relations, of which the power and efficiency are in all space.
3. As the universals that have their individual subjects everywhere:
4. As Truth which everywhere accompanies its cause that produces it.
5. As God, whose essence fills the whole world without parts.

Things can be called temporal because they are corruptible, having both beginning and end in time; others (as instants) are temporal as being the very parts of which time consists;

6. p'a^o B. 9. 2^{oo} B. 17. illitat^e B. 23. quod deest. 25. Sex^o B.
34. ^{**} 9 B.

34. *qua*. The word may be *contra* just as well; but as some other words are doubtless wanting, no sense can be made with either word.

tempus. Unde non sufficit ad esse in tempore, quod temporaneum sit, dum tempus est, ut videlicet propter hoc sit in tempore, sic quidlibet esse in quolibet, quia quotlibet est dum quodlibet est. Oportet ergo invenire B 156^a aliam rationem essendi in tempore quam est esse cum 5

others, because they have accidental modes of being that are measured by time.
tempore. Et propter hoc negatur communiter eterna, que nec senescunt nec veterascunt, esse in tempore. Verumtamen 3^{io} dicuntur aliqua esse in tempore ex hoc quod habent modos accidentales essendi mensuratos tempore; ut corpora eterna habent motus secundum 10 quos sunt in tempore, et deus habet quotlibet relaciones sibi adiacentes secundum quas dicitur esse, fuisse et fore secundum prius et posterius, quamvis aliter quam res create.

How time is in itself a cause of corruption, and a cause of generation by accident.

Time, by removing corruptible beings from their origin, necessarily renders them weaker;

as in compounds that become old and fall away by the mere action of time.

But though time measures the non-existence of a thing before it is produced, it does not cause its production necessarily at the end of that period.

If it did, it would be its cause by itself.

Et sic patet quomodo intelligitur tempus esse per se 15 causa corrupcionis, et per accidens causa generacionis.

Quamvis enim nec tempus nec accidens aliquid possit agere, tamen potest facere multa bona, sicud et alie qualitates que non sunt de genere activorum. Dicitur ergo; tempus est per se causa corrupcionis rei corrup- 20 tibilis, quia, dum corruptibile est productum, inevitabile est quin tempus faciat ipsum antiquius et debilius ad durandum, abiciendo ab eo eius principium; ut in mixtis que dicuntur solo tempore veterascere, facit tempus adiacens, causando suas antiquas formas esse 25 debiliores ad servandum humidum in illis quo continuantur partes et disponuntur ad subiectandum formam; ideo incinerantur et veterascunt dispariter secundum modum sue radicalis conglutinacionis; et possunt dici continue inevitabiliter corrumpi. Sed tempus mensurando 30 non esse rei ante eius generacionem, non facit quod inevitabiliter ipsa est in fine; ut patet de contingencia rerum, que dependent ex libero beneplacito dei, cum possit esse quod talis res nec generatur nec generabitur; et sic inevitabiliter facere quod datum generabile sit, 35 est per accidens causare eius generacionem.

Unde, si inevitabile sit quod post finem talis temporis A effectus generabitur, concedendum esset ad sensum expositorum quod tempus est per se causa generacionis illius, sicud est de partibus temporis, etsi contingencia 40

4. quotlibet B; ib. q. libet B. 8. 3^o B. 25. antiquitas B. 28. ¹cineaul² B.
40. 9^a B.

aliqua sunt futura inevitabiliter determinate post lapsum temporis. Tempus enim, et omne successivum dicitur esse de se corruptibile; quia si aliquando est, tunc est in *corrumpi*, cum deus non potest servare omnes partes cuiuscunque successive simul pro eodem instanti. Sed diffinitive et differenter a permanente, successivum videtur definiri *quantum cuius non omnes partes possunt esse simul instanter permanentes*. Permanens autem proprio: "quodlibet ens per tempus durabile cui non est inevitabile habere partes in *generari et corrumpi*".

Et talium sunt multi gradus; ut successiva sunt proprius permanencia quam mixta, cum materia hominis sit incontinens fluxum. Si autem instans et indivisibilia vocantur equivoce permanencia, hoc est equivoce.

15 Dictis istis in communi in tempore, videndum est profundius, persecutando quid sit tempus realiter. Sunt 3 opiniones famose de illo, quarum prima, perturbans bonam doctrinam ex sua ignorancia, ponit quod omne tempus, sicut et omne accidens, sit substancia. Et sic

20 sunt filii huius erroris tripartiti; ut aliqui dicunt omne tempus esse deum, alii ponunt omne tempus esse mundum; et alii, omnem rem durabilem esse tempus. Hii autem, volentes antiquare opinionem suam, habent concedere quod semper fuerunt et semper erunt, quia 25 per tempus eternum. Et tamen non possunt durare, nisi per instans, cum sit omnis substancia, vel deus sit solum instans. Et sic, si aliquid incipiet vel desinet esse, inmediate post instans quod est presens incipiet vel desinet esse; et sic de preterito. Et perit omnis 30 certitudo de rei diuturnitate, cum nemo potest quicquam facere, nisi per tempus eternum fuerit in faciendo illud. Et sic perirent omnes policie, cum nemo potest secure iudicare de etate alterius, nec diuturnitate operis, nec de prioritate aut posterioritate temporali, de qui- 35 bus naturaliter innatum est politicis communicare.

Et quamvis tam confusa insit istis cognicionem de tempore aut cognicio, tamen pompant se scire in quo instanti sit dies iudicij vel quecumque coniuccio, opposicio, sive effectus futurus, quia in instanti proximo 40 futuro, componentes divisibiliter tempus. Ymmo, si

Time is corruptible in its very essence, being always in the act of mutation; the successive is distinguished from the permanent, in that its parts cannot coexist.

We may now inquire what time is in itself.

There are three principal views, the first erroneously

positing that time is identical with the substance either of God, or of the world,

or of anything permanent.

It would follow that all things are eternal since time is eternal, yet they cannot last longer than an instant, as time does. This doctrine would destroy all certitude as to the duration of things.

1. *futa^r* B. 4. *cor^ep^t* B. 7. *vi^r drⁱ* B. 10. *ineni^{le}* B. 18. *pt* B.

36. *tangnic^{om}* B.

and future are
all one to
them.

They
contradict
both
philosophical
and ordinary
language to
such an extent,
that it is wiser
not to confute
them, and to
set their
opinion aside
as evidently
wrong.

The second
opinion posits
that no
successive
being *is*, but
either *was* or
will be.
If so, then
neither
movement nor
time is even
possible:
what never *is*,
cannot *be*.

God cannot
know the
existence of
movement;

He can only
know that a
thing will be
moved;
if He knew the
existence of
movement,
movement
would exist.

If God's
knowledge of a
successive
thing is
continuous, the
the thing
known must be
so too;

diligenter examinentur patebit quod non refert illis dicere
quidquam fore, esse vel fuisse, cum utroque sequitur
quocunque tali vocatur pene idem tempus, de quo non
refert enuncciare hoc non fuisse vel fore; quod natum
est destruere omnem veritatem. Patet eciam quod omnia 5
que opinati sunt auctores vel vulgus de tempore forent
falsa. Unde, quando philosophus dicit cum plebeis quod
sepe volvebatur celum, causando dies, menses, et annos,
ista stulticia dicit quod nrum quam nisi semel, quia solum
uno die, qui sunt omnes dies, et cum mobile sit idem, 10
spacium idem, et tempus idem, omnis revolucio que
fuit erat revolucio tunc futura. Et examinetur ista posicio
in quacunque sciencia, et invenietur maior fatuitas solli-
citari circa eius probacionem quam ipsam dimittere
tanquam patenter erroneam. 15

Secunda fabula, interimens multas disputaciones, dicit
quod nullum tempus, motus, aut successivum, est, sed
fuit sic et erit. Contra quam viam alias diffusius ar-
gueram, probando quod ex hoc sequitur nullum succes-
sivum huiusmodi posse esse; quia, cum motus, si est, 20
denominabit mobilem moveri, et tempus rem temporaliter
durare, patet, si non est quod mobile movetur vel durat,
non est motus vel tempus. Et sic nec motus potest
esse vel fore; quia quod mobile successive movetur,
non potest esse vel fore. Nam quod mobile movebatur 25
est eternum, et per consequens non est motus.

Item, iuxta hanc viam, deus non potest scire motum
esse; quia si non potest scire quod non potest esse,
igitur non potest scire quod motus [est], vel motum
esse, quod idem est. Et per idem non potest scire 30
mobile moveri, sed motum iri. Si enim deus aliquando
sciret motum esse, aliquando illud scitum esset. Magna
igitur perversio foret dicere quod deus non potest
cognoscere illud quod philosophi vere ponunt sensibile
commune, ab omni sensu noscibile. Sciencia enim vel 35
est actus, vel habitus, vel relacio que non potest esse,
nisi fuerit in instanti.

Item, sciencia qua deus vel creatura sciret motum
esse, vel est continua | vel interrupta. Si continua, B 157^a
tunc iuxta hanc viam scitum manebit continue. Si 40
interrupta, per idem in quolibet instanti erit interrupta,

3. p^o pro pene B. 16. int'mes B. 29. est deest B. 31. ire
or tre B. 32. esce B. 40. situm B.

et sic ultra indivisibilem intercisa; quia sciencia nec est instantanea vel temporalis, sed semper nescitur nescientia in deo vel qualibet creatura respectu motus vel temporis. Ex istis videtur quod motus non erit continuus quo ad tempus, quia continue scietur a deo non esse; quia in omni multitudine instancium in qua est quocunque tempus. Aliter enim nullum esset instans temporis. Si enim instans est instans temporis, tunc est tempus in instanti; quia nec diu nec in instanti potest aliquid manere instans temporis. Et per idem, si est proporcio temporis ad eius medietates, vel aliter partes proporcionales, est dare instans proportionis huiusmodi, sicut instans continuacionis, iniciacionis, et finicionis temporis; et aliter superflueret distinctione temporis 2^m gramaticos et loygycos in presentes, preteritum, et futurum. Ymmo omne verbum esset presentis temporis; et sicud nullum tempus foret in instanti, sic nec in aliqua eius parte, et per consequens omne tempus per se totum non foret, et tempus eternum non potuit fore vel fuisse, quia nec iam nec post hoc.

Est autem modus loquendi philosophorum et theologorum loqui non sic arcte, sed extensive de tempore, ut patet 4^o Physicorum, commento 88. Et ideo, 4^o et 5^o metaphysice, de priori, 8^o metaphysice et commento 5^o, dicitur quod cena differt a prandio 2^m partes, et conformis est applicacio, libro 9^o et 14^o et libro 12^o. Ymmo omnes scientie sic locuntur. Unde propter tales evidencias fui primo motus ad ampliandum tempus, quia non vidi quomodo philosophus vel theologus posset negare huiusmodi successiva. Nec capit ingenium meum quod sint continua, nisi componantur ex partibus existentibus. Sicud ergo medium instans illius hore copulat medietates omnes ad invicem, sic illa copulantur, causantes tempus, continuacionem, prioritatem, corruptionem, scienciam, ut philosophi vere dicunt. Nec aliter aliquod instans vel aliquod aliud posset esse reliquo superius aut posterius quo ad tempus, et sic instans iniciat, copulat, et unit partes temporis que sunt in

if intermittent,
it must be so
at every
instant, and
will thus go
beyond
indivisibility
itself.

A given time
must be the
double of its
half, and if so,
there is an
instant at
which this
proportion is
verified;
otherwise why
make a
distinction
between past,
present, and
future?
All would be
present.

Yet there is a
mode of
expression in
which the
word *present*
is really taken
in a wider
sense by
philosophers
and
theologians,
and this fact
gave me
the first idea of
extending the
sense of the
word.

As the medial
instant unites
the two halves
of an hour, so
all instants are
united with
each other,
some being
intrinsic, others
extrinsic to a
given time.

7. enim est B. 1b. $\widehat{\imath} \widehat{\imath} \psi$ B. 22. arte B. 36. $\widehat{\text{sci}}^m$ B; *tb.*
alt' B. 38. $\mathfrak{f},^n$ B.

15. *Loygycos*. I have purposely preserved, here and elsewhere, such mistakes in spelling as leave the sense clear, while showing the copyist's negligence.

Otherwise I do
not see how
the sacramental
words,
or oaths, or
promises, &c.
could be true.

If nothing is
except at the
present instant,
all the rest of
time must then
be wanting;

Thus in the
middle of an
hour, both
halves are
wanting; and
so through all
time; so there
is no time at
all, if anything
exists, it exists
for ever, and
God is not
eternal.

But it is false
that nothing
is but in this
instant.

There are many
other similar
arguments that
are
unanswerable.
For instance,
as regards the
immutability
of God's
knowledge,

and the free
determination
of His will.

suis mensuris. Aliquod vero instans sic respicit partes temporis tanquam eis essencialiter intrinsecum, quia pars eorum, et aliquod tanquam eius extrinsecum, ut instans proximum priori. Nec aliter video quomodo verba sacramentalia, verba iurandi, et propositiones 5 policite quibus fiunt contractus forent vere. Ymmo nullus sonus vel tremor, nec actus discursionis anime possit esse.

Item, supposito quod nichil est, nisi in hoc instanti, patet quod quelibet pars temporis deest in instanti.¹⁰ Suppono autem quod *deesse* sit ampliativum, vel ponendo subiectum abesse a loco vel officio cui poterit applicari (ut localiter distanca desunt nobis, licet habeamus eorum possessionem), vel 2^o ponendo rem que poterit esse [et] abesse ab instanti vel tempore pro quo est¹⁵ verum ipsum deesse. Sic enim perfeccio futura et vana gloria plene preterita desunt nobis. Ex quo patet quod utraque medietas illius hore pro medio instanti deest secundum se totam, et per idem omne tempus, et per consequens nullum tempus est in illo instanti, cum 20 totum tunc deest. Et per consequens, cum nichil est, ut false asseritur, nisi illud quod in illo instanti est, nullum tempus esset; vel aliter, si aliquid est, illud semper est. Et ideo non est | possibile 2^m istam viam B^{157b}

quod deus semper est; quia si sic, quodlibet infinitum diu est, cum diuclus quam semper nichil potest esse.

Et sic de multis replicacionibus quas alias replicavi, sic loquendo de sciencia dei et eius determinacione et possibilitate rerum, restant quotlibet insolubilia vie contrarie que sunt fallacia isti vie. Ut, si deus scit aliquid, idem est, et necessario semper scit omnia que erunt vel fuerunt. Ideo necessaria omnia que erunt vel fuerunt sunt pro tempore suo, licet non modo. De immutabilitate vero divine sciencie sunt dicta multa sanctorum et 35 raciones, cum aliter foret minoris permanencie quam sciencia creature. Ipsa enim non continue variatur proportionaliter ut cognitum variatur.

Item, si deus se determinat facturum aliquid, tam certe cognoscit quod determinat se esse facturum illud, 40 sicud ipse scit, quod ego determinavi me esse facturum

aliquid, sed propter determinacionem illud 2^m est necessarium, scilicet, quod ergo determinavi me esse factum quocunque: ergo, et primum. Ideo, sicud omne verum est necessarium absolute vel ex suppositione, 5 sic omne necessarium absolute est contingens ad utrumlibet; quia quo ad causacione dei liberrimam, eque possibile est non esse sicud esse; que sentencia non potest sustineri nisi ponendo deum esse ante instans temporis, et posse eque non causare datum effectum 10 sicud umquam potuit.

Et per hoc plane patet solucio ad antiquum sophisma de Cristo vidente quemquam in verbo, vel veraciter asserente quod dies iudicii est tunc. Sicud est necessarium quod Cristus sic vidit et dixit, ita est tam necessarium 15 quod sic est. Et similiter sicut potest esse quod non sic est, sic eque potest esse quod non sic vidit aut dixit. Et solum in hoc stat vera solucio, quando omnia subterfugia sunt rimata. Nec aliter video quomodo potest logice sustineri vel defendi sensus scripture, di- 20 centis nos omnes esse filios Adam, Cristum esse filium David et filium Abrahe, cum eius seminibus; quia cum quilibet nostrum ignorat genealogiam particulariter exemplative generacionem huiusmodi, oportet ad ultimum concedere quod dicti patriarche in magno tempore 25 mediate generarunt illos filios; et per consequens, si aliquis sit filius talis patris, tunc habet talem patrem et aliis habet ipsum filium. Ex quo sequitur quod relativia sunt convertibilia in tempore.

Unde alias posui adversantibus illum casum quod 30 Petrus, Paulus, et Linus sint omnes homines, et Petro predestinato existente patre naturali utriusque sequentium prescitorum, sit Linus pater spiritualis Petri et Pauli, et sit Paulus pater naturalis Lini sine progressu ulteriori filiationis. Quo posito, videtur quod cuiuslibet 35 hominis filius est persona dampnata, ut patet expositorie isti vie. Et tamen alicuius hominis non omnis filius est persona dampnanda; quia aliquis filius hominis non est persona dampnanda, quia Petrus, qui est filius Ade, Abrahe, et alicuius patriarcharum qui non sunt modo. 40 Nullus autem catholicus negabit quin, sicud Cristus fuit filius David et Abrahe ad bonum sensum, sic omnes

Answer to
an ancient
sophism
relative to
Christ seeing
any one in the
Word (when
the person did
not yet exist):
as Christ saw,
so it is
necessarily.
It is only thus
that Scripture
can be
explained,
saying that we
are sons of
Adam &c.
We must extend
present time
from ourselves
to the
patriarchs and
to Adam; thus
only can we
have such a one
for father.

A case put:
Peter is
predestinate,
Paul and Linus
are foreknown
Peter is natural
father of Paul
and Linus,
Linus spiritual
father of Peter
and Paul,
and Paul
natural father
of Linus.
Supposing
them to be all
mankind, the
son of every
man is damned,
yet a son of
man (Peter) is
not damned.

We are sons of posteri Judei, ut dicit beata virgo, eciam nos sequentes | B 158^a
 Abraham, and ipsos in moribus, ut dicit Apostolus, sumus filii Abrahe
 by nature, of imitatorii, et omnes nos filii Ade naturales. Nec occurrit
 Adam. How is this, michi quomodo restringentes tempus vere expriment
 if we say that nothing sensum horum, cum secundum eos nec Adam generavit 5
 is, but what is aliquem nostrum, nec aliquis nostrum descendit ab
 non existing? Adam; quia nec Adam pro primo instanti sui, nec ante,
 They would nec post, descendit de hominibus qui descendederunt ab
 also have to Adam. Et per idem argumentum nec genitus de homine
 grant that a mortuo ante infusionem anime habet patrem; sed foret 10
 posthumous child has no nude filius femine et non viri. Et sic de occisione
 father at all; hominis, de causacione sani distantis, de existencia ora-
 and there are cionis, de successione generacionis et subiecti aggregati
 many other ex diversitate sibi succedentibus, que omnia essent in-
 difficulties. et wulgari. 15

All that was or will be is, each thing in its own time; this agrees with Scripture, philosophy, and vulgar speech, and solves all difficulties.

A third opinion holds that time is a quantity which: though successive, can be indefinitely lengthened by Almighty

Power. But I have proved that no individual quantity can be lessened or increased.

Intellecto itaque isto sensu benedicto, quod omnia [que] fuerunt vel erunt, sunt; singulum tamen tempore suo, ut locuntur tam philosophi quam scriptura, est facile respondere ad instancias. Nam auctores et wulus 20 naturaliter nunc laxant et nunc restringent pertinenter suo sensui; et sic distribucio ac negacio acomoda tollunt controversiarum apparencias.

3^a via dicit quod tempus et quantitas [sunt] continua, quasi multiplicata linea successiva, sed tantum profunda- 25 tur in existencia accidencium quod ponit quodlibet eorum posse per se existere; et sic quamlibet partem temporis esse instans, posse quantumlibet diu prolongari ex dei omnipotencia, et quantumlibet indifferenter poni pro quolibet; contra quod alias diffuse argueram, probando 30 quod nullum ultimum singulare quantitatis potest maiorari vel minorari; quia, cum ad tales motum requiritur aquisicio vel desperdicio quantitatis tamquam sensibiliter motum huiusmodi; sed una successiva idem subiecto, sed non idem numero quo ad tempus et partes 35 intrinsecas. Tempus ergo est diuturnum ad quod alia diurna per accidens debent reduci tamquam primam mensuram illius generis; quia si sibi accidentaliter in- esset duracio, per idem et illi duracioni; et sic infinite.

1. u'ga B. 12. tâconé taccionē; B. 12, 13. exnâ aronâ B. 18. que deest B. 22. after ac an illegible word; looks like ac crossed off B.

24. sunt deest B. 26. exnâca B.

1. Beata Virgo. See Luke I, 55.

Item, si instans temporis posset quantumlibet diu servari, superflueret deum producere aliquod tempus, et per consequens illud instans foret divisibile successive et habens infinita instancia temporis generata continue; 5 et sic ultimum singulare instantis non duraret, sed idem instans numero 2^m subiectum et non secundum formam, ut loquitur Aristoteles. Aliter enim tolleretur modus loquendi de prioritate instantis vel temporis, et per consequens successio. Si enim instans eternitatis non 10 potest durare successive sine tempore distincto, multo magis instans temporis non potest sic durare. Aliter enim possent successive hore, dies, menses, et anni; et totum foret instans indivisible secundum successionem. Et sic quilibet sciret prenoscicare quando est dies iudicii, 15 vel quodlibet futurum, quia in hoc instanti; et sic de aliis intricacionibus iacentibus super eos qui ponunt tempus quodlibet esse celum.

Item, si per tempus posset sic durare, tunc quotlibet tempora possent succedere simul, et per consequens 20 minus tempus parificari cuilibet maiori in diurnitate.

Et sic oportet ponere tempus habere aliam quidditatem B 158^b preter duracionem, | quia omnia tempore eque diu durancia forent per illa, et per consequens deus prerogando quodcumque tempus cum reliquo, parificaret ipsa ad 25 invicem; et sic instans, vel hora, et huiusmodi, per accidens forent huiusmodi. Vel aliter deus non posset sic servare quodcumque tempus cum reliquo. Nam tunc deus posset facere talia tempora simul incomunicanter currencia informare subiecta; et per consequens cuiuslibet essencie duracio ponendum esse tempus. Et cum nullum tempus per accidens sit tempus, quelibet temporis duracio foret tempus. Et per idem duo talia equalia possent simul componere 3^m; quod foret omnimode superfluum intensive vel extensive; quia sit res per infinitum magnum tempus durare et esse quantumlibet brevis periodi; ut, posito quod infinite hore, simul currentes quo ad fines et inicia, constituant unum tempus quod foret infinitum magnum tempus preter magnitudinem molis. Talia multa possent excogitari contra vias 40 huiusmodi, circa que, ut dicit Aristoteles, est magis fatuum sollicitari quam est fatuitas impugnandi.

If an instant could last a long while, why should God have made time?

That instant, besides, would be divisible and contain other instants. What would become of priority and succession?

All would become one indivisible instant, and men would know perfectly when every event would take place.

If time could be lengthened out, a short time might be made equal to a long one, and time would require another essence besides duration; otherwise nothing could differentiate two different times.

Every temporal duration would be time;

and infinite parts of time would make up a time that is infinitely great. It is foolish to trouble oneself about such a theory.

5. id = idem? B. 12. succ^{uo} B. 18. p B. 23. progando B.

29. in fore B. 30. pōm B.

The denial of
all accidents is
very unphiloso-
phical;

subject and
accident are
contra-
distinguished.

Time is the
duration of the
world in
successive
change.

It is now here
in particular;
and though it
may be said
to be in the
first heaven,
on account of
its movement
by which all is
measured, yet
if it should
cease, and only
a potter's wheel
were to move,
time would be
the same.

Another time
would mean
another world.

The first of all
instants is that
of eternity;

the second is
the first instant
of the world's
existence; the
others follow
in order, as
they are nearer
to or farther
off this first
instant.

Et correspondenter dicitur ad opiniones negantes omnia accidentia esse; in hac evidencia: si sunt, tunc sunt res que possunt per se existere; que opinio nec est philosophica nec theologica sicud nec eius evidencia. Ideo accidentis ex opposito metaphysice distingwitur a suo subiecto. Alias tamen, cum declarative proposui quod mundus sit universitas creata, que est unum compositum ex omnibus subiectis preteritis et futuris, moralibus et materialibus, cui insunt omnia accidentia; et *illum mundum durare in transizione successiva* est tempus, quod individuatur a mundo et genere motus, et mensurat omnem motum particularem. Et sic prius secundum genus sunt prius et posterius in analogo motu quod in tempore [est], licet prius fuit in tempore directe in tempore quam in aliqua specie motus. Et sic, licet nullius partis mundi duracio sit tempus, tamen principali secundum Aristotelem est tempus in primo mobili vel corpore celesti quod est quasi forma mundi. Verumtamen, si totus orbis celestis annichilaretur, vel omnino quiesceret, mota sola rota figuli, foret continue idem tempus. Et sic, cum pars mundi individuatur a tempore, patet quod absolute impossible foret illum mundum, subiectum temporis, produci, nisi producatur cum tempore eodem modo.

Ex quo videri potest ulterius quod sicut nullum tempus vel instans potuit fuisse prius vel posterius quam fuit de facto, sic non potest esse novum tempus, nisi fuerit novus mundus. Nam instans eternitatis est omnino immobile quo ad gradum prioritatis, cum nullum instans potest esse priusquam instans eternitatis est de facto, eo quod habet gradum prioritatis summum possibile. Et inmediate post ipsum evenit primum instans temporis, a quo omnis prioritas vel posterioritas temporis mensuratur. Alia vero instancia sunt posteriora, ut ab eo magis distancia et esse priora quo primo instanti mundi singulariter propinquiora. Et cum nullum instans temporis potest sibi esse | propinquius, videtur quod nullum instans temporis, nec ipsum nec aliud, poterit esse temporaliter ipso prius, et per consequens mundus, tempus, et instans, cum eius simili-

5. ex'a'o B. 9. mālibg z mālibg B. 13. ft' B. 14. est *deest* B;
ib. dr̄e B. 21. ī diniaꝝ B. 24. codeoo B. 28. nowus B.

bus erant ita primo temporaliter sicut de dei potencia potuerunt. Ex quibus videtur quod mundus non potuit fuisse eternus *a parte ante*, cum tunc quilibet dies noster esset infinitum cicius quam tunc foret.

5 Sed dimissa ista subtilitate logica et philosophica, videndum est quomodo locuntur homines plus pueriliter sapientes. Ipsi enim propter variacionem in logica sepe verbaliter contradicunt, ut sapientes concedunt quod homo est homo, licet modo nullus homo sit in actu. 10 Ipsi enim ampliarent ad omne ens actuale, ad omne ens possibile et ad omne ens intelligibile, quia aliter esset intelligibile superius ad ens, et intelligibile superius ad esse; et sic posse non presupponeret esse. Et in isto homines multipliciter variantur; ut aliqui concedunt quod homo est semper quodlibet istorum terminorum esse, et negant quod homo est homo, nisi habuerit existenciam actualem. Unde illam propositionem, *homo est*, sic converterent: *ens est*, vel *potest vel intelligitur esse homo*; unde negarent istam consequenciam: 15 *Antichristus est, ergo est aliquid*; sed, est *intelligibilis vel possibilis*. Et ita concedunt quod non est idem dicere: *hoc est album et hoc album est album*: quia, ut dicunt, *hoc album* necessario *est album*; quia sic intelligunt: *hoc album est album*: *Si hoc album est existens, illud est album*. Illud negant quod necessario est album; et sic concedunt quod omne futurum necessario est futurum, sicut omne presens necessario est presens. Ad tantum ergo prodest taliter variasse, quod per hoc intelligi possunt auctores et sensus equivocantes. 20 *Probabile ergo videtur ampliari hoc verbum est ad connotandum omne tempus possibile, sic scilicet, preteritum et futurum, cum preter tale non potest esse tempus. Et communiter concedendum quod omne futurum vel preteritum est, quia in magno tempore 25 eterno; sed non in quolibet instanti vel qualibet parte temporis; sicut omne quod est, est in magno situ mundi; et nulla tamen eius parte est omne quod est.* Et possunt esse ad hoc 3^s evidencie.

Primo, quia sequitur ex opposito quod omne [quod] I. Whatever is, 40 est, illud semper est, quia in instanti quod est presens, at every instant is always;

ut communitur exponitur. Si A instans aliquando est, et non est aliquod *quando* quin in illo A est, tunc A semper est. Et per idem, omne quod erit, erit semper, et omne quod fuit fuit semper, quia per omne tempus et omne instans. Et per consequens, omne tale foret 5 sempiternum, quia a tempore per quod deus duravit capit eius quandalitatem. Pari enim evidencia qua conceditur quod quilibet durat per omne tempus, concedendum est et [quod] quilibet futurum durabit per omne tempus; ut patet ex dictis. Sequitur enim: *tunc erit ita 10 quod hoc durat per omne tempus; ergo, hoc tunc durabit per omne tempus.*

Sed ex alio latere negant quod deus vel aliquid semper erit vel semper est, quia solum per instans, sed multa fuerunt et erunt semper: que omnia cum consequentibus sunt nimis literalia. Et probacio 15 omnium istorum pendet super isto quod, si aliquando erit quod *hoc semper est*, aliquando erit ita quod *deus scit quod hoc semper est*; et cum deus | nichil potest B 159^b desinere scire, deus semper sciet quod hoc semper est, et per consequens semper erit verum quod *hoc est 20 semper.* Et ita *hoc semper erit.* Concedendum est ergo probabiliter quod nichil semper est, nisi id quod est in omni tempore, utputa tale quod semper fuit et semper erit; sicud mundus et alia sempiterna que incepert esse. Sed deus ultra hoc est eternus, quia eius 25 demonstracio est supra tempus. Ideo est prius tempore.

Some writers say: God could have created the world before He did; but the world could not have been created before.

Et sic intelligendi sunt auctores qui concedunt quod deus prius potuit produxisse mundum, sed ipse non potuit prius fuisse productus. Deus enim habet in eternitate posse ad producendum mundum; sed mundus non potest esse vel fuisse. Et ita est de omnibus similibus. Idem ergo est dicere quod *hoc semper erit* et *hoc erit semper*, cum adverbium sit adiectum, *nisi in illo tempore.*

II. If all *is* not in eternal time, we must deny its existence, saying that it is made up of parts that *are* not.

2^o confirmatur per hoc quod aliter negandum esset tempus esse, ut superius tactum est, quod nemo concipit; et quod tempus componitur ex partibus que non sunt, eo quod *componi ex aliquibus est causari ab illis*; et per consequens omne componens est, sicud omne 40 *causare presupponit esse.* Nullum ergo tempus habet

2. al⁷B. 9. quod *deest* B. 34. *adic^t* B.

eius magnitudinem a partibus que non sunt; quia tunc magnitudo illa non esset, et per consequens tempus illud non esset magnum. Sed sicut tempus in nullo instanti haberet partes, vel saltem solum illas que continentur ad illud instans, vel haberent illud instans eis intrinsecum, sic correspondenter tempus pro nullo eius instanti foret magnum; vel aliter solum pro medio eius instanti haberet medietates, et solum posset habere duas quartas; et sic de aliis partibus aliquotis. Et solum quando iste partes non possunt esse, tunc sine dubio omne tempus maneret continue indivisible, nunc magis, nunc ^{2^m} quod essent partes vel non essent partes a quibus caperet eius quantitatem.

Conceditur ergo quod omne tempus est divisibile, et habet omnes eius partes, sed non simul proprie; quia non pro eodem instanti, sed in magno tempore eterno, et sic alias prius et alias posterius. Nichil tamen habemus de tempore ^{2^m} se totum simul, nisi instans. Unde necessario omne tempus est eque celeriter in ^{2^m} corrupti sicut in generari. Nec potest esse, nisi ita velociter corruptetur et generaretur ^{2^m} partes, sicud posset aliquod tempus corrupti. Nec sequitur per locum a simili quod sicud ponam esse de rebus permanentibus, cuius non est possibile dare causam ponendo tunc esse rem absolutam que ponam per se esse. Patet igitur quod non contingit bene examinatum vere loqui in materia de tempore, diffiniendo tempus vel continuatatem, temporis prioritatem et alietatem, et ceteras proprietates accidentales temporis et instantis, nisi ponendo tempus componi ex non quantis, et ampliando hoc verbum modo quo dictum. Quomodo, queso, aliud foret ante vel post aliquod tempus vel instans, vel inter instancia, vel unum instans prius reliquo, si semper necessarium est nullum instans esse cum reliquo?

Semper enim sciretur sic non esse.

3º confirmatur illud de fundamentali significacione III. This can be vocabuli. Nam secundum precipuos hoc verbum rectum, proved besides est, significat mere substanciam, sicut pronomina, quia B 160* significat esse |, quod est essencia, non quomodo ali- 40 quam proprietatem accidentalem vel differenciam spe- cificam a qua res caperet suam quantitatem, sicud

For at no single instant would time have existing parts, since nothing would be at any single instant.

Thus all time is divisible into parts, but none of them coexist, and nothing of time is all at once, save the instant. It follows that time vanishes as fast as it comes into existence.

We cannot, therefore, affirm anything truly of time without positing its composition out of indivisible instants, extending the sense of the verb is.

thus it does not faciunt omnia, non transcendencia; nec connotant de
connote time by
itself. If it did, se aliquod tempus, sicud verba adiectiva; quia deus
God in eternitate tunc non sciret se esse in eternitate subducto tempore,
would not
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Est, therefore,
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quod est impossibile cum in eternitate sit esse vel fuisse
there would be vel *fore*, cum eternitas sit “interminabilis vite possessio 5
tota simul”. Et hinc, secundum grammaticos, hoc verbum est significat pure presens tempus, sine successione connotata, et est verbum substantivum, non significans principaliter accidens adiciendum subiecto, sicud talia verba, *currere*, *moveare*, *fieri*. *currere* enim est motus 10 adiectus esse rei, et ita sunt *quantificari*, *qualificari*, *referre*, *agere*, *pati*, *ubilitari*, *temporaliter durare*, *poni* et *habere*. Ista enim sunt novem genera accidencium adiecta substancie, que est esse vel essentia rei: ideo vocantur verba adiectiva. Et hoc verbum esse subiectum 15 substantivum non predicatum in quod vel in quale, modo quo termini connotantes qualitatem rei, sed mere dicens primam questionem de subiecto, *quod est* et non *quid est* aut *quale est*. Et ideo ens non est genus, cum omne genus dicit quiditatem presupponentem 20 questionem, *Si est*, vel esse rei cuius quiditas queritur. Being therefore indifferent to time, *Est* signifies eternity, and, though used by grammarians in the present, it is indifferent to all time, and can be thus applied to any permanent truth.

Being therefore indifferent to time, *Est* signifies eternity, and, though used by grammarians in the present, it is indifferent to all time, and can be thus applied to any permanent truth.

It does not follow, when we say that something is, that it must be at this instant.

Patet ergo, cum hoc verbum, esse, sit causa indifferens ad tempus connotandum, principaliter significat eternitatem, quod libere potest homo uti ipso ad quodlibet tempus indifferenter connotandum. Et si obicias 25 quod gramatici determinant ipsum ad tempus presens connotandum, dicitur sine dubio quod indifferens est ad omne tempus connotandum secundum grammaticam; quia posito quod semper fuisse ista proposicio: *Tempus est*, semper fuisse vera; et hoc verum est continue 30 connotasset omne tempus, cum non caderet a sua connotacione, propter lapsum temporis. Unde et hoc nomen *tempus presens* omne tempus significat. Et ex istis patet quod non sequitur, *A est*, igitur in hoc instanti; sicud non sequitur *Sor currit*, igitur *Sor currit* in hoc instanti vel in ista parte temporis. Nec sequitur cum medio ponente hoc instans vel istam partem temporis

14. *io'* B. 16. *subm̄ fb̄m̄* B. 17. *t'ino'* B. 19. *quid non* B.
23. significat principaliter significat B. 31. *gñotass̄* B.

5. This definition is a famous one, given by Boetius (*De Consolatione Philosophica*, l. III. prosa 2. near the beginning), and generally adopted by Scholastics.

esse. Et isto modo intelligendi sunt sancti qui dicunt deo omnia esse presencia in eternitate, quia, ut dicunt, tempus adiacet eternitati secundum se totum, ac si qualitas mundi adiaceret deo qui faceret se esse ad omnem eius punctum. Nec dubium quin conceptus sic loquencium sit verus, quamvis quandoque videbatur michi extraneus.

Sed contra illud argumentatur. Videtur enim primo quod omnia instacia possibilia sunt simul, quia in hoc magno tempore eterno. Et per consequens omne quod fuit vel erit est. Et sic nichil potest incipere vel desinere esse. Et per consequens, nichil potest corrumpi vel moveri, et sic omnia sunt eterna, quia intransmutabilia. Si enim Sors potest transmutari, ipse potest esse ubi, quantus, vel qualis non est.

Videtur 2º quod omne quod eveniet necessario eveniet; quod si erit, est; et si est, determinatum est ipsum esse; et per consequens necessario est vel fuit quo ad deum. Ergo est tam determinatum hoc esse, quam determinatum erit unquam hoc esse; et sic mors cuiuscunque viventis est cum eius vita; nichil ergo reliquo B 160^b cercius | quo ad deum.

Videtur 3º quod omnes contradictorie veritates simul sunt; ut puta *esse* et *non esse* *Sortis* simul sunt. Si enim mors rei est, tunc *non esse* eius est; et si vita eius est, tunc *esse* eius est. Cum ergo omnis mors vel vita que fuit, est, vel erit, est, sequitur quod omnes contradictorie veritates sunt. Et sic de contrarie, privative, et relative oppositis.

3º Ad primum dicitur quod conclusio non sequitur; nec sequitur omnia possibilia simul esse possibilia inter se, quia multa sunt possibilia que nec erunt nec fuerint nec sunt. Ymmo, quamvis omnia preterita et futura sunt, non tamen tempore simul sunt; sed unum est in tempore suo, et aliud in tempore suo. Nam ad *esse* simul in tempore, requiritur *esse* in eodem instanti in numero, vel secundum se tota, vel secundum aliqua ex quibus sequitur ipsa esse pro eadem mensura temporis. Sicud ergo non sequitur: *Ista sunt in magno mundo et sunt simul loco*; ita non sequitur: *Ista sunt in magno tempore; igitur, sunt simul tempore*; sed

4. q̄s B. 12. n' B.

As two things requiritur instans mensurare illa que sunt simul vel 2^m in the world suas essencias, ut contingit de motibus subitis, vel secundum sua accidentia, ut contingit de modis essendi, accidentibus instantaneis, quibus sunt omnes res temporales. Sicud ergo non oportet res esse simul loco,⁵ quamvis relaciones earum sint simul, sic non oportet res esse simul tempore; et sic pretericiones aut futuraciones earum sunt simul, sed oportet unam vel partem eius esse per locum per quem est aliud vel pars eius. Unde Aristoteles concedit ultima contiguorum esse 10 per eumdem situm indivisibilem. Quandoque autem locuntur philosophi largius de *simul*, tam tempore quam loco. Conceditur ergo a quibusdam quod omne tempus vel instans quod potest esse est, quia in magno tempore eterno, sed non omnis substancia que potest esse 15 est, quia creditur quod multe substancie possunt esse que non fuerunt vel erunt. Et creditur quod alias mundus non potest esse; sed de hoc viderit philosophus. Et ita conceditur quod omne quod fuit vel erit, est. Verumtamen, quando superius negata sunt talia, hoc 20 erit ad istum sensum quod fiunt in eodem instanti.

Many possible things are neither past, present nor future; for they will never be. What we deny is the simultaneity of all things in the same instant. We also for the same reason, deny that nothing can begin or cease to be. Everything is present to God according to the order of its being, and as only the Eternal one is properly in eternity, it follows that all things have their beginning and their end.

Ulterius dico quod non sequitur ex isto quod nichil potest incipere vel desinere esse, sed pocius sequitur oppositum; et cum omnis incepcio vel desinio que fuit vel erit est, quia in magno tempore eterno,²⁵ quelibet tamen in instanti suo, una prius et alia posterius. Quamvis enim omnia instancia possibilia sunt, non tamen simul, sed sunt deo presencia, et ita presencia, et tamen unum alio prius aut posterius, secundum elegantissimum ordinem. Nec ex hoc sequitur 30 quidlibet esse eternum, sed nichil novum; sed pocius oppositum. Quamvis enim omne bonum sit in eternitate, nichil tamen formaliter est in eternitate nisi eternum. Novissimum ergo tempore est illud quod est post omne aliud in tempore. Et sic non repugnat sed con-35 secuntur se in deo *primum* et *novissimum*; non tamen est recens aut senex.

Some assert that there is no 'last of all creatures', for there is an

Et dicitur a quibusdam quod non est dare simili-
ter novissimam vel ultimam creaturam singularem,
sicud est dare [primam], quia post omne instans vel 40

10. *gl̄gor⁹ B.* 18. *wider't B.* 21. *etad B;* *ib. fūt B.* 35. *r̄pugt B.*

38. *Ei⁹ B;* *ib. finr B.* 40. *fādā'e B;* *ib. primam deest B;* *prius pro post B.*

creaturam erit instans et alia creatura; quemlibet tamen eternum *a parte post* potest dici novissimum quo ad tempus, quamvis in nullo instanti. Aliquid vero est novissimum quo ad hoc instans, ut res que in ipso 5 incipit esse; aliqua est novissima dies quo ad tempus generacionis et corrupcionis; ut dies finalis iudicii. Sed B 161^a similiter novissimum | est solus deus, non sic quod sit inferior in ordine quam aliud, vel quod habeat esse vel perfeccionem accidentalem sicud partes mundi innovantur, sed, considerata quacunque novitate, invenietur ultra et extra illam aliquam novitatem, non secundum substanciam vel accidens absolutum, sed respectivum, cum causat omne in deo positum. Creatum est ergo secundum novas habitudines relativas, que vocantur 15 esse accidentalia a quibusdam.

Ad 2^m dicitur quod conclusio bene concepta est concedenda. Pro quo notandum quod aliquod est necessarium absolute et aliquod ex suppositione. Absolute necessarium est, quod non potest non esse, sive 20 sit prima veritas, sive veritas creata sine qua deus non potest esse, ut sunt 3^a et duo esse quinque, dyametrum quadrati sensibilis non esse cometram sue coste. Necessarium ex suppositione est verum pro aliquo tempore habens causam ex quo sequitur illud esse. Et non dicit 25 quod illud sit semper; et sic omne verum contingens est necessarium, quia si aliquid fuit vel erit, tunc est verum in magno tempore vel eternitate. Et si illud est, tunc deus habet unam volitionem eternam respectu illius vel sui convertibilis, ex qua sequitur illud esse; 30 ut si Anticristus peccabit, deus eternaliter voluit quod peccabit, vel quod peccatum suum punietur; et isto modo volicio dei eterna est causa futurionis pene.

Ideo, pari evidencia qua passivum comburiter de necessitate naturali causata ex applicacione calidi, se- 35 quitur omnem effectum esse necessitate supernaturali ex causacione cause eterne formaliter inferentis. Sequitur enim determinate verum est necessarium, omne verum est determinate verum, ergo omne verum est necessarium. Maior patet ex hoc, quia omne determinate verum est 40 necessarium esse vel fuisse: ut patet de qualibet vera

11. a'quā novitem B. 13. cātū B. 20. cātā B. 22. quadratū B;
ib. cometar⁹ B. 22-23. Nctriū B. 26. n̄ctriū B. 40. v'a B.

logica illius materie; et, si aliquid fuit vel erit, tunc ipsum est, iuxta illam viam. Ergo, si aliquid est determinate verum, necesse est ipsum esse, et per consequens est necessarium. Et minor argumenti patet ex hoc quod omne quod necesse est esse vel fuisse verum,⁵ est determinate verum; sed omne verum est huiusmodi.

for every truth must be necessary, if we only suppose it to be indeed true.
Probatur per deduccionem ad impossibile, capiendo quod non est necesse esse vel fuisse quod Anticristus erit, cum hoc quod ipse erit. Si Anticristus erit, tunc verum est quod ipse est, et fuit, eo quod verum erit ipsum¹⁰ esse et fuisse. Et omne quod erit est; et si est vel fuit, necesse est ipsum esse, ut proximo deductum est: ergo, si erit, necesse est ipsum esse. Et patet quod si est, necesse est eternaliter fuisse quod ipse erit. Et idem est argumentum de quolibet signando; quia si aliquod ens¹⁵ erit, tunc per tempus futurum est verum et necessarium quod fuit; et per consequens pro eadem mensura est necessarium quod per tempus eternum illud fuit futurum. Et per consequens per illud tempus necessario est futurum.

²⁰
Hypothetical necessity implies that the thing must exist at some period or other. But we have three sorts:
1. hypothetical eternal truths, as God's decree that Antichrist should exist, and his production; and these are above all time. Yet their existence is quite contingent.
2. Others exist for ever,
3. others for a longer or shorter period.

Omnia autem necessaria ex suppositione in hoc con-
veniunt quod necesse est illa pro aliqua mensura esse. Sed hoc tripliciter variatur. Nam aliquod tale necesse est esse eternum *a parte ante* et *a parte post*, ut *deum velle Anticristum esse*, et *Anticristum fore vel esse pro-25 ductum*; quorum utrumque reciproce causat reliquum: primum, ut forma exemplaris, et 2^m ut materia. Nec est inconveniens, sed necessarium, aliqua reciproce cau-
sare in diverso genere causandi. Tales ergo veritates sunt supra omne tempus | ut futuriciones, pretericiones, dis-
iunctiones, et noticie dei. Et tamen contingentissimum est illud esse, cum potest non esse, sed non incipere vel desinere esse. Aliiquid etiam tale necesse semper esse: ut mundum et partes eius. Et aliquod necesse est esse: ut mundum et partes eius. Et aliquod necesse est esse non semper; et hoc tripliciter; et sic per omne 35 tempus aut instans in quo instanti desinit esse, vel in omni tempore post instans sui in posiciones; ut patet de istis; *hoc modo et hoc instans est preteritum, est futurum*, vel 3^o quod incipiat vel desinat esse simul ut

7. p^r twice B. 8. q, twice B. 9. cū h^e twice B. 24. app^v B;
ib. app^g B. 30. ut B. 31. notie B. 39. esse que simul B.

res subite sine successione, ut res temporales que includuntur.

Ex istis patet quod nichil est [in]determinate verum, quia omne contingens vel est determinatum a deo, vel 5 convertitur cum determinato a deo. Nec repugnat necessarium ex suppositione esse contingens, cum contingens sit illud quod pro aliqua mensura non est modo. Non sequitur: *pro ista mensura hoc non est*; 10 igitur, *hoc non est*; quia impossibile est aliquid quod erit vel fuit simpliciter non esse. Quondam tamen putassem sic dicentem insanire, quia mentes iuvenum infecte, et corporalium fantasmatum mutabilitate plene, non concipiunt prioritatem et coexistenciam eternitatis cum tempore. Et hoc facit philosophum mundum ponere coe- 15 ternum deo, et loqui multa impossibilia. Nec sic est loquendum, nisi homo fuerit magis exercitatus in positione. Error enim huius logice facit multos errare in materia de necessitate futurorum. Putant enim aliqui quod omne futurum est absolute necessarium, forte 20 propter prescienciam, preordinacionem vel determinacionem dei. Sed hoc non sequitur, cum semper potest esse, ut dicitur, quod deus non sic scivit; et tam contingens est mundum non esse vel non fuisse, quam contingens est animam istam non fore, demonstrando 25 quamcunque animam producendam, quia potest deus (sicud quondam potuit) non producere vel produxisse istum mundum. Sed summe libere potuit hoc in eter- nitate. Ergo adhuc sic potest. Verum non est pos- sible quod posse dei pro aliquo instanti dependat, quia 30 tunc dependeret ab aliquo extrinseco. Et ex hoc patet quod tam necessarium est deum revelasse vel scivisse quocunque contingens futurum, quam necessarium est me fuisse. Ideo falsum est quod Cristus potuit mentiri vel decipi, sed bene potest non dixisse, vel secundum 35 humanitatem non fuisse. Ideo necessitas ex suppositione non excludit contingenciam ad utrumlibet; et per con- sequens non tollit libertatem arbitrii nec casum vel fortunam quo ad causam secundam, sed quo ad deum.

Et sic errando putamus ex magna ignorancia quod 40 futura sunt indeterminata.

There is no such thing as indeterminate truth.
Hypothetical necessity is by no means contrary to contingency. We cannot say *This is not of a thing that was or that is to be.*

I once thought that this opinion was madness, for I did not understand it.

One must, however, be well trained before using this language; for many err, thinking that all future things are absolutely necessary.

But it does not follow.

Christ could not lie, but He might not have spoken, or not have existed. The free will of man is thus saved; chance also exists for the second causes, not for God; but we, being ignorant, think that the future is undetermined.

3. determinate B. 14. phus B. 37. cam B. 38. cam B.

There are many things foreknown and foreordained, and many that are only foreknown, and there may be things that God does not foreknow; but whatever He foreknows, must exist hypothetically at some part or other of eternal time;

and as it is impossible that anything should be eternally in the future, this thing foreknown will at a certain time become past.

This is why the Fathers say that God necessarily foreknows that which is foreknown, all things being present to Him; they do not speak of absolute necessity.

My existence is necessary, means that it is necessarily follows from the existence of an eternal truth; or that, I being, it is against the ordinance power of God that I should not be.

Conceditur tamen quod multa deus prescit que non preordinat, ut peccata; et multa prescit que preordinat et predeterminat. Et tamen iam vel nunc potest esse quod nec nunc prescit, nec aliquando hoc prescivit, cum a dei sciencia sequitur illud scitum; quia ista sciencia dicit relationem dei ad coexistenciam sciti. Verumtamen quidquid deus prescit, necessarium est illud esse pro aliquo tempore, et per consequens in tempore eterno est illud necessarium ex suppositione.

Nam | si deus prescit aliquid, ipsum erit. Et cum claudit contradiccionem aliquid eternaliter esse futurum, distingwendo futurum contra presens, patet quod pro aliqua parte temporis eterni est illud lapsus in preteritum, et per consequens pro illa parte temporis eterni necesse est illud fuisse. Et cum necessario omne quod fuit est in tempore eterno, patet quod necesse est illud esse.

Et isto modo intelligendi sunt patres nostri, qui dixerunt quod si deus quidquam prescit, necessarium est ipsum sic prescire, et illud esse, quia deo sunt omnia presencia. Sed constat quod illud dictum cum eius sententia est valde remotum a sententia que concedit quod absolute necessarium est deum prescivisse hoc futurum. Et si queritur quomodo debet exponi hec proposicio, *necessarium est me esse*, dicitur quod altero 25 istorum modorum probari potest: *necessarium ex suppositione est me esse, ergo necessarium est me esse*. Et antecedens sequitur: *hec est una veritas eterna ex qua sequitur me esse; ergo antecedens respectu talis*. Vel potest sic exponi: *ego sum, et legi vel in potentia dei 30 ordinate repugnat me non esse; ergo necessarium ex suppositione est me esse*. Nec sequitur: *Ego sum et hoc instans est: ergo, ego sum in illo*, quia tunc quodlibet semper esset. Nec sequitur: *aliquando non sum: ergo, non sum*. Nec sequitur, *Sum in instanti presenti; ergo, 35 sum nunc*, cum nunc sit adverbium singulare. Nec sequitur: *deus nescit hoc in B instanti quod est presens: igitur, nescit hoc*, cum necessario scit omnia presencia, preterita, et futura cum singulari sciencia absoluta.

5. 1^a cū pro cum B; ib. sciam B. 10. Nam | nam B. 11. fuisse esse B.
13. after eterni; est illud lapsus in preteritum *underlined* B. 31. r'pūgnat B.

Et si queratur quando necesse est talem futuracionem esse, dicitur quod quandocunque aliquid est, necesse est illud esse, ut dicit Aristoteles. Et ita, si ens est, deus scit necessario illud esse, ut in hoc instanti erit; 5 in quoconque eciam in quo est ipsum instans, necesse est illud esse. Et sic in hoc privilegiatur *scire* dei respectu sciti extrinseci ultra *scire* nostrum; quia sciencia sua est immutabilis. Nam claudit contradiccionem ipsum esse, nisi sciat illud esse. Ideo non expectat alteracionem 10 sui, ut quidquam adiscat. Nec dicit *scire* suum habitum in ipso, sed relacionem, scilicet coexistenciam scientis ad scitum. Ideo est alterius rationis quam *scire* nostrum. Et hinc est quod homo potest privari a presciencia, quia de potentia absoluta potest fieri non prescitus, postquam 15 fuerit prescitus, sine variacione pari sciti. Sed non sic deus; quia si prescit quidquam, illa presciencia est eterna, cum non potuit incipere prescire. Nec videtur quod potest desinere prescire. Ideo non potest de non prescito fieri prescitus, sicut nec de scientie veritatem 20 aliquam, fieri eius non sciens. Possibile tamen est quod deus sit cuiuscunq[ue] veritatis corruptibilis non scius Vel nescius erit; veritatem quam semper scit esse non scit esse semper, cum scit eam aliquando non esse. Et per illa considerata patet responsio ad 2^m, quia non 25 sequitur.

Ad 3^m dicitur quod non sequitur *Mors mea est in 3 tempore quo vita mea est; et sic quando vel dum vita mea est; ergo, est simul temporaliter cum vita mea;* quia, sicud dictum est quod ad hoc quod aliqua sint 30 simul tempore, requiritur quod sint pro eodem instanti vel inmediata; sed ad hoc quod aliqua sint simul in loco, requiritur quod ipsa vel aliqua eorum sint in B 162^b eodem situ indivisibili, vel inmediata. | Unde, quamvis eius partes temporis sunt, non tamen sic simul sunt. 35 Nec est possibile alicuius successivi eius partes simul esse; ut tempus a principio mundi usque nunc habet partem currentem a principio mundi usque ad nativitatem Christi; et inter terminos illius partis et ipsum nunc sunt mille trecenti et 83 anni. Unde, sicud po- 40 nendo universalia, de levi pronunciantur veritates quas particulares homines reprimenter intricate, sic indubie

When must this future being exist? when it does exist, and that instant is known to God, by unchangeable knowledge, far superior to ours.

His knowledge signifies merely the coexistence of the knower and the known. A man may foreknow and then cease to foreknow a thing without any change in the object; not so God.

His foreknowledge is eternal, and therefore a 'foreknown' cannot become 'not foreknown'. Yet God can know a changeable truth not to exist at a given time.

3. That my life and death must take place in the same eternal time does not prove that they are simultaneous; for we have already stated that this requires coexistence at the same instant, as it is requisite, that two things should coexist, or touch each other, to be together in space.

14. depata B. 15. prst B. 21. scit B. 39. mille t'centi 7 83 B.

41. r^{pm}it B.

The doctrine of in illa materia de levi et plane pronunciantur veritas continentates successionem ab illis quorum animus elevatur ad considerandum eternitatem supra tempus, ubi aliquando solum ymaginantes sensibilia intricantur. Ymmo, ut communiter loquendo de successivis, pro 5 nunciant nescii multas veritates ex quibus sequitur opinio supra dicta.

A permanent being is a being that continues to exist during a certain space of time; a successive being changes with time; an instantaneous being is measured by the first instant of its existence. Time has all its parts, but it valet pocius quam sequitur in suo convertibili: una pars temporis fuit et alia pars temporis in eodem magno tempore eterno erit: ergo iste partes sunt in eodem in-

stanti. Nec dubito quod repugnat aliquid esse in tempore eterno, vel esse prioritatem et posterioritatem temporis, nisi incedendo in viam veritatis predicamentalis. Patet ergo quod, si aliquod temporaneum vel durans per tempus sit temporale, quod non oportet deficere pro omne mensura temporali qua est, tunc ipsum est 10 permanens. Et si sit aliquod per tempus, oportet partes succedere pro omni mensura temporali qua est illud successivum. Sed inter ista mediat subitum, cuius esse mensuratur instanti primo. Et si obicitur quod omnes partes temporis sunt, igitur in presenti instanti sunt; 15 patet quod omnes concedentes sic tempus esse, concedunt antecedens. Et patet michi quod consequencia non valet pocius quam sequitur in suo convertibili: una pars temporis fuit et alia pars temporis in eodem magno tempore eterno erit: ergo iste partes sunt in eodem in- 20 stanti. Nec dubito quod repugnat aliquid esse in tempore eterno, vel esse prioritatem et posterioritatem temporis, nisi incedendo in viam veritatis predicamentalis.

It is not true that we have nothing of time but one instant, for how can we have an instant without having time?

Unless indeed this means that we have nothing of time that is now, but one instant.

If two instants unite to make up time, why not all instants of the Past and the Future?

At all these instants, God is certain of every truth; which implies that all of them are equally determinate and true.

Et si obicitur communis sententia quod nichil habemus de tempore nisi instans, patet quod illud vere non 25 potest intelligi ad verba, cum claudit contradiccionem nos habere instans de tempore, nisi habeamus tempus et quotlibet partes eius. Ideo sic sane intelligitur: nichil

habemus de tempore quod sit primo in ipso nunc, nisi instans; quod est verum, quia compositum ex duobus vel 3bus aut quotlibet signatis instantibus non est

primo in ipso nunc, cum quotlibet eius instancia sunt extra ipsum nunc. Ideo, ponendo tempus componi ex instantibus, patet quod non est racio quare duo instantia componencia tempus sunt, quin per idem omnia 35 instanciam preterita et futura sunt; et deus est in quo-

libet istorum ita certus de quocunque vero sicud est aliquo: quod non esset, nisi ita certe esset quod-

libet verum, sicud est aliquid, et per consequens ita determinate, sed non ita stabiliter.

40

9. $\widehat{\text{f}}$ perhaps crossed off pro sit B. 21. quia pro quod B. 23. pr $\widehat{\text{e}}$ -dictas B. 31. sit $\widehat{\text{e}}$ B. 35. f $\widehat{\text{u}}$ qu' B.

Conceditur igitur quod omnes veritates que unquam sunt vel erunt, sunt; sed non nunc. Et sic omnes oppositiones relative, contrarie et privative, sunt; sed non nunc; ymmo in tempore eterno. Nec esset possibile 5 aliter esse relatam oppositionem inter *prius* tempore et suum *posteriorius*; nec inter duo contraria, cum albedo in me et nigredo in Sorte non contrariantur. Nec inter privacionem et suum habitum, cum non possunt simul esse; nec inter contradictoria, cum non possunt simul 10 esse. Est ergo opposicio inter illa opposita in magno tempore eterno, de quo intelligitur quod si unum oppositorum est, tunc reliquum est. Et libet vere loqui quod omne instans est aliquod *istorum*, demonstrando omnia instancia; et aliquod istorum est nunc, et aliud

B 163^a non est nunc, | demonstrando omnia que sunt in magno tempore eterno. Non enim valet responsio que concedit quod prioritas temporalis inter A instans et B instans est, et tamen sua extrema non sunt, quia sic prioritas est sine posterioritate, sicud nec posterioritas cum prioritate. Tunc autem fundaretur relacio, et dependeret tantum ab uno extremo. Sic enim loquitur communitas logicorum, concedens istam horam pro eius medio instanti habere duas medietates ex quibus componitur, ut ex partibus componentibus et concausantibus 25 ac continuatis ad hoc instans; et tamen ille medietates non sunt, cum hoc instans sit extrinsecum utrique earum. Certum est quod talia sunt impossibilia. Ideo relinquitur quod omnes partes temporis eterni sunt, et per consequens omnia que iste partes mensurant.

30 Et si obicitur sic: *qualitercunque erit, est; sed necessarium erit Anticristum fuisse, ergo necessarium est Anticristum fuisse*, et sic de omni veritate: dicitur concedendo conclusionem, sicud patet in descripcione Necessarii. Sed non sequitur, *Necessarium est Anticristum fuisse; ergo, non potest esse quin fuit*. Hoc enim solum sequitur et de absolute necessario. Et ita, si ens aliquod fuit vel erit, tunc ipsum est; et econtra. Nec sequitur: *mors mea est: ergo, ego non sum*; et sic de aliis denominacionibus, que videntur inferre negacionem.

40 Ex quo videtur quod de nullo quod fuit vel erit concedendum est similiter quod illud non est, sed *illud*

All truths are, but not all are now; all relations, oppositions, and contradictions are, but not all are now; this besides is self-evident, by the very idea of opposition.

We cannot admit that the instant A is before B, if either A or B is non-existent; for that would imply priority without posterity, and vice versa. Every relation must depend upon two extremes, not one only. This, however, is the common doctrine of logicians, which is certainly impossible.

Objection:
It will be necessary for Antichrist to have come; therefore it is necessary for him to have come; since what will be, is.

Here the solution rests on the sense already mentioned, of hypothetical necessity. We must never admit that anything past or future does

26. instanti (!) B. 33. d,d,^{one} B. 36. et = erit? B.

not exist
absolutely, but
that it does
not exist in a
certain part of
time.

*That I am not,
was never a
true
proposition.*

Another
objection: God
knows me to
exist and not
to exist, so He
knows a
contradiction;
so a
contradiction
exists.

We reply that
He knows a
contradiction,
but not the
existence of a
contradiction
now.

I too know
many things
that are not, to
have been or to
be about to
at their time.

It is urged that
God's
knowledge of
past, future and
present is
absolutely
identical;
now identity in
knowledge
argues identity
in the known.

But though the
past and the
future infer the
existence of the
thing, they *are*
not that
existence.

non est tunc vel tunc vel modo. Sicud non sequitur:
A non est ibi; ergo, ipsum non est; sic ista non sequi-
tur: *A non est tunc: igitur, ipsum non est.* Si ergo *non
esse* rei est, tunc illa res non fuit vel erit. Unde talis
propositio eternaliter foret falsa: *hoc non est* (demon-
strando rem que fuit vel erit). Nec quidquam tale
scitur non esse. Bene tamen scitur aliquid non esse
nunc, vel tunc. Nunquam ergo fuit ita quod *ego non
sum.* Opposicio igitur contradictoria non potest esse ex
parte rei, cum claudit contradiccionem unam veritatem
contradictam succedere alteri, eo quod contradiccio
tunc esset in re: omne quod fuit vel erit, est. Ideo
oportet cavere de negativis sine determinacione.

Et si obiciatur quod deus scit quidquam scivit, et
per consequens scit me fuisse et me non fuisse, et ita 15
scit contradiccionem, et cum non scit nisi quod est,
sequitur quod contradicco est: huic dicitur quod conse-
quencia non valet, sed antecedens concedendum est;
quia omne quod deus scivit, fuit, et per consequens
est, et ultra sequitur quod deus scit illud, sed non scit 20
illud esse nunc, quamvis nunc scit illud esse. Sicud
enim tendit omne quod fuit vel erit esse in tempore
suo, sic scit omne tale esse, et aliquando per conse-
quens scit illud esse. Ymmo sic scio ego diem iudicii
esse. Et multa olim horum corrupta scio nunc esse in 25
tempore suo, sed nichil scit illa esse nunc. Deus autem
nunquam scivit me non esse, quamvis omnem creaturam
pro aliqua mensura scivit non esse.

Sed si argumentatur ex hoc quod eadem sciencia
scit deus fore rem qua scit rem fuisse vel esse, quia 30
idem est sciens invariatum, et idem est scitum: ergo,
eadem est sciencia (Consequencia patet de homine, et
per consequens evidencius de deo. Et minor patet ex
hoc quod omne *fuisse* vel *fore* rei est eius *esse*, cum
claudit contradiccionem *fuisse* vel *fore* rei existere, nisi 35
eius *esse* sit ut conceditur): hic videtur michi | quod B 163^b
fuisse vel *fore* rei, cum sit sempiternum, et res illa

temporalis, valde differt ab *esse* rei. Negatur: "hoc in-
fert *esse* rei"; ergo "est illud *esse*"; quia tunc omnis

;

- 1. *it* *ut* *it* B. 2. *ita* B. 7. *scit* B. 11. *e* B. *ib.* ⁹*dicto* B.
- 12. *essent* B. 14. *scit* B. 22. *terd* B. 26. *scit* B. 36. *cuius?* B;
- ib.* *est* *ut* *g* B. 38. *Ner* B.

causa esset suum causatum. Sed de sciencia dei tripli-
citer contingit loqui; vel formaliter, ut dicit relacionem
in deo, et sic est accidentis sibi prius naturaliter, sed
ponens scita; vel ut dicit habitum vel actum elicitum;
5 et sic non est sciencia essentie divine; vel 3º, ut dicit
substanciam scientem, et sic manet necessario eadem
sciencia dei, non pocius variata propter variacionem
rei, quam variatur lux propter hoc quod illuminat
manum et post aliud succedens in eodem situ post
10 manus absenciam. Et ita dicitur a sapientibus quod
eadem est fides secundum substanciam credencium rei
futuricionem, que est credencium eius presenciam vel
pretericionem, quia substancia fidei est de cuius futu-
rio precedit, et esse subsequitur, et pretericio postrema.
15 Sicud eadem est substancia noti et visionis qua cog-
noscuntur membra maligna et antiqua ex tempore alte-
rata, et membra parva et tenella tempore precedencia.
Accipiendo ergo fidem pro isto credito omnis credens
futuricionem rei vel eius pretericionem, credit esse rei
20 in tempore eterno, quamvis non nunc.

Et ulterius obicitur quod sicud ex dictis sequitur de
hoc, erit vel fuit tunc est: sic econtra, si est, tunc erit
et fuit; et per consequens hoc instans est, erit, et fuit;
quod nimis est confusivum dicere, cum tunc non esset
25 differencia inter tempore verborum. Et consequencia
patet ex hoc quod, si aliquod instans est, tunc deus
in tempore futuro scit illud fuisse, et in eternitate scit
illud fore. Et sequitur: deus scit hoc fuisse, igitur, hoc
erit, nam proposicio vera significat hoc fuisse, et ita
30 est; ergo quod hoc fuit.

Hic dico quod videtur michi conclusionem esse I do not object
concedendam de quolibet quod est in parte temporis; to this
sed non sequitur formaliter de alio, cum esse sit prius conclusion so
naturaliter quam fore vel fuisse. Et ita conceditur omne far as it regards
35 tempus presens esse preteritum et futurum, sed non those things
respectu eiusdem instantis. Unde in eternitate, esse non that take up a
est formaliter fore vel fuisse; sed totum est ibi esse et part of time,
presencia erit. Hinc negant quidam quod deus pres- but the present
40 ista obliqua verba sunt, et tunc non realiter formantur is not past and
ab hoc verbo sum, sed a talibus verbis fuo, fuis, ero, future relatively
Some deny God's prescience seeing all things

as present; and *eris*, que sunt adiectiva connotancia pretericionem et in factum futuracionem in tempore, valde dispariter a verbo substantivo; ideo argumentatur ab inferiore ad suum superius, dum sic argumentatur: *Ego fui vel ero; ergo, ego sum.*

The authors
say that all
truth is in
eternity, as the
object of Divine
knowledge, but
things
contingent
exist otherwise
in time;
which may
mean that the
eternal
archetypes of
things are in
God, and that
creatures are
produced in
time according
to them.

It is objected
that white is
black, and every
contrary every
other.

A two-fold
answer.

1. The
conclusion is of
no more value
than the
argument.

When a
predicate is
affirmed of a
subject, it is
understood to
be affirmed as
existing
simultaneously;
not so when
there are
several
affirmations.
This man is
dead; this man
is alive;
to get a
conclusion,
you must
suppose both
affirmations
true at the
same instant.

grammarians
point out that
past and future
come from
other verbs
than *esse*.

Unde nota quod auctores ponunt omne verum in eternitate, cum sciencia dei terminata ad ipsum. Et, ut sic, est omne verum eternum, est necessarium et inevitabile. Sed aliud esse habent contingencia in tempore.

Illud autem potest habere sanum sensum, videlicet quod in eternitate sunt raciones ydeales, que ponunt tales res esse in tempore suo; et secundum pretericionem causalem, concedunt auctores illas vias rationaliter esse res productas. Videtur tamen michi quod nichil est formaliter in eternitate, nisi quod est quodammodo eternum, et ita futuricio et sciencia dei est in eternitate, et presencia sic est in tempore; et non sic sed aliter in eternitate.

Et ulterius videtur sequi quod album est nigrum, vivum mortuum, et sic de quotlibet oppositis, quia sequitur: *hoc est vivum* | *et hoc est mortuum*: *igitur vivum est mortuum.* Et per idem album est non album; et sic de quibuscunque oppositis. Hic dicitur duplamente. Primo, non sequitur conclusio nec valet argumentum factum pro eius probacione. Unde, quandoque in una kategorica affirmatur predicatum de subiecto, hoc semper est intelligendum pro eadem mensura duracionis; sed quandoque seorsum in diversis affirmationibus sic asseritur, hoc potest esse pro diversis mensuris. Ideo oportet capere in minori quod *hoc sit mortuum* pro eadem mensura pro qua *hoc est vivum*. Et tunc sequitur conclusio. Et per hoc tolluntur quotlibet deducciones in quibus concluditur oppositum de opposito. Et per idem notandum est quod aliud sit *hoc esse album et nigrum* de copulato extremo, quamvis aliquid sit *hoc esse album*, et illud idem sit *hoc esse nigrum*. Ex ipsis patet quod repugnat scire *hoc esse non album* aut *non senem*, etsi hoc vel fuit erit senex vel album. Ex quo patet quod oppositio contraria vel privativa non infert oppositum contradictorium, nisi

9. *bij gū* B. 12. *pticom* B. 13. *rōnel'* ē B. 23—24. *dr d'r* B.
34. *scit* B. 36. *scit* B.; *ib.* *scit* B. 40. *in fit* (sic) B.

cum limitacione ad eandem mensuram, ut sic argumentando: *hoc est album, et nullum album est nigrum: et igitur, hoc non est nigrum pro eadem mensura pro qua est album;* et ita de similibus est dicendum.

5 Ex istis patet quod non repugnat aliquid moveri ad denominacionem quam ipsum [non] habet et a denominacione quam [habet,] sed non pro eadem mensura temporis pro qua ipsum movetur ad illam vel ab illa; ut moveor ad sanitatem, et sum sanus illa sanitatem, sed 10 non pro eadem mensura temporis pro qua moveor ad illam, sed posteriori. Ideo ista posicio non destruit, sed ponit omnem motum cum suis terminis a quibus et ad quos. Nec esset aliter possibile motum specificari vel esse cum talibus terminis; semper tamen modificanti 15 sunt termini infiniti, ut: *non esse illius albi est vel fuit tunc vel tunc.*

Sed 2º probabiliter conceduntur omnes tales predicationes oppositorum positivorum pro diversis mensuris, sed non contradictorum; ut quod *ceci rident, claudi ambulant, mortui resurgunt,* etc. quia qui sunt huiusmodi pro preterito sunt huiusmodi pro tempore futuro; et hoc potest esse ad alium sensum sine miraculo, et ita invenitur sequela scripturam loqui. Et ita sum triennis et senior quam triennis, et iunior quam triennis, sed non quam est aliis qui est triennis. Sum enim senior quam triennis, quia pro hoc instanti. Et assumitur sic: hoc instans intrinsecum terminat senium meum, quod est maius quam aliquod senium trienne. Et ita resolvenda sunt omnia talia in *per se.*

30 Sed ulterius argumentatur quod necessarium antecedit ad contingens ad utrumlibet; et per idem, ex contingenti sequitur impossibile. Sequitur enim ad *deum scire Anticristum fore, ipsum Anticristum esse;* sed antecedens est necessarium, cum sit veritas eterna que non 35 potest incipere vel corrumphi. Et per consequens, vel est falsum vel contingens ad utrumlibet de presenti. Et per idem sequitur: *Deus scit me non fuisse; ergo, ego non fui;* sed antecedens est necessarium pro tempore preterito precedente *esse meum,* cum sequitur: *deus 40 scivit assumptum esse verum, me non fuisse: ergo, deus*

A thing may be white and black, but the contradiction consists in its being so at the same time. This theory does not contradict the idea of change; on the contrary, it affirms change with all its elements.

^{2. On the other hand, we may admit the argument and grant that these oppositions coexist, but in different parts of time, so that they do not really contradict each other.}

I am three years old, and older than three, and younger than three; but not younger than one who is just three years old.

Another objection: A thing absolutely contingent follows from a necessary truth:

which is absurd. For instance, God's knowledge that Antichrist will exist, and Antichrist's existence.

Or, God knows that I did not exist;

4. e't B. 6. non *deest* B. 7. habet *deest* B. 27. asr B; ib. senim B.
29. in p se B. 40. anu B; meum *pro* verum B.

therefore I did scit me non fuisse; et antecedens constat esse necessarium. Et quod consequens sit impossibile, patet ex hoc, quia suum oppositum est determinate verum de preterito, et omne tale est necessarium, et quod consequens sit impossibile. 5

Most of the philosophers whom I follow admit the conclusion verbally.

But the antecedent cannot be true at the moment when the consequence is good.

God knows that Antichrist will be; therefore Antichrist is, is true, but the consequence exists only at a certain time, and not when

Antichrist's futurition is without his present existence.

A consequence may also be true, and yet not true in any finite time; as: *God wills that all the instants of time be; therefore they are;* which cannot at any moment be true.

Thus it is not necessary that the thing affirmed in the consequent should exist actually, for the conclusion to be true.

It does not follow, if I know the resurrection, that the resurrection is now.

Hic dico quod precipui philosophi quos ego sequor in ista materia concesserunt conclusionem in terminis. Nec aliter videtur, capta tota multitudine veritatum continuancium, quomodo ipsa possent causari ab alia completa causa priori. Verumtamen hoc est impossibile quod pro eadem mensura qua consequencia est bona, et antecedens est verum, | et consequens non. B 164^b Nam data tali consequencia: *Deus scit Anticristum fore: ergo, Anticristus est,* realis consequencia non est nisi in tempore: ergo, est consequens cum antecedente. Et 15 ita in omni tali consequencia, consequens est ita verum sicud suum antecedens. Et ita illud consequens est necessarium et contingens, sicud antecedens est contingens et necessarium. Nec est consequencia pro instanti quo Anticristum *fore* est sine eius *esse*; quia consequencia est habitudo relativa causati ad causatum eiusdem. Unde aliqua est talis consequencia, quam simpliciter est esse impossibile in tempore finito; ut patet de tali consequencia: *Deus wult ista esse: ergo, ista sunt,* demonstrando omnia instancia temporis eterni 25 cuius antecedens et consequens claudit contradiccionem pro aliquo instanti esse vera. Ista ergo consequencia, cum suis extremis, est primo in tempore eterno, et respectu cuiuscunque temporis est dare talem consequiam et quotlibet alias veritates. Nec est inconveniens veritatem connexionem manere, et quantumlibet tempus, et posicionem antecedentis manere continue veram posicionem consequentis, manente contingencia vera sine existencia sui significati; ut hic: *dies iudicii est futura: ergo, illa dies est.* 35

Nota tamen quod non oportet, etsi signum sit verum pro aliquo instanti, quod suum significatum sit pro illa instanti. Sed satis est quod sit pro alia mensura, sicud non sequitur: *hic scio hoc: igitur, hic est hoc.* Ista non sequitur: *scio nunc resurreccionem mortuorum: ergo, nunc est resurreccio mortuorum.* Unde

patet quod, formato tali signo eterno: *deus scit omnia* And God's
instancia fore: ergo, illa sunt, quod tam antecedens quam knowledge, and
 consequens foret eternaliter verum. Non tamen bene the consequent
 est distinguere inter veritatem connexionis, que est con- existence, of all
 ditionalis veritas, non ponens antecedens vel conse- the instants of
 quens ex parte rei, et consequenciam ex parte rei. Stat time, is true
 enim conclusionem veritatis ad suum antecedens esse may be true at
 pro una mensura, pro qua suum antecedens non est, is not true, and
 et econtra, cum temporale sequitur ex eterno, et econtra. vice versa.
 10 Nec est verum quod deus unquam scivit vel scit me God never
 non fuisse, sicud nunquam fuit ita quod ego non fui; knew that I did
 sed semper est ita quod ego non fui in isto vel in isto in- not exist, but
 stanti. Unde non sequitur: *Hoc in quolibet instanti non* or such a time.
 est; igitur, hoc non est, demonstrando multitudinem Other
 15 omnium instantium, vel quodcumque aliud quod non examples.
 potest esse in instanti. Nec sequitur: *in hoc instanti est*
 ita quod hoc est vel non est: sed nunc non est ita quod
 hoc est: ergo, nunc est ita quod hoc non est; sicud
 eternaliter ante primum instans mundi fuit ita quod
 20 *hoc est vel quod hoc non est*. Et tamen nec fuit ita ante
 hoc idem instans quod *hoc est*, nec ante illud fuit ita
 quod *hoc non est*: sicud in multis locis neutrum con-
 tradictorium est, sic in multis temporibus, ut in quot-
 libet locis, *nec est ita quod tu es nec est ita quod tu*
 25 *non es*. Et ita in multis instantibus; quia aliter quid-
 libet repleret orbem terrarum, sicud deus. Et confor-
 miter non sequitur: *ante primum instans mundi fuit hoc*
 esse vel hoc non esse; sed tunc non fuit hoc esse, ergo
 tunc fuit hoc non esse; quia si tunc fuit hoc non esse,
 30 *et omne quod fuit est, sequitur quod est hoc non esse;*
 potissime cum illa repugnat: hoc fore et hoc non esse;
 et hoc fore fuit eternum ex omnibus cum talibus dictis.
 Unde sequitur cum determinacione quod *vel est hoc*
 esse nunc, vel est hoc non esse modo.
 35 Sed ulterius dubitatur si antecedens eternum eter- Whether an
 naliter causat suum consequens, ita quod, *si deus nunc* eternal
 wult A esse, nunc causat A. Quo dato, videtur quid- antecedent
 libet esse eternum, cum omnis rei causa sit eterna, et causes its
 causa completa simul est et non est cum suo causato;
 40 quia aliter consequencia bene alias posset esse sine consequent
 dato consequente, et tunc videtur quod deus eternaliter since
 God is the cause of all, and His will is eternal.

gignit omnem creaturam, cum pro quolibet instanti causat, faciendo omne scibile. Nec videtur ratio quare pro hoc instanti deus scit hoc esse quod per mille annos post hoc instans non est, quin per idem ordinat et scit hoc esse, cum sua ordinacio sit sua⁵

All things are
eternal in
God's
knowledge; but it does not
follow that they
exist in the
same way as
they are known,
i. e. eternally,
only that they
exist at the
right time.
So also of
God's will, love,
and ordering
act.

B165^a

faccio. Hic dico quod I precipui philosophi concedunt omnia esse eterna in noticia et sciencia dei, quod non aliter intelligendo adhuc addit, nisi quod illa fuerint eternaliter ordinata vel scita. Modo non sequitur: *hoc est volitum a deo scitum, vel ordinatum pro ista mensura: ergo, hoc est pro ista mensura.* Sed bene sequitur ex dato antecedente quod *hoc est in tempore suo*, ita quod ista sunt ampliata, sicud termini actuum illis correspondentes. Nec sequitur: *deus vult hoc, amat hoc, ordinat hoc, pro ista mensura* (quia intelligere dei re-15 spectu cuiuscunque singularis extra est prius quam suum *velle*, cum intelligere sit absolute necessarium): *ergo causat hoc, facit hoc, vel scit hoc pro ista mensura.* Sed *velle, diligere, ordinare, et cognoscere etc.*, que sunt intrinseca deo, precedunt suum *facere* ad extra. Ideo dixerunt subtile philosophi quod est dare actum executivum voluntatis divine, distinctum ab illa volitione, sicud temporale posterius in natura distinguitur a suo priori eterno.

These acts
precede those
of making,
which are
extrinsic to
God.
Some
philosophers
even posit a
two-fold act
of His will.
Note which
verbs denote
the external
operation of
God, and
which the
internal act.
The latter may
be and are
without their
temporal
results, which,
however, they
must produce;
for to be
without signifies
not to have for
a certain period,
not for ever.

20
25
30
35
40

ideo oportet notare que verba ponunt pro eadem mensura rem ad extra, et que non; ut *operare* dei, *efficere* [quod] suum est, *formare*, *moveare* et huiusmodi sunt temporalia. Sed *scire* vel *cognoscere*, *amare* vel *ordinare* etc. sunt eterna; et illa possunt esse et sunt sine temporalibus, que formaliter secuntur ex illis; non tamen possunt esse cum hoc quod reliqua non sint. Unde satis est quod A sit pro aliqua mensura pro qua non habet B, ad hoc quod sit sine B. Unde beatus Petrus est sine peccato pro mensura sui certitudinis, et tamen est in peccato pro mensura sue negationis, et ita nunc scio B Petrum esse in peccato, sed non pro nunc; et ita credo quod scio me esse beatum in tempore suo; ymmo credo quod nunc scio me esse beatum tunc.

Whether a
cause produces
its effect before
that effect
exists.

Sed ulterius dubitatur si causans causat suum cau-40 satum antequam causatum sit ipsum. Et videtur michi

t3. terminum B. 18. si' pro scit B. 27. quod deest. 31. r'linq B.
34—35. of'itu^{nis} B.

quod omne causans prius origine natura vel tempore It does; neither causat suum causatum, antequam ipsum sit, sed in sup- in time, nor in nature, or posito causantis. Si causans pro aliquo instanti causat, by origin; but vel est causa eorum, tunc illa sunt pro eodem instanti. cause, *qua* cause, and effect are 5 Unde quamvis deus sit causa Anticristi, non tamen pro simultaneous. God is Antichrist's cause, but not now; and we may say that what causes at one instant exists at another. So a consequence exists only when the consequent exists, and the antecedent exists before it is properly an antecedent.

hoc instanti; et sic concedi posset quod in hoc instanti est illud quod causat in alio instanti; et sic est causa in alio instanti, quamvis non in hoc instanti causat in alio instanti. Et ita conceditur, ut prius, quod con- 10 sequencia ex parte rei non est nisi pro mensura in qua est illud consequens. Et ita antecedens est pro mensura pro qua non est antecedens respectu dati consequentis, quia non est antecedens, nisi quando est antecedencia. Et sic patet quod tempus est in instanti, 15 non ut in eius adequata mensura, sed est in se primo, cum per se sit diuturnum et in instanti, ut in casu; et in eodem instanti est unum instans aliud a reliquo. Nec sequitur quod in eodem instanti reliquum sit, nec quod pro illo instanti sit unum aliud a reliquo, quia 20 tunc in illo instanti esset illa alietas.

Ex quo patet quod infinita sunt, quorum nullum There are potest esse per tempus vel instans. Illud patet de veri- infinite things that are neither temporal nor instantanea, as, v. g. eternal truths, collective propositions, propositions about varied motion,

tatibus talibus eternis, primum instans erit, generacio mundi erit, etc. Patet etiam de talibus: *Ista omnia sunt*, 25 quibuscumque demonstratis; patet etiam de talibus: *Iste motus est difformis, quo ad tempus alio gradu usque ad B;* et ita de difformitate motus, cuius prima medietas est uniformis ut 4, et alia medietas succedens uniformis ut 8, et generaliter de omni motu remisso qui 30 non est vere continuus generaliter; et per consequens de omni sono vel oracione. Nam manifestum est philo- B 165^b sophis quod oratio est | quantitas discreta, successiva, in qua sunt quotlibet intercisiones, eo quod tremor est motus causatus ex refleccione, qui non potest esse 35 motus continuus, ex 6^o phisicorum. Ideo generaliter decipitur sensus de continuitate soni, sicut visus de continuitate situacionis [et] coloris: ut patet de ticone circumducta in nocte, et troco cuius basis est discolor circumducto in limine, ut declarat Boecius in prin- 40 cipiis musice.

sound, and speech;

which last is an intermittent and varied movement, in which our ears are deluded, as our eyes are in other cases.

2—3. \supseteq B.6. $\widehat{p}i$ concedi pos; B.16. $\overset{2}{ca}$ = causa? B.3t—32. $\widehat{ph}\bar{i}s$ = physicis (?) B. 37. et $\widehat{de}st$ B; ib. \widehat{ticon} B. 39. \widehat{line} B.

Here I wonder
how modern
writers can pay
so little heed to
their own
expressions on
these subjects,
which imply
that many
things exist
which are not
present.

If not,
movement
could have no
beginning nor
end; design in
nature, merit
and demerit,
would perish;
theft and
hanging, work
and health,
father and son,
privation and
production,
would no more
be causes and
effects.

And nothing
could happen in
which there was
a before and
an afterwards.

Blessed be the
Lord, who hath
enlightened my
mind, so that
I escape these
straits!

That God is
certain as to
future things
makes no
difficulty; for
there is both
contingency
and necessity.
I am quite free
not to act thus
or thus,
but this does
not exclude
hypothetical,
only absolute,
violent, or
natural
necessity.

Et hic admiror quomodo moderni non advertunt ad locuciones suas de prioritate et posterioritate temporis, de difformitate motus quo ad tempus (et sic de aliis), de comparacionibus includentibus multa esse extra presens. Aliter enim non esset possibile motum successivum vel subitum terminari, vel habere terminum a quo vel terminum ad quem, vel naturam agere propter finem actionis sue, nec meritum vel demeritum esse causam pene vel premii; nec furtum potest esse causa suspensionis, nec labor causa sanitatis, nec pater causa filii, nec privacio principium producendi, nec mors vel fons vite alius potest esse; nec aliquis potest ambulare vel dicere argumentum, nec aliquid potest esse ante tempus vel post aliud instans; et sic omnia incipiunt et desunt esse, cum non erit tempus amplius. Si enim A erit post hoc, tunc possibile est A esse post hoc, et tunc possibile est anterioritatem vel posterioritatem esse, et sic prioritatem et posterioritatem. Sequitur enim: *ego sum ante B, ergo sum prius temporaliter quam B.* Et ita de post, quia aliter non esset possibile quod unum succedat vel precedat temporaliter aliud, cum pro mensura pro qua sunt simul, neutrum est temporaliter post vel ante reliquum. Non enim concedendum est quod deus facit aliqua duo incipere esse; et si cognosceret unum posse differre a reliquo, vel alterum illorum ordinate posse fieri, ipse non sic faceret. Benedictus sit ergo dominus temporis, qui illuminat mentem meam supra tempus ad evadendum libere omnes istas angustias spiritus in loquendo.

Nec movet difficultas de assercione dei respectu futurorum, quod utrolibet est sibi causata certitudo, et ita simul in unum contingencia et necessitas. Ego enim liberrime possum non fecisse quemcunque actum, ymmo non esse pro nunc, cum omne unum quod non est absolute necessarium est contingens ad utrumlibet et ex necessarium ex suppositione. Si ergo esset absolute necessarium omnia futura evenire, vel necessitate coaccionis, vel 3^o necessitate naturali excludente libertatem, periret meritum. Modo est necessarium meritum, consilacionem, casum et fortunam esse: ymo potentiam

9. *no* pt' B. 13. *am* pro argumentum B. 20. B *deest* B.
30. *aff,cone* B. 31. *cata* B.

a domino esse cuiuslibet creature; et hoc est de lege que potest esse ordinata: *talia possunt contingere*; legi tamen ordinate, que est eterna et incorruptibilis, repugnat talia non esse. Et si queratur quid sit necessitas ad peccandum, potest dici quod non deus, sed libertas arbitrii. Verumtamen, sicud est temporale bene placitum deo, est reducibile ad eius voluntatem eternam, cuius non est dare causam formaliter inferentem; sic omne preteritum est reducibile ad voluntatem causatam, cuius sequela non est causa substancialis ulterior, quamvis B 166^a deus sit causa veritatis connexionis. Et ita wult quemlibet actum; sed non placet illi disformitas eius, que est peccatum. Wult ergo odium, sed non sic odere.

Sed postremo obicitur quod tota difficultas stat in abusione verborum de presenti pro tempore preterito et futuro; in quo fundamento non est difficultas, sed voluntaria deviatio a grammatica, ut patet ex concedendis a sic opinantibus. Nam querendo quid facit Adam, Anticristus vel quicunque alias, diceretur quod ipse incipit esse, desinit esse, et breviter facit quidquid fiat vel faciet. Et tamen est mortuus vel est generandus.

Negantur eciam a sic dicentibus syllogismi expositorii, et rectissimi syllogismi in quacunque figura; ut sic argumentando: *iste est albus et iste est niger; igitur album est nigrum; omnis homo est mortuus, omnis homo est virus; ergo omnis homo virus est mortuus vel omnis homo mortuus est virus.* Nullum album est nigrum; omnis homo est albus: igitur nullus homo est niger.

Omnis homo syloyzat; aliquis homo est mutus; igitur aliquis homo mutus syloyzat. Et sic de similibus infinitis. Sequitur eciam quod a privacione ad habitum possibilis est regressio; ut tam facile est me servari ne peccavero postquam peccavi, sicud ante fuit; et tam faciliter possum remediare quamcumque indispositionem sicut unquam potui. Sequitur eciam quod filius meus ex michi dubio esset sapiencior me, cum tamen sim certus quod non habui filium. Nam si filius meus erit sapiencior me, ipse est sapiencior me. Sed ex michi dubio ipse erit sapiencior me: igitur ex michi dubio ipse est sapiencior me. Et per idem ipse est senior me in

1. adomio B. 11. vocat B. 12. michi B. 27. vivus est mortuus B. 36. exm B. 38. exm' B. 39. exm' B

unless I wish casu, vel alias non valet exposicio comparativi gradus, to contradict nec exposicio de *differt* et *aliud*, nec aliqua exposicio all that is here laid down. supra dicta, continens diversitatem temporis.

I reply that a logician must adapt his speech to his audience and to circumstances; so, when speaking of transitory and particular things, he will admit that the present is and the past is not, nor the future; meaning *not now*; as, when a common person, asked if he has heard istud capitulum. Mass, says, "No", meaning "not to-day". But when he has to deal with philosophers on abstruse questions, he must speak of all the parts of time as being present, abstracting from the signification of *present* that of any particular time. Some grant this extension only when speaking of God; all is present to God, they say, but that does not give it existence. This I cannot admit. When I say: *this or that is present to God*, I abstract from the idea of actual existence; I do no more when I say: *This or that is*. Hic dico quod loyculus debet aptare locucionem suam secundum exigenciam auditorii, pro loco, et tempore; ut puta, quando queritur de rebus transmutabilibus tunc dicendum est particulariter, considerando hoc instans in quo sumus; et secundum hoc aptanda sunt verba, concedenda aliqua esse et non fuisse, ut illa que nunc sunt subita, alia fuisse et non esse, vel fore, subtiliando ipsa non esse nunc. Sic enim locuntur plebei, quando queritur si comedenter vel audierit missam, dicunt quod non, restringendo questionem ad illud direkte; et ad istum sensum locutus sum usque ad 15 Mass, stractis philosophis secundum consideraciones universales, transcendendo omnia corruptibilia, loquendum est de tempore et suis partibus quibuscumque, cum omnibus mensuratis vel existentibus in illis, ac si essent 20 presencia; quod non potest concipi nisi acie intellectus, considerantis duracionem eternitatis supra tempus, et abstrahentis verbum figure presentis temporis a connotacione particulari cuiuscunque temporis; quod sine dubio singulariter grammatici rare sciencie swadent ad 25 faciendum.

Unde aliqui concedunt talia, solum ampliantes verbum quando de deo locuntur; ut deo dicunt omnia merita et demerita, preterita et futura esse presencia. Et quando queritur utrum sunt vel non sunt, dicunt 30 quod non sunt, sed sunt quo ad deum; sed hoc non infert illa esse. Hoc tamen videtur michi preter rationem locatum. Ideo, sicut ampliendo intelligo verbum B 166^b sub figura presentis temporis, simpliciter sine connotacione particulari temporis, quando dico quod deus 35 cognoscit, facit, vel habet sibi ista presencia; sic, quando similiter profero quod *ista sunt*, intelligo verbum ut tempus. Nec est michi vis concedere cum verbis adiectivis tales pretericiones, aut solum cum verbis substantivis et verbalibus veritatibus adiectivorum. 40

Some admit that a movement past or future, is;

6. pres B. 16. i^d B. 25. su duo B. 42. fit pro fit B.

movebatur aut movebitur, moveri: ita quod non sequitur: *locucio Sortis est: ergo, Sortes loquitur*, propter equivocationem connotacionis temporis per verbum. Sed non est veritas in ista diversitate. Quando vero non sic ampliavi verbum, bene negavi aliqua deo esse presencia, nisi ea que sunt, sed concessi pretericiones et futuriciones rerum esse deo presentes, et ille faciunt bona vel mala; et ista sentencia est satis vera in sensu suo.

10 Ulterius dicitur quod non negans Adam esse, et dubitans dicit de Anticristo si est, non contradicit concedenti utrumque illorum esse pro tempore eterno, et non simul et semel. Et illa concedens quod ipse facit omnes actus difformes quos unquam fecit, referendo ad temporibus preteritum, quod est pars temporis eterni, non contradicit neganti quod ipse facit aliquod tale, restringendo verbum ad ipsum *nunc*.

Nec sequitur ex ista opinione aliquem sylogismum esse negandum, quin pocius sylogismos concedendos esse quos multi negant; ut patet de conclusionibus concedendis de oppositis predicationis de seipsis, sed non simul et semel. Et est propinquissima locucio quod deus est non solum ante generacionem Abrahe, sed eciam antequam fieret, et ante rationem stabilitatis sue, 25 quod est eternum. Et ita hodie et cras Cristus vivit, et 3^a die consummatur. Ymmo, sicut credo carnis resurreccionem, Christi mortem quam aliqui crediderant, et per consequens cum actus fidei non sit falsus, sequitur fidem creditivam esse veram; et ita deus diligit 30 et wult omnia bona que erunt vel fuerunt, et per consequens cum [non] wult non ens, sequitur omnia talia esse. Et ita omne tempus, maius vel minus, componitur ex omnibus suis partibus. Et tunc aliquod ex centum annis, aliquod ex 4 annis, erit aliquod ex quotlibet instantibus. Nec sequitur hominem esse multiplicatum per diversa loca, etsi ille sit per diversa loca distanca, quia requiritur quod simul et semel sic esset, nec sequitur: *ista sunt: igitur sunt simul tempore*.

Sed ulterius dicitur quod non sequitur omnem regresionem esse possibilem a privacione ad habitum, eo

but deny that
what was
moved is
moved;
but this is not
true.

There is no
real
contradiction
between one
who does not
deny Adam and
doubts of
Antichrist, and
one who affirms
that they exist,
each in his
time,
nor between
one who says
he does all the
bad actions
he ever
committed,
and one who
denies it,
restricting his
meaning to *now*.
I deny no
sylogism; on
the contrary,
I admit
sylogisms that
others deny.
I admit that
God is before
Abraham's
existence, and
even before his
eternal election.

All time is
made up of
parts;
100 years,
4 years, are all
made up of
instants.

11. dicitur B. 11. antecristum vel de B. 24. c t, *pro* et B.

26. gsumat^r B. 28. f^o B. 31. non *deest* B. 33. exce'tū *āns* B.

34. *āns* B.

that a return
from a privation

to a former quod regressio ponit habitum fuisse, et privacionem quality is always possible. postmodum fuisse. Unde non sequitur: *Ego possum A return implies habere istam formam et careo ista forma: ergo possum that the habere istam formam postquam carui ista forma.* Hoc quality has been lost. We may take thought about things past, but not as past things.

enim ampliat hoc nomen, *regressio.* Nec obest consiliari de preteritis, sed non pro tempore pro quo sunt preterita; nec bene aliter admitteretur quod sint futura talia, aut quod sumus ante hoc instans, demonstrando ista que de facto sunt preterita, si illa essent similiter impossibilia. Possum ergo cavere de multis talibus de potentia absoluta.

Nor is my son perhaps wiser than I if I have no certitude that I shall have one; in the other case it is possible. He may be older than I if he lives 100 years and I then return to life; otherwise it does not follow.

The others say that time consists of parts which do not exist, that a vocal proposition is a proposition, but has no being; that the sacramental words are not true until completed; that there is nothing successive; that things move and last without motion or duration. They cannot account for age, which becomes greater and greater by succession, and can neither be increased nor diminished.

Nec sequitur quod filius meus ex michi dubio sit sapiencior me, cum non habeam evidenciam quod ego habeo filium. Verum cum hoc est satis possibile. Nec sequitur a pari quod sit senior ^{B 167^a} me. Illud tamen est possibile, posito quod vivat centum annis, et ego sum noviter suscitatus. Et sic de quotlibet conclusionibus, in quibus oportet diligenter cavere de negacionibus et mensuris cum quibus est verificacio. Ut: *ego scio quando dies iudicii est*, sed adhuc ignoro hoc nunc, cum scio illum diem esse; quia credo absque contraria formidine, et iam est, sed non credo istum esse nunc.

Alii vero commemorant verba sua sine fine, concedentes quotlibet impossibilia et adhuc vult esse; ut alii concedunt tempus et alia successiva componi ex partibus que non sunt. Et propositionem vocalem concedunt esse propositionem, sed non esse. Alii autem dicunt quod hec proposicio vocalis: *hoc est corpus meum*, non est vera antequam complecione residui propositionis, foret Cristus sacramentaliter in hostia. Alii dicunt quod non est possibile successivum esse vel aliquid moveri. Alii dicunt quod res moventur sine motu et durant sine duracione; et sic de multis quibuscumque impossibilibus, a quibus deus liberavit me sic loquendo. Non scirem enim aliter etatem meam, vel antiquitatem aliam sustinere; quia omnis talis est magna successive, et per consequens habet vel habebit partes. Et cum nulla singularis etas potest maiorari vel minorari, sequitur quod totalis etas sit continue eque magna; cum enim causatur ex adiacencia temporis, patet quod causatur successive ex tempore; quia aliter tempus causaret illam

subito in fine, quin illud tempus non esset. Habito ergo quod etas sit successive magna, patet quod oportet posse etatem ita proporcionaliter [ad] senem, et non pro illo instanti in quo est quantumlibet iuvenis. Ergo res linquitur quod post, in tempore suo, sit sic senex. Sic ego nunc senior per indivisibile quam prius fui, quia est dare quam senex prius fui, sicud et danda est maxima etas hominis qui nunc deficit esse, et incepit mecum. Alter enim non est dare quamdiu viveret vel quamdiu esset vita vel mutacio sua, nec totum cuius forent parciales etates. Non ergo est verum quod aliquid semper non erit per tempus aut per tempora.

Quo ad 2^m dubium, videtur quod non idem tempus sit ubique, hoc est in omni loco; quia in nullo loco est accidens, nisi ubi est suum subiectum; sed non in omni loco est mundus quod est subiectum temporis, sed tantum in uno: ergo non in omni loco est tempus idem in numero.

Item, impossibile est accidens esse unum, nisi 20 supposita unitate subiecti sui; sed mundus non est aliiquid unum, ymmo aggregatum ex omnibus creaturis vel vivis ista aggregata: ergo, nec tempus est unum. Maior patet ex hoc quod non est corpus animatum continuum, nec aliquod ens predicamentale, cum tunc haberet animal, et omnia corpora immediata essent continua.

Item, maior pars philosophorum non verterentur in dubium quin quelibet pars mundi potest esse mundus. Ex quo patet quod quotlibet partes mundi sunt eiusdem speciei cum mundo, et per consequens duraciones 30 earum sunt eiusdem speciei. Et sic, duracione mundi existente tempore duracionis suarum parcium, forent tempora. Sic enim essent, posito quod substancia sua esset mundus; et per consequens, cum nullum tempus per accidens sit tempus, sequitur quod sunt tempora.

35 Item, omnis duracio corporis extenditur, omne tempus est duracio corporis: ergo, omne tempus extenditur.

B 167^b Maior patet ex hoc quod duracio parcium | corporis presupponitur ad duracionem tocius, tanquam causa; et non extrinseca: igitur intrinseca. Sicud ergo totum 40 durans ad eius partes durantes, sic tota duracio ad eius parciales duraciones. Non ergo est racio quare

A man's age being reckoned thus, old age must come long after the age of youth, and old age has its comparative and superlative degree.

Whether the same time is everywhere.
Arguments contra.

1. The world is not everywhere, and time is unable to be where the world is not.
2. The world has no unity, it is a mere aggregate; time cannot have more unity than the world.

3. It is doubtful if a part of the world cannot be the world; so each part may be of the same species; therefore the durations of each part are separate times.

4. All duration of a body is extended, and time is the duration of a body.

motus vel aliud accidens extenditur, quin per idem tempus extenditur.

5. If time were
the same
everywhere,
day would be
night, autumn,
winter and
summer would
be together.

Item, iuxta istam viam, sequitur quod dies sit nox, autumpnus sit ubi estas sit [et] yemps; tempus eciam saluberimum et pulcherrimum foret turpissimum tem-⁵ pus et pestilencia; et sic de quotlibet denominacionibus oppositis temporum. Deduccio patet ex hoc quod idem est tempus in numero apud omnes. Illud ergo quod hic est nox, est allibi dies; et sic de ceteris conclusionibus expositorie inferendis.

I reply that the
time which is
night may be
somewhere
without its
being night
there.

Those who
dwell at the
Poles have one
day and one
night in the
year, of six
months each;

and those who
live in the
frigid zones
have in winter
days, and in
summer nights
of only a few
seconds.

But I am
answered (1):
If what is day
elsewhere is
night here, then
day is night;
and yet where
night is, there
is no day.

And night will
be continually
pursuing day
round the earth,
and day
likewise.

Time would
move round
the earth, and
night and day,
which are
universals,

Sed hic dicitur quod illa nox est hic, sed non est hic nox. Et ideo dicunt auctores habitantes sub polo habere totum annum pro die naturali, scilicet medietatem anni, sole existente in sex signis propioribus isti polo; et aliam medietatem anni pro nocte, cum sol per ¹⁵ aliam medietatem anni erit in aliis sex signis distancioribus ab eodem polo. Et cum orison taliter habitantium sit equinoctialis circulus, patet quod unam medietatem anni habebunt pro die et aliam pro nocte; et alii habebunt diem eternum, sicud habitantes in celo ²⁰ extra umbram terre. Alii autem habebunt aliquando instans, vel verius aggregatum ex paucis instantibus pro die artificiali; ut habitantes sub polo zodyaci, sole existente in solsticio yemali, et dum sol fuerit in solsticio estivali, est illis dies fere 24 horarum et nox ²⁵ unius instantis vel tempus aggregati ex paucis instantibus.

Contra illam responsionem argumentatur primo sic. Sequitur, *dies alibi est hic nox, et cuiuscunque est tempus alicubi, huiusmodi est: ergo dies est nox*; et tamen, ubicunque est nox, est non dies. Sequitur quod dies ³⁰ est non dies. Et per idem sequitur quod quelibet pars diei vel noctis est dies et nox, et per consequens pars non est pars; et sic de aliis oppositis.

Similiter sequitur quod continue fugabit nox diem, et econtra circa terram proporcionaliter, sicud lux solis ³⁵ sequitur umbram terre; et econtra. Sed illud videtur loyco derisorium et posticum mendacium, cum tunc tempus moveretur circulariter ad motum solis. Ymmo

4. et deest F.

23. *Sub polo zodyaci.* Under the pole of the ecliptic. The ecliptic having about 23° of obliquity with the equator, its poles touch the arctic and antarctic circles.

foret tunc nox figurata continua, sicud umbra terre et dies sicud residuum mundi; quod non conveniet multiplicatis. Et conclusio patet, ex hoc quod continue erit eadem nox numero oriencior et quiescenti propinquior. Ergo per eius motum erit. Per idem dormiens in lecto mane, vel fugiens diem versus occidens foret continue propinquior diei; quod non posset esse, nisi propter accelerationem diei supra fugam suam.

Similiter videtur quod idem tempus potest augeri et alterari, cum motus celeriter versus occidens haberet diem diuicius quam ipso in dando situ quiescente; et cum non continue haberet novam diem et noctem, sequitur quod ille per motum suum prolongaret sibi diem. Et de alteracione temporis videtur planius, cum 15 dies potest serenari et nox obscurari. Annus eciam potest meliorari vel peiorari in fertilitate et bonitate, et sic de multis talibus denominacionibus qualitatum.

Similiter videtur quod ad omnem punctum sub terra sit nox, et per idem omne corpus terreum eclipsans directum aspectum solis ad medium dyaphanum faceret ibi noctem, cum non sit racio quare mane est vel sero, cespes terre vel aliquid mixtum faceret noctem per eius adumbracionem, quin per illud quodlibet aliud mixtum terreum; sicud patet, ymaginando quod loco 25 terre ponatur quodvis terreum mixtum. Et tunc sequitur | quid quidem ad nutum, per interpositionem manus vel alterius eclipsantis faceret noctem ubicunque fuerit. Ymmo quilibet portaret, tam extrinsecus per pannos vel alia tegumenta eclipsancia, quam intrinsecus, 30 ad omnem punctum noctem suam secum. Et cum dies tam cerebro intercipitur, sequitur quod sunt mille noctes localiter distantes, sicud et dies. Nec valet dicere quod in lapidibus et aliis mixtis opacis nec est dies nec nox, tum quia omne tempus est dies vel nox 35 ubicunque fuerit, vel saltem pars earum, tum eciam quia omne tale mixtum est porrosum, habens corpus dyfanum in eius compositione; et in infinitum in op- posito loco potest esse nox adequate, sicud patet de nocte instantanea, que solum est nox in puncto terre 40 supposito polo zodiaci. Sol ergo, respiciens terram,

would have a semi-spherical shape.

The same time could be increased and changed; a thing moving swiftly towards the West, would have a longer day; and the day may become finer, the night darker, the year more or less plentiful.

Night would be everywhere underneath the earth; and every earthly body eclipsing the sun, would produce night;

night would be carried about under the clothes, in the body and the brain.

There would be a thousand different nights and days.

You cannot say that in minerals there is no night and no day; all time is one of the two, and minerals have pores, letting in the light.

It is the sun that causes the

1. figata B. 2—3. $\widehat{m}ltit\varphi$ B 12. nouñ after et B. 20. as-
pectu B. 28. tamquam B. 34. $\tau\eta$ B.

day by beaming causat illam diem infra illam diem, eo quod aliter que-
on the earth; libet abombracio per nubem terream causaret noctem.
otherwise every cloud would cause night;
and night is when it does not beam; if the sun failed us,
both day and night would fail, or day and night would be tas
equivalent to light and darkness.

Et si potest dies remitti usque ad non gradum in claritate pro medio instanti, non foret ratio quare esset plus nox quam dies. Sicud ergo hic, tempore in quo deficit illustrando, tunc hic est nox; quia aliter, deficiente sole, deficeret tam dies quam nox; vel aliter quelibet illuminacio causaret diem et quelibet abscuritas night would be tas indifferenter causaret noctem; sed nunquam in sole, 10 ubi non potest esse nox, sic dies.

This we admit, and answer the eterna, suppositis predictis de tempore. Dicitur ad foregoing argumentis.

1. It is not true that accidents are only where their subject is; relations, v. g. are multiplied throughout their subjects. But if we say, as we may, that the whole is in each of its parts, then we deny that the world is not everywhere, though it may be said: The world is in your mouth, and you are in your anus: for this is a verbal quibble.

2. The world must indeed have a certain unity, or it would be a mere aggregate of substances.

As laws unify a people, so they do the world;

and it does not become other merely because of generation and corruption here below;

Dicendum quod sic, aliter non esset in celo dies primum quod assumptum est falsum, cum relaciones et alii respectus, ymmo qualitates competentes composito multiplicantur per subiectum; sicud patet de similitudine, de sanitate, de voce, et multis similibus que non habent partes corpore extensas. Verumtamen equivocando de esse in alio, ut docuit Aristoteles, concedi potest quodlibet totum esse in qualibet eius parte, ut causatum in sua causa, et non ut locatum in suo loco. 20 Et tunc neganda esset minor, cum mundus sit in omni loco, non dimensionaliter, sed causaliter. Et si derisorie inferatur quod mundus sit in ore tuo, et tu totus in anno tuo, patet quod leve verbum est et in sentencia nichil movens; sicut nec: pars mundi est in ore tuo et pars 25 tui est in tuo anno. Nec oportet sentire ibi fetorem, cum non habens ibi olfactum, nec sicud dimensor abstractus strictitudine loci, sicud deus qui est ibi.

Ad 2^m dicitur quod oportet ponere mundum habere quamdam unitatem; vel discretam quantitatem, ut habet 30 populus; vel continuam, ut habet homo. Vel quomodo cunque dicatur, mundus non est omnes creature, sed aggregatum ex omnibus substanciis; sicud populus non est illi homines, sed aggregatum ex hominibus convenientibus in pollicia vel ritu. Unde, sicud manet idem 35 populus, quamvis non ultimum singulare manente eadem pollicia vel lege vivendi, sic manet idem mundus, manente eodem principe cum lege sua naturali et multitudine naturalium principiorum. Non ergo est nowus mundus propter generacionem vel corrupcionem, corrup- 40 torum sublunarium, quia manet idem deus cum suis

1 e^o B. 3. sic B; ib. duo pro non B. 12 p^te B. 40—41. cor^r r^e B.

legibus et quilibet punctalis materia prima. Et quando auctores dicunt quod totum est sue partes, predicacio materialis est. Sicud enim utuntur auctores predicacione 2^m causam, ut diem dicunt lacionem solis super terram, et illam lacionem vocant porcionem super terram circuli descripti super orisontem: ubi non est dubium | quin figurative locuntur; ac si dicenter quamlibet creaturam fuisse rationem eternam esse: ideo et ipsam rationem esse deum. Sic ergo intelligendo mundum discrete unum, ponit philosophus correspondenter quod genus temporis est numerus, hoc est mensura secundum naturales replicaciones instantium, mensurans motum.

Ponendo autem mundum esse animatum, tunc paten-
cius est essenciam mundi (quia ipsam animam) esse ubique, sicud dictum est de homine. Et sic tempus est accidens in omni loco, sicut etas hominis est in omni eius parte. Et iuxta istam consideracionem foret duracio vel mora temporis; illa tamen mora est numerus, quia mensura que primo causatur ex numero instantium. Manerent autem adhuc ponendum tres raciones, primo ex hoc quod aliter non esset dare quod mundus est substancia, [sed] acervus alicuius non naturalis. 2^o ex hoc quod mundus, cum sit quoddam totum et finis, gracia cuius constituendi sunt eius partes ordinate, est perfectior quam aliqua eius pars. Cum ergo multe sunt partes mundi animate, et omne animatum sit perfectius quam corpus inanimatum, sequitur quod mundus sit animatus. 3^o ex hoc quod omnem actionem vel perfectionem quam habet pars integralis habet suum totum; sed pars mundi habet intelleccionem, sensacionem, vegetativam, sensitivam, et motum ex se; ergo et mundus denominatur eisdem actibus, et per consequens vivit. Et pari evidencia ex se movetur, et celum sic movetur; omnes ergo partes mundi sunt anima regulante, quamvis non proprie vivant, sicud est in minori mundo, cuius superfluitates aliisque non vivunt, nec superfluitates trium digestionum correspondentes in maiori mundo 4 elementis et mixtis inanimatis ex illis completis. Superfluitates vero alie, ut pili, et cornua, correspondent plantis et arboribus; et ossa mineralibus. Sublunarii vero loci correspondent spiritibus;

for God, and the laws of nature, and primal matter, remain unchanged. The whole is its parts materially, not formally; it is a merely figurative expression. The world being one, Aristotle defines time as the measure of its motion.

But if we admit that the world is animated, then its essence (or soul) is much more truly everywhere.

If not, we cannot prove that the world is more than a mere aggregate. It must be, as a whole, more perfect than any of its parts; but some of its parts are animated, therefore, it must be so too. The whole possesses every perfection of its parts; now a part of the world understands, feels, &c. Besides, the world has self-movement. Comparison of the macrocosm with a living body, or microcosm.

4. *diedut' B.* 23. *sed deest B.* 30. *pars B.* 40. *ḡt̄ B.* 42. *Subiñ̄ B.*

At any rate,
the world is
one, and time
is the measure
of its
transmutations.

3. Not
admitting the
possibility of
annihilation,
I do not admit
that a part of
the world can
become the
whole.
And thus no
part is of the
same nature
as the whole.

It is urged:
Time is prior
to any duration
caused by time;
but as each part
causes the
world, each
partial duration
is prior to time

But different
things may be
reciprocally
cause and effect,
in different
ways.

The parts of
the world cause
the whole, as
that of which
it consists;
the whole
causes the
parts, as that
for which they
exist.

So also of
duration.
I leave to
theologians
whether or
not the world

et sic terra attribuitur corpori hominis, aqua sangwini, aër spiritibus et ignis calori. Regio vero capitinis correspondet celo, regio pectorum aeri, regio vero intestinorum correspondet aque et regio generativorum, cum posterioribus membris solidis, correspondet terre. Et 5 ut breviter dicatur, quelibet proporcionalia contingit reperire in maiori mundo et minori. Sed quomodo cunque sit de ista opinione, satis est quod mundus sit unus, et tempus sit, et numeros ipsum consequens ad mensurandum eius esse transmutable. ¹⁰

Ad 3^m credo quod illud assumptum pro opinabili sit impossibile, cum nichil potest annichilari; quod tamen oportet ad hoc quod pars mundi foret mundus; hoc est, universitas creaturarum. Ideo nulla pars mundi est eiusdem speciei cum ipso; et per consequens cuiuslibet partis mundi duracio potest esse tempus, sed duracio totius mundi.

Sed obicitur: omne tempus est prius quam qualitas ab illo causata; ergo, iuxta opinionem, duracio mundi foret prius quam duracio partis mundi. Conse- 20 quens falsum, cum pars mundi sit causa mundi, et per consequens ipso prior; et per idem, ipsum | quando B. 169^a foret prius tempore, potissime cum potest esse sine mundo; sicut patet in mundi produccione, specialiter de animalibus. ²⁵

Hic dixi, ut sepe alias, quod non obest aliqua reciproce causare se in diversis generibus causandi. Unde partes mundi causant ipsum materialiter; et mundus econtra causat illas partes finaliter; et, cum finis sit causa perfectissima, patet quod in prioritate dignitatis, perfectionis, et principate intencionis nature, mundus excedit quamlibet eius partem. Et sic se habet duracio ad duracionem. Utrum autem mundus sit in infinitum perfectus per generacionem unius suppositi, quod sit deus et homo, componens parcialiter cum 35 mundo, relinquo theologis, qui dicunt istam humanitatem esse tantum finite bonitatis. Sed hoc videtur michi certum, quod manet continue idem mundus, et

4. aqua B. 11. cdo B. 21. gns^m B. 26. d'r dixi B. 28—29. mun-
dns et. 34. perfectum B.

^{15.} *Cuiuslibet.* I think it would be more in agreement with Wyclif's general meaning to put *nullius*.

sic anime continue producuntur, cum quelibet anima sit accidens mundo. Correspondenter autem dicitur quod motus in communi est prior naturaliter tempore, et tamen tempus singulare est naturaliter prius quo-
 5 cunque motu singulari; sicud est de quantitate corporis in genere, presupposita ad quantitatem eiusdem corporis corpoream. Et tamen quecumque eius quantitas singularis est posteriori danda quantitate; et ita reperies in multis.

10 Ad 4^m negatur assumptum, sicud patet de duracione hominis que manet eadem corrupto membro, ymmo corrupto toto corpore. Aliter enim non foret periodus animalis continua, sicud vere conceditur esse. Si ergo fuerit res habens partes quibus potest carere, tunc
 15 eius duracio omnino non dependet a duracionibus illorum parcium; nec per consequens extenditur, sicud contingit in animali. Et per idem duracio mundi non extenditur. Nec sequitur, si duracio mundi presupponit duracionem dei, que est eternitas, et duracionem anime
 20 mundi vel intelligencie, que duracio dicitur evum, et 3^o duracionem materie prime, que est quandalitas, quod ex hinc ille duraciones presupposite sint eius partes; sed bene presupponuntur ut essencie extrinsece,
 non quo ad situm, sed quo ad essenciam; sicud qualia-
 25 tates prime sunt essencie extrinsece presuppositae ad resulta-
 cionem qualitatuum secundarum. Et sic de aliis multis acci-
 dentibus. Est ergo magna racio quare duracio mundi, que
 est tempus, non extenditur, et motus mundi extenditur;
 quia, quotlibet partibus mundi corruptis, foret continua
 30 eadem duracio mundi, sed non foret idem totalis motus mundi, corrupta parte mota. Et ideo hinc est quod mundus durat indifferenter ad omnem eius partem sive motam
 sive quietam, sed non movetur alicubi, nisi ubi pars eius movetur. Ideo motus mundi dicitur velox vel tar-
 35 dus, uniformis vel diffiformis quo ad subiectum, sed non quo ad duracionem mundi, cum ipsa non requirit talem duracionem partis mundi sicut motus. Equaliter enim quomodolibet motis et quiescentibus inest duracio.

Et si dicatur quod non [est] racio quare duracio
 40 mundi sit tempus, quin per idem et cuiuslibet sue

is now of infinite perfection.
Each soul that is created is an accident of the world.

4. We deny that duration is extended; a man's duration does not change, if he loses a part of his body, or even the whole.

Time implies eternity and the 'eon', it is true, but these are not therefore parts of time.

The reason why the motion of the world is, and its duration is not, extended, is that if part of the world were destroyed, its motion would, but time would not be changed, for duration is the same, whether a body moves fast or slow.

If it is asked why the duration of the whole world should be time, rather

11. codem B. 20. omnium? B. 22 sed pro quod B. 24—25. q^{tes} B.
 39. est deest B.

than that of a part, we reply that it is

because all other durations are accidental, and that alone is necessary; for the others might not exist.

Time is thus the universal, indivisible and ubiquitous duration of all temporal things, as life is the animation of the whole body.

Thus to call any other duration time, is an abuse of language. We do not deny that the duration of the simple points of which primordial matter consists, is extended.

5. Here there are three points of view. Either day and night are (1) not time, but the sun's motion, or (2) they are made up of motion and time, or (3) they are times. In the first case day and night are nowhere but in the sun, and there both together;

for when we have day, there is night at the

Antipodes. And in the sky, where there is always light, it would be night for ever.

partis duracio erit tempus, dicitur [quod] sic. Nam certum quod tempus est duracio successiva, quia aliter duraret alia successiva duracione, et tunc accidentaliter successive duraret, tanquam accidentaliter quantum. Et tunc non esset quantitas, sed esset processus in infinitum in duracionibus. Cum ergo omnis duracio sit alicuius durantis duracio, patet quod oportet ponere tempus esse *communem duracionem omnibus temporalibus, mole indivisibilem, et ubique.* | Sicut ergo vivificatio B¹⁶⁹ tocius corporis est vita animalis, et nullius partis vivificatio, sed vita imperfector alterius rationis, sic etiam est de duracione mundi et de duracione suarum partium. Unde abutuntur terminis qui vocant quamlibet quandalitatem vel duracionem partis mundi tempus, sicut patet ex conclusionibus insequentibus et naturali conceptu quem quilibet habet de tempore.

Et si obicitur quod duracio punctalis materie prime habet posicionem et extensionem: ergo, duracio composita ex illis habet posicionem et extensionem; dicitur quod non obest predictis quod duracio mundi, sicut et vita animalis, sit multiplicata, et tamen duracio prime materie, cum sit alia, sit extensa. Non enim est pars alterius duracionis, sed ad illam presupposita.

Ad quintum sunt tres modi dicendi. Quidem enim negant quod dies vel nox aut aliqua pars eorum sit tempus, sed sunt motiones solis. Alii dicunt quod sunt aggregata ex motu et tempore. Et tertii dicunt quod sunt tempora.

Contra primum modum dicendi patet quod communiter negarent diem vel noctem esse extra solem; et sic impossibile esset diem vel noctem esse in terra. Sed mocio solis foret continue tam dies quam nox; quia si nos habemus noctem, que est lacio solis sub orizonte, per idem antipodes habent diem nostrum pro nocte, que est lacio solis sub orizonte eorum. Sed quid plus inconsonum quam dicere quod est nox eterna in celo solum, ubi est maxima claritas? Ista ergo, si comparerentur in intelligencia dictis astronomorum in ista materie, ponerent diem et noctem porcionem circuli solis, quia illam vocant astronomi motum, et ita ponerent omnem diem vel noctem rem permanentem, et omnem

1. quod *deest* B. 3. *accit* B. 11. *enim* B. 38. f^e *qūtr̄* *ī* *teⁿ* B.
39. *pcom* B.

preteritam vel futuram existentem in hoc instanti; et sic de multis sequentibus ad que sic dicentes non plene advertunt.

Et sic patet quod 2^a posicio habet concedere noctem quamlibet esse diem, cum omnis talis sit ubique racione sue partis, et sic movetur cum sole, ratione alterius partis, tam dies quam nox, continue.

Ideo, videtur michi quod 3^a posicio est melior, quem ponit tempus esse diem et noctem, sed per accidens; et ita evum, seculum, indiccio, lustrum, annus, mensis, 10 septimana, dies, hora, momentum vucam bisse; et sic de ceteris partibus de quibus locuntur tam astrologi quam compotiste, sunt partes temporis, sicud patet discurrenti per dicta autorum et wulgarium. Ista materia bene conceditur; sicut oportet utramque viam 15 predictorum concedere, quod omnis dies est nox, et econtra. Ymmo, stante sole, foret eadem dies in numero quo modo, quia dies eterna, que foret nox eterna, etc Ergo patet quod lacio solis non est genus ad diem vel ad noctem. Et ita conceduntur aliqe 20 conclusiones sequentes ex illa posicione; notata tamen distinccione inter dies artificiales et naturales, et quomodo denominaciones predicte insunt temporis, sicud tangitur in responsione sequenti. Nec est inconveniens B 170^a tales | denominaciones inesse eidem pro diversis locis 25 aut diversis temporibus, sed non simul et semel.

Tunc ad primum argumentum contra primam respon-
sionem patet quod assumptum est concedendum, sed
maior est neganda. Non enim sequitur: hoc tempus
est hic nox, ergo est hic non dies; quia, si hic est
30 non dies, tunc est non dies, et per consequens non
est alicubi dies. Ideo bene conceditur tanquam sequens
quod *iste dies non est dies alibi*, sed non sequitur *hoc*
est non dies hic, ergo hoc est non dies; sicud non se-
quitur: *hoc non est dies h'c; ergo, hoc non est dies*.
35 Conformiter autem dicunt theologi quod Christus est
ubique, sed non ubique est ille homo, nec alicubi est
non homo, sed alicubi est non homo ibi illud quod
non est homo ibi: quod idem est. Sic ergo multe
partes diei et noctis sunt tam dies quam nox, secundum

The second position has also to admit that night is day.

I prefer the third view, and say that time is accidentally day or night, or an age, a century, a year, &c.

Both the other views must grant that day is night, and that if the sun stood still, there would be both eternally. We admit many of the above arguments, merely distinguishing between artificial and natural.

Answer to the attacks on my first reply.

i. (6). We deny that the present time is night here, but grant that what is day here is night elsewhere.

Christ's manhood is not everywhere; it does not follow that the Word is not man.

Many parts of day and night are as much one as the other;

8. quam (?) B. 11. vuca bisse B. 12—13. quam artiste quam gpotifie B.
15. Sicud B. 2^o. am B.

11. I am quite unable to make anything out of these words,
vuca bisse.

obliquitatem vel rectitudinem spere quo ad habitantes dispariter in orbe terrarum; sicud patet considerantibus subtiliter istam materiam. Est tamen dare tam diem quam noctem longissimam, quam eciam brevissimam; sed non video adhuc quod quelibet pars diei aut noctis sit tam dies quam nox, cum quotlibet instancia nec sunt dies nec noctes.

or rather
neither the one
nor the other.

7. We deny
that time
moves.

Ad septimum respondeatur, negando conclusionem primo assumptam; quia, cum omne tempus sit immobile localiter sicud mundus, patet quod non competit ipsi circulacio. Ymmo, si mundus moveretur motu recto, adhuc foret tempus ubicunque foret situs, sicud idem tempus esset commune duobus mundis, si essent.

Those who say
that light
pursues
darkness,

or that the
duration of
man is most
transient,
attend only to
the number
of miles
described by
the equinoctial
point, which
measures time,
and predicate
the effect for
the cause.

Night, though
existent
throughout a
space that has
a shape, has
no shape.

Night and day
are everywhere,
but not
artificially; the
former only in
the earth et its
shadow; the
latter
everywhere
else.

Night may be
nearer and
nearer to a
fixed point, but
it does not
properly
approach it;
the cause of
night only
approaches.

Illi autem qui ponunt lucem fugare tenebram, sicud canis leporem, intelligunt de speciebus lucis et speciebus tenebrem paulo contraccius, et non de ultimo singulari. Et sic intelligunt illi qui ponunt tempus hominis, et per consequens eius duracionem, velocius transire quam aliquod notum sublunarem. Attendunt enim ad miliaria que punctus equinocialis describit: et cum ille motus sit mensura temporis, et sic per accidens causa eius, dicunt in predicacione 2^m causam quod tempus tam velociter transit, et per idem etas hominis. Tales autem predicaciones non admittit logicus, nisi ex convencione. Non ergo sequitur quod nox sit figurata, quamvis multiplicetur per situm figuratam; quia tunc deus esset sphericus, sicut mundus et anima figurata sicud homo; et sic de aliis multiplicatis.

Nox ergo et dies sunt ubique, quamvis non ubique sicud nox et dies artificialis. Nullibi enim est nox, nisi in terra vel oppaco terreo, aut eius umbra; et per residuum mundi est dies. Et sic expansius est dies quam nox, quamvis nox sit expansius dies et nox; positivum namque prestans est privato. Nec sequitur: *continue eidem quiescenti erit eadem nox propinquior: ergo, illa nox movebitur;* sed sufficit quod hoc fiat per motum alicuius facientis ipsum tempus esse alicubi noctem ubi prius non fuit nox. Unde nox nulli rei potest appropinquare, quamvis potest alicui propinquius esse. Racio enim diei vel noctis movetur, sed non nox vel dies.

2. orbem (l) B. 7. sunt twice B. 9. a^{tam} B. 27. spūs B.
32. expāsius B. 33. crit B; ib. poīlm B. 34. pna^o B.

B 170^b Ac si concederetur | quod si deus michi posset esse So I may come
 propinquius homo per assumptionem humanitatis, sine nearer in space
 hoc quod ipse moveatur (quod quidam concedunt posse to God as
 fieri sine hoc quod aliquid moveatur). Unde conceditur Christ, and
 5 de possibili quod continue propinquabo localiter nearer to me
 homini cui nichil potest appropinquare localiter. Ymmo yet God is
 iste homo est propinquior michi ad quemlibet punctum
 mei quam aliquis alius homo potest esse. Et tamen
 movebor continue versus illum hominem a quo disto
 10 per quantumlibet spaciū. Videtur tamen melius con-
 cedere quod ille *propinquius* est homo quam fuit, quam
 concedere quod iste homo est homo *propinquior* quam
 fuit. Non enim est propinquior res quam fuit; et tamen,
 ut est homo, est aliquid. Et fere conformiter est dicendum
 15 in terminis accidentalibus de tempore.

Nota tamen quod contingit intelligere istos terminos We may also
 accidentales temporis in suppositione simplici, modo deny that day
 quo superius dictum est, et consequenter negare quod is night, merely
 dies est nox, et sic de aliis temporalibus conclusionibus admitting that
 20 concessis in suppositione predicabili. Nec sequitur ad the time which
 sensum illum expositorie: *hoc tempus est dies et hoc*
idem tempus est nox; ergo, dies est nox; sed bene
 sequitur quod illud tempus quod est dies est nox.

Ad 8^m dicitur quod conclusio non sequitur propria 8. A man
 25 predicacione de eodem tempore in numero; quia motus travelling
 sic versus occidens haberet infinitas noctes et infinitos towards the
 dies, communicantes tamen secundum mutationem sui west might have
 orisontis. Sed species diei vel noctis potest prolongari an infinite
 vel breviari secundum diversa eius individua, et eadem number of days
 30 dies vel nox in numero potest large loquendo, alterari, and nights of
 serenari, vel obumbrari, fieri salubris vel obnoxia; non different lengths,
 quia tempus sit substancia subiecta illis qualitatibus according as
 vel illis accidentibus, sed quia cum tempore ista con- his changed
 tingunt; ut tempus dicitur amenum illi cui contingit individual time.
 35 q̄menitas in illo tempore.

Ad nonum dicitur [quod], loquendo de die et nocte 9. We must
 artificiali, contingit varie valde distingwere raciones carefully
 eorum, ut aliqui dicunt ubique esse noctem ut non est the meaning of
 sensibile lumen solare; et, sole existente in meridie some words.
 40 emisperii nostri, habemus noctem tam inter nos quam Some say there
 extra, et [ad] alia puncta habemus simul diem, sed non is night

7. propinquus B. 14. sc̄ B. 18. quo ad B. 25. parte pro
 predicacione B. 27. ιη B. 36. quod deest B. 31. ad deest B.

whenever there is no sensible solar light; thus we may have night at midday; thus the moon eclipsing the sun, causes night, and we have day after sunset because of reflected sunbeams. But it is better to admit artificial day to exist whenever the sun, being above the horizon, causes sensible light. Why does an opaque body cause night at dawn or sunset, and not during the day? Because in the second case the sun is above, in the first, below the horizon.

Would the moon, if self-luminous, and if the sun were destroyed, cause day and night?

It would.

Have the inhabitants of valleys &c. night when the sun is concealed from them? Yes, if it is below their horizon.

Day or night is everywhere; in the sky, it is always day, beneath the earth, always night.

in eodem situ sed eundem situm in numero. Et ita luna vel quodlibet aliud umbrosum, eclipsans solem usque ad insensibilitatem luminis, causat ibi noctem; et sic in horis crepuscularibus est dies, sicud est per reflecionem luminis solaris ad obstaculum, sed non 5 per lumen incorporatum in luna vel alio astro. Artificiosius tamen et cercius videtur loqui, ut astronomi locuntur, concedentes ubique terrarum esse diem artificiale ubi sol est super orisontem ibi locati, causans lumen sensibile. Dies enim connotat lucem vel claritatem, 10 nec refert quod corpus oppacum distinguit emisperia inter que orison intercidat, sive fuerit terra sive terrae.

Et si queratur a sic dicentibus quare mixtum in ortu vel occasu solis causat noctem, ubi multum relinquimus 15 plus tollendo de lumine; potissime cum sol ibi situato tam oritur quam occidit: dicitur quod huius racio est, quia sol [est] supra orisontem 2ⁱ situati et non super orisontem | primi situati, et hoc sonat dies vel nox B 17¹ artificialis de vi vocis.

Et si queratur utrum luna habente lumen proprium, corrupto sole, causaret per suum motum diem et noctem, dicitur quod sic, cum dies et nox maxime constituuntur per luminosum quodcunque fuerit. Et sic potest dici 25 quod illud tempus quod est hic nox foret subito hic dies per annihilationem solis, mota luna super orisontem, ipsa existente ex se maxime lucida inter luminosa.

Et si queratur utrum habitantes in locis valosis habent noctem quando sol eclipsatur illis per terram, dicitur 30 quod sic, sole existente sub orisonte eorum, et aliter non. Et quod queritur utrum, corrupto sole, foret ubique nox, dicitur quod sic, si nichil supleat vicem solis.

Ulterius concedi potest quod ad omnem punctum 35 mundi est dies vel nox; et sic in quotlibet sitibus. In celo est dies, ubi non est nata naturaliter esse nox. Et infra terram est nox in multis corporibus, infra que non potest esse naturaliter dies; ubicunque tamen est nata esse dies, sicut aliquod est luminosum quod non 40 est natum esse tenebrosum, et econtra aliquod eternum

15. r'linq.' B. 18. tame B; ib. quod B. 19. est deest B. 25. per deest B.

visivum quod caret aptitudine ad cecitatem. Patet ergo Day is thus the
quod ad hoc [quod] hic sit dies, requiritur hic esse time when the
tempus in quo sol est supra orisontem huius situs, sun is above a
tempus in quo sol est supra orisontem huius situs, given horizon.
De aliis vero partibus temporis ut 4 temporibus anni
5 et aliis de quibus locuntur compotiste, oportet diligenter
advertere quomodo causantur secundum denominaciones
accidentales, connotando extra rationem temporis, et
quomodo iniciantur et equivocantur; et iuxta hoc re-
spondere, ut patet exemplariter ex predictis.

10 Quo ad dubium tertium, videtur quod, cessante omni
motu sensibili, non foret tempus, quia omne tempus
requirit prius et posterius in motu, sed solum in motu
sensibili sunt prius et posterius; ergo solum in motu
sensibili potest fundari tempus; igitur. Maior patet, ex
15 hoc quod si tempus posset diffiniri per prius et posterius
in seipso, tunc posset idem diffiniri per se vel per
suum posterius; et tunc tempus posset habere prius et
posterior ex se sine motu; quo dato non est singendum
quid tempus dicit ultra esse rei.

20 Item, pono quod non sit motus sensibilis, et ymagi- (2) On the other
netur homo de tempore; tunc patet quod esset tempus, hand, let us
quia aliter non esset ymaginacio diurna gignitiva suppose
fastidii. Et quod non oportet ex hinc ponere motum, that there is no
videtur ex hoc quod stat ymaginativam terminari movement,
25 tinue ad idem simulacrum pro eadem re, sine generacione and that a man
nove speciei vel nova terminacione actus ymaginandi sets to fancying
Et sic non pocius foret ymaginacio successiva quam time; there
est visio vel quivis alias respectus, cum successio re- would be time
quirit diversitatem materie motus.

30 Item, si possibile est omnem partem mundi privari (3) As each
motu locali, possibile est omnem partem mundi quiescere part of the
similiter a motu. Pono ergo hoc, et sequitur ex quiete world can be
tempus esse, cum aliter non esset quies illa longa. deprived of
Stat ergo tempus esse sine motu similiter. Nisi enim local movement,
35 quies temporis esset temporanea, sequitur quod tempus it can rest
immediate precedens illam quietem, et tempus immediate from
subsequens illam quietem ex incepione motus, essent movement;
vere continuata ad instans quietis (et per consequens suppose that
done, and the world must rest in time, or the rest would not have any duration.

2. quod deest B. 5. qpotifte B. 19—20. ^{ygine} lio B. 25. ga^{cōne} B
32. pō B; ib. sc̄ ex twice B. 33. lo^a B.

19. Item. The preceding argument proves that time depends on movement; those which follow go to prove the contrary.

continuel, esset tempus, ex hoc quod continue esset instans et non continue motus.

(4) The slowest movement would be the quickest; for, supposing that the first mobile stops, and that the hand of a clock of one foot diameter goes round in one day; the First Mobile would move one point every instant; so there must be infinite rests, or the hand would describe as much space as the First Mobile. (5) The world might not have been moved immediately after its creation: yet time began with the creation of the world, and its rest being a successive state, would have been measured by time.

Answers.
We say that time implies some sort of sensible movement; for intellectual movement and even certain sensible attractions do not imply a *Before* and an *After*.

Item, contingit quantumlibet tarde motum esse velocissime | motum, cum quelibet pars mundi potest B¹⁷¹ quiescere, mota alia. Posito ergo quod orilogium cuius dyameter sit pedalis, volvatur semel per tantum temporis quanta est dies naturalis. Et sequitur ex predictis de individualibus quod erunt infinite interciones in revolutione A, sicud essent circumducto celo cum A; quia aliter essent tot puncta in circumferencia A, sicud in circumferencia mundi sunt. Cum moveretur ergo per omnes istas penes istas moras intercedentes, non esset motus, quia nichil A vel pars eius. Sequitur quod tempus potest esse sine motu; et per idem quantumlibet magnum tempus. 15

Item, possibile est quod mundus creatus per quantumlibet tempus similiter quievisset et post motus fuisset; ergo tempus non requirit talem motum. Assumptum patet ex hoc quod quies est de se successiva, sicud motus, ut prius dictum est; ergo, si est quies, est 20 tempus. Aliter enim posset quies nunc esse permanens et alias successiva; quod est impossibile, cum aquirerem per totum novas partes in successione, et nichil quod fuit permanens foret pars quietis successive. Et casus de quiete tocius foret multis patenter possibilis, cum 25 quies sit perfectio rei gracia cuius est motus. Et in signum huius, perfectissima mundi quiescunt continue.

Ad illud dubium respondetur, concedendo quod [si] non sit motus sensibilis exterius vel interius, tunc non est tempus. Ideo, sicud necesse est tempus esse, sic 30 necesse est motum sensibilem esse. Unde, non in quocunque motu fundantur prius et posterius successiva, sicud patet de motu intelligencie a deo; et breviter de cuiuscunque substancie motu quo tendit in finem suum. Sic enim innititur quelibet particula terre quieti in 35 centrum mundi et omnes substancie in deum, tanquam centrum ubilibet multiplicatum; sed in talibus motibus non habebit ymaginacio materiam successive aquisitam vel deperditam, ratione cuius causaretur instans differens a tempore; sed omnis talis motus foret 2^m se totum 40 simul, sicut est de evo et eternitate.

5. or'logiū B. 13. m̄l a ūl B. 28. si deest B. 41. sic B.

Ex istis patet quod sententia primi argumenti caret calumpnia, eo quod motus intelligencie est principium remotum ad quod non consequitur tempus. Unde ymagineato quod totus mundus casset a motu sensibili extrinseco perceptibili, lata ymaginatione super prius et posterius, videndum est utrum actus ymagnandi sit permanens; tunc sequitur tempus esse, eo quod ymagnans est pars mundi sensibiliter mota, et per consequens mundus secundum illam partem movetur.

(i) The first argument is, therefore, quite conclusive. If we can suppose the whole world at rest and only imagination active, representing time, we say that imagination moves, and, therefore, the world moves. When we imagine time in particular, the object and the act change successively.

10 Communiter eciam, quando ymagineativa fertur super preterito et futuro in particulari, non est facile hoc fieri, nisi successive, sicut quantumlibet ymagineamus prius tempore unum et posterius tempore aliud. Ex tali autem ymaginatione causatur intencio speciei fixius in
 15 ymagineativa, et debilitas vel potencia ymagnantis ex delectacione vel tristitia, et bonitas vel malicia, fortitudo vel fastidium, aut alie huiusmodi qualitates, ratione cuius aquisite vel deperdite, saltem secundum intensionem vel remissionem, ex sequitur tempus ad alteracionem
 20 successivam. Nec est possibile ymagineacionem nostram coniunctam motui mundi secundum dispositionem in qua nunc sumus ferre super tempus in particulari sine
 B 172^o successione actus ymagnandi; qui, cum mundus sit
 quoddam unum, oportet in eius motu esse unum non
 25 motum movens ordinate suas partes; quo cessante
 movere, cessaret totus ordo illius motus.

Nor can it possibly be otherwise.

Sicut enim in animali ulterius effectus est motus cui proxima est virtus motiva localiter in suis subiectis, ut spiritibus vel calore; et 3^o sunt membra solida, ut
 30 musculus, villus, lacertus vel cetera organa, quorum compositionem ista ingrediuntur. 4^a est appetitiva anime movens, imperando virtuti motive corporali; et hanc appetitivam movet apprehensiva convenientis vel nocivi tamquam ultimam, et primum movens ita quod, cessante
 35 illo movere, cessaret omnis motus animalis. Sic ymagnandum est in maiori mundo quod est dare motum sublunarium tamquam ultimum effectum cui proxima est vis celestis influxa per lumina diversimode incidencia et 3^o sunt astra celestia cum suis coniunctis orbibus.
 4^o vero est appetitiva mocionis orbibus, et 5^o finaliter est apprehensiva primi motoris.

Comparison of the movements in an animal with those of the macrocosm

18. ^{ite'ssiom} B. 23. qui ^{cū} B. 27. ^{ātī vlcī} B. 32. hac B
 39. ^{ḡp} B. 40. mocc^o (?) B.

In all movements, we must come to a First Motor, immovable in Himself,

moving spiritual beings spiritually, and material things materially.

But material movement must one day cease, because it is imperfect.

All generation and corruption will then come to an end.

As in the microcosm, so in the macrocosm, there are two sorts of movements, one proceeding from the First Motor, the other from the soul.

Man will one day be incorruptible, and the world perfect; yet some of its parts will still move, and this will constitute time.

Therefore the case put in (2) is impossible. If a man could imagine anything without any succession of acts, it would not be time but a sort of aeon.

Necesse ergo est quod in motibus ponderosorum et levium, et generaliter in omnibus sublunaribus motibus qui non sunt mobiles ex se moti, sed ab alio, sit motus resolubilis ad omnem motorem mundi ex se moti; quem motorem oportet esse immobilem; et ille generaliter movet esse partem mundi in quantum movetur. Sed diversimode movet, insensibilia motu spirituali et sensibilia motu corporali; quia, cessante perfecto ordine movendi in motu sensibili, cessaret motus elementorum mixtorum ab alio. Verumtamen, cum omnis talis motus sit actus imperfectus, causatus propter ordinem insitum quantitate vel qualitate acquirendum, patet quod oportet talem motum aliquando cessare, et alium spiritualem continuari eternaliter, modo quo philosophi nostri dicunt fore post diem iudicii. Tunc enim non erit aliquod mixtum, nisi homo vel pars hominis, vel forte astrum. Sed, cessante motu celi, cessabit generacio et corrupcio substancie, et omnis materialis alteracio vel motus in quantitate. Sed sicud est in minori mundo, est dare duas manieres motuum, quorum unus est a natura corporea et non aliis, reliquus autem est ab anima: sic in maiori mundo est dare duas manieres motuum, quorum unus est sensibilis naturalis, cuius motor celi est principium; aliis autem est spiritualis et intencionalis, cuius anima, que est supra omnia corpora, est principium. Manebit ergo tunc homo incorruptibilis, sicud et quilibet pars mundi ultimate perfecta, et mutabitur homo intencionaliter tam a sensibilibus quam ab intelligentiis B 170 insensibilibus mutacione successiva; et hoc secundum omnes vires anime. Non ergo est possibile mundum 30 similiiter quiescere secundum omnes suas partes; et cum motum successivum in communi consequitur tempus, satis est ad perpetuandum tempus.

Per ista patet ad 2^m argumentum quod casus est impossibilis. Ymmo, posito quod homo fixe ymaginetur sine successione quacunque mundi, sequitur quod non esset tempus sed mensura quedam proporcionalis evitate intelligentie, sine prioritate vel posterioritate in successione, nec generaretur tunc fastidium vel aliud ens predicamentale; nec foret aliud tunc diurnum, et si 40 maneat sic eternaliter, quia cuiuslibet rei duracio foret

7. spūali B. 12. omnem pro oportet B. 29. muōē B. 3 . enīt B.

37. *Evitate*. Derived from *evum*.

tota simul, sicud est de eternitate. Nec capit yimaginacio nostra infirma talem statum hominis, cum propter B 172^b mutabilitatem organi omnem apprehensionem | nostram consequitur vel comitatur successio. Unde leve dictum 5 est ponere quod yimaginans sine successione tempus faceret, quia cicius intellectus hoc faceret; et sic tempus esset eternum propter eternam intencionem temporis a prima causa. Et propter hoc omne yimaginans habet suum tempus quod esset duracio sui actus yimaginandi. 10 Et per idem sine dubio quelibet duracio successiva foret tempus.

Et si queratur quomodo erit successio in motu post diem iudicii, dicitur quod erunt duo genera hominum ex opposito locatorum habituatorum et passionatorum,

15 quorum unum erit in celestibus plene felicitatum, et aliud iuxta centrum, plene miserum. Et primi habebunt actualiter perpetuo claram noticiam et plenam delectacionem in primo motore, et post hoc habebunt discursus cognoscendi omnes veritates causatas cum quadam 20 successione, sine diminucione sui gaudii, propter securitatem sui habitus, excluso fastidio et errore in suo discrusu. Et breviter omnes vires anime erunt plene suis actibus perfectissimis circa sua abstracta maxime proporcionata ad ipsas delectandum. Circumstancie vero 25 actuum sensuum hic in statu corporali, que includunt perfectionem, erunt ibi ablate, et solum illud quod est perfectum ibi remanebit; ut nemo generabit ibi, nec augmentabitur, nutritur, percipiet sonum, odorem, saporem, vel qualitatem tangibilem per violenciam aut

30 materialem immutacionem sui organi. Sed organum erit ad tantum perfectum quod percipiet armoniam sonorosam sine violencia, causantem consequentem motum non successivum sed permanentem, qualis erit ad omnem punctum celi, dum quelibet eius pars violentia 35 tacione alterius intelligitur suo ordini situali. Sed talem sonum non sufficimus nunc percipere propter peccatum inobedientie. Ideo dicimus quod non est talis sonus, cum tamen non sit racio quod motus violentus causaret sonum, quin multo magis in omni mixtione naturali 40 causetur ex motu non successivo sonus armonicus, ut

We cannot even conceive such a state, and it is frivolous to say that it would be time: time would in that case be eternal.

Of the happiness of the blessed in Heaven.

They will have full knowledge of and full joy in the First Motor, and will know all truths.

All the powers of the soul will produce the most perfect acts.

There will be no generating, eating, hearing, &c.;

but the organs will be so perfect that they will perceive

sonorous harmony without the need of sound,

14. p^a nator^p B. 20. dicⁱone B. 32. fancrosam B. 35. intl^r B.

40. c^er B.

fragrance
without wanting
to inhale
vapour.

the most
pleasant tastes

and feelings
likewise;

and all as
nothing to the
delights of
the mind and
heart.

Sound is a
state of matter
that acts on
the auditory
faculty;

odour, savour,
and the rest,
are also similar
states.

And the
corresponding
feelings are
states produced
by their
objects in
the senses,
which may
have them
without the
aid of those
objects.
We need not
go into this
question

dicit Boecius. Et eodemmodo olfactu percipietur odor summe proporcionatus, sine fumali evaporacione, cum ipsi sensui subicitur fumus aereus mundissimus, colore igneo temperatissimus; nec movetur hic talis fumus infra nares ad confortandum cerebrum, et tam realiter inmutandum olfactum, nisi propter defectum virtutis. Et conformiter gustus habebit saporem temperatissimum sibi obiectum, cum ibi erit siccum terreum proportionative mixtum cum humido aquo et callido igneo movente. Et eodem modo sensus tactus percipiet suum maxime tangibile, et sic erunt omnes sensus interiores et exteriores in summa sue delectabilissime apprehensionis. Sed omnes iste delectaciones erunt raptim exhauste propter delectacionem rationis et voluntatis in suo finali obiecto.

Querendum autem est de circumstanciis et quidditate hic narratorum. Dicitur quod sonus idem est quod sonacio et disposicio secundum quam materiale est immutativum virtutis ¹⁵ | auditiva. Et sic odor vel odoratio B ¹⁷³ est disposicio mixti aerei secundum quam ipsum est motivum virtutis olefactory. Sapor vel saporositas est disposicio aquei humili, ^{2m} quam ipsum est immutativum virtutis gustative; et sic de qualitatibus ^{2¹⁸} tangibilibus. Et omnes ille qualitates habent certas proporciones miscendi elementa secundum atthoma vel partes divisibles, ex quibus resultant non quod sint res que possunt per se esse, sed sunt disposiciones vel potencie mixtarum ad taliter obiective immutandum. Et eodem modo intenciones vel species in sensibilibus sunt disposiciones illorum, causate ab obiectis secundum ³⁰ quas sensus sunt apprehensivi eorum. Et illas possunt sensus perfecti aquirere, sine immediacione obiectorum vel accione similium specierum per medium. Ymmo, vere loquendo, sensus sunt quodammodo cum obiectis a quibus afficiuntur, et rapiunt vel ciliunt species ab ³⁵ illis quem ad modum specialiorem noscendum, cum non sit multum pertinens huic loco, relinquetur studientibus; capiendo quod tota imperfeccio erit subducta, et totum quod erit perfectionis persone tali possibile remanebit.

40

1. fume (*very plain*) B; ib. fuali B. 3. fumg B. 11. erit B. 12. ¹
funne B. 18. sona^o B; ib. male, or mole B. 2¹. humili aqui humili B.

Et econtra in gente opposita. Illis enim erit dolor of the damned. perpetuus sine dissolucione alicuius particule vel virtutis.

Nec obest ignem vel quodcumque horridum naturaliter hominem immutare spiritualiter perpetuo sic punitum; 5 quia dolor non est nisi displicencia de obiecto, vel quia ipsum est presens, sed inproporcionatum appetitui, vel quia ipsum conceptum delectabile deest. Et sic in illis ingeminatur dolor. Quod autem dolenti sic impertinens [est] sui dissolucio, patet ex hoc quod stat 10 hominem quantumlibet gaudere in eius dissolucione, et quantumlibet dolore terreri, vel horrere nichilominus eius deperdito. Si ergo queratur quid erit primum movens omnium istorum, dicitur quod prima veritas, prima iusticia et prima causa, que est iam primus 15 motor mundi et cuiuslibet sue partis; sed sicud iam movet motu extrinseco et materiali sensibili, mediante motu celi, ita movebit tunc motu spirituali, medianibus rationibus iusticie, animas et corum corpora; et forte movebit localiter tam beatos quam miseros. Raciones 20 autem fundamentales hic dictorum relinquunt theologis, sicud et totam materiam ulterius pertractandam, contentatus de hoc quod necesario est semper motus successivus.

Ad 3^m dicitur quod assumptum est impossibile, cum necessarium est beatos, preter noticiam quam habent de deo propter perpetuam unionem, noscere discursive res per motum circuli, primo in deo, 2^o in proprio genere, 2^o reflectendo in deum, ad quem statur ut ad primam et ad ultimam causam, in quo sunt omnes 30 veritates quodammodo resolubiles. Nec est inconveniens delectacioni talem circularem apprehensionem esse successivam; quia non ex eius deperdizione deperditur beatitudo essentiale nec erit delectacio successiva. Verumtamen non claret michi adhuc utrum possibile B 17^{3^b} est omnem motum localem corporum hominum cessare, vel necessarium sit aliquod corpus tale moveri localiter tam celeriter sicud movetur aliquis punctus mundi. Quod si sic, foret consequencia assumpta bona, sed antecedens eius impossibile, admitti.

40 Vel illud antecedens potest admitti, tanquam predicatione michi neutra, et negari consequencia; et potest

They will suffer for ever, without losing anything of their body or their faculties. Pain is but the unpleasantry of an object that does not agree with the desire, or that, agreeing, is absent.

Dissolution is here irrelevant to pain; a man may feel joy as well as terror at the thought of dissolution. The cause of these pains is the First Cause, Source of all truth and of all justice. I leave the thorough examination of this matter to theologians.

(3) It is impossible that all movement should cease in the world; for the Blessed have successive knowledge of things; which constitutes movement.

Whether all bodily movement can cease, or must necessarily continue, is not yet clear to me. Different answers, according to cases. We may even admit the

8. i gmar B. 9. est deest B. 10. disso B. 11. dolo'e B.
12. e^o B. 19. bōs B. 26. dist^r fine B. 1. delectacionem B.
38. a^{ta} B. 39. admitti deest B. 40—41. pe^o B.

conclusion —
that the world
may rest —
distinguishing
the senses of
the word.

It means,
firstly the
absence of all
movement,
which is
figuratively
called repose,
as opposed to
toil.

Secondy, the
inaction of an
agent that
ceases to
produce
something new.

Thirdly, the
attainment of
an external
end to which
a being tends;
which may
mean that a
creature has
all that towards
which it tends,
or that it still
lacks many
accidental ends,
requisite to its
perfection.

Fourthly, the
duration in
time of a being
that can move,
but does not.

Thus, if we
admit that there
may be no
successive
movement in
the world,
it would follow
that there
would be no
time and,
therefore, no
rest in the 4th
sense; but
there would be
rest in the 3^d.
Therefore rest,
in the 4th sense,
implies
succession.

gracia argumenti admitti consequens possitum, distinguendo de quiete, ut dictum est de motu. Aliquando enim dicitur quies similiter pro carencia cuiuscunque motu. Et isto modo dicitur deus anthropologice quiescere in se eternaliter, quia est finis ultimus non potens in aliquem extra se ad eius indigenciam tendere. Et ista quandoque vocatur requies figurative, cum requies opponitur labori, sicud quies motu. Et illo modo solum essentia divina potest quiescere. Quandoque autem dicitur agens quiescere, quando cessat a produccione 10 nove nature extra se; et hoc dupliciter; vel secundum speciem, vel individuum. Agens enim naturaliter, pro effectu quem non habet, tendit in illum habendum quo adhuc caret; et quamvis non ut sic movetur, tamen ut sic agit et accio talis in aliquibus est labor. 3^o dicitur aliiquid quiescere, quando ipsum habet suum finem extrinsecum cui innititur; et taliter quiescit quelibet particula terre in centro, et omnis creatura in deo, sed valde dispariter: ut aliqua habent quidquid appetunt habere; et illa, si fuerint cum hoc rationalia, 20 sunt beata. Aliqua vero carent multis finibus accidentibus requisitis ad eorum perfeccionem. Talis autem quies non includit de se successionem, nec excludit motum permanentem qui est nitus vel tendencia in finem extrinsecum. 4^o modo dicitur aliiquid quiescere, 25 quando ipsum durat per tempus per quod caret motu dando, quo natum est moveri per illud tempus. Et de ista quiete famosa opposita motui successivo locutum est prius, quod oportet ipsam esse primo in tempore tanquam successivum, et dividi in membra eius 2^m 30 divisionem motuum successivorum.

Istis notatis, dicitur quod admissio, gracia argumenti, nullum motum successivum esse in mundo, sequitur ex hoc nullum tempus esse, et per consequens nullam quietem 4^o modo dictam, sed quietem 3^o modo 35 dictam bene contingit intelligere cum necessitate motus successivi. Illa tamen quies non esset longa vel diurna, cum illam denominacionem habet quies a tempore. Ex quo sequitur quo talis quies compatitur secum tempus; ymo sequitur ad esse temporis, nec 40 discontinuat tempora ab invicem. Ideo negandus est

casus in quo sequitur mundum quiescere per totum tali quiete sine successione, et ante et post moveri successive. Nam illud dictum implicaret prioritatem temporis vel nature illius quietis mundi ad successionem, ⁵ et econtra; quia intellecta illa quiete mensurata solum per instans temporis indivisibile, tunc certum est quod foret instans sine successione; et illa quies inciperet et desineret esse; et cum illa quies sequitur ad mundum et ad quamlibet eius partem de quanto innititur vel ¹⁰ tendit in deum, patet quod implicat mundum per totum incipere et desinere esse.

Illa ergo quies est ante omnem motum successivum Such rest would be naturally prior to successive movement, could not be preceded by time, and would be neither successive nor instantaneous,
B 174^a mundi, prioritate naturali, | sed non post omnem talem motum mundi, quia non potest esse naturaliter posterior ¹⁵ quam successivum. Nullum ergo tempus precedit illam quietem, cum dicit solam habitudinem que per se consequitur ad rem quiescentem. Et impossibile est quod sit successivum, nisi dicat formam accidentalem, inexistenciam alicuius partis ad subiectum. Ideo illa quies ²⁰ non potest esse instantanea, sicud nec mundus potest pro eodem instanti incipere et desinere esse. Tunc enim esset, et per consequens tempus. Et ultra sequitur ex istis porcionem mundi durare successive; et per consequens non incipere et desinere esse; et ita forte ²⁵ est de qualibet parte subiecta, cum incepio et desinicio pro eodem instanti implicat opposita primo inesse eidem subiecto formaliter pro eodem instanti. Et sic patet sequi quod quantumlibet forte agens approximatum pro primo instanti generacionis forme substancialis in ³⁰ materia exspectabit amplius quam per instans antequam indisposuerit materiam ad illam formam; quia aliter natura, inducens illam formam, frustra induxisset illam, et esset impedita a sua induccione, cum agens naturale contrarium pro instanti inductionis forme ³⁵ ageret eque fortiter ad eius eductionem.

Et si obicitur de lineabus, instantibus et infinitis similibus, quod pro eodem instanti incipiunt et desinunt esse, dicitur quod non ex sufficienter simili argumentandum est hinc substanciali, *per se esse*, simul incipere et desinere esse, quia non requiruntur contrarie tanquam mutaciones in materia ex generacione et

And as the argument implies that such rest would be prior to succession, it must be denied.

for the world could not begin and end at the same instant.

That would imply that opposites can coexist in one and the same subject.

And thus no agent can produce a form at the same instant it ejects the contrary from.

If it be objected that lines, instants, &c., begin and end instantaneously, I reply that the analogy is not sufficient to prove that a substance can do so.

corrupcione istorum accidencium, sicud requiritur ad generacionem et corrupcionem per se substancie. Et correspondenter dicitur quod non est possibile quod aliquid pro primo instanti sui esse peccet actu illicito, eo quod producens actum elicientem illum produceret et actum. Non ergo foret in potestate elicientis actum illum non elicere, vel non eliciuisse illum actum et per consequens rationale esset quod non obligaretur ad denuo eliciendum illum; eo quod decretum esset a lumine obligante illum actum esse vel fuisse, et per consequens non esset in potestate obligante declinasse eleccionem talis actus; quia iam ante esse suum, et post. Obligacio ergo precedit tempore actum et contrarium obligacioni. Multa ergo sunt instancia ordinata regimini universi, et per consequens impossibilia [sunt] que communiter admittuntur vel propter ignoranciam vel gracia argumenti.

All these positions, granted by ignorance or for the sake of argument, are impossible.

(4) I cannot find any means to prove that the world moves now faster, now slower; so we may admit that regularity of movement is a necessity. Thus we deny what the argument supposes. If half the points in the world were destroyed, leaving only the circumference intact, the world would be as dense as before, but only half as large; and each diameter, seemingly as long as before, would be only half its present length.

Ad 4^m dicitur quod non est michi facile invenire medium ad probandum quod mundus potest una vice moveri tardius et alia vice velocius. Ideo potest dici 20 quod necessario requiritur ad duracionem mundi successivam eque velox motus, quomodo non potest esse motus velocior, ut prius dictum est. Unde negari potest assumptum in arguento, eo quod oportet mundum 2^m aliquam eius partem esse eque velociter motum sicut 25 aliquod potest moveri, et sicud moto a horologio modo quo ponitur, sequens est quod mundus moveatur vel motu locali vel motu alteracionis ita velociter sicud potest. Quod si motus alteracionis non potest esse univoce velox cum motu locali (et sic mundus non 30 eque velociter alterari potest sicut movebatur localiter), tunc oportet quod eque velociter moveatur sicud potest. Unde, sicut prius tactum est, corrupta medietate materiarum punctalium mundi, quieta materia linearis in circumferencia mundi, adhuc foret mundus eque 35 densus, ut prius dictum est |, sed non eque magnus, B 174^o sed in 2^{lo} minor. Et ita quelibet dyameter mundi, posita uniformitate densitatis materie, foret in 2^{lo} brevior, quamvis ymaginacio dicat oppositum.

9. adenuō B. 10. alue pro a lumine B; ib. obli⁹ B. 11. obli⁹ B.
15 sunt deest B. 25. velox B.

Correspondenter intelligendum est de A hore-
logio posito circumduci sine hoc quod aliqua pars
mundi velociter moveatur; tunc in ea proporcione plures
volveretur in tanto tempore quam dies fuit naturalis,
in qua proporcione multitudo punctorum sue circum-
ferencie exceditur a multitudine punctorum equinoccialis,
eo quod non est possibile in eodem vel equali tempore
esse plura instancia quam in quocumque tempore tanto.
Et per consequens non est possibile motu velocissimo
mundi esse plura indivisibilia aquisita quam quocunque
motu indivisibili equali. Et patet quod casus positus de
horelogio, ad intencionem qua ponitur, est impossibilis.
Ymaginacio autem non capit istam sentenciam; quia
non ymaginatur in particulari aliquem motum ex hoc
quod ymaginatur successionem temporis. Ideo credit
quod, quocunque mobili vel motu signato, quod staret
mobile in equali tempore moveri velocius aut tardius
in quacumque proporcione signanda cum hoc tamen
quod ipsum sit velocissime motum; quod tamen est
impossibile, sicud in *a simili* dictum est de rarefaccione
et condensacione, ut quisquam non errans in ymagina-
cione iudicaret tempus mensurans revolucionem A
horelogii, subducto quocumque alio motu, esse tam
diuturnum sicud est tempus mensurans revolucionem
celi. Nec est facile vel possibile nobis in ista disputa-
cione vere estimari in particulari lacionem temporis,
nisi ex suppositione uniformitatis motus celi cum suis
partibus, et ex suppositione quietis terre cum suis
contentis, et experientia capta de situacionibus astrorum
per suos radios. Iстis enim subductis, iudicaret agitatus
motu delectabili vel aliunde soporatus, tempus esse
quantumlibet breve vel insensible, et contristatus vel
tediatus quantumlibet parvum tempus esse quantumlibet
longum. Ideo nullus nisi levi estimacione iudicat quan-
titatem temporis.

8. ²pla B. 9. moto(!) B. 10. ²pla B. 20. assimili B
29. exp̄genā B.

1—2. *Horelogio*. This word has already been rendered in the side-notes by ‘clock’. Although the earliest mention of a clock that I can find is that of Henry Vic or De Wyck, made in 1379 for Charles V. of France, yet the context seems evidently to allude to a hand turning on a dial. Some of the later clepsydrae turned a hand by the dropping of water.

As for the hand
of a clock, it
would require
to turn round
as many times
in a day as the
circumference
of the world
is greater than
that of
the clock, in
order for the
velocity to be
equal.

The case is,
therefore,
impossible.

Our
imagination
cannot
comprehend
how it is that
a slow
movement
performed in an
equal time with
a quick one,
measures time
just as well.
One revolution
of the hand of
a clock in
24 hours takes
as much time
as a revolution
of the sky.
We must
suppose the
uniformity of
this movement
and, also the
immobility of
the earth:

without these,
a man who
enjoys himself
or sleeps thinks
time short, and
vice versa.

Objection:
There is no time without local movement, and no first or last instant to time.

But time is long as movement is divisible, according as change takes place, and the instant of time corresponds to the being changed in movement; there is a first instant — the being changed, followed immediately by a second — the having been changed.

When at the starting point, the mobile is already in movement; when at the goal, it rests; these instants thus agreeing in nature with those which immediately follow them.

It may be said: If there is movement at the very starting point, it has a certain velocity at that starting point.

Thus no movement is possible at the first instant of creation.

To answer this, we say that velocity, implying time, cannot be predicated of an instantaneous movement, but is that part of successive movement,

Et si obiciatur quod tempus, motus, et magnitudo, consecuntur se in divisibilitate, et per consequens nec est tempus sine motu locali, nec est dare primum instans vel ultimum temporis, sicud nec primum *mutare vel mutatum esse* motus: hic dicitur, ut prius, quod, si 5 tempus eque indifferenter consequitur motum alteracionis sicud motum localem, tunc est dare magnitudinem virtutis vel latitudinis qualitatis, secundum cuius divisibilitatem est motus divisibilis et tempus duiturnum, et 2^m divisibilitatem gradus in tali qualitate est instans 10 temporis et *mutari* motus indivisible. Et ita semper consecuntur se quo ad divisibilitatem, tempus, motus, et magnitudo. Et ita conceditur quod est dare primum instans *mutari*, precedens per instans *mutatum esse*. Et ultra conceditur quod est dare primum instans 15 motus et temporis, similiter et cuiuscunque successivi est dare primum instans, et ultimum cuiuscunque successivi facti a parte post, quamvis non sit dare ultimum singulariter instans successivi. Et ultra conceditur quod mobile movetur in termino *a quo* et 20 quiescit in termino *ad quem*, cum disposicio instantanea in talibus successivis se tenet cum sequente immediate. Sed utrobique est dare instans immediatum tali, instans in quo mobile quiescit vel movetur.

Et si dicatur quod si est motus in termino *a quo*, 25 tunc certe est velox, | et determinatum est ipsum esse; B 175^a ymmo, tunc non esset possibile aliquid diffimerit motum quo ad subiectum simul incipere moveri secundum totum. Ymmo, pro ultimo instanti foret motus completus, et mobile tunc annihilaretur, et mobile 30 tunc inciperet esse; etsi mobile suum immediate post hoc crearetur. Non ergo talis motus potest esse pro instanti sue creacionis, quia tunc posset [esse] sine suo subiecto quantum ad ista et similia, patet ex dictis quod velocitas motus respicit tempus primo; et motus 35 instantaneus non est velox. Sed adhuc indeterminatum est motum illum esse partem motus successivi. Ymmo, pari evidencia qua punctus motus primo instanti motus non pertransiret punctum suppositum, aliud autem per remotionem de presenti. Conceditur ergo quod si unum 40

2. sc idem B. 8—9. dimidiatum B. 18. appo B. 19. finit B.

22. fci B. 23. illi B. 26. detin B. 33. esse deest B. 38. pp'o B.

mobile incipiat moveri per posicionem de presenti, et esse, et moveri, unus motus esset (reliquo autem designente removeri per posicionem de presenti) anterior per instans, et in fine temporis (anichilato uno mobili, desinente esse et moveri per remotionem de presenti) foret unus motus, reliquo diuturnior per instans. Utro-bique tamen esset dare cuiuslibet talis motus, tam primum quam ultimum instans, cum sit dare instancia immediata, et sic, pro instanti pro quo est primum ^{since the mobile, during that instant, remains still in the same point of space.} *mutare*, apponit agens nisum ad transferendum punctale ultra punctale suppositum; et ista sunt per *mutari instantaneum*, quod non est motus successivus, sed eius pars prima et nuda, nec velox nec tarda, quamvis motus successivus sit secundum istam mutationem ^{Explanation of how the mobile passes from the first point of space to the next;}

primo instanti: unde tale *mutari* requirit minimum motum pro instanti proximo esse in alio situ indivisi-bili, sicut *quietari* requirit punctale pro instanti proximo esse in eodem situ indivisiibili. Ideo est impossibile quidquam quiescere vel moveri proprio solum per instans. Nec video quomodo *mutari* posset esse instantaneum nisi sua materia foret indivisiibilis, non successive aquisibilis, sed subito pro instanti quo mobile est supra illa, et in proximo instanti super indivisiibili sibi proximo. Sic enim est dare terminum *a quo*, et ter-minum *ad quem*, cum *mutari* respicit futurum, sicut *mutatum esse* respicit preteritum. Non quiescit mobile pro proximo *mutato esse* post motum et non pro ultimo *mutari* proximo precedente. In materia autem de acqui-sitione situm inmediatorum consequenter secundum processum instantaneum deficit ymaginacio nec quia virtus materialis est non potens capere nisi sensibiliter divisible; [quod] non est instans, vel situs punctalis; et quelibet talia sunt que racio convincit esse ponenda.

Ad 5^m dicitur quod assumptum est impossibile, cum quies temporalis coexigit motum successivum; nec dubium quin impossibile sit permanens fieri successivum vel econtra, ut bene tangitur. Quamvis autem de per-fecione rei sit quiescere, et quies sit generaliter finis motus, non tamen potest illa perfeccio competere cui-cunque, sed mundus potest esse in sua perfeccione cum ^{effort of the motor agent to pass the mobile from one point to the next.}

^{The punctal movement in the first instant is neither slow nor rapid; neither rest nor movement is, therefore, properly instantaneous.}

^{But when we think of a mobile passing from one point to the next, our imagination fails, being a material faculty.}

We deny that the world could have been immovable after its creation. Rest is a perfection in general, but a perfection that

10. visum B. 13. *inda* B. 14—15. pp B. 28. *ꝝ¹⁶* B. 30. *after*
nec *a very illegible word* B. 32. *quod deest* B. 35. *ꝝ¹⁷* B.

does not belong hoc quod continue moveatur; nec, posito quod esset to all things; plene perfectus quo ad numerum hominum, et cessante omni generacione substancie, foret ornatus in dispositionibus corporis ad eius ultimum, et homines circu-

lariter tenderent in deum modo quo dictum est. Quod 5 si queratur utrum sit impossibile omne individuum rationalis nature felicitari et tendere in deum suum sine motu successivo concomitante, dicitur quod iam hoc modo est impossibile. Sed admitto, gracia argumen-

ti, quod sit possibile pro inicio mundi; et tunc B 175^b concedo quod non foret tempus; nec vere enunciaretur de aliquo quod ipsum fuit vel erit; sed totum foret esse, sicud est in eternitate; nec scimus loqui secundum istam dispositionem mundi, quia instans incepionis mundi foret eius tota duracio, non successiva, sed per- 15 manens, ut aliquandiu foret mundus tunc, sicud nec semper. Sed amotis omnibus adverbii temporis, et mundus est, et permanent sine defectu vel desinacione alicuius partis sue.

How can the world have begun, since it is to be eternal?

Its dependency on another and its past non-being infers its non-being in the future.

I am not prepared to explain myself on that head now, but merely affirm that time is for ever.

Whether the non being of the world preceded its being.

Arguments pro i. Creation is the bringing of a creature from pure non-being to

Sed difficultas est quomodo exponendo mundus 20 eternalis incepit esse. Videtur enim pari evidencia qua mundus desinit esse; quia, sicud est efficienter ab aliquo, et non fuit, ita est efficienter ab alio et non erit. Et si fit, tunc subito fit, et per consequens faccio est subita; et cum nullum subitum potest esse permanens, 25 sequitur quod faccio illa desinit esse. Nam, incipiente tempore, desinit esse; nec tempus ipsam corrumperet. Ergo, subducto tempore, desinet sic esse. Vel, si dicatur quod faccio illa sit eterna, cum necessario deus facit de quanto conservat mundum, loquitur de faccione 30 subita vel incepione mundi. Et tunc non occurrit michi promptus modus explanandi me in ista materia. Ideo transeo pro presenti, concedens, ut alias, quod necesse est tempus semper esse. Hoc tamen tangit non modicum dubium loycale.

Sed, mundo creato, *non esse* eius precessit suum *esse*. Et videtur quod sic, primo, ex hoc quod creacio sit produccio creati de simpliciter *non esse* ad *esse*. Alter enim non haberet creacio terminos *a quo* et *ad quem*

7. telita'i B. 21. eternaliter B; ib. p⁹ B. 23. etit B. 32. modo; ib. et pro in B. 34. non tangit non (!) B. 36. processit B.

4—5. Circulariter. See above, p. 270.

nec posset bene describi differri ab aliis speciebus motuum, vel a generacione naturali, et a faccione artificiali. Nam [cum] in generacione naturali factum a natura non sit de nichilo, sed ex materia, que est eadem substancia cum producto; sicud in opere artis humane non sit alia substancia, sed artificiosum per generacionem forme artificialis, sicud in opere nature sit compositum naturale per generacionem forme substancialis: si ergo creati *non esse* precessit eius *esse*, sequitur quod creatura nunquam talis aliquando non fuit.

Item, quidquam deus fecit, eternaliter preordinavit; eternaliter ergo preordinat mundum et eius faccionem. Assumptum patet ex hoc quod aliqua preordinavit, quia aliter tolleretur eius providencia. Et idem est iudicium de quolibet facto suo, cum nichil potest ignoranter vel improvide facere. Cum ergo non potest esse alicuius nova ordinacio in deo, quin eternaliter ordinavit illud facere, sicut scit illud fore, sequitur quod aliquid fuit factum a deo, preordinacio dei, et cuius *non esse* fuerit eternaliter. Non enim stat *esse* ordinati cum dei preordinacione; ergo oportet preordinacionem inferre *non esse* illius cuius est preordinacio.

Item, deus fuit eternaliter sciens mundum esse creandum, qualiter ratio ydealis mundi non fuisset eternaliter precedens eius *esse*. Vel ergo pro illa mensura fuit *esse* mundi vel eius *non esse*: si eius *esse*, tunc non fuit creandus, quod est inopinabile, cum deus non potest facere quod non est faciendum. Et consequentia patet, ex hoc quod, si aliquid est, tunc illud non est faciendum, sed factum. Nisi ergo pro aliqua mensura foret *posse esse* mundi, vel eius futuricio sine eius *esse*, non esset mundus possibilis a principio sue creacionis. B 176^a Et si pro aliqua mensura sit futuricio vel | possibilitas rei sine eius *esse*, tunc est cum eius *non esse*, cum alterum contradicitoriorum concomitatur quodlibet.

In ista materia sic tetigi. Prius, verisimile est logico quod *non esse* mundi nunquam fuit, cum semper fuit *esse* mundi; nec fuit *non esse* mundi formaliter in eternitate; quia tunc esset eternum. Ymmo tamen omne quod fuit vel erit, est: patet quod *non esse* mundi est,

being; one the starting point, the other the goal.
This is the only good definition by which it is distinguished from all other productions and changes.

2. Every thing was preordained by God;

now preordination infers the non-existence of that which is pre-ordained.
3. Before Creation, the world was known by God as to be created. Then there was the non-existence of the world; for if the existence, God could not know it as to be created.

I think it may be asserted that the non-being of the world never was, and that its being was always; and if its *non-being* was in

3. cum deest B. 14. After providencia nide B. 32. sui creacio B.

36. pus B. 39. t̄η B.

eternity, it would have been eternal.
Yet its non-being, if it was, could not be otherwise than in eternity; for it never was in time.
So I say to the first argument that the proper definition of creation is a making out of nothing, and creation presupposes no starting-point.

To the second, that the futurition of the world was ordained in eternity, i. e. at a period when the world could not be;

this knowledge of God is without the existence of the world in so far as it is eternal; as it corresponds to time, it is simultaneous with its existence.

God's preordination precedes what He makes, not in eternity nor time, but in nature; for God pre-ordains a thing to be, not to be in the future. To the third, that *creandus* signifies either to be about to be created, or to be worthy of creation.

et non in tempore, si fuit ante mundum: quod est impossibile, cum deus et omne quod est est in tempore. Ymmo, si pro primo instanti mundi sit verum quod *non esse* mundi fuit, tunc est verum quod deus fuit; quod est inprobatum. ⁵

Ad primum dicitur quod creacio est faccio ex nichilo; et quelibet alia faccio est faccio ex aliquo, quia ex materia. Nec est verum quod terminus *a quo* cuiuslibet creati fuit, cum primum creatum in tempore fuit sine termino *a quo*. Sed quodlibet posterius creatum habet ¹⁰ terminum *a quo*, hoc est, *non esse* suum precedit in instanti *esse* suum. Nec est logico facile exprimere faccionem mundi, cum semper deficeret in docendo quid sit, quam deus vel pocius alia veritas eterna.

Ad 2^m dicitur quod assumptum est impossibile, cum ¹⁵ non sit possibile deum preordinasse produccionem prime creature, nisi per instans primum cuius est, futuricio non fuit, nec potencia ante actum (saltem anterioritate temporali); quamvis forte futuricio mundi, sicud et cuiuscumque alterius rei, sit eterna a parte ²⁰ ante, nec alia est futuricio, cum res fuerit et alia antequam fuerit, et sic futuricio prime creature est eterna, et per consequens in mensura pro qua non potest fore *esse* illius creature; et tanta est sine *esse* illius creature pro illa mensura; sed est continue cum *esse* illius ²⁵ creature in tempore existente. Et ita intelligunt illi qui ponunt quod necessario, si est creatura, tunc *non esse* illius creature eternaliter precedit eius *esse*; hoc est, *fore esse* eius pro aliqua mensura naturali eterna, pro qua non est eius *esse*. Conceditur ergo quod ordinacio ³⁰ dei est instantanea, cum requirit ordinatum, et pre-ordinacio dei precedit, si quidquam facit, non eternaliter, nec tempore inparcialiter, sed naturaliter. Non enim preordinat vel ordinat deus quod primum instans vel prima creacio erit, sed preordinat illud esse et non ³⁵ fore; quia nec fuit nec erit eius *fore*.

Ad 3^m dicitur quod hoc participium *creandus*, potest connotare futurionem, vel dignitatem ut creetur vel sit creatus. Ad primum sensum patet quod falsum assumitur. Et in 2^o sensu patet quod mundus iam est ⁴⁰

2. *dem⁹ before* deus B. 4. *c'e'* B. 11. *aliquo (?)* B. 14. *q, fit q;⁹* B.
20. *app⁹* B. 24. *tenta, tenta?* B. 27. *est pro esse* B. 33. *inpar* B.
39. *secundum* B.

creandus; hoc est, est dignus esse creatus ex bene placi-
cito creantis. Mundus ergo, et non eius futuricio ante
actum, habet rationem ydealem eternam, priorem na-
turaliter mundo. Et illam rationem nunquam conco-
5 mitabatur *non esse* mundi, sed fuit eternaliter sine *esse*
mundi pro illa mensura; non cum *esse* mundi pro illa
mensura, sed non fuit cum *non esse* mundi.

In the first sense, the world never was *creandus*; in the second, it is *creandus* even now. The ideal of this world was never accompanied by its non-existence, but was merely without its existence. There are other questions concerning these matters; but I have already strayed too far beyond what I first intended; so I bring this work to a close.

Innumerabilia autem dubia continencia materias hic superficialiter salutatas possent emergere. Sed consi-
10 derans quod ultra sensum primum propositum vel capacitatem sepius evagabar, decrevi tempus exigere cum isto tractatu de temporalibus ab anxio scrutinio
B 176^b veritatum huiusmodi | parumper desistere, finem tocius operis quiecius inponendo, etc.

15 Et sic est finis Tercii tractatus Magistri Johannis Wicleff, Doctoris Evangelici, cuius anima habeat eterne visionis iocunditatem. Fideliter correctus, etc.

1. ee' B. 4. mundum B.

17. The editor may perhaps be excused here for saying that he thinks the two last words ought, for truth's sake, to have been omitted.

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Errata.

Two unfortunate circumstances — one due to my sending to press by mistake a sheet which required further revision, and the other to my too great haste in assuming the correctness of a reading which a note from Mr. Matthew afterwards showed me to be wrong — render necessary the unusual course of inserting a list of errata in this Volume. As, however, ‘to err is human’, the reader will perhaps exercise the divine attribute of forgiveness, not only as regards these mistakes, but others which I have discovered on going carefully through the volume.

P.	7, <i>foot note</i> , l.	2, omit	cleaver	<i>supply</i>	clearer.
"	8, "	1,	verbol	"	veibal.
"	11, <i>side-note</i> , "	26,	natural	"	<i>natural</i> .
"	12, text,	7,	necessitata	"	necessitate
"	20, <i>side-note</i> ,	31,	false we	"	false. We
"	32,	ult.,	that.	"	that
"	35, <i>foot-note</i> ,	2,	continence	"	contingence
"	48, <i>side-note</i> ,	26,	concluse	"	include.
"	63, text,	37,	spongio	"	spongia
"	64, <i>side-note</i> ,	ult.,	element,	"	element
"	65,	25,	experience	"	experience;
"	66, text,	39,	multas implicia	"	multa simplicia
"	84,	10,	aërum	"	aërem
"	98, <i>foot-note</i> ,	1,	sentence. I	"	sentence, I
"	99, text,	23,	pausant	"	pausat
"	101,	12,	puiditate	"	quidditate
"	108,	27,	punctualium	"	punctalium
"	III, <i>side-note</i> ,	23,	inanimate	"	inanimate
"	II2,	27, 28,	and the midriff(?)	"	
"	II2, text,	28,	mitricori	"	nutrictiori
"	II2, <i>omit the whole of the foot-note to l.</i> 28.				
"	II2, text,	l.	8, <i>omit</i>	individuacionem	
"	II2,	29,	venibus	"	individuaciones
"	II2,	36,	arentibus	"	venis
"	II2,	28,	subtili, a quo	"	a parentibus
"	II3,	11,	mitriti	"	subtili a quoso
"	II3,	20,	animam	"	nutriti
"	II3,	38,	alimenta	"	alimenti
"	II3, <i>side-notes</i> n	17, 18,	of the midriff		
"	II4, text	1,	temperancia	"	temperancie
"	II5,	3,	dissolveretur	"	dissolverentur
"	II6,	23,	collectim, omnes illas	"	collectim omnes illas
"	II6,	34,	procedere per	"	procedere. Per
"	II6,	36, 37,	generatam. Est	"	generatam est
"		37,	privacio, quo	"	privacio. Quo
"	II7,	33,	constancium. Sed	"	constancium: scilicet

P. 117, text,	1.	35. omit	habent	<i>supply</i>	habet
" 118, "	"	30, "	plus. Et	"	plus et
" 118, side-note,	"	17, "	by	"	as to
" 119, text,	"	39, "	considerantes,	"	considerantes
" 120, side-note,	"	27, "	superadded	"	superadded
" 123, text,	"	10, "	verum	"	verbum
" 125, side-note,	"	7, "	ginger	"	galangal
" 126, text,	"	30, "	aut	"	sunt
" 126, "	"	31, "	coningaciones	"	coniungaciones
" 127, foot-note,	"	3, "	non living	"	non-living
" 128, side-note,	"	8, "	big	"	<i>big</i>
" 129, text,	"	7, "	aliud	"	aliquid
" 130, "	"	5, "	tamen	"	tantum
" 130, "	"	7, "	aquum	"	aquosum
" 130, "	"	8, 10, "	violentum	"	violentatum
" 137, "	"	16, "	non		
" 137, foot-note,	"		Dr. Poole	"	Mr. Harris
" 140, text,	"	3, "	cum	"	tum
" 154, "	"	8, 9, "	cappam	"	capa
" 154, side-note,	"	28, "	or	"	for
" 187, text,	"	16, "	maligna	"	magna
" 188, "	"	38, "	vel fuit erit	"	erit vel fuit
" 194, side-note,	"	35, "	a	"	the
" 196, text,	"	33, "	locatum	"	locutum
" 197, "	"	11, "	dicit		
" 201, "	"	31, "	cerebro	"	crebro
" 201, side-note,	"	31, "	and in the brain		
" 202, text,	"	8, "	abscuritas	"	obscuritas
" 202, "	"	9, "	sic	"	sit
" 202, "	"	40, "	corrupcionem,	"	corrupcionem
" 207, "	"	7, "	quem	"	que
" 208, "	"	16, "	tenebrem	"	tenebre
" 208, "	"	19, "	notum	"	motum
" 208, "	"	26, "	figuratam	"	figuratum
" 211, side-note,	" 3—10,	"	What—time	"	The seasons and such other divisions of time are accidental, not essential.
" 219, side-note,	" ..	34, "	from	"	form
" 226, text,	"	17, "	est,	"	est

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