

Library of

Wellesley



College.

Presented by

Wichif Society

No 50002

Printed in Austria.

IOHANNIS WYCLIF

TRACTATUS

DE LOGICA.

NOW FIRST EDITED FROM THE VIENNA AND PRAGUE MSS.

(VIENNA 4352; UNIV. PRAG. V. E. 14.)

BY

MICHAEL HENRY DZIEWICKI.

VOL. III.

LONDON.

PUBLISHED FOR THE WYCLIF SOCIETY BY TRÜBNER & Co.
PATERNOSTER HOUSE, CHARING CROSS ROAD.

1899.

Contents of Introduction.

I. Preliminary Remarks	p.	V.
II. General view of the work	p.	V.
III. Analysis of Vol. III. <i>a)</i> Chapter IX	p.	IX.
<i>b)</i> Chapter X	p.	XXV.
IV. Conclusion: The gist of the Nominalistic controversy	p.	XXXVI.

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 Individuatione 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 coëxist 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-coïncidence 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, *Iut.* 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

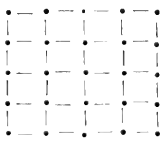
by denying that at each instant of *any* movement one point is passed over; it is the case only for the swiftest movement possible, that of the 'equinoctial point' in the sky (38, 39). — It is true that such an answer does away with all really continuous motion, except for the said point: during any 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 coïncide." 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 coëxist 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 coëxisting 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 racionem 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 coëxist 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-immaterial. 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: Is 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 (*individuacionem 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 *fallaciae 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 *eternily*, or *during all eternily*, or *in some part of all eternily*. 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 coëxist (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 coëxistent 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 *ævum* 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 coëxist, 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 coëxist. 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 contradictories; 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 expository 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 expository 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 inextended 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 Judgment 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 TERTIUS

Continuatur.

CAPITULUM NONUM.

B 99^b Sequitur de localibus pertractandum. Supponendo primo omnem ypotheticam adverbio loci copulatam cum proporCIONALI actu esse localem; ut est talis: *Sor currit ubi Plato currit*. Est autem iste species ypothetice (sicut causalis, comparativa, et temporalis), affinis cathgoricis, cum signa coniungendi talia convertuntur cum cathgoricis. Idem enim est dicere: *Sor currit ubi Plato currit*; et: *Sor currit in loco in quo Plato currit*. Et hinc, 2^m auctores, adverbium loci et temporis sumuntur quandoque nominaliter pro denominationibus cathgoricis a loco et tempore: ut patet de istis: *ubi, quando, nunc*, et similibus. Sunt ergo tales propositiones quante et quales, ut cathgorice: et per consequens sunt iudicande vere vel false, contradictorie, equipollentes, vel aliter passionate, sicut cathgorice. 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 compositibile 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.

25 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

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 preter hoc locum et tempus, quorum omnium principium est punctus; et unitas est principium puncti. Et tam necessario consequitur locus materiam quod ubicunque fuerit ista maxima materia mundi, ibi est iste locus. Sic quod, si moveretur recte (per impossibile) in vacuo infinito, foret continue idem situs, cum ad individuacionem 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.

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 illius situs quem principaliter intendit, ordinat natura situm indivisibilem tocians multiplicari ^{2^m} eius individua. Si ergo mundus habet ad omnem eius punctum partes immobiles, subtiles, comitanter ad speciem in animali, cum quibus copulatur virtus mundi regitiva, que facit informaciones vivencium et alia opera latentia; tunc facile est distingvere situs parciales, cum quilibet situs partialis foret *talem partem situari*. Et in B ^{100^a} talem partem ac eius situm possunt quotlibet corpora vicissim ingredi, sicut theologi ymaginantur omnem ultimum immobile se habere. Et illius opinionis videtur 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. ^(com¹) completur B. 25. copulatur *in marg.* B. 33. ^(ci) B. 36. ^(lata'coe) B. 38. ^(pur'atib9) B.

24. *Immobiles, subtiles*. 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* = *ύλην*.

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-
 5 que fuerint probabiliter opiniati. Nam, ponendo quod quelibet pars superlunaris preter polum continue moveatur (et sic de qualibet parte sublunari preter terram vel sibi adherencia, ita quod non sit talis pars mundi
 10 divisionem situs mundi sufficit ista materia, sic ad indisionem 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.

15 Ex quo ulterius concedendum est quod manet continue idem situs in numero, propter idemptitatem mundi et conformitatem distancie ad duplex quiescens, situo quantumlibet in substancia variato. Si enim datum corpus vel quodcunque aliud se habuerit continue per
 20 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
 25 mundi et duo poli quiescerent, toto residuo moto, tunc quilibet motum 2^m circulum concentricum et eque distantem a polo mundi foret continue eque distans ad hiis tribus, et in casu a quolibet alio distante. Sed iam necessario multa terrena quiescunt, sicut et multe partes
 30 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 habentis quamcunque partem sic posita
 35 tam, 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*,
 40 videtur quod quotlibet situs possunt esse simul, et unus moveri ad intrinsecum. Et sic locus per accidens

Every superlunary part of the world, except the poles, is in continual motion.

Its 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. generabile (?) B.

9-10. indini °3 B. 25. 2° pro duo B.

9-10. indini°3 B. 28. 3° pro tribus B.

22. ague

2. One place would be placed in another: which is absurd.

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;

locaretur, et sic in infinitum procederetur in locacionibus, sicut et in aliis quantitibus, sed non per se essent quante. Ista ergo situacio est *hoc situari*, et non *habere mundi* vel *relacio*, cum sit quantitas principians ubi-
 cacionem alterius generis, sicut tempus principiat ip-
 sum *quando*. | Et per consequens nil distans a relico B 100^b
 potest esse adequate ubi ipsum relicum est, nec ali-
 quid potest esse alibi quam adequate est, nec acquirere
 locum vel moveri de loco ad locum sibi adequatum. Et
 sic non specificaretur motus localis per terminum *ad* 10
quem, vel eius materiam, cum nichil potest moveri de
 loco ad locum.

Ista et multa similia dependent super isto, quod
 omnis situacio vel locus pertinenter signandus corrup-
 pitur ad quamcunque modicam variacionem subiecti; et 15
 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, adquisicionem vel immobilitatem loci, 20
 cum aliis philosophice de loco locutis. Nam tam homo
 quam bestia habet inmatam sibi potenciam ad cogno-
 scendum mobile mutare locum suum, sicut patet de
 naturali noticia situs, posicionis, distancie, et opposi-
 tionis. Ideo sicut in natura omne motum vel mobile inni- 25
 titur alicui fixo, sic non est possibile nos locum cog-
 noscere, 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 30
 commentator quod centrum mundi est causaliter eius
 locus; et per idem uterque polus, non quod situs in-
 divisibilis sit formaliter situs mundi, sed quod hii 3^s
 situs principiant, tam quo ad *esse* quam quo ad noti-
 ciam, situm mundi et cuiuslibet sue partis. Cum ergo 35
 mens prius cogitat singulare fixum quam situm, non
 mirum si a tali individuat locum, et si locatum quan-
 tumlibet varietur.

Ad primum argumentum, dicitur quod situs parcialis
 est primo subiective in communi ad quamcunque par- 40
 tem mundi sic positam, et ab illo communi non potest

4. \widehat{m} di B. 8. aqr¹e B. 9. locum *deest* B. 13. dependentes B.
 23. mo¹a m¹ur' B.

migrare. Universalia enim sunt alicubi, et generabilia, et corruptibilia per accidens, ut patet ex dictis superius. Sed per accidens subiectatur in quacunq[ue] singulari parte mundi sic posita, licet non dependet a tali.

but it belongs accidentally to every particular part.

- 5 Pro 2^o 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 quoad subiectum proximum. Et 3^o 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 dicitur quod deus non potest facere duos situs coexistenti, 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 ubicunq[ue] 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 alicuius 3ⁱⁱ; nec possit moveri, nisi eadem distancia in numero possit maiorari et minorari. Differo autem a solutione argumenti quo probatur quod, mundi moto recte versus oriens, moveretur quilibet situs eius, quousque probatus fuerit casus assumptus. Sicut ergo res 35 universalis est immobilis, sic et locus.

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 Porrée's definition takes a wider view; but Aristotle implicitly says the same.

12. singularis (!) B.
39. a^{or} B.

30. 9pœ B.

31. v' nec in marg. B.

corporis continentis immobile primum; quod intelligitur de agregato 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 immediatum 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 istis 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 20 autem et quolibet animali perfecto sunt iste sex differencie quorsumcunque ubicantur absolute fixe. Et in aliis dicuntur comparative. Unde, ymaginato homine cuius capud sit in polo antarctico et pedes in polo arctico, manus dextra in oriente et sinistra in occi- 25 dente; tunc posicio illius hominis corresponderet posicioni mundi.

Sed preter istas posiciones est dare alias posiciones parcium 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 B101^b distancior a circumferencia mundi. Ex quo patet quod non est possibile centrum esse supra aliquid vel inferiorem 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 movere ipsum motu recto, nisi forte equivocando intellexerint quod ipse habet potenciam ad hoc, *si posset fieri*; sicut ego possum videre bestiam mortuam, ipsa 40

12. ft² B. 22. v'ca^v B. 31. circumterencia B *ib.* inferior B.

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

- obiecta michi. Res autem multiplicatas non repugnat esse supra se vel sub se; et sic de ceteris differentiis, 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.
- 10 Sed de puncto, loco, vel quantitate permanente singulari, non est possibilis talis realis multiplicatio, quamvis substantia 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 extrema mundi sit alior ipso et extra ipsum 2^m situm indivisibilem, nisi pars mundi superficialis subiectet illam, et per idem centrum mundi esset inferius quam aliquod permanens continue magnum. Et sic de cuiuslibet corporis termino. Non enim foret substantia superior vel inferior propter eius accidens terminans, si ipsum non subiectetur in aliqua eius parte potius quam propter bonitatem, vel alia eius accidentia, quantumlibet distancia, aut propter talem terminum per se existentem in eodem situ quo infimo non continuatum cum terminato.
- Sed pro aliis 4^{or} differentiis notandum quod omne animal absolute habens istas diferencias habet 3^s lineas dimensionales orthogonaliter se secantes in medio; et sex medietates concomitantes divise per tales tres lineas obiciuntur sex differentiis positionum, 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 diferencias 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. 8^m B.

27. quomfimo B.

34. p^mctas B.37. d^s a^l 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. 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. 10

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. 15

proportionatum esse multipliciter positum respectu animalis, sicut et deus est maxime denominatus taliter respectu diversorum quo aliquid potest esse. Nam si aliquid causatum habuerit dextrum, sinistrum etc.; tunc deus est sibi dexter, sinister etc. 5

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 B 102 que protenditur versus dextrum usque ad finem mundi 10 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 differentiis 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, 20 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 altercationes sophisticæ: 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 capud hominis esset supra ipsum; et sic esset corpus supra se, sub se, et ita 30 de aliis differentiis. 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 differentiis, 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. n. errcam B. 16. 2²⁹⁹ pro differentiis B.
18. alīs 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 differentiarum 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 consequenciis.

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

Sed relinquendo ista sophisticis et redeundo ad conclusiones priores, patet quod omne absolute habens istas denominaciones habet sex medietates communicantes, quarum quelibet continet 4^{or} medietates communicantes 4^{or} parcium 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 predictae. Sed medius punctus sic positi non refertur aliqua istarum 6 denominacionum respectu illius positi, sicut nec centrum respectu mundi. Nam medietas inferior mundi est ab equinocciali | usque ad polum articum, et alia medietas incommunicans cum illa est pars superior eius; et medietas mundi a Colubro usque ad polum orientalem est pars dextra mundi, et alia medietas incommunicans est pars sinistra. Medietas vero ab oriente usque ad cenit habentibus speram rectam est pars anterior; et relicta 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.

Ex istis patet quod *sub* et *supra* in mundo sunt equivoca. Nam aliquando dicunt altitudinem et bassitudinem, ut supra dictum est, et aliquando dicunt absolute positionem mundi. Et sic polus articus dicitur summe subditus in mundo; bassissimum tamen et infimum possibile ad sensum expositum est centrum mundi. Unde, solum in mundo vel concentrico cum mundo, est idem

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. metes B.
19. media^{b9} B. 20. et ad B. 27. coluro B. 33. alij B. 38. fo^m 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 istis patet quod iste differentie posicionis susti-⁵ nent magis et minus, et quod est dare summum vel maximum possibile in tali denominatione: ut summe dextrum, summe sinistrum, etc. Patet etiam quod omnis locus est equalis suo maximo locato et adequato; et per consequens mensurat ultimum gradum magnitudinis¹⁰ 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 efficienter, sicut deus quantificat omne¹⁵ quantum, et corpus continens quantificat suum contentum, sicut et locus. Sed quantitas, que est dimensio, formaliter quantificat subiectum suum et efficienter requantificatur ab eodem. Unde situs non est formaliter subiective in aliqua parte mundi, nec formaliter illam²⁰ quantificans, nec ab illa quantificatus. Sed locus ponitur per accidens efficienter quantificare suum subiectum locatum, sicut est generati principium, quamvis non sit de genere activorum. Aliud enim est facere et aliud²⁵ 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 dimensionis et figure. Differunt tamen ab in-³⁰ vicem, cum quelibet pars quantitativa loci mundi differt a parti quantitativa dimensionis vel figure sue. Nec est inconueniens, sed necessarium, quod aliqua reciproce se quantificant in diversis generibus causandi; et taliter sunt reciproce in seipsis. Unde licet in 5^o phi³⁵ sicorum dicatur aliquid 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 denominationem. 2^o modo omnis causa est in suo⁴⁰ causato, et omne subiectum forme est in illa forma:

1 infinitum B.

3. in eccentrico B.

23. quati B.

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

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* substancie. Et patent descripciones istorum.

Motus autem localis, quo ad eius principium subiectivum, dividitur in motum *per se* et motum per accidens. Quamvis autem impossibile sit aliquid moveri, nisi moveatur per accidens, tamen ad propositum restringitur motus per accidens ad motum localem, sine eius per se existencia vel sufficiencia ad replendum
20 locum; ut forme dilate cum subiectis motis, et quecunque partes quantitative. Sed per se movetur localiter quecunque per se substancia corporea que ex inclinatione eius intrinseca movetur, ut corpora.

Et hoc dupliciter; vel concomitante violencia ab
25 extrinseco, sicut est in pulsione, traccione, veccione, 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 appetitum. Probabile tamen est quod omnis motus localis
30 istorum inferiorum est cum violencia; ut aliquod corpus movetur sine quadam naturali inclinatione.

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 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. hō B; *ib.* fait^o B. 5. After sufficient a blank space for 4 words B.
19. exn^a B. 23. cor^u B. 28. influencie B. 38. mōlia B.

surgit post quietem, sicut facit bestia memorans oblii sempiternaliter immutantis. Semper tamen ab influencia celi vel alio sempiternaliter movente moventur mutabilia nota; ut patet de motis ad generandum sibi simile in certo tempore anni, vel prosequentibus delectabile aut 5 fugientibus tristabile. Homo autem, cum anima sua non subiacet necessitata 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 quiescunt.

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 moveatur. Si enim sit corpus quod movetur, tunc vel mo- 15 vetur 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 agregatum corporum motorum, sicut et totus mundus sit causatum finitum; quia, si esset infinitum, nichil potest ascendere vel descendere, cum non esset aliqua differentia loci supra- 35 dicta. Omnes enim ille differentie 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. f̄p̄uar̄ ī mut^N B.

3. f̄p̄nar̄ B.

3o. ex^N 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 fingi quod primus motor est forma extensa primi mobilis; vel 2^o quod sphaera superior movet 10 inferiorem, et econtra propter concatenationem eorum 2^m concentricitatem vel excentricitatem; vel 3^o quod eiusdem orbis quilibet pars moveat aliam, sicut est de trocho circumducto, qui eternaliter moveretur, si non impediretur a corruptente, nec ab extrinseco collidente 15 nec ab appetitu quem forma habet ad quiescendum. Cum ergo ista non possunt fingi 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 coextended 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.

20 Omnia ista tolluntur per hoc quod celum regulariter difformiter movetur, ac si esset unum proportionaliter motum; quod nulla trium viarum potest solvere. Nec est philosophicum ponere talem violentiam 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 perfectius cognoscere 35 suum ordinatum quam homo suum ordinatum, sicut operatio nature est perfectior operatione 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 perfectionem. 40 Est enim perfectius primo corpore, cum sit finis ordinans ipsum et omnia alia ordinata; et per consequens

So God is not necessary.
Answer. All these subtleties 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.

13. troco B.

24. dicta *deest*.

28. tlim B.

34. cor^o B.

Immovable and
cause of
eternal truths,
God is also
eternal.

nec est eius materia, nec forma, nec pars quantitativa. Est ergo indivisibile. Et cum non possit moveri ab 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. B 104ⁿ

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.

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 totius 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 universalialia. 5

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.

Secundo autem dividitur motus localis in comparatione ad eius puncta et materiam in ipso aquiribilem; ut alius est motus *simplex*, et alius est motus *compositus*. Simplex autem in proposito vocatur motus naturalis, homogenius, corporis naturalis; et motus compositus est motus competens animato a forma superaddita; ut progressio, repcio et volatus competunt animali. Et istos motus comitantur multi motus diversarum specierum et multe quietes. Ideo totum agregatum vocatur motus compositus. 15

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.

Motus autem simplex quidam est rectus, ut ascensus et descensus, 2^m divisionem gravium et levium; et quidam circularis, ut motus corporis. Neutri perpetui: solum enim talis motus creditur esse perpetuus. Ideo principalissime competit corpori circumferri perpetuo, propter proporcionalem perfeccionem. Quod si aliqua pars orbis celestis ascenderit vel descenderit, hoc erit 2^m proporcionem circuli, et propter inclinacionem alterius cui inexistit, et non propter situm alciorem vel bassiozem in quo appetit quiescere, sicut gravia et levia. 20

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

Unde, 2^m 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 25

4. quod *deest* B. 17. pu^{en} B; *ib.* aq'ri^{em} B. 20. *ññ* after corporis B.

30. pu' ^{no} B. 32. cor^{is}; orb *above* B.

subiecto primo possunt isti simul inesse. Et 2^m astro-
 nomos, motus circularis ab oriente in occidentem com-
 patitur secum per totum subiectum sic motum, alium
 5 circulaem motum ab occidente in orientem: et multo
 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,
 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
 15 tunc motum circulaem esse perpetuum, sed potius
 probabiliter infert oppositum, cum motus celi non sit
 solum propter finem habitum placendum, sed propter
 finem habendum, ut perfeccionem universi in produc-
 tionibus animarum; et cum hoc non possit procedere
 20 in infinitum, philosophis est ponere quod aliquando
 cessabit motus celi.

Sed pro specificatione motuum sunt 3^a notanda. Primo
 quod aliquis est *per se* terminus ad quem motus, et
 alius non *per se*. Per se terminus motus est denominatio
 25 accidentalis quam oportet mobile ut sic motum ad
 B 104^b quirere | et in fine motus habere ut ubicatio localiter
 moti. Terminus autem ad quem, sed *non per se* ter-
 minus motus, est quecunque forma que in fine primo
 habetur a moto, quam non oportet ipsum formaliter
 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-
 tandum quod de motu, sicut de aliis naturis, contingit
 35 aliquas esse per se species, et alias species per accidens;
 que quidem species sunt capte ab accidentibus separa-
 bilibus ac inseparabilibus; ut multe sunt species religio-
 sorum et tamen omnes sunt eiusdem speciei substanci-
 alis. 3^o, videtur michi quod species motus naturalis vel
 40 essentialis maxime attenditur penes materiam motus;
 et per consequens penes *per se* terminum *ad quem*, cum

and circular
 movement from
 east to west
 and from west
 to east may
 also coexist.

But ascent and
 descent are
 contrary.

Not that the
 same body
 cannot ascend
 and descend at
 the same time;
 but the same
 body as a
 whole, cannot.

Yet though
 without a
 contrary,
 circular
 movement is
 probably not
 eternal; it is
 for an end, and
 that end
 attained, it will
 cease.

Three points
 must be
 noticed here.
 1st That the
 terminus of
 any movement
 is so either by
 itself or not;
 i. e. a terminus
 to attain which
 the movement
 is made;
 or one which is
 attained, but
 which was
 not the
 principle of the
 movement.

2nd There may
 be essential
 and accidental
 species of
 movement,
 according as
 they are
 distinguished
 by something
 essential or
 accidental.
 What
 principally
 species
 a movement is
 its proper and
 essential
 terminus.

10. mltr' B.

20. p̄hic B; ib. al̄η B.

32. fauis B.

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

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 a point is at once east, west, north and south. For instance, every point in the sky, except the antarctic pole, is more or less to the north.

omnis talis sit eiusdem rationis cum materia primo acquisita. 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.

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 orizoncium: 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 infinicies erit occidens. Quilibet ergo punctus in equinocciali, si movebitur versus 25 alium, continue movebitur versus quemlibet alium; et sic continue movebitur versus occidens, versus meridiem, et quemlibet punctum equinoccialem cuiuscunque difference. Et illud sequitur ponendo istas differencecias 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 differenceciam, cum non sit talis differencecia fixa. Maior probatur per hoc quod in relativis tenet consequencia a comparativo ad simpliciter; sed quilibet punctus celi 35 preter polum antarcticum est in comparacione ad ipsum borealis; ergo quilibet punctus preter ipsum est borealis. Et sic de 3^{bis} aliis punctis inicianibus 3^s alias plagas. Non ergo opponuntur terra borealis et australis, sed pocius relative convertibilia [sunt]. 40

4. p^ulent B. 28—29 cōcō d^uic B. 35. 9^o B. 36. ergo v^o 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 ter-
- B 105^a minum fixum et re | cedere continue ab eodem. Sic
- 5 enim contingeret muscam ascendere repente ab uno extremo lancee in aliud per hora, illa lancea 2^m se tota descendente per eandem horam velocius in qualibet porporcione 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 movetur. Antecedens patet, quia tunc continue foret in eodem loco; ergo non moveretur localiter. Si enim mobile
- 15 moveatur propter nisum suum, non acquisita materia motus, tunc omnis lapis vel grave mixtum continue moveretur versus inferius. Sed quid incredibilius de columpnis et aliis quiescentibus quam quod descendant continue?
- 20 6^{to} sic: si motus remissior impedit aliquantulum, motus intensior plus impediret, et motus equalis simpliciter impediret. Sed motus orbis planetarum impediret motum raptus, cum longe velocior foret, illo subducto, quam est modo. Ergo motus simpliciter pares sim-
- 25 pliciter 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
- 30 in die motu proprio sui deferentis: ut sol in anno solari frequentius quam modo circumrotaretur per unum diem. Et alii planete per plus vel minus 2^m porporcionem velocitatis sui deferentis. Et hoc videtur mirabile multum, quod mobile multum velociter movetur versus
- 35 terminum fixum, et tamen, subducto illo motu, et quocunque 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 ori-
- 40 zontem 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. 5^b. 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. 6^b. 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 planets, if their movement is destroyed. Which seems astounding.

15. adq^{ta} B. 16. 1p B. 29. ts B. 30. d'int^o B. 33. d'int^o 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 acquirere eius materiam. Nec valet dicere quod descriptio concavitate orbis superioris et non adquisicio situs sit motus localis orbis planete; quia talis descriptio non est motus, sed acciden- 5 taliter concomitatur motum; ut, si quis applicaret cultellum quiescentem ad lapidem molarem circumductum, quo usque tota superficies extima lapidis sit descripta, talis descriptio non est motus. Ergo per idem nec retrogradacio orbis inferioris nec descriptio sue concavitate. 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 orbis 15 planete habet nisum ut sit sub orbe signorum continue dispariter suppositus, saltem 2^m | 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 specificice; ut luna dicitur habere quinque motus, preter duos motus communes omnibus planetis, et quotlibet alios motus contingit ymaginari lunam habere in ymaginacione per 25 diversos orbis 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 nomen 30 motus equivoce ad motum proprie dictum, ad materiam motus, et ad quemcunque modum habendi corporis propter quem ipsum aliter movetur, ut sunt nisus, descriptioes, tardaciones, vel quomodocunque aliter vocentur: respondetur ad argumenta. 35

Ad primum dicitur quod conclusio est probabilis, cum qualibet pars latitudinalis sere 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 40 mundum, sive in ultima spera, ut maior pars sapientum

15. quia *pro* quod B. 20. 10⁹ B. 25. in ymaginacione *in marg.* B. 27. ca⁹ or ca¹⁰ B.

concesserat, et patet sequi ex dictis quomodo de loco vel situ est facile respondere. Nam celum 2^m emispirium supra horizontem nostrum movetur ab oriente in occidentem et 2^m emisperium sub horizonte nostro movetur ab oriente in orientem et converso: et sicut idem ascendit et descendit 2^m partes, sic in proposito de motu ab oriente in occidentem; et e contra. Sed notandum quod *oriens* quandoque sumitur pro illo situ immobili in quo dextra pars celi creata est, et quandoque participialiter pro quocunque 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 quem rotatur, quod alium modum movendi habet quelibet pars orbis mota super horizontem nostrum, quam haberet movendo super eadem principia et converso; quia quilibet talis pars oriretur nobis in situ quem vocamus occidentem, et paulatim moveretur versus meridiem, quousque advenerit ad situm quem vocamus orientem fixum. Et proportionaliter de partibus orbis motis sub horizonte. Ideo philosophi, specificantes modum movendi celi 2^m partes sensui suo notas, ut sunt partes supra horizontem nostrum, vere dicunt quod celum movetur ab oriente in occidentem, et antipodes nostri vere dicerent quod celum movetur e contra a situ quem nos vocamus occidentem ad situm quem nos vocamus orientem; sed situs qui est nobis occidentem diceretur illis orientem: et sic de situ orientali. Ideo utrobique movetur celum versus occidentem respectivum.

B 106^a 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 quolibet pars orbis celestis corporee magna oritur et occidit 2^m partes respectu diversorum. Et sic est tam orientem quam occidentem (intelligendo participialiter); et sic quilibet punctus orientem continue erit orientem vel occidentem, quia continue novo ortu et occassu instantaneo respectu diversorum orizoncium. Et sic ortus successivus 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. p^{ti}cⁱr B. 14. notu^s B.; *ib.* ymagⁱ B. 17. pⁿa 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: to 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 horizontem nostrum movetur versus occidens; quod est verum. Unde credo quod est dare oriens et occidens immobile, in quorum primo astra habent ampliolem efficaciam, tanquam partes 5 dextere, et in 2^o 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 equinocciali 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 equinoccialis, 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 eandem 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 immediate ante hoc movebatur versus illum situm, et immediate post hoc sic movebitur: quia nihil 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 3^m dicitur quod consequencia non valet. Unde concedo tales esse diferencias fixas. Nec dubium quin negantes tales esse diferencias, sed [admittentes] quod 35 equivalet ac si tales essent, intricabunt seipsos, cum nihil potest equivalere impossibili. Et sic conceditur quod quilibet punctus in celo, preter aliquem 4^{or} nominatorum est australis, borealis, orientalis, et occidentalis; ut tangitur in argumento.

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

1. deducta 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 compossibiles, et non contrarii; sicut sunt ascensus, et descensus. Ascensus enim dicit adquisicionem superioritatis, et descensus adquisicionem inferioritatis, que repugnat simul inesse eidem subiecto primo et per se. Nota tamen quod motum repcionis consequuntur multi motus, et multe quietes organorum. Ideo motus contra navem eque velociter contrarie motam non [est] continue 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 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, 2^m 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 ratio 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 reduccionem, qui mutuo se expellunt; et sic contrariantur quecunque loca distancia. Aliquando autem restringitur contrarietas formarum ad rationem contrarie

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.

9. r'pcois B. 11. nō or aō B; ib. est deest B.

31. duce' = dupliciter? pro differenter B.

activitatis. Et talis non inest quantitibus, 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 denomi- 5 nantes. 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, 10 quia motus rectus contrariatur ei qui est e contra ad differenciam oppositam, et non illa circumduccio, sicut patet ex descriptione motuum contrariorum superius posita.

There is an exception for multipliable beings and also for matter, that can be partially in different places; but not wholly and at the same time.

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 'ascend': 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 rests, but not *vice versa*.

Ad 5^m negatur argumentum. Nec sequitur mobile 15 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 differenciam, 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 e contra, 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^m B. 17. q̄, B. 23. v^{te} B. 25. v^{te} B.

39. *Time 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
 5 perfectio, 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
 10 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 ex-
 15 tendunt nomen motus ad tantum ut iam extenditur, sed solum illi qui innituntur salvare motus proprios planetarum.

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

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. ^malpetgio B. 35. ^stem 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 redintegrate 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 redintegration

Melius ergo est extendere nomen motus ad omnem limitationem passivam ab alio; ratione cuius limitationis dispariter se habet quo ad situm, qualitative vel quantitative. Et isto modo dicunt philosophi intelligencias moveri a Deo, tanquam amato et desiderato, 5 ad movendum active suos orbis: quod si non facerent, cum veris paribus que iam ponuntur, dependerent de bonitate accidentali, displicendo Deo. Et breviter omnis creatura movetur sic a Deo, saltem per tempus, inveterascendo, perficiendo in bonitate accidentali, vel 10 deficiendo; et tali motu dicunt philosophi omne movens phisicium communicans in materia cum suo motu quod tangit in movendo, moveri; quia non dubium quin omne tale | continue debilitatur in agendo, et sic B 107^b continue deperdit qualitatem. Non tamen oportet 15 quod intelligencia, ut sic, adquirat continue successive qualitatem. Nec oportet quod calidum calefaciendo frigeat 2^m aliquam eius partem; nec oportet motum ab obiecto adquirere continue successive aliam qualitatem; sed sufficit quod limitetur ab illo ad accident- 20 aliter eliciendum actum vel servandum, ratione cuius est melius vel peius, vel aliter denominatum quo ad acquirendum 3^m gradum materie motus quam foret subducto limitante ad taliter apprehendendum.

Unde vane ponunt aliqui actus anime esse qualitates, 25 propter hoc quod ad illas est motus. Ad illos enim non est motus tanquam ad per se terminos, quamvis necessario omne elicitive actus sit mobile, sicut nec est motus ad *movere* intellective; nec moverentur talia proprie, sed extensive, loquendo de motu. Quod patet 30 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 35 speciem aut habitum prius receptum. Ideo tunc inceperunt tam motus instantaneus quam permanens. Unde,

7. v^o B. 32. moverit *in marg.* B. 35. epit *in marg.* B; *ib.* 34^a B.

35. *Servabit.* I have used the word *redintegrate*, 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, redintegrated, though the sense is perhaps somewhat different.

cum non sit possibile talem actum elicitum esse nisi vel generetur vel servetur qualitas illo actu, non mirum si auctores dicunt omne elicitivum actus esse mobile (subaudi motu communiter dicto, et non motu proprie 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 adquirent sua mobilia. 2^m 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 vacuo vel in pleno, cum omnibus aliis sequentibus existis. Nam si A motum contra B in 2^{pl}o tardius ipso B, intendatur motum suum quousque moveatur in 2^{pl}o velocius ipso B uniformiter moto, pro instanti medio movebitur eque velociter cum B: et tunc, continuando illum gradum motus, non mutaret situm suum. Cum ergo omne mobile naturale impeditur ne tam velociter moveat se sicut potest, videtur quod sic velociter movetur cum impeditum non impedit a velocitate motus, ut dicit responsio. Ideo videtur michi probabile quod 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 and faster were there no impediment.

Ad 6^m dicitur quod stat motus impedire se mutuo quo ad effectus extrinsecos, causatos a motibus, sed non quo ad velocitatem vel tarditatem illorum motuum; | 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 utrumque. Et per consequens non impediret vel impediretur; quia non esset. Motus tamen communes possunt se mutuo impedire. Unde, pro materia argumenti, videtur michi quod non propter equales motus contra se impeditur mobile moveri. Ut, ymaginato quod sol innitatur moveri tantum motu proprio, quantum orbis rapiens nititur movere ipsum contra

6. Different coexistent 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 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, &c. — are contrary to the circular movement.

One thing is certain: in the sky there is nothing violent.

occidens, ita quod per A tempus sit in meridiano nostro; ego non video quin uterque illorum foret motus; sed non uterque velox vel tardus. quamvis valde celeriter describeretur circulus in orbe superiori utroque istorum. Motus tamen proprio moveretur sol velociter 5 ab austro in boream, vel econtra. 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 10 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 limi- 15 tatur 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 20 sunt diversorum rationem. cum totum genus unius presupponit totum genus alterius. Et ita videtur michi quod, sicut motus qui est nisus ab oriente in occidens contrariatur nisui ab occidente in oriens, sic motus successivus ab oriente in occidens contrariatur motui 25 successivo possibili qui dicit formaliter adquisicionem. 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, cuius- 30 modi 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 Caneri versus Capricornum, vel econtra; eo quod 35 quilibet istorum motuum compatitur secum per totum motum circulem; et sic de motibus circularibus compacientibus se in eodem subiecto, dum non directe fuerit versus diferencias oppositas.

Sufficit ergo philosopho quod celum per totum sit 40 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.

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

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

Uterius conceditur quod descriptio talis non est motus, sed unum accidentaliter habens motum. Nec quelibet adquisicio situs est motus, cum stat aliquod subito acquirere vel deperdere situm per continuacionem vel discontinuacionem partis quantitative; ut patet de augmentato vel diminuto, de multiplicato, vel de multiplicato. Motus ergo qui est limitacio 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 adquisicionem, ad quam sequitur adquisicio 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.

Also that the orbit described on the celestial sphere is not 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.

Sed diligenter notandum quod motus quandoque sumitur agregative pro multis motibus agregatis, eciam 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 equinocciali. Primo modo est augmentacio motus, et forte omnis motus citra velocissimum.

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

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

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

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,
it 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 lineari per equinoctialem circulum subiectato. Et dicitur difformis quo ad subiectum, quando una eius pars quantitativa 2^m molem est reliqua tali velocior, 5 ut 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 10 temporis 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^{ces} partes quantitativas, sicut 2^{cem} quantitatem; scilicet quo ad molem et quo ad 15 tempus. Et conveniunt 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^m molem, et quantumlibet parva pars motus 2^m molem est equalis toti motui quo ad duracionem; et sic 20 iste equalitates et inequalitates dicuntur equivoce.

Humilis tamen logicus, non querens apparenciam B 109^a sophisticam, concederet quod infinitum parva pars quantitativa motus et suum totum sunt equalia, et tamen totum illud est quantumlibet maius sua illa parte. Unde, 25 propter istas equivocac magnitudines distingwendas, vocatur una pars quo ad successionem vel diuturnitatem: et eius magnitudo vocatur diuturnitas. Et alia vocatur pars quo ad molem; et eius magnitudo propter famositatem vocatur simpliciter magnitudo motus. Magni- 30 tudo enim competit methaphorice magnitudini corporee, sicut multitudo convenit numero. Aliter enim dicit habens hoc pro inconvenienti palam sequi quod quelibet pars celi, eciam indivisibilis, esset quantumlibet magna, quia durative equalis suo toti: quod equivocans sine 35 inconvenienti 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 alius difformiter

6. coluri B.

17. 9^a B.20. *z pro est B.*

difformis. Et hoc dupliciter: vel quo ad subiectum, vel
 ad tempus. Dicitur autem motus uniformiter difformis
 quo ad subiectum, quando cuiuslibet partis sue quan-
 titative quo ad molem gradus intensissimus tante excedit
 5 gradum eius medium, quante alicuius talis partis equalis
 gradus intensissimus excedit gradum eius medium. Et
 talis motus simpliciter uniformiter difformes non mo-
 ventur nisi lineariter. Nam mota sphaera, centro eius
 quiescente, quelibet eius semidyameter sic moveretur:
 10 sed de qualibet linea secante dyametros difformiter
 mota foret falsum quod uniformiter difformiter move-
 retur. Et cum motus corporum secuntur in velocitate
 motus suarum linearum et superficialium, patet quod
 partes quantitative talium sphaerarum oblique valde
 15 diversificantur in difformitatibus suorum motuum. Est
 ergo corpus dare uniformiter difformiter motum 2^m quid,
 quando cuiuslibet partis quantitative gradus inten-
 sissimus tantum excedit gradum eius medium quante
 alicuius sue partis equalis et simillime in figura et
 20 positione gradus intensissimus excedit gradum eius
 medium: cuiusmodi sunt corpora quorum partes lineares
 uniformiter difformiter moventur. Sed uniformiter diffor-
 mis motus quo ad tempus est cuius cuiuslibet partis
 quantitative quo ad successionem gradus eius intensissi-
 25 mus tante excederet gradum eius medium, quante
 alicuius talis partis equalis gradus intensissimus excedit
 gradum eius medium. Est autem motus difformiter
 difformis quo ad subiectum vel tempus motus difformis
 cuius difformitas est difformis. Potest autem dici quod
 30 motus difformiter difformis, tam quo ad subiectum
 quam quo ad tempus, est dupliciter; vel sic quod
 quelibet eius pars quantitativa continue magna sit dif-
 B 109^b formis, vel sic quod quotlibet eius partes sint | difformes;
 et hoc contingit infinitis modis variari. Et sicut ex
 35 parte motus quo ad molem, et parte motus quo ad
 tempus potest fieri pars motus ex utrisque composita,
 ita ex motu difformi quo ad tempus et motu difformi
 quo ad subiectum et quo ad tempus; et ita mixtim in
 aliis divisionibus.
 40 Sed ista dicta consecuntur tria dubia hic breviter
 pertractanda. Primum, Si possibile est motum vel tale

and b) *variably* varied.

This too is either as regards (1) the subject or (2) the time. a) 1. It is uniformly varied in the subject:

either *absolutely*, as the diameter of a uniformly revolving sphere:

or partially, as bodies of which certain lines move thus.

(2) Uniformly varied in time, when the highest exceeds the mean velocity as much in one quantitative part as in any other.

b) 1) *Variably varied* in the subject; (2) in time.

Here there can be infinite modes of variation; and new species of movement can be found indefinitely.

Three questions:

1. 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 suc- 5 cessivis.

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 ipsemet sunt. Nec valet dicere 15 quod non omnia sunt danda, ut alibi dictum est; nec est maior ratio 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. 20

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 denominationes quales punctus accidentaliter recipit; ut moveri, quiescere etc. Substantia ergo per se subiectans punctum continuantem partes linee per se principiat 30 illam lineam; et cum illa non possunt esse sine tali puncto, patet quod nullus punctus potest auferri a linea, eadem manente; quia sic contingeret corrumpere omnem punctum corporeitatis dande, servando illam. Continuatibus ergo duabus pyramidibus, erunt puncta 35 conalia immediata.

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

eorum sunt immediate. Et, cum illi situs manent ex-
 punctantes alia puncta, patet quod quodocumque alter
 eorum erit occupatus aliquo punctali intra corpus,
 reliquus erit occupatus punctali sibi immediato: et per
 5 idem sequitur quod corpus pyramidis tangens medium
 punctum B superficiiei plane eque distantis superficiiei
 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
 10 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 pyra-
 midis.

Similiter de instantibus: videtur quod erunt imme-
 15 diata, 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, de multis aliis superioribus
 tactis, certum est quod unum durabit diucius vel ultra
 reliquum per unum instans; quia aliter non essem 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 decedente. Deus enim
 scit tales premiare proportionaliter 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 quemcumque 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^c 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, C signifying the first half of a line and all the odd divisions of the second half;

1—2. exptātes B. 5. tā^{as} B. 20. dem^{at} B. 21. et certum B.
 20. zftē pro et stem B.

and that A gets to the end of the first half in the instant B: then the proposition will be true immediately before B, at B, and immediately after.

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.

deveniat ad medium punctum, continuando uniformiter motum suum super omnes partes proporcionales 2^o medietatis: tunc patet quod A *tangere* C manebit usque ad B instans, et inmediate post B instans erit: ergo duracio sua erit inmediate B instanti, ante et post; 5. et per idem potest Deus proporcionare infinita taliter se extendencia per descripciones situum punctualium immediatorum vel quomodolibet aliter.

Similiter est dare motus indivisibiles quo ad duracionem inmediate succedentes; ergo et mensuras instantaneas, ipsos mensurantes. Antecedens patet de divisionibus superficierum immediatarum in corporibus contiguis dividendis continue: ut, posito quod A dividens primo, dividat superficiem B aeris, et post superficiem inmediate C aque: patet quod dividetur distinctis divisionibus, pari evidencia qua aliqua superficies dividetur appropriata divisione. Et constat, cum divisio ponit dividi aliquid de presenti, quod est dare instancia inmediate 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 quantitibus qui innovabuntur subito pro quolibet instanti istius hore 2^m se tota, de pyramide circumrotata super multitudine punctorum per se servatorum sine linea; ut posito quod Deus annihilaret 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 sicut motus et eius materia, patet quod illud tempus componetur ex instantibus. 10 15 20 25 30 35

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

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.

5 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 descriptione; quia dicere quod gradus
10 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 extremum vel terminus illius motus, est plane de-
15 mencio.

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

Gradus ergo medius motus uniformiter difformis quo ad tempus, erit gradus utriusque medietatis successive; quia aliter non continuaret unam medietatem latitudinis cum alia. Continua enim sunt talia quorum
20 ultima sunt unum: ut agregatum 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
25 punctus utriusque illorum. Et ita, generaliter loquendo de continuacione, terminacione et velocitate successivo- rum incidit homo, velit, nolit, in istam sententiam.

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
30 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 estivum, solum per instans tanget zodiacum fixum illo die; et cum zodiacus fixus sit orizon habitantibus sub circulo artico,
35 sequitur quod solum per instans deficit sol in illa die ab existencia supraorizontally habitantium; et ita per idem instans vel agregatum 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 potencia absoluta potest facere substantiam

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

29. 30^{ed} B.32. 1^o p^o i^o c^o B.38. defnicio *deest* B.

punctalem, vel condensando, vel noviter causando, vel
 3^o 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
 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

and He can
 also place
 several of such
 points so as to
 touch each
 other.

And thus out
 of several
 inextended
 substances, an
 extended
 substance
 might be made.
 Suppose that
 God created
 such substances
 in every point
 of space,
 and then
 annihilated
 all continued
 substance.
 space would
 remain as it
 was, and the
 things in space
 also;

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 inmotas: 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
 punctualia posset moveri localiter; ut iste globus suc-
 cessive circumductus, causaret duracionem successivam.

Posito ergo quocunque tali accidente continuo, oportet
 ponere subiectum eius continuum, et illud esset com-
 positum ex punctalibus, quia illa forent eius principia
 25
 intrinseca. | Nec dubito quin, admissio hoc pro possi-
 bili, omnes philosophi mundi non haberent infallibilem
 evidenciam ad concludendum quod non est sic de facto.

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
 alius 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
 faciundo nimis diu exceptaret principale intentum.
 40

The truth that
 past and
 future are
 present to God,

Argumentando eciam pro isto puncto, multum expedit
 habere contendo quod omnia preterita vel futura sunt

Deo presenciam: tunc enim sequitur omne quod erit aliquid, ipsum est taliter; et per idem, si aliquid dividet superficiem, vel erit summe propinquum ipsum. sic se habet: et hoc multum valet pro intento.

5 In oppositum est philosophus 6^o phisicorum, 3^o de celo, et primo de generatione, per multas pregnantes rationes et consideraciones difficiles contra Democritum et Platonem: ut puta de tactu, de mediacione cuiuscunque continui, de divisione cuiuscunque continui in
10 infinitum, de continuacione indivisibilis cum alio, et multis similibus que postea tangentur.

Sed ad illud respondet Linconiensis, dicens quod Aristoteles intellexit nullum continuum distincte sensibile componi ex non quantis tanquam partes eius
15 meralibus. Et vocantur partes numerales partes quantitative, que aliquociens finite quo ad hominem sumpte constituunt suum totum, vel maius; et tamen impossibile est non quantum esse partem vel componere continuum sic sensibile. Verumptamen apud Deum est
20 notum ex quot non quantis mundus componitur, et quecunque pars eius corporea; sicut notum est sibi quota pars quantitativa anguli recti est angulus contingencie quam Euclides, 3^o elementorum 25^o, demonstrat esse minimam speciem angulorum, et partem anguli
25 rectilinei. Et sic dicit Aristoteles, primo posteriorum, punctam esse causam linee, cum ponitur in eius diffinitione tanquam prius naturaliter. Ideo dicit Linconiensis quod ista opinio non contrariatur sensui Aristotelis, sed sequitur ex eodem. Nec est possibile punctuale
30 tangere vel continuari cum aliquo 2^m intellectum quem Aristoteles exponit de termino; quia supponit omne tale habere ultimum.

Verumptamen unum indivisibile potest tangere reliquum, large loquendo; quia esse ad eundem situm
35 indivisibilem positum cum alio; et sic potest continuari cum alio large loquendo, quia facere unum continuum cum alio. Et compositum ex 3^{bus} punctis, vel quotlibet

is of great use in this matter.

First Objection: Aristotle, in many places, seems to contradict this.

But Grosseteste points out that 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 follows from it.

One point can, in a wide sense, touch another, i. e. be in the same place with it. A collection of points in odd number can have halves;

21. miani B. 30. it^m B. 31. 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 duplicem
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 2^o modo, sed non
primo, habet omnis quantitas medietates, i. e. duas
partes quantitativas incommunicantes, quarum neutra
indivisibiliter excedit reliquam totum equaliter constitu- 10
entes, licet ternarius et omnis quantitas habeat duas
medietates equales 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.

It 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 demon-
strat, 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 signi-
ficaciones 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 liniens 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 quicumque 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^{um} B. 7. isto pro 2^o B. 23-24. ymag^h B. 26. aris^o B.
32. 4th B. 33-34. expt^e B.

sciencia confusa et communiter dicta aliquod tale antecedens; ut nemo mundi scit distincte quantum est hoc corpus, quodcunque demonstratur; 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 inmensurabilia et illa voco infinita 2^m quid, vel quo ad hominem, et ita intelligo quodocunque 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; et sic diversi (2^m perspicacitatem suam) habebunt diversos maximos numeros illis finitos, et diversos numeros minimos illis infinitos. Nec est inconueniens unitatem additam vel subtractam a numero facere quod quis non sufficiat distincte totum apprehendere confuse, cum 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 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 instancium, terminorum, vel parcium talium quaremlibet 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 porcionibus quod repugnat aliquam esse simpliciter infinitam. Tempus ergo est sic infinitum a parte post; 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 concentric 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 anteriori; nec quod linea simpliciter infinita 2^m unum extremum | possit circumduci vel figi aliter termino B 112^o, fixo propius per eius talem amocionem, ut communiter ymaginamur homines. Unde satis est pro sensu philosophi 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, superficies, linee, vel finiti termino intrinseco. Et patet solucio ad primam racionem 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 instantia erunt in ista hora; 20 eo quod pro quolibet instanti tanget solum unum novum punctum. Cum ergo quecunque sint equalia alicui tercio sunt equalia inter se, videtur quod uterque maximus numerus punctorum sit equalis alteri, sicut est equalis maximo numero instancium 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 que libet talis dyiameter 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 infiuitis 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. app^o B. 10. B deest B. 17. et deest B. 35. redn^{do} B.
30. 9^{me} B.

dato puncto velocissime moto qui, gracia exempli, sit punctus equinoxialis; ille pro quolibet instanti temporis acquirit et deperdit situm punctalem et nullus alius tardius motus; sed aliquis exceptat per duo instancia, 5 aliquis per 4^{or} instancia, et sic porporcionaliter 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 10 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.

Alone 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.

Et ex istis potest patere, cum nichil potest velocius moveri motu successivo quam movetur equinoxialis, 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 partium: 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 posicione mundi in magnitudine, situ, figura, et terminis inseparatis consequentibus est multis eligibilior, quam alie recitate.

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.

Patet ergo ex dictis quod argumentum 2^m peccat 30 in materia, capiens quod omne punctum | localiter motum pro quolibet instanti acquirit situm punctalem: quod non est verum, cum sicut intercisiones talium adquisicionum porporcionaliter 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.

Thus in this argument the assumption is wrong. It may be urged that it 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 puth* B.

28. q̄ntib9 B.

2. *Punctus Equinoxialis*. 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, swung 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 substantialium et simplicium in mixtis, et de densitate ac raritate corporum. Pro quo declarando, notandum 2^m sentenciam 5
perspectivorum et communem experienciam, quod maxima decepcio contingit in sensibus, in significando continuitatem motus. Cuius ratio est, quia tam ad situs quam ad motus significacionem requiritur tempus conveniens; et ideo parvitas temporis facit quotlibet illusiones; ut 10
ticio 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 experiencia communis de ioculantibus docet idem. Et 15
patet quod non est credendum sensui generaliter in talibus, sed pocius rationi, 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 agregatus vocatur motus inter cuius partes intercidunt multe quietes vel multa substantialiter illi impertinencia, proporcionaliter dicendum est quo ad intercisionem instancium de quandalitate vel tempore agregato. Sic 30
enim oportet philosophum loqui, ampliando verba de presenti, quando loquitur de huiusmodi agregatis; 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 35
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 loquere; 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 quolibet 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 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 rationi, vocare agregatum ex indivisibilibus aut divisibilibus distantibus substanciam, quantitatem | qualitatem, etc. ut alibi patet diffusius.

All successive motion is continuous, for it exists during a continuous aggregate of instants.

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.

In the case of two concentric circles, of which one circumference is double of the other, the former will have double as many points.

Uterius, quo ad 2^m de A et B circualtis concentrice, dicitur quod talis est proporcio numeri punctorum ad numerum punctorum, qualis proporcio circuli ad circulum; et ita generaliter de quibuscunque continuis et multitudinibus ipsa continentibus. Ideo ponunt sapientes concorditer quod prima ratio mensurandi est in numeris; et patet quod quotlibet semidyametri et circuli concurrent, antequam deveniatur ad centrum, servando recititudinem.

The circumference of the world is probably a perfect circle, with the least possible curvature, and exceeds the nearest possible inscribed circle by one point only; but the others, being more curved, differ by many points.

Ideo est assumptum argumenti falsum. Quis namque negaret quin, ponendo puncta A circuli esse immediata, semidyametri iniciate a punctis immediatis statim concurrerent antequam procedatur distancia sensibili versus centrum? Unde opiniabile est quod circumferencia mundi est maxime regulariter de possibili circularis; et cum ipsa habet graduum remissimum arcuaem, opinabile est quod supremus circulus excedit circulum proximo suppositum solo puncto. 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 coëxist, 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 5 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 10 alius esse maior. Nec plus derogat hoc infinitati divine potencie, 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 15 esset validum nec esse mundum equalem pise propter nimietatem parvitatatis eciam non valet; sic videtur quod inter hec extrema intelligibilia est dare optimum gradum medie quantitatis; quoniam verisimile est Deum scire 20 et velle in tam principali fabrica contigisse. Ex istis 20 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 25 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 30 sequitur de *ubi* indivisibili, cum sit actus qui multiplicatur ad multiplicacionem subiecti sui primi. Et confirmacio huius est, quod tanta foret ratio repugnancie quod puncta forent simul quo ad suos situs, sicut quod quantitates molares essent simul coextense; sed hoc non 35 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 con- B 113^b stituent magnitudinem, ut tactum est superius, cum

unum distabit ab alio per quotlibet intercepta. Unde argumenta hominum volencium detrudere quotlibet talia puncta in eodem situ indivisibili petunt pro fundamento quod non sit possibilis compositio continui ex non 5 quantis. Ideo illud 3^m non est probacio, sed peticio principii.

Unde alias dixi quod non possunt plura quam sex 10 puncta inmediate circumstare eundem punctum in medio. Et hec est una causa quare septenarius est numerus universitatis. Omnem ergo punctum mundo sensibileriter intrinsecum circumstat inmediate, versus quamlibet 6 differenciarum, unus punctus. Sed argumentatur communiter quod quemlibet punctum intrinsecum circumstant puncta infinita; quia sit A punctus in aere quem 15 solum sex puncta tangunt 2^m istam viam, tunc patet quod A constituit trigonum superficiale, quadratum, pentagonum; et sic de qualibet specie figure superficialis, 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 suprapositum aut suppositum illis punctis; quia, sit B punctus immediatus A orientali, et C punctus sibi inmediate suprapositus, et D punctus inmediate supra positus A B in linea eque 25 distante inmediate 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 inmediate. Patet ergo quod A, ex una quadrata superficiali, habet 3^a puncta; scilicet B C D sibi inmediate, et per idem habet versus 35 occidens alia tria puncta; et sic habet sex puncta inferiorius tangencia; et per idem, multiplicando pentagonos.

12. $\widehat{drar} \phi$ B. 14. ac' B. 16. 4^{um} B. 21. utr' B. 26. 4^{um}; and so all along B. 30. a'que B.

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

to suppose the contrary is to beg the question.

Only six points can touch a seventh placed in the middle: thus 7 is the number of totality.

But here is a difficulty; it would seem that every point is touched by an infinite multitude of others.

If a given point A touches another B, which is itself touched on each side by the points C and D, then A must also touch these, and so on ad infinitum.

exagonos, etc., haberet ex omni parte puncta circumstantia 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:

Pro ista consideracione solvenda, notandum quod mundus, sicut quolibet eius partes, habent posiciones suas lineares et superficiales, quarum posicionum radix est 3^8 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 punctorum, quam alia linea reliqua obliqua. Sicut enim non esset ratio scissibilitatis ligni vel lapidis 2^m poros longitudinales potius quam transversi, nisi ratione disparitatis in continuacione linee naturalis, sic in mundo non esset ratio quare una dyameter esset longitudinalis vel latitudinalis, potius quam quelibet tracta ad quoslibet polos mundi, cum esset ratio specialis quam ego pono a michi probabili ex posicionem suorum punctorum respectu punctorum 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 reliquam angularem. Ut in casu posito, si A sit punctus talis linee, tunc illum tangunt solum sex puncta versus 3^8 differencias supra dictas, ita quod nullius quadrati minimi puncta angularia obliquata a posicionem predicta tangunt se.

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.

Et si argumentatur quamlibet lineam [non] directe incidentem quo ad posicionem | predictam esse curvam, B 114⁴ dicitur quod non sequitur. Pro quo notandum quod quilibet punctus linee primi modi est punctus linee 2^3 modi, et e contra. 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. 1^{ca} B. 18. v^{er} B. 20. incidendi B. 22. ta^{nt} B. 28. non deest B. 32. lra 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 immediatum centro. Ex quo sequitur quod ille punctus A linee est medius inter centrum et punctum angularem proximo supradictum punctum in linea immediata. Et sic ascendo oblique 2^m situs indivi-
 5 sibilis immobiles et sempiternas. Unde, quicumque 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 argumen-
 10 tatur quod non sit ratio 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
 15 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*
 20 *B punctum*, et *B punctus tangit C punctum*: ergo. *A punctus tangit C*. 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
 25 intellectus in recte concipiendo compositionem continui ex non quantis. Quod grave est facere, ex hoc quod ymaginacio cogit intellectivum in apprehensione cuiuscunque ymaginabilis; et cum in toto ambitu sui obiecti non reperit compositionem huiusmodi parcium, non est
 30 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 expectit parum disgreddi, ne posicio dicta videatur contraria
 35 tam lucidis veritatibus, ex tam firmis principiis demonstratis. Libenter tamen scirem a modernis arguentibus geometrice contra dictam viam de compositione continui ex non quantis, quid ipsi vocant lineam, superficiem, punctum et angulum; si negent talia mathematica 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 quantitatem 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 mathematice. Et diversimode sencientes statuerunt sibi talia naturalia disparium quantitatum; sed omnia huiusmodi, solo intellectu noscibilia, sunt posita in suo termino naturali. 25 Angulus eciam potest significare posicionem figure sensibilis 2^m concursum linearum lateralium ad punctum eius signabile naturalem; vel posicionem significanter simpliciter 2^m concursum linearum lateralium ad punctum eius mathematicum terminantem. 30

Et iste videtur esse sensus Euclidis et aliorum mathematicorum loquencium de istis 4^{or} modis rerum. Non enim potest intelligi omne indivisibile 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 descriptive est indivisibile 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 difinitione: dicitur quod punctus, cum sit extra genus, describi potest, sed non proprie difiniri. Nec est inconveniens in tali descriptione poni quodammodo posterius. Verumtamen patet logico quomodo punctus

est prior linee in elementari compositione. Sed linea est prior puncto in finali ratione, cum est linis gratia cuius est punctus. Et sic eadem causant se reciproce in dispari genere causandi. Et oportet proprietates capere logico differenciarum latencium in quolibet describendis. Ulterius, quo ad decriptionem linee vel superficiei, notandum quod longitudo vel latitudo non est eius genus vel species, sed passio aut accidens; sed sicut punctus aut punctualitas est *substanciam esse punctualem*, sic linea vel linealitas est *substanciam esse linearem*, cui inseparabiliter accidit longitudo; et superficiem que est *substanciam esse superficiale* inseparabiliter consequitur quo ad speciem latitudo, licet eadem superficies posset nunc esse longior aut laerior, et nunc brevior aut striccior eadem, dico 2^m materiam. Pro quo notandum quod in quolibet corpore est dare maximam lineam, maximam superficiem, et maximam multitudinem punctualium, que est prima mensura penes quam attenditur cuiuslibet talium magnitudo.

20 Ex quo patet quod eadem corporis magnitudo sit equalis sue maxime linee et sue maxime superficiei; et per consequens rectificata maxima linea mundi haberet duo extrema cum medio et proporcionem finitam ad quamlibet eius partem, manens continue causata: ut 25 mundus. Hec tamen rectificacio est impossibilis, sicut et posicio linee simpliciter infinite. Talis enim foret infinitum maior mundo.

2^o patet quod linea non superaddit multitudini punctorum nisi continuacionem; superficies superaddit linee 30 continuacionem linearum immediatarum, et corporeitas continuacionem huiusmodi superficierum. Unde in predicacione 2^m causam suscipiunt omnia hec 4^{or} de se invicem predicacionem, licet non formalem.

3^o patet quod longitudo, latitudo, et profunditas non 35 sunt quantitates sed quantitatem continuum consequentes, licet geometre propter ampliorem noticiam et differenciam accipiant longitudinem et latitudinem, loco generum linee et superficiei. Nec ista duo et profunditas correspondent proporcionabiliter quantitati. Nam nullum B 115^a 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* linee (*sic*) B.

2S. multitudinem B.

20. lineam B.

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.

et idem esset argumentum de qualibet superficie assignanda. Et de linea patet idem, cum quolibet linea infinitorum punctorum quo ad nos sit alicui corpori equalis cui repugnat esse eque longum cum eodem. Potest etiam deperdere longitudinem per circumlacionem, 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 relacionem quam superaddunt quantitati.

10

Uterius 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 applicacio linearum; et si sit contactus, tunc indubie est indivisibilis, et potest manere non angulus; et si sit applicacio linearum, tunc est agregatum ex multis applicationibus extensis. Ideo vellem quod sollicitantes se ad pugnandum compositionem continui ex non quantis per impugnationem sentencie 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 superficiei mundi. Quidam autem sunt anguli acuti obliquilinee, et oblique superficialis; ut anguli intrinseci zodiaci et equinoccialis; et alii anguli huius sunt obtusis; 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 circumulum contingentis, et 2^{us} causatur ex eadem porcione linee circularis et dyametri circuli currentis. Aliquis autem est oblique lineus 2^m utrumque

12. intelligi (*sic*) B. 32. 30^{et} B. 36—37. 91^{ur} B.

36—39. See pag. 35.

latus tantum; ut angulus causatus ex contactu duorum
 circularum. Et angulorum superficialum rectilinearum
 quidam est rectus, quando linee recte super se erigun-
 tur; quidam est obtusus, ut quilibet maior recto; et
 5 quidam est acutus, ut quilibet minor recto; et quot-
 libet sunt proporcionabiles divisiones de angulo cor-
 pores, ut patet faciliter adaptanti.

Sed videtur ex descriptionibus supradictis quod qui-
 libet angulus sit multus per totum subiectum, et per
 10 consequens multus magnus. Videtur eciam quod ad
 eundem punctum essent quotlibet anguli; quia quot
 sunt figure sic posite ad datum punctum, tot sunt
 anguli. 3^o videtur quod nedum descripciones Euclidis,
 sed eius sententia, 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^{ter} potest intelligi angulum esse magnum: vel
 20 in natura propria quo ad molem, ut angulus naturalis,
 vel rescriptive quo ad basem; ut quicumque angulus
 mathematicus; et sic dicunt geometre omnes angu-
 25 los | rectilineos equales, quorum quecunque bases ter-
 minantes equalia latera indirecte incidencia sunt equa-
 les. 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 prin-
 30 cipiati ab eadem, sic et angulus potissime, cum sit de
 genere respectuum: ut divisivum, proportio, 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 constituunt lineam vel basem minimam possi-
 bilem 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 in-
 mediate; et sic angulus mathematicus est situ aliter
 in puncto mathematico, et essentialiter 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 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 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.

(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.

base minima bipunctali; accidentaliter autem tripliciter ad quamlibet basem suam. Primum autem subiectum anguli cuiuscunque corporei mathematici est substantia quadrupunctalis, que est corpus minimum possibile. Et proporcionaliter dicitur de angulo naturali. Anguli ergo 5 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 10 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.

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, 20 et quotlibet alia accidencia, 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 25 immediate supra priorem: et eius medietas habet angulum immediate supra 2^m; et sic de quotlibet angulis, quoniam constituunt unum angulum naturalem, qui est 2^pliciter divisibilis, ut patet ex dictis de concursu et communicacione linearum, et de quantitibus angulo-30 rum. Unde ad omnem punctum mundi est angulus componens alium, 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 35 quadrangulam lineam, sic communiter vocarent quamlibet extensam posicionem figure ad conum terminantem et circa basem eius, angulum. Sed ista tertia vulgaris significacio terminorum est extra locucionem congruam geometri. Ex composicione ergo anguli mole magni ex 40

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

angulis inextensis potest patere compositio continui ex non quantis.

B 116^a Et patere potest preterea quod angulus habet magnitudinem preter molem: quod sic arguitur. Capió | 3^s angulos superficiales, qui equaliter constituunt angulum superficialem rectam, 2^m doctrinam prime Vitulonis, que docet angulum rectum datum in 3^s partes dividere equales. Et sint illi anguli A, B, C. Capió ulterius 3^s angulos superficiales equales, qui in 3^{bis} diversis superficiebus constituunt angulum corporeum pyramidis trilateræ, iuxta sententiam penultime diffinitionis undecimi Euclidis; et tunc videtur quod angulus corporeus dicte pyramidis et angulus rectus superficialis sunt simpliciter equales, quia eorum terciæ sunt equales: quod reputarent adversarii maximum inconveniens. Certum est tamen quod 3^s anguli mathematici superficiales constituunt 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 essentialiter terminatur; et cum in illa basi tripunctali sunt 3^s linee minime, patet quod est dare 3^s angulos mathematicos superficiales terminatos ad differentias, 3^s lines ad constitutionem anguli corporei requisitas; 25 et sic ex talibus insurgitur ad angulum mole magnum.

Angulus autem corporeus mathematicus non est mole magnus, sed habet esse situale in unico puncto cum 3^{bis} angulis superficialibus ipsum principiantibus. Et preter hoc habet esse causacionis in quolibet 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. Difert etiam angulus mathematicus corporeus ab angulo superficiali, in hoc quod talis angulus integratur quo ad substantiam 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. vitulois B. 10—11. trilate' B. 12. 3^e (sic) B. 11. mie B. 39. qu^{vis} B.

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

Every physical angle is composed of a great many angles and substances.

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.

(3) Euclid gives a genetic 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.

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.

in genere anguli; sicut figura componitur ex finitis.

Non sic autem de superficiali angulo quocunque.

Angulus autem corporeus naturalis quicunque habet quotlibet angulos et corpora, que ipsum principiant;

et patet quod non sequitur esse aliquos angulos mathe- 5

maticos, superficialem et corporeum, coequales, cum primus sit indivisibilis quo ad substantiam, et reliquus

habet partes. Ideo angulus superficialis mathematicus non est divisibilis in suas partes, sed respective divisi-

bilis in suos effectus, que sunt partes posicionis figure 10 sensibilis.

A 3^m dicitur quod Euclides, more suo, describit angulum in predicacione 2^m causam. Nam ex ipso quod

due linee alternate tangunt se 2^m applicacionem figure quam terminant in differenciam, causant angulum ad 15

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 20

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

Nec obviant hec dicta sue sentencie, etsi finem quorundam ipsum communicatum contradicant. Nam licet

nullus angulus mathematicus dividi poterit quo ad molem, tamen dividi potest 2^m magnitudinem respectivam captam respectu sue basis, ut docet conclusio 30

primi et quotlibet alie conclusiones eiusdem. Et sic quantumlibet lineam rectam dandam contingit dividere in duas

medietates, quarum neutra divisibiliter excedit reliquam. Et omnes tales vocat sensibilis philosophus, satis vere

ad sensum suum, medietates equales. Nam, capta qua- 35

cunque linea naturali, contingit significare punctum eius medium naturalem, 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. du^o B.

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

diametro equalium punctorum, nullus punctus mathematicus est eius centrum, simpliciter, sed punctus lineae naturalis. Et per hoc solvuntur conclusiones 3ⁱⁱ libri elementorum Euclidis. Nec capit ymaginatio duo puncta 5 esse immediata in eadem superficie, ut linea: ideo negat talia duo esse sensibilibiter immediata, ut patet ex A primi libri. Unde quererem a volente lineam dividere in duo equalia, utrum medius punctus manebit vel corrumpetur post divisionem. Si manebit: quare potius cum una 10 medietate quam reliqua? et si corrumpetur utrobique, sequitur punctum quemcumque esse accidentalem sue lineae: quod est superius inprobatum.

Et idem est iudicium de divisione anguli. Nam nullus angulus mathematicus 2^m molem differre potest, cum 15 sit indivisibilis quo ad molem. Si enim angulus superficialis quicumque esset divisibilis quo ad molem, tunc angulus contingencie est angulus rectus, et angulus intrinsecus oppositus angulo contingencie essent equales simpliciter: quod contradicit in 3^{ium} Euclidis elementorum. Dividere ergo angulum mathematicum ad sensum 20 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 potenciam vel virtutem individualement in sua sub- 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, equallem in medio puncto orthogonaliter; et si, manente 30 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 denominationis continue, sicut et quilibet angulus in sua sub- stancia 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 continui

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.

Repl:

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. Antecedens 5 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 aliam 15 tangere multa eius puncta, sicut patet ex nota proxima. Nec ex hoc sequitur aliquam linearum illarum esse curvam, vel regulariter dyametrum esse duplam, aut 3^{plam} ad costam, propter numerum duplum aut 3^{plum} punctorum integrancium. Stat enim illas lineas sic sec- 20 tantes dyametrum tangere eadem puncta, cum omnes 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 supponitur 25 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 superficiiei quadrate; et aliqua earum 30 habet duo vel 3^a puncta date dyametri, nulla communicante cum reliqua. Ergo quelibet habet totidem. Ex quo sequitur quod omnes ille simul habent in 2^{pl^o} vel in 3^{pl^o} plura puncta date dyametri quam sunt puncta alterius lateris iniciativa omnium illarum, et 35 stat conclusio; scilicet, quod quelibet dyameter est 2^{pl^a} vel 3^{pl^a} 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 alia 40

10. unic' B. 21. deq'9 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 quolibet figuratorum punctorum quo ad nos, dyiameter 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 dyiameteri. Alie autem linee intermedie, si ad tantum declinent ab angulo recto quod oportet punctum proximum contactui incidere in suum proximum lateralem, immediatum puncto 15 contactus, tunc tangunt tria puncta de dy diametro, et 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 4^{or} punctorum immediate circumstancium polos mundi 20 tantum 4^{or} situs describit in die naturali. Et si queritur in quibus instantibus, dicitur a michi probabili quod, cum punctus equinoccialis fuerit in medio inter oriens et meridianum, tunc punctus immediatus polo versus oriens incipit per posicionem vel per remocionem B 117^b de | presenti incidere in situm proximum supra polum; et, cum dictus punctus equinoccialis fuerit in medio inter meridianum et occidentem, tunc incipit dimittere situm illum et incidere in situm proximum sinistrum vel occidentalem; et sic de ceteris quoad sibi. Quorum 30 ratio est, quia, cum punctus equinoccialis 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 ratio est abdita apud 35 deum quare pocius est in uno situ quam in reliquo.

11. \widehat{ca}^{st} B. 18. dras = diferencias B. 29. quadralis? B;
quod s' B. 31. gd^{a} B. 32. adnetr^v B.

3. *Figuratorum.* I suppose that Wvclif means a square of points, thus $\begin{matrix} \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot \end{matrix}$ 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.

Nec verecundetur quantumlibet subtilis philosophus fatere propriam ignoranciam in quotlibet particularibus, specialiter de finitate nature; ut puta quare Deus potius produxit hoc individuum possibile nunc quam tunc; quare potius hoc individuum quam aliud possibile, quare 5 potius ponit polum articum 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. 10

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.

Cum autem inceperit plus declinare ad unum 4^{or} situm semidyametricum, ratio exigit quod tunc tangat punctus proximus centro vel poli situm proximo indivisibilem illius situs linearis semidyametricis. Et eadem est consideracio de quotlibet circulo circumducto, centro 15 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 puncto (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 dyametricorum mundi, vel in aliqua eorumdem, ideo stat ipsam servare rectitudinem.

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.

Ex istis patet quod incertum est cuilibet 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 particularia per quorum medium incidit 2^m partes: et in tali positione ignorari oportet que due linee ta- 40 liter se secantes communicant in unico puncto, et

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

Si autem quis theologisat dyametrum mundi oportere constare ex punctis inequalibus, cum argumentatur non esse medium mundi simpliciter; nec quemlibet mundi intrinsecum circumstarent precise 4^{or} anguli recti, eo quod, dempto impari circumferencie, ita esset; et sic diceret totum mundum constare ex punctalibus pariter 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 quod non est dare simpliciter medium quadre, quin angulus dividitur in duas medietates simpliciter: illi nunquam esset ratio diversitatis quare. pro instanti divisionis anguli recti in duas medietates. punctus semi-dyometri proximus centro erit pocius in uno situ proximo centro quam reliquo.

Illi autem qui 3^o ponunt Deum posse ponere iuxta situs punctales lineares alios situs punctales commixtos sine amocione alicuius situs, esset facile quod dyameter quadrati esset 2^{pla}, equalis, vel quomodolibet aliter proporcionata suo lateri. Et tunc nec sensus nec ratio 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 quod inter dyametrum quadrati et costam eiusdem servatur utrobique eadem proporcio: scilicet medietas proporcionis 2^{ple}; sicut nec probabit quod dyameter quadrati, costa eiusdem, et medietas prima dyometri, sunt 3^s termini continue proporcionales. Et per hoc 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 3^m respensionum efficaciter improbare.

Et per hec patet responsio ad obiectionem geometricam, qua obicitur sequi expositione 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 quantity would be to another as one number to another; now this is the denial of incommensurable quantities.

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.

quantis quod qualitercunque est proporcionabile continuum continuo, taliter est proporcionabilis numerus numero; quod repugnat conclusioni XI^o 2ⁱ Euclidis, et conclusioni 26^{te} 9ⁱ libri; et satis expresse diffinicioni 3^e 5^{ti} libri. Videtur eciam contradicere sentencie XI⁵ libri que ponit quotlibet quantitates continuas incommensurabiles, et quotlibet locis ponit multas passiones verificari de continuis que non verificantur de numeris.

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 constituunt. Verumptamen geometer habet pro inconvenienti quod quantitas continua ymaginabilis resolvatur in partes indivisibiles [que non sunt] sue consideracionis, vel quod quecunque quantitates, continue vel discrete, communicent in parte sensibili aliquota utrique. Nec aliter vocant communicantes aut commensurabiles, si communicant in parte indivisibili. Unde nec in 5^{to} nec in 7^{mo} diffinit Euclides partem ut descriptio 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 consequens lineas illas ad unum sensum esse incommensurabiles: ut patet ex 29^a conclusione 7^{mi} Euclidis. Si tamen omne continuum esset simpliciter divisibile in duas medietates equales, ut 4^{rius}, tunc indubie sequeretur contradiccio, si cum hoc omne continuum com-
ponitur ex non quantis.

Et ex istis 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 ipsa constitutus 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 his duo constituunt primum numerum superficialem quadratum, ita (capta linea pedali)

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

16. 9^{ri} B.

30. 9^{rius} B.

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

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

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

2^o patet quod non quæcumque proporció signabilis est quadrati ad quadratum, et ita de aliis speciebus figurarum. Patet, ex hoc quod qualiscunque est proporció figure ad figuram, talis est numeri ad numerum; sed non qualiscunque proporció signabilis est inter 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;

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 quod est impossibile aliquem circulum adæquare quadrato, cuius radix est primus numerus circularis: et sic de quotlibet aliis que non constant ex numeris pariter paribus. Ymmo patet intendenti quod illo supposito, solum quantitas quadrata cuius radix est quadratus foret circulo cœquanda. 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 argumentum buffonis non sequitur ex dubio: *cuiuscunque*

thus it is not always possible to change the form of a given square, keeping the same square number of points. It is doubtful whether every circle can be squared, and whether the quadrature of any circle can be found.

It by no means follows that, if we can find a circle (or a

1. co^{us} pro continente B. 2. co^{us} B. 7. c'cu² B. 8. c'cu^r B.
29. sb B. 31. p'g B. 36. prt culg B. 39. z B. 39. briffonis? B.

number larger than a given one, and again a circle (or a number) smaller than the same, we can find a circle or number equal to it.

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;

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.

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 circumferencie 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 equales incommunicantes, situs centri indivisi- 15 bilis cum neutra se teneret. Ideo videtur quod 6 puncta mathematica conglobata constituunt cum aliis centrum sensibile: et sic quelibet mundi dyametrum foret pariter par, cuius una medietas se teneret cum una medietate quantitatis mundi, et alia cum reliqua. Videtur etiam 20 quod quelibet 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 multiplici non permittit. 25

Et si argumentatur ulterius sequi ex oposicione 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 distingwunt, non realiter illis 30 conveniunt: sed sicut figure aliunde sunt in suis premordis | confuse, sic figure corporum in suis primariis elementis. 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 sphaera, et illa sphericitas est maxime arcuosa, multiplicata per totum, cum sit primus gradus 40

8. de quibus B.

25. \widehat{m}^{et} B.

30-31. r^{et} illis \widehat{m}^{et} B.

33. est

deest B.

et simplicissimus. 3^a figura est pentagonus qui 2^m diversam posicionem potest esse circulus vel pyramis. Si enim punctum aliquem immediate circumstant 4^{or} puncta in eadem superficie, tunc ille punctus est centrum circuli habentis duas dyametros tripunctales; et quia illud centrum communicat cuilibet earum, ideo est quelibet 4^{or} semidyametrorum bipunctalis, et circulo circumferencie ex 4^{or} rectitudinibus et 4^{or} curvitatibus causata. Si enim 4^{or} punctis, contituentibus primum 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 exagonum; et sic confuse circulus vel triangulus habens quodlibet laterum tripunctale; et patet consideranti figuras numerorum, de quibus 8 Euclidis et secundo Aristotelice Boecii. Et in casu quo sit corpus, potest esse sphaera, vel pyramis, vel exagonum imperfectum. 5^a figura est eptagonum, ex 5^c punctis constans; et illa potest esse linea, superficies, vel corpus, 2^m diversum modum posicionis; sibi que competit perfectius ratio sperae, dum versus 6 differentias circumstant 6 puncta, 7^m quoad centrum.

Unde 2^m istas 5^c figuras numerorum primorum posuerunt antiqui 5^c species corporum simplicium, secundum 4^{or} elementa, et 5^{tum} neutrum; et istas 5^c figuras appropriarunt ordinate istis 5^c corporibus, ut patet per Themistum super 3^{um} celi et mundi. Et ad exemplar istorum sunt tantum 5^c figure corporee regulares, ut patet 13 elementorum, conclusione 17^a; et hinc sunt tantum 5^c figure repletive loci; ut patet 3^o de celo 68^o. Hinc etiam exemplantur 7^{em} species speculorum regularium, ut patet libro 5^o Vitulonis, conclusione 8. Ex istis colligitur quod prima omnium figurarum, quo ad elementarem compositionem, est triangulus; et prima ac perfectissima quo ad finalem causacionem est circulus. Unde licet Euclides prius

or it one point of the four last is not on the same plane, pyramids (of three, four, five and six sides) and spheres. All these may also be in line.

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^c B.
28. ap[']parū B. 29. f^r B. 33. 68^o B.

tractat de triangulis quam de circulis; tamen primam passionem trianguli demonstrat per difinitionem 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 longitudo linee mathematice et latitudo superficiiei mathematice capiantur a sensu in aliis, non tamen in subiectis suis primis: sed et intellectum viancium oportet subtilitatem istius materie plurimum ignorare. Necesse est namque duas 10 lineas rectas immediate poni in divisione mundi, et ab eisdem terminis oportet duas lineas indentatas progredi sic, quod una habeat in partem quemlibet datorum punctorum parium linee immediate supponente; et econtra de altera; sic quod, quot sunt combinaciones 15 parcium talium rectarum linearum, tot sunt diversitates possibiles 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 110^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 inconueniens, sed longe plus patulum, quam quod figura, numerus, vel relacio, componatur ex partibus disparium 25 specierum. Et ratio est, quia subiecta immediata 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 30 vel figuram. Non autem componitur accidens extensum de accidentibus disparium specierum, que quidem accidencia informant subiecta immediata 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;

Et ex istis patet quod est dare maximum et minimum 35 angulum possibilem; maximum. ut angulum in centro mundi, causatum ex incidencia duarum linearum immediatarum semidyametri mundi oppositis. Minimus autem

21. 3^{am} B. 38. 01^o 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 con-
tingencie datur, sicut et quicumque alius corporeus; et
cuilibet angulo in proporcione finita noscibili, si non
5 obesset ignorancia comparandi.

Quotlibet sunt talia argumenta, quibus multi nituntur
inugnare dictam sententiam. 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
composicionem continui ex non quantis.

Tercio, videtur sequi quod nichil potest rareferi, 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 quodcunque corpus glorificatum, ut theologi lo-
cuntur. Nec essent elementa in mixtis, sed corpus quanti-
tative 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 adquisicione materie successive occupet situm
25 maiorem ad omnem eius punctum per egressum parcium
intensivarum materie, vel quomodocunque aliter. Et
correspondenter de condensacione. Sed talem rarefac-
cionem vel condensacionem credo non posse esse,
sicut nec rarefaccionem infinitam vel condensacio-
30 nem ad punctuale. Et sic de multis varie ymaginatis
in ista materia. Non enim potest aliquid rareferi, nisi
vel per extensionem, vel per evaporacionem materie
inbibito corpore alieno; et econtra de condensacione.
Unde 2^o modo dicitur aliquid rarefactum, quod sine
35 pluri sui materia partes eius ponuntur extensus per
intrinsicam ocupacionem 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;

1. c^osp^o B.2. p^otelata B.

3. datus B.

10. deta; B.

aere; nec aliam rarefactionem vel condensacionem convincit ratio, 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 fatuū est credere quod, stamine humido, unctuoso, vel alio combustibili resolutō 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 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 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 corpulenciis, quibus corpora dicuntur subtilia vel terrestria. Et in ista equivocacione 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. 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 diligencia memorandi. Raritatem autem primo modo dictam dixi quondam 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 autem densitas privative quo ad situm et positive quo

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

Sed obicitur per hoc quod, iuxta hanc viam, quodlibet elementum, proportionaliter 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 proportionaliter de aliis elementis, in quibus videmus materiam duci ad circumferenciam, sicut econtra in generatione 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 proportionaliter habet de forma ut de materia quo ad multitudinem, patet quod in 1000^{lo} habet plus de forma, et proportionaliter de aliis elementis. | Nec derogat hoc perfectioni mundi, sed potius 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

It is urged that in this view, the quantity of matter in an element would depend on the space it occupies.

This is false. For, 1st, fire would contain 1000 times more matter than earth, if we grant that each element has ten times more quantity than the one just below it.

But the elements contain more of form and less of matter, according as their place is higher.

2nd; All elements would be equally dense: which contradicts the whole School.

3rd; It contradicts experience a little water generates much steam.

Answer 1st.

We admit that, granting the supposition, fire has 1000 times more of matter than earth; but also 1000 times more of form.

Thus the most perfect element is the most abundant.

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

In tantum quod primum celum ponitur moveri unico 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. 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 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 proportionali 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 quomodo elementa superiora plus habent de condicionibus forme, etsi longe plus habent de natura materie.

Ad 2^{am} racionem, dicitur quod oppositum sequitur, cum raritate, que est qualitas superhabundantis, dyaphana [excedunt]; et inferiora, ut excedunt in oppacitate, ita in 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 implicia ipsis participant extra mixta. Pro mixtis autem sunt elementa superiora magis pauca, et per consequens rarius posita.

1. pe'gris B. 31. excedunt deest B.

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

Unde, sicut semen est rarum in terra, dum paucum semper gignitur 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 distancia constituent unam substanciam corpoream; quia res communes dicunt nunc colleccionem suorum suppositorum, et nunc dicunt simpliciter naturas huiusmodi, sic quod tam homo quam materia prima, etsi partes dividantur ab invicem, manent perpetuo; et sic elementum, quantumlibet fractum in minucias in mixto, manet continue eadem substancia. Et per hoc patet responsio ad communem conclusionem qua queritur utrum elementum mixtum sit rarum, vel totum compositum ex elementis. Nam utrumque est rarum B 121^a communiter, | sive elementum sit unum continuum per totum, sive discretum minutanter sparsum. Et utrobique est multitudo parcium rari, subiectum raritatis, quo extenditur modo suo.

Ex quo notandum quod elementum quodcumque, commixtum cum altero, est precise eque rarum vel densum in mixto, sicut foret sine mixtura quo ad raritatem vel densitatem 2^o 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. Unde, ad concipiendum talem commixtionem, oportet primo capere unam multitudinem corporum disparium specierum, constituentem quoddam unum; 2^o oportet attendere ad totalem situm quem occupat talis globus; et oportet 3^o attendere ad quantitatem partis illius 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 eciam relacionem ad mixturam [et ad] constituencia quoddam unum; quia stat eandem terram innotam 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. fcm̄ B. 2. gjr̄ B. 23. mixtum B. 33. gleb. (!) B. 37. attendere illius multitudinis oportet B. 39. et ad deest B: ib. gsti^{ca} B.

It is quite false to fancy that the rarer any element is, the less of matter it contains.

sic raram per gravacionem terre ex commixto relico elemento. Unde falsa et infundabilis est ymaginacio qua putatur elementum, eo quod rarius, eo paucius materie continere; ut precise tanta sit multitudo materie spere ignis, quanta est multitudo materie spere terre,⁵ 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 every where.

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 eciam vel alium¹⁰ 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 dispositio uniformis,¹⁵ sicut in mixturis pannorum et quotlibet aliorum artificialium contingit fieri: multo magis ergo in subtiliori compositione nature. Et isto modo contingit de omnibus

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.

qualitatibus 2^{is} vel formis resultantibus, quod est dare mixtum agregatum eis subiectum; et non cuilibet parti²⁰ 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 manent²⁵ continue eque magne, etsi exalarentur usque ad celsitudinem 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 et³⁵ disgregat eterogenia ad invicem, dans generato proportionaliter de loco dicto, ut de forma. Econtra autem in resolutione 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

t. 9^o; B.

4. otine' B.

10. zimar' i. vide' et^o B.

35. cum

pro tamen (?) B.

angulum versus centrum, creditur quod hinc inde sunt
 B121^b absoluta } raritas et gravitas adquisite, computando cum
 summo aereo totum medium interceptum.

Ex istis facile est videre quomodo pluvia gravantur;
 5 nam nubem vel unbeculam, sive nebulam, in qua sunt
 4^{or} simplicia catenata, dissolvit nunc calor, nunc
 frigus; et, segregato subtili terreo ratione conveniencie
 cum igne et aere, exsudat aqua formam spericam.
 Et quia deficit sustentans, quo usque ex illis guttilis
 10 aqua notabilis magnitudinis sit unita, ideo guttatim
 descendit secundum formam maiorem aut minorem,
 proporcionaliter ut exalacio commixta celerius vel tardius
 segregatur. Aquam enim, ratione sue fluxibilitatis, stat
 colabi: sed terra, ratione constancie et siccitatis, diu-
 15 cius catenatur.

Ex istis colligitur quod nullum corpus potest esse
 maius aut minus quam prefuit, nisi propter adquisicio-
 nem aut deperdicionem materie, quamvis putatur quid-
 libet rarefactum esse maius quam prefuit, ignorando
 20 situs quos perdit intrinsecus, sicut et ignoratur com-
 mutacio situum extrinsecorum pro intrinsecis in par-
 tibus condensati. Et patet quod vera sententia de rari-
 tate et densitate non obviat huic vie.

Ulterius videtur michi probabile quod non est possi-
 25 bile duo corpora coextendi, cum nulla materia prima
 potest componi ex suis partibus intensivis. Patet sic.
 Conclusio opposita non posset verificari, nisi materia
 punctalis componeretur ex partibus intensivis; et tunc,
 rarefacta materia vel condensata per totum, vel rare-
 30 facione vel condensacione durante per tempus, ut
 adversarii locuntur, sequitur quod corpus motum in
 infinitum rarefieret, vel in infinitum condensaretur, ante
 quodcunque 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 exhibit a quo-
 libet punctali materie unum aliquod iuxta positum)

1. hic B; *ib.* m̄ B. 8. aliquando *pro* aqua B. 13. Aqua B.
 14. colabr̄ 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 quodeunque instans dandum erit totum infini-
 cicies quo ad nos duplicatum in magnitudine; et
 opposito modo sequitur de condensacione. Illud patet
 in paucioribus. ponendo quadrupunctale, si sit possi-
 bile incipere per totum rarefieri; cum hoc quod non 5
 incipiat rarefieri ad sui duplum; et patet iuxta com-
 munita principia adversancium quod hoc incipit esse
 maioris quantitatis quam prefuit, et cum non sit ratio
 quare una medietas, quin per idem et quelibet, sequitur
 quod hoc incipit esse 2^{plum} ad illud quod prefuit: et 10
 eadem est ratio de condensacione. Ex quo patet quod
 repugnat composicioni continui ex non quantis quod
 aliquid per tempus vere continuum rarefiat vel conden-
 setur per totum, in acquirendo vel deperdendo continue
 quantitatem. Nec scit philosophus fundare casus cal- 15
 culatorios istius materie, in quibus quondam multum
 inaniter insudavi.

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:

Sed pro fundacione parcium intensivarum materie,
 argumentatur theologicie isto modo: forme absolute,
 tam substantiales, quam accidentales, possunt ad invicem 20
 cum materia coextendi, cum ergo idem sit iudicium de
 substantiis materialibus, eo quod forme huiusmodi
 poterunt per se esse, ergo per idem materie poterunt
 coextendi. 2^a consideracio est de glorificatis corporibus,
 que ponuntur sicut lumina cum medio coextendi. Et 25
 3^a consideracio est quod situs aut locus, cum sit acci-
 dens absolutum, potest de dei omnipotencia per se
 esse; sicut conceditur de corporeitate et aliis quotlibet
 quantitativis, que videntur magis a substantia depen-
 dere. | Cum tali ergo loco prius vacuo potest Deus B 122^a
 coextendere substantiam vel quodlibet accidens sensibile,
 ex pari evidencia duas materias; cum repugnancia, si
 qua foret, oriretur ex impossibilitate coexistencie dimen-
 sionum 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

1. lince B.

4. h^t B.

24. 9f^o B.

26. 9f^o B.

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

Ideo, supponendo necessitatem fidei ac eius probabilitatem 2^m singulas eius partes, suppono 2^o pro descriptioe quid nominis, duas res situatiter coextendi quando per locum aliquem dimensionaliter pertendentur. Hoc enim sonat iste terminus *coextendi*. Ex quo patet quod quotlibet accidentia 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 substancialis, materialis, vel accidentalis, poterit per se esse, tunc haberet quelibet talis propriam dimensionem, locacionem, et cetera accidentia; vel omnis res foret substancia, vel esset necessarius processus in infinitum in generibus accidentium; ut alias diffuse arguam. Non ergo in infinitum rara est terra ad quemlibet terre punctum, nec suscipit substancia magis aut minus in sua essentia, que est forma. Et idem iudicium de quantitate, ubicacione et situ, que omnia oportet componi ex suis partibus intensivis, si per eundem situm possunt coextendi res omnino distincte, quarum quelibet pars minus potest esse sine coexistencia partis alterius; quia, hoc dato, forent huiusmodi accidentia coextensa; et cum sunt intrinsece presupposita ad accidens rationale, relinquitur quod qualitative aut intensive componunt ipsum; quod tamen superflueret, cum primum officium quantitatis vel loci sit quantificare; quod eque fieret, si non componeretur ex suis partibus intensivis. Inconveniens etiam 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 (1) 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, 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.
illegible B.

23. ntis pro necessariis; very

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

be the form of water, and another the form of fire. According to that theory, all bodies would be equally dense.

sic de ceteris, quia materia dicitur relative ad materia-
tum. Ymmo, cum materia sit eadem essencia cum
composito, sicut et forma, si essent 4 forma extense
per eandem naturam, singulum illorum elementorum
esset singulum; | et cum qualitas aut quantitas per se B 122^b
existentes haberent proprias densitates, per idem etiam
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 incompressible. 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, the rapidity of movement of

Quo ad secundum, quod est michi plus difficile, potest dici tripliciter: primo, quod celum cedit 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 totius mundi A punctus mutetur ad situm sibi immediatum, cum hoc quod aliquis punctus maneat inmotus (et voco omnia puncta mota; oportet enim esse multa, 25
cum nullum potest expectare aliud in eodem situ proprio) videtur quod quodlibet expellet proximum, et sic non remanebit aliquid inexpulsum. Pro illo dicitur quod conclusio non sequitur. Nam motus circularis salvat illam instanciam; ut possibile est quemlibet punc- 30
tum vasis vel loci dati circulariter mutare situm suum, uno insequente 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 concucientis causatur in medio tremor cir- 35
cularis, sicut in tribus elementis nostris et mixtis in eis concussis sensibilibiter esset videre; et si non esset talis circularicio, moto uno localiter, omne corporeum moveretur. Nec est vis, quam celeriter circulus per totum moveatur, ut quod motus celi in tali ascensu 40

6. pp'as B; *ib.* defites B.
28. sanat B.

11. sublimari B.
39. qua B.

22. qm^{te} = communi-

tatem(?) B.

corporum perturbetur, quia est dare statum corporum quo ad motum. Nec sequitur motum astri perturbari in tali ascensu, licet ex quolibet motu recto sequitur circularis. Quando autem erit generalis assumptio, stabit celum, quantum nos possumus sensu convincere. Nec repugnat quod sit talis motus circularis insensibilis, cum tamen delectabilis sit beatis. Secunda responsio dicit quod est dare quantitatem supranaturalem, a qua unum corpus erit penetrativum alterius, ut sint conformiter per eundem situm coextensa. Sed videtur michi quod illa opinio sit minus gravis, cum per idem posset qualitas disponi, ut sint quolibet coextensa. Et stant omnes rationes facte contra coextensiones | materiarum, corporum, vel formarum. Deus enim prebet unam talem materiam coextensam cum alia connectere, cum alia componendo, sicut 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 compositionem quantitatis cum extensis suis terminis, sufficit immediatio terminorum.

Tercia via dicit quod omne corpus plene sublimatum potest penetrare corpus celeste vel aliud dyametaliter sine hoc quod continens sibi cedat. Verumtamen, in tali penetracione est novi situs generacio utrobique, cum utrumque occupat sibi proprium, sicut sunt incommunicancia quantitate. Sed illud videtur difficile propter tria. Primo, quod non videtur ratio quare Deus 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 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 propius, sed nullum precise eque prope. Nam si precise 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. *12. desponere B. cipiue after si B.*

13. extensiones B.

23. dyametrum B.

39. pre-

particles in this circle would not hinder any astral movements. And at the resurrection, the sky will no longer move, or will move insensibly. 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.

Or we may finally say that a glorified body can penetrate any other body, without its giving way, because, having a new mode of being that does not come in contact with the sky, there is produced a different site for it. But *first*, if a glorified body can pass on to the outside of the heavenly sphere, why not other bodies that are not glorified? This would bring other difficulties to the front. Again, how can one point be nearer to the pole than itself, or farther from it, but no two points equally near?

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
supposicione 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. Distinccionem 10
illius materie relinquo theologis, hoc asserens, quod nulla pars fidei, nec verum aliquid, opponitur isti vie.

3^{um} argumentum claudicat, sicut et primum. Quantum ad existenciam elementorum in mixtis videtur michi indubie ipsam oportere concedere. Nam Aristoteles, 15
primo de generatione, ca^o de mixtione, movet dubium in terminis; et tenens afirmativam partem, dicit quod diffinitione | *mixtio est miscibilium alteratorum unio*; B 123^b
ideo differt a generatione vel corruptione, ubi alterum corrumpitur et reliquum generatur. Differt eciam ab 20
augmentatione, ubi alimentum assimilatur aucto conservanti suam speciem vel naturam in actu. Differt ab alteracione, cum oportet utrumque mixtorum esse substanciam per se separabilem a reliquo, quod non potest competere quantitati. Unde tria requiruntur ad ydon- 25
eitate 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 dispositio ex contrariis resultaret. Et tercio oportet com- 35
mixta esse proporcionabilia in multitudine, ut gutta 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 generatione*. 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 conveniunt 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 accidencia, et sic manere in esse remisso incompleto cum formis contrariis. Et illud vocat commentator esse in potencia. Patet ista posicio 3^o 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 substanciis elementaribus quam de mixtis; ut sicut nichil est reliquo magis homo. sic nec aliquid est
20 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
25 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
30 stat quod illud subiectum primo simul recipiat formas contrarias, sicut patet de racione contrarietatis. Tunc

B 124ⁿ enim simul | haberet denominationes 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
accidentali, ut patet de quibuslibet earum, cum quolibet
forma sit subiectum vel essentialiter vel accidentaliter
formaliter se habere. Et tercio videtur quod 4 elementa
40 contraria, que communicant in eadem materia in numero, 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 compenetrates 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. niffbles B. 7. latum B. 8. t^{te} (?) r^{te} B. 16. fubalis (sic!) B.
18. elementariis B. 34. calliditas B. 35. callidum B. 40. una que B.

et materiarum processus in infinitum, et ydemptificacio
 elementorum, cum communicant in eadem materia vel
 essencia singulari. Sequitur enim, ut supra tangitur:
ista materia est de essencia huius ignis (et sic de tribus
 reliquis elementis): *ergo singulum est singulum eorun-* 5
dem. Nec evitabitur quin quelibet pars quantitativa
 unius elementi huius continuatur cum alia parte quan-
 titativa 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
 quot auctores et rationes ad hoc sonuerunt, omnes
 sentenciant quod dispositiones et qualitates, quales
 secundum speciem nate sunt consequi elementa, re-
 linquuntur in mixtis: quod, cum sit verum, non arguit
 quod elementum aliquod sit in mixto actualiter. Contra 15
 istam sententiam videtur descripcionem termini militare.
 Nam elementum, ut huiusmodi, est causa intrinseca rei,
 nec pars qualitativa, ut exponit comentator, primo phi-
 sicorum et 3 de celo 6. 9. Aliter enim diceretur celum
 eque elementum sicut aliquod corporum 4 simplicium 20
 sublunarium; nec congrue vocaretur lapis aut lignum
 corpus mixtum, cum habeant materiam primam et
 formam simpliciolem quam aliquod elementum. Si enim
 non sit aliquod mixtum, est dare illa ex quibus mis-
 ceretur. Corpus igitur hominis non misceretur, nisi 25
 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 specialis-
 sime, 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 vm' B. 21. sublunari B. 27. v'mis = vermis B. 35. non B. 36. u'ous B.

2^o principaliter experientia phisica videtur repugnare.
 Nam tam arte quam natura cognoscitur ex partibus
 B 124^a mixtorum elementa | dispariter resultare, ut in dissolu-
 tionibus lapidum, calcacionibus 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 quousque
 maior pars aerei vel ignei expiret, propter vim movendi
 et convenienciam ad locum debitum ex natura, sicut
 15 in sensibus innominatis; ut quercu 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 splendoris: ut in
 20 oculis caticis, squamis piscium, quibusdam vermibus,
 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 dispare, sed omnes eius-
 dem nature quo ad formam superadditam, licet in

4. calcacōnibꝰ B. 15. ff,^{bus} B. 16. fꝰ B. 20. cattis B.
 24. delictū B. 29. q, lꝰ 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.

2^o; 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

more similar to one elements, others to others, but all having the same form and compound nature: 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.

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?

qualitatibus una quo ad unum elementum, et alia ad aliud, plus accedat; quia aliter non esset ratio quare carbo, lignum, et talia combustibilia secundum aliquam partem resolvuntur in cineres, et secundum aliam inflammantur. Contra illud 3^o argumentatur. Signo 5 totam multitudinem per C et totam multitudinem per D, que 4^{or} dicit adversarius corrumpi in adventu forme superaddite. Et argumentatur sic: quodlibet istorum 4^{or} fuit continue seorsum in loco per se sibi proprio, purum a commixtione cum contrario pereundum, et ad- 10 huc manet quo ad | essenciam, vel remissum paululum B 125* in qualitatibus, vel ipsis servatis integris sicut prius. Ergo per nullum eorum superducitur forma superaddita; vel si inducuntur 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 accionem 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 composicionis, sicut fuit immediate ante induccionem; et porporcionaliter ad materiam datur forma.

Confirmatur tripliciter primo sic: impossibile est 25 qualitatem vel accidens quodcunque transmutari de subiecto in subiectum; sed qualitates prime, que iam sunt in mixtis, condam et fuerunt in simplicibus: ergo ad huc 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 ratio quare forent qualitates prime, quare possunt inesse in mixtis quibuslibet; quia sunt corpora simplicissima sine ordine

5-7. 3^o-4^{or} (sic!) B. 8. sunt *pro* super B. 10. peund, B. 23. oonis B. 30. callidum *and very often after* B. 30. quod B.

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

prioritatis respectu elementorem se habencia, stante
sententia huius vie. Confirmacio [2^a] est hec. Impossibile
est qualitates contrarias coextendi; quod esset, stante
illa sententia: igitur, etc. Et maior patet ex hoc quod
5 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 denominationibus contrariis, vel
10 [essent] materie coextense. Et patet minor, eo quod,
si forme substantiales elementorum sint per totum
mixtum, sequitur quod et qualitates; et tota contraria,
multis modis contraria. Tercia confirmacio est ex im-
possibilitate reaccionis duorum elementorum simul et
15 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
20 reduccionem qualitatis contrarie, sequitur quod idem
subiectum secundum idem sit simul et semel agens et
paciens, in actu et potencia respectu eiusdem. Prius
ergo et principalius educeret qualitatem contrariam a
se ipso, quam induceret post debilitatem potencie per
B 125^b qualitates instantaneas qualitates suas in corpus | ex-
trinsecum. 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
30 naturales sciunt adducere. Credo 3^{am} sententiam 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
35 quod proprie non sit mixtio, sed iuxtaposicio corpus-
culorum; 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 sub-
40 stancialis 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. $\tilde{\eta}$ ritas B.6. $\widehat{\text{accus}}$ B.10. *essent deest*.16. p'usfuma B; *ib.* fuma? B.29. *recipe* B.33. Ca $\widehat{\eta}$ B.35. $\widehat{\text{isp}}\widehat{\text{o}}$ 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 elemental 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.

aliquod 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, iuxta poni, et per formam superadditam 5 continuari. Licet autem nullus oculus corporalis sufficit cognoscere appropriatos situs corporum commixtorum; Deus autem distinctissime, et intellectus humanus confuse cognoscit positionem in quolibet mixto perfectius huiusmodi situs dari. Et sic conceditur homines com- 10 misceri ad invicem cum aliis, et proportionaliter de ceteris partibus huius mundi, sed non ad finem quod forma substancialis resultet constituens mixtum substancialiale disparis speciei; et solum tale mixtum ad propositum est naturale cuius quelibet pars quantitativa 15 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 privacio, sequitur quod nusquam sit talis forma; quia nec indivisibilis, nec extensa. Ad illud dictum est superius, quod forme substanciales, ut a 25 materia elevaciores, sic sunt a condicionibus materie remotiores; ut forma corporeitatis vel forma elementaris secundum aliquos est situatiter secundum partes punctuales materie; et quelibet forma materialis superaddita determinat sibi certam multitudinem elementorum 30 constituencium minimum naturale; et sic gradatim ascendendo quousque 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 que- 40 libet forma substancialis cuius partes quantitative distant situatiter extenditur modo suo. Nec oportet quamlibet

- partem quantitativam subiecti habere appropriate partem
 5 quantificativam forme, sicut forme anulorum extendun-
 tur. Si partes sue quantitative sint animalia anulosa (et
 sic de bestiis; si multe quantitative unam constituent)
 10 forma totalis extenditur modo suo. Ymmo, si duo ho-
 mines unum hominem quantitative constituunt, forma
 totalis extenditur sine alia sui parte divisibili vel ex-
 tensa.
- Nec sequitur ex istis quod mixtum solum ligatorie
 15 vel aggregative sit unum, ut cunulus lapidum, domus,
 vel populus; quia ex commixtione propria et perfecta
 resultat quedam forma substantialis et perfecta speci-
 fica; non sic autem de aliis artificialiter aggregatis.
 In hoc tamen conveniunt quod, sicut impossibile est
 20 mixtum perfecte poni in specie sine forma substantiali
 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
 25 multitudinem dicit consensum hominum, ut obediant
 uni legi. Et domus dicit figuram aggregatam ex posi-
 tionibus suarum parcium, ut defendat hominem ab
 intemperancis nocumentis. Et sic de ceteris, cum omnis
 unitas sit a forma. Et sicut forma substantialis mixti
 30 est per totum subiectum. licet non extenditur nisi per
 subiectum homogeneum suo toti; sic forma aggregata
 taliter accidentalis aggregati est per totum suum subiec-
 tum. Et de possibili non habet aliquam partem con-
 similis rationis; sed sicut forma mixti est causaliter in
 35 elemento per quod non extenditur, sic et forma aggre-
 gati 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.
 40 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. legacōr B. 10. anul9 B. 11. que quia B. 16. Et pro sic B.
 23. ἵπα^{eis} B.

2. *Annulorum*. 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

3^o videtur quod omne mixtum sit continuum cum medio continuante; et per consequens nullum corpus mundi est ens in actu, sed solum potencia; 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 substantia 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 situi et tempori, et multis aliis accidentibus, gracia cuius perficiende sunt omnes parciales substantie, ut noverunt philosophi, et supponitur in presenti. Mixtum ergo, in quocunque elemento sit positum, trahet quotlibet partes eiusdem speciei ad sui circumferenciam, et per consequens immediatas 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 expectare successivam accionem 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 quemcunq; recessum alique insensibiliter insequatur. Contingit eciam in casu, pro supplecione pleni, virtute continuacionis, quantumlibet grave sequi aliud inmedium amotum, etsi fuerit disparis speciei; quod nunquam contingeret, nisi esset quedam continuacio sic motorum. Unde, ex influencia veritatis, motus fuit Aristoteles 5^o phisicorum (forsitan ignoranter) ad ponendum con-

B 126^b

15. $\bar{u}i\bar{s}$ B. 17. $q\bar{u}i\bar{u}$ B. 26. $f\bar{g}u\bar{n}t$ B. 31. $\bar{p}l\bar{u}$'s B. 33. $c'effum$ 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 immediate posita nunquam huiusmodi constituunt quoddam unum, quod est terminus communis utrique, communicancium parcialiter in eodem. Unde conceditur quod quelibet quantitativa corporeitas est in potencia, non tamen distinguendo potenciam contra actum. Et sic omnia corpora que non sunt continuata cum corporibus eiusdem speciei constituunt numerum actualem. Et continuacio talium cum corporibus disparis speciei, adnascencia vel contiguacio nominatur. Ex quo patet quod hec duo, continuacio et contiguacio, non sunt species distincte ex opposito, sed potius continuacio est genus utriusque. Contigua enim sunt quecunque se tangencia disparis speciei, quorum ultima 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 integracionem corporis animalis.

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

limits of two things being identical; but two points that merely touch are not identical. We may grant that all bodies are *potencial* (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.

Uterius notandum est iuvamen elementorum in mixtis, ad constitutionem et perfeccionem sui compositi. Oportet autem in omni mixto perfecto terram quo ad multitudinem dominari, propter mixti constanciam. Nec aliter esset iuvatam efficienter sensus tactus. Unde, secundum analogiam, ad suum sensibile fundatur sensus tactus plus necessarius aliis in nervo retili terreo, ceteris sensibilibus plus extense. Oportet secundo inesse naturam aqueam ad multitudinem terrenam, forcius colliniendam terream, et ad stabiliendum in homine sensum gustus, quem oportet fundare in humore aqueo, nedum quoad linguam et partes pororum extensius adiacentes. Sed e converso quo ad gustale quod oportet omne humidum aqueum, si gustum debeant proportionaliter mutare, et genera talium obiectorum sensus distingwere, ut sensitum per habens sensus huiusmodi, nedum quo ad noticiam, sed eciam ad *esse*. Et omnia 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. ipōita B; *ib.* ponam B. 18. genia B
23. Iuva^m B. 29. aliter B; *ib.* r'tili B. 38. sp^{uus} 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 auditive 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 commiscetur. Oportet tercio aerem commisceri, quia aliter non esset mixtum tale sonorum, dilatans se post percussionem, nunc secundum dyametrum longitudinalinem, et nunc secundum latitudinem, ad tractum 5 spiritus aerei complantati corpora, causando secundum numerum tremulosum ex dilatacione et constrictione secundum dyametros transversatiles, sonum in aere proporcionaliter continente, qui eciam moveret conaturalem et complantatum aerum in miringa. In tali 10 namque mixto aere complantato, et non in aere alieno contento in spongiosioribus, subiectatur vis anime auditive. Ignis autem clarificat spiritus alienos, et facit proporciones, ad colores iuvans ut sue speciei cum irradicacione luminis extranei per medium dyafanum 15 sensibiliter diferenciuntur. Unde in spiritibus animalibus qui subiectant virtutem visivam, ignis plurimum dominatur in proporcione admixta alia; ut ex claritate cristallaydis, cum tunicis sufficienter illuminatis in suis superficibus, et species libere inserantur, et lumen oculi 20 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, 25 recipiens speciem, specialiter paciatur. Unde passionem visus declarat Aristoteles | in De sensu et sensato et 2^o B 127^b De anima. Accionem vero sensus ponit, 1^o De animalibus et 3^o Metaphysicorum.

Alie autem sunt quotlibet commoditates in existencia 30 elementorum in mixtis; quorum tractatus ulterior pertinet naturali, qui ponit inter mixta perfecta terrea habundancius dominata; ut in minera, vel lapide; 2^o aquam, quo ad opus liquacionis dominari generaliter in metallis; 3^o unctuosum aerem, qui est causa in- 35 flammabilitatis, ponit in vegetali quo ad illud effectum

7. cofac'one B. 14. fue ffcu B. 24. mltio B. 30. existencie B.
33. lapide vel B. 34. loqconis B.

35. *Unctuosum 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, specialiter quo ad spiritus ainales; et quinto ignem habundantius in homine, propter maiorem copiam istorum spirituum, et alias operationes ad quas natura ornat
 5 intentum. Et sic et species et genera mixtorum, quacunque genera corporum simplicium in maiori mundo proportionaliter coaptantur. Nec tollit tale dominium aliorum elementorum super terram ampliore terre multitudinem, vel dominium terre quo ad aliqua super
 10 illa; sed satis est quod unum elementum quo ad aliquid super reliquum dominetur, et quod mixta totaliter perfectioribus formis substantia, habet plus proportionaler de superioribus elementis. Conferat ergo protervus textum Aristotelis alio, mediate in fine, cum dictis eius.
 15 primo De generatione, 4^o 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 adcomposicionem continui ex non
 20 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
 25 corporei acquisiti in corporacione, ad tempus; quia stat aliquid subito acquirere vel deperdere talem situm per adnascenciam vel discontinuacionem. Stat eciam columpnam rotundam, 2 pedum in longitudine, et 8 pedum in latitudine, sicut hasta est, descendendo uniformiter
 30 in hora, describere in hora situm secundum longitudinem duplum ad hastam; et aliam simillimam in figura volvi latitudinaliter precise eque velociter, describendo sitaliter plus quam octogintopliciter ad priorem, sicut patet calculanti: ubi certum est quod
 35 quolibet punctus unius precise eque velociter movetur, sicut aliquis punctus alterius. Non ergo esset possibile aliquod 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 any 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. Exg̃m̃to B. 5. ga B. 11. totalia B. 21. Io3 B. 33. octog̃incopl̃r B. 38. ta' B.

33. *Octogintopliciter*. 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.

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

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.

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^a
 omne motum tam velociter movetur sicut 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 accidencia. Ut, posito quod latitudo alteracionis et eciam motus localis uniformiter, et difformiter 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 spacii, 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 punctale. 20
 Et preter hoc est dare minimum naturale in quomodocunque 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. Sicut 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. hno^o (z) B. 21. quiescente B. 28. mistulis B. 37. equivocant B.

Parum tamen locutum est de illo colore vel colorato, quod primo appropriate agit speciem et terminat distantiam 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 communicatione partium universi, quod quolibet eius partem apprehendendo, apprehenditur ipsum totum intencione confusa; et ipso confuse apprehenso, apprehenditur eius quolibet pars; ymmo primum principium, quod omnia appetunt, ad minimum confuse.

Remark respecting colours, how they act to aid vision.

Sed reliquendo hoc, ut hic inpertinens, alibi pertractandum, proseguendum 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 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 proportionaliter 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 respondententi.

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 linee, motu orbis superioris, vel motu sui, proprii orbis, vel epicicli, quin eundem describit quolibet istorum motuum; sicut patet attendendo diligenter ad figuram 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. punctos B.
39. dir B. 42. dimi^{ta} B.

that are varied in time, for a given length may be traced in a given time by mobiles of infinitely varying velocities.

ex hoc quod contingit infinitos esse motus horales, quorum quilibet describet lineam a pedalis adequate; et tamen primum esse uniformem ut duo, secundum eque intensum gradum ut 4, et tercium gradu ut 8; et sic in infinitum. Ut, posito quod in infinitum intendat aliquod istorum suum motum super aliquam partem sue linee, tardando diucius 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 motus, et quam velociter descendit grave in confinio inter aquam et aerem.

1. 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, dicendo sic regula generalis, eo quod motus difformes quo ad tempus sunt univoce veloces cum motibus uniformibus quo ad tempus, sicut sunt univoce motus cum illis. Ergo dicenda est illis ratio eadem. Assumptum huius argumenti foret evidens illi qui poneret in corpore rarefacto per totum, et cum hoc continue circumducto pro quolibet 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, continue expansis manibus et brachiis, circumducatur et quod continue auferatur de extremo medii digiti corelative 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 outstretched 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 velocitas attenditur penes lineam quam describeret punctus, qui indivisibiliter velocius movetur quam aliquis 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 istorum, cum non sit possibile penes ipsum unum excedere aliud per indivisibile: quod tamen oporteat, dato tali motu puncti

2. que (or quo) libet describe B; *ib.* bñc *pro* lineam B
13. aliud B. 15, 16. in ddo B. 10. ddo B.

5. aliud B.
18. corlo^m B.
38. indim B.

33. indun^t B. 35. p^omo propter B; *ib.* multo p^o B.

indivisibiliter velocius moti. 3^o, quia tale circumductum
 non movetur velocius quam aliquis eius punctus; quia
 tunc moveretur velociori gradu motus; et per consequens,
 cum gradus iste sit dandus, esset dare illud quod
 5 primo movetur illo gradu. Sicut ergo non est dare
 precise quam velociter precipue movetur aliquis punctus
 sic moti, ita nec est dare quantum velocior precipue
 movetur totum mobile. Et quarto patet, quia ymaginato
 quod Sor circumductus derelinquat post se, per totum
 10 in quo fuerit aliqua pars eius [caliditatis, ipsam] cali-
 ditatem vel aliud accidens quodcumque, et non extra
 illum situm, patet quod completa circumduccione est
 dare totale accidens derelictum, et per consequens est
 dare eius circumferencia, cum solum finite situalter
 15 extenditur. Quero igitur utrum circumferencia talis
 accidentis sit maior quam triangulus descriptus a B
 puncto (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, sicut et B,
 ut suppono, sequitur cum dandis quod in qualibet
 25 parte talis temporis, B excederet Sortem per indivisibile.
 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 2^a eius circumduccione de-
 scriberet circulum immediatum priori: et sic sine fine.
 Et sic componeretur circulus ex circumferenciis im-
 mediatis. 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, quocumque parte mundi, | eo
 quod est dare maximum situm in mundo, ad cuius

(3) It is
 impossible that
 a body could
 move faster
 than any of its
 own points:
 which is
 implied, if the
 measure of its
 velocity is a
 line outside it.

10. caliditatis ipsam *deest* B. 30 *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 15 velocissime moveretur, erit non gradus motus: quod 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, sicut et diurnitatem; 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, sicut et eius subiectum, cum continue erit precise par suo subiecto; et eadem diminutione divisione minuetur utrumque; sed subiectum inclusive 25 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 tunc 30 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 integratur 35 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 usque 40 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^o fa^o B.

servatis eius accidentibus (quod est impossibile, toto colore servato), est dare situm per quem est anichilacio, 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 aliquid se habuit vel habebit, tunc si se habet. Non enim est color in isto zophismate: *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 immediatum 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 columpnari possibili, uniformis grossiciei ut virgulto correspondentali, dividendo illud in suas partes proporcionabiles geo- 25 metricas minores, versus B extrinsecum. Ut capio duas lineas girativas, incipientes in extremis dyametri C relique basis, et circumgirent quamlibet istarum parcium proporcionabilium versus B extremum continue propius 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 totius 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 laciis. Tunc patet quod est dare instans in quo C tangit D, in quo oportet quod tanget extremum gracile illius D et per 40 consequens est dare communiter quantumcunque longam vel brevem partem determinatam ad illud extremum.

6. h' B. 8. colorem B. 9. longit^u de B. 23. v'g^o B; *ib.* cor^u B. 130. c. *pro* eciam B.

Data ergo una parte eque longam, sicut 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- 5
noscere. Unde si D, pyramis ferrea, tangeret primo
secundum communem punctalem F planum per G postea,
operatam constantem, videtur quod D abstractum,
stante positione parcium G, haberet in latere applicato
plano unum foramen punctale, quamvis non sufficeremus 10
distingvere tale foramen H; sicut nec radium huius
transeuntis per illud foramen; nec punctum sibi ex-
tremum 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 potencia 15
absoluta facere unum situatum non quantum, post illo
habito; si potest anichilare multa talia simul et con-
vertere, faciendo unum quo ad apparenciam continue
magnum; et habito quod sic, queratur ut ratio, ex-
perimentum, 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, sicut
ad improbandum talia esse.

Supposito ergo quod sit talis compositio, redeundum 25
est ad regulandum velocitates motuum. Redeundo ad
punctum propositum de mensura velocitatis motuum
quo ad signum, necesse est tria supponere; primo
distincionem 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. opaca B. 20. doceat *deest* B. 25. Suppono B; *ib.* reddendum (?) B.

25. *Compositio*. 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 *compositio continue ex non quantis*. But when, for instance, there are only three letters, op^o, so indistinct that g 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.

Leaving these philosophical difficulties, and passing to theology, let us ask if God can make a thing occupy space without quantity, or annihilate and re-create it so as to give the appearance of a thing having continuous magnitude; if so, how do we know that it is not so now? Yet we do. Three things should be noted: *first*, the distinction already set down, as to uniform movements, &c. 2nd, that

diurnitatem, sicut magnitudo molis vel parvitas permanencium divisionum; ita quod motus subito non esset velox vel tardus, sicut punctus non est parvus vel magnus. 3^o supponatur quod possibile sit motus et quotlibet alias formas contrarias eidem simul inesse secundum partes quantificativas diversas: ut sicut contingit unam partem columpne descendere et aliam ascendere, sicut contingit unam partem subiecti calefieri et aliam frigidari; 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 denominationibus a formis contrariis. Quicumque enim concedat aliquid denominari secundum partem quantitativam forme habentis contrarium informatam oportet concedere 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, sicut pars fuit talis, mota per totum; et ita sciendum est de quibuslibet formis que habent contraria.

Unde patet quod vanus sit calculus de proporcionem impedientis forme date secundum eius multitudinem vel paucitatem, respectu forme contrarie. Nam eque velociter calefit A corpus cuius solum millesima pars calefit per totum gradum alteracionis, ut | toto residuo interim frigefacto gradu ut octo, sicut illa pars millesima; et sic simul tempore sit calidum et sit frigidum; et ita de quibuscumque denominationibus a formis contrariis etc. quo ad omnes auctores vel rationes 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. Sicut 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.

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

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

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

senses, or
times, or parts.

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.

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

Racio autem difficultatis ad assenciendum iste sen-
tencie 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 speci-
ficare: ut iste motus Sortis est *ipsum moveri isto tem-
pore secundum illam partem acquirendo istam materiam
motus*; quia aliter esset iste motus multiplicatus per 15
totum, sicut est motus communis. Sicut ergo non
repugnat istum *Sor moveri nunc secundum istam partem
acquirendo istam formam* et simul cum hoc *moveri
nunc secundum aliam partem acquirendo formam con-
trariam moto opposito*: sic stat Sortem moveri simul 20
et semel motibus oppositis non commixtis, ut per con-
sequens non se inpedientibus a denominationibus propriis.
Aliter enim non esset possibile aliquid moveri secundum
partem; quod est contra philosophum 1^o et 5^o phisi-
corum, et contra communem et venerabilem sententiam 25
logicorum.

Istis tribus premissis, dicitur generaliter quod quilibet
motus velox est ita velox sicut aliqua eius pars, et per
consequens cuiuslibet talis motus velocitas attenditur
penes partem eius velocissimam mesurantem; ut motus 30
primi mobilis est eque velox sicut motus punctalis
partis in equinocciali, licet quomodocunque tarde
moveatur aliqua pars eiusdem. Et ita generaliter, quan-
tumcunque velociter movetur aliqua pars punctalis per
se mobilis pro quacunque 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 compara-
cione ad tempus mesurans; et sic tollitur instancia de 40

7. doctrina deest B. 20. 8 pro Sortem (S?) B. 22. ad pro a B.
32. tenocciali B. 39. mote B.

linea superius facta. Nam probatum est superius quod
 nullus punctus ultime sære describit lineam; quod
 conceditur. Verumtamen non moveretur nisi describeret
 situm in mobilem punctalem linearem. Et si capitur
 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 descriptionis tanti situs equivalet | ac si
 continue de possibili describeret novum situm. Ideo
 10 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
 15 simul moto localiter motibus non componentibus unum
 motum, sicut contingit de astro moto in suo epicyclo,
 dicitur quod maiorem situm circularem describit quod-
 libet eius punctale motu epicycli; 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 im-
 mediate succedentis, et orientaliter retrogradiendo: quod
 non erit motu orbis. Et ista experigencia movet eos ad
 ponendum epicyclos 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
 35 paribus, sine circumduccione attingeret terminum *ad*
quem adequate in eodem tempore. Sed longe alius est
 motus nunc quam esset tunc, ut patet de partibus
 motus quo ad molem, capientibus individuacionem
 a situ.

No point of the
 highest sphere
 describes a line,
 but that which
 is equivalent
 to a line.

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.

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}^{eaa} B. 17. \widehat{m} B. 10. expigenca B; *ib.* qua B; *ib.* \widehat{fciut} B.
 26. includatur (!) B. 31. tracto (?) B. 37. esse (!) B.

19. *Experigencia*. Probably for *experientia*, and belonging
 to the next sentence: *quod patet experientia*. Cf. l. 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 extended 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 circulearem circumferencialiter descriptum iuxta declarationem 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 totius motus. Tale enim est commune citra speciem, et supra ultimum singulare; ut patet alibi. Nam punctale extimum huius mobilis, simpliciter intellectum, est commune ad quodlibet illorum. Et patet solucio ad rationes superius tactas, que videntur refugere veritatem. Ulterius, videtur quod assenciendo composicioni continui ex non quantis, infringitur sententia de velocitate motus localis. Nam, capto equinocciali circulo, et circulo sibi immediato, | sive altrinsecus versus polum, sive B 132^a circulo immediato supposito, videtur quod omnes huiusmodi 3^s circuli, sicut et omnia sua puncta, continue eque velociter moventur, quia quolibet uniformiter quo ad 20 tempus et subiectum, et angulum motus alicuius; istorum aliqua pars quantitativa est eque velox sicut aliqua pars alterius. Ergo conclusio. 10^m sic plura sunt puncta in equinocciali circulo quam in altero circulorum signatorum; et pene tot situs punctuales occupat circulus equinoccialis, quot puncta habet. Ergo plures situs punctuales occupat circulus equinoccialis, quam aliter sibi immediatus. Et quilibet punctus alicuius istorum circulorum describit adequate in die omnes situs punctales sui circuli. Ergo velocius movetur quilibet punctus in equinocciali, quam aliquis reliquorum. Et hic videtur quod sit discontinuacio in celo ad quemlibet eius punctum; quia est dare instans in quo punctus in equinocciali describit situm punctalem; et punctus (scilicet immediatus) non, sed permanet per tempus in eodem 35

11. extinuu B. 15. sententiam (!) B. 17. alt'ue⁹ B. 21. angulus B. 23. p̄a B. 33. in *φ* pro instans B. 34. f' B. 35. no' B.

1. I suspect Wyclif 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 circumferencie ultime celi erit discontinuacio.

Ad illud dicitur quod impossibile est aliquod indivisibile velocius moveri localiter quam continue in quolibet instanti dati temporis describere situm suum punctalem; quod cum facit quilibet punctus in equinocciali (ut supponitur), sequitur quod quilibet eorum movetur 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 equinocciali movetur difformiter quo ad tempus. Nam totalis multitudo punctorum in quolibet minori circulo equinocciali est minor totali multitudine punctorum in equinocciali; et sic de sitibus. Ex quo sequitur quod quilibet circulus sic immediatus equinocciali ad minimum per unum situm punctalem plus describit de sitibus, quam alius extra illum; quod conceditur. Et ultra conceditur quod quotlibet alia puncta eque velocius moventur uniformiter quo ad tempus. Sed vanum est nobis sollicitari 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 revolutione, puncto in equinocciali existente in oriente fixo per unum tantum instans, punctus situ immediatus in qualibet istarum linearum sit in situ suo immediato per duo instantia; nec sequitur ex tali difformitate discontinuacio, quia
 B 132^b non superius situs | mundi pertranscendendus. Sed si pro
 35 quolibet instanti continui pertransiet unum situm cum puncto equinocciali (et sic de puncto immediate versus polum) tunc describeretur situs mundi teres vel lenticularis et non sphericus, cum eque amplum situm circularem describeret quilibet talis punctus sicut aliquis.
 40 Ideo oportet ex carencia situs fixi quem describeret

To this we reply 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. iudi^m B.30. equinoecialis (!) B; *ib.* exⁿte B; *ib.* p^vun B.32. Irar^p B.37-38. describeret B; *ib.* teres vel lenti^m B.38. sp^us

= spiritus B.

punctus extra equinoccialem, cessare talem situm describere unum pluries et alium paucius, secundum limitationem 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 revoluzione diurna acquireret 4 situs adequate sine discontinuacione eius a centro; quia non est situs qui intercideret. Et per idem, A puncto equinocciali orientali pertranseunte duos situs punctales in duobus instantibus; et B, sibi puncto immediato, pertranseunte tantum unum in altero illorum instancium, non foret discontinuacio illorum punctorum, cum posicio circularis situum punctalium requirit quod non interciderat alius situs punctalis. Et idem contingit quando unus punctus movetur, et alius sibi immediatus quiescit. Si ergo duo puncta signata, in equinocciali et circulo sibi immediato, haberent pene tot situs punctales materiali tempore distribuendo, et unus pausaret per instans et alius non pausaret, tunc facta continuacione revolucionum distarent, ut innuitur. Sed modo, proportionaliter 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 quiesceret; nec in 2^o 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 menciuntur multi verbaliter concedentes. Michi autem videtur quod omnis descriptio 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{tm} 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 posito, in 2^o instanti, et non in primo, describitur
 datus situs. Et sic queritur ut sequens: sequitur ex
 posicionem 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 133^a cipit | derelinquere ipsum, describit illum: tunc oportet
 quod instanti primo, cum pertransiret illum. Et sic
 describet punctus motus in casu puncta constituenta
 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 ter-
 mino ad quem foret ultima distributio divisibilis
 15 proximi: quod est irrationale. Secessus igitur indivisi-
 bilis ab indivisibili est *mutari*, et successivus indivisibili
 proximo est *mutatum esse*. Verumtamen pro illo instanti
 non foret *mutari*, nisi inmediate succederet *mutatum*
esse. Et ita in casu notato: pro illo instanti quo indivi-
 20 visibile circuli proximi equinocciali incidit in situm
 indivisibilem orientis, est *mutatum esse* respectu indivi-
 sibilis proximi precedentis; et pro illo instanti pausant
 instanter, cum non inmediate post illud instans erit
 situs descriptus post illud instans; sed inmediate post
 25 illud describitur. Nec est ista pausacio instantanea quies
 proprie, sicut nec *mutari* est motus aut quies. Et ita
 potest dici in omni mutacione subita, quod res pro
 illo instanti pro quo subita sic non est facta, sed incipit
 esse facta; ut contingit de linea, et anima, ac similibus
 30 que fiunt in instanti. Et sic non est, quodcumque
 creatura est facta vel est creata. Nec oportet, si res
 nunc non est facta, et fiet, quod nunc sit illa vel
 aliquid eius fiendum; sed bene sequitur quod ipsum
 est fiendum in tempore suo. Et ita homo moritur pro
 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 impertinens nobis sermo.

Difficulty about
the movement
from one point
to the next.

Wyclif
distinguishes
between
changing and
having changed
places.

At the instant
one point
leaves its place,
it changes; at
the instant it
comes to the
next, it has
changed.

This is true of
all
instantaneous
changes,
as the acts of
the mind;

also of death.

Digression
concerning
death; its
divisions:
spiritual and
corporal
(which we may
omit);

11—12. corrumpantur (*quite vlain*) B. 15. Lacessus 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, it 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 assimilatur, sed in parte digerit adnatam pinguedinem. 2^o plus depauperatus, nec assimilare sufficit, nec assimilatum servare; et tunc defluunt partes continue, 10 quousque 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 successive; 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 quantitativam [que] vivit in illo est mortuum. Et primo in animali vivit cor, vel aliquid cordi propior; et sequentur alie partes ordinate, 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 corrupcio 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 corrupcione. 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. I,raj'e B. 11. m^{ta} fm^r B. 15. sic (l) B. 17. z' *pro* eciam B.
 20. vunt *pro* moritur B. 21. que *deest* B. 21-22. illa . . . mortua ppor B.
 24. b'vut' (?) B. 27. fr B.

quod non obest idem generatum quod eternaliter est secundum esse intelligibile, habere pro dato instanti esse actuale et pro proximo instanti. Vita enim non dicit formaliter mutacionem, cum analogice inest deo. But this is not inconvenient for one who knows how the present may be extended to the part: life may be eternally possible, and actual only at one moment; if the next moment actual life exists no more, then the preceding one was that of death.

5 Sed mors, ut huiusmodi, dicit precedens non esse actuale; quia infinite intelligendo, est aliquod non esse, et secundum totum huiusmodi, generari. Et si idem in instanti proximo subsequenti habet non esse actuale, tunc simul cum hoc, ut sic, corrumpitur vel moritur, Life, however, may mean either the vital principle, or its act, individuated by time; we mean the latter here. Life and death are like beginning and ceasing, both of which may be predicated of the same, but the former is a denial of the past and the latter a denial of the future.

10 ut [non] sit vivum.

Notandum tamen quod vita potest intelligi equivoce pro forma substantiali permanente qua vivitur, vel actu eius successive individuato a tempore. Et de illa que consistit in successione, ratione temporis adiacentis, Life and death are like either the vital principle, or its act, individuated by time; we mean the latter here. Life and death are like beginning and ceasing, both of which may be predicated of the same, but the former is a denial of the past and the latter a denial of the future.

15 quod est plurimum individuans eam longam vel brevem, est nunc nobis specialiter sermo. Sicut igitur eidem simul insunt inceptio et desinicio privative opposita, primum 2^m negacionem de preterito, et ultimum secundum negacionem de futuro; sic vita et mors, cum non beginning and ceasing, both of which may be predicated of the same, but the former is a denial of the past and the latter a denial of the future.

20 sint pure privative opposita (ut visus et cecitas, et privaciones formarum substantialium et accidentalium, que non simul compaciuntur inter se secundum aliquem gradum), sed potius sicut generacio et corruptio, magnitudo et parvitas, intensio et remissio et forte lux et If anything dies in any sense, it lives at the same instant, but in a contrary sense. Those who deny our doctrine of the composition of the continuous, say that death is the change of a subject after the end of life, or the absence of the soul from the body.

25 tenebre. Et patet quod si aliquid moritur, vel mors sibi inest altero dicatorum modorum, tunc vivit pro eadem mensura temporis, licet dispari ratione. Illi autem qui negant compositionem continui ex non quantis dicunt quod mors vel est *mutatum esse* subiectum in termino Those who deny our doctrine of the composition of the continuous, say that death is the change of a subject after the end of life, or the absence of the soul from the body.

30 vite exclusive, vel 2^o est simpliciter et primarie privacio vite in corpore quondam unito. Prima est ita in primo instanti non esse viventis; et 2^a est quantumlibet longa; I prefer the first answer.

B134ⁿ nec est in | ista variacione, dum tamen sciatur fundare quod corpus moritur vel mortem patitur quando non Return to the main subject. The question as to when one point moves slower than

35 est, vel quod anima separatur pro instanti quando non est anima, aut quod mors non potest esse possibilis, terribilis, vel timenda. Prior autem responsio est michi plus placida, et consequens ad predicta.

Si autem queratur quando datus punctus movetur tardius quam punctus in equinocciali vel difformiter

5. precedente B. 10. non *deest* B; *ib.* vum B. 13. individuate (!) B.
 22. im^r B. 2. aliud (in full) B. 26. bit^r or *unc* (!) B. 31. quod³ B.:
ib. *beneath* ita B. 36. quō B. 38. ad^{ta} B.

another in the above mentioned circles, is absolutely useless.

The movement is varied (in the subject) if it be not as swift as possible; it matters nothing that it is not varied in itself.

We must remark that many words represent both movement and relation at once, as *ascend* &c.; and the words *earliness* and *rapidity* are taken to mean the same, whereas the former indicate only a relation of precedency in time.

What is early may be very slow; a thing that is very late may be extremely rapid.

quo ad tempus, dicitur quod in quolibet tempore cuius instans pausacionis est intrinsecum, et solum in tali; et cum nulla pars quo ad tempus, vanum est verificari 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 talis difformitas habet esse incompletum in causis 10 suis continue vel non, est huic inpertinens. Ex quo patet quod non oportet, si talis motus sit secundum se totum difformis, vel velocissimo remissior, si utraque medietas dicti motus et quelibet alie eius partes aliquo tempore non sunt difformes. Quod exinde totus non 15 sit difformis. Patet eciam quod contingit eundem motum nunc esse velociorem et nunc tardiozem, 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.

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 decipiun- 25 tur plurimi propter ignoranciam distincionis inter citoitatem et velocitatem, seroitem 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 30 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 quitquid 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. descēdo B. 18. ip 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 positione situum indivisibilium primo celesti videtur sequi quod non sit realiter circumferre, eo quod non est ratio quare unum situm circumferret et duos situs immediatos in ultima circumferencia mundi ex uno latere, quin per idem esset sic ad quemlibet punctum eiusdem circumferencie, cum sit uniformissime curvatis. Et tunc continue pertran-

B 134^b siret punctus maioris circuli duos situs, | dum punctus minoris circuli describeret unum solum; et sic in eadem

10 superficie circumferrent eidem puncto 6 puncta, et per consequens infinita mundi circumferrent eidem puncto quotlibet puncta ex omni latere. Que duo sunt mathematice impossibilia compositioni continui ex non quantis.

15 Item, proportionaliter 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.

20 Maior argumenti patet, ex hoc quod si circulus maior mundi diminueretur ad non quantum, stante continue circularitate, ille foret proportionaliter curvior sicut minor: ergo, etc. Aliter enim quelibet porcio equalis foret precise eque curva sicut ipsa circumdata;

25 quod est impossibile, cum tunc tantam curvitatem contineret, quanta est curvitas tocius equinoctialis circuli. Minor argumenti facti est patula cuicumque qui videt quod circuli paralleli equinoctiali versus polum, ut sibi propiores, sunt minores. Cum ergo quilibet punctus dicte circumferencie sit polus respectu alicuius maioris

30 circuli, sequitur quod periret iudicium de parvitate circuli ad quemlibet eius punctum.

Item, circulus equinoctialis 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

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.

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^omo ce^o B. 3, 4. c^ocūcta B. 4. im^o B. 7. vmform^e B.
10. circūcta et circūfact^e B. 12-13. mat^e B. 13. oponi B. 17. ita B.
23. pte^e B. 28. palelli B. 28. p^o pro sibi B. 33. cū 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 extensa 10 per arcum ad quemcunque eius punctum, secundum unum gradum indivisibilem. Nam si multiplicetur per tria puncta, tunc in arcu sextipunctalis essent 4^{or} curvitates habentes posicionem; et per consequens constituerent 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.

Pro isto oportet | supponere, sicut supra, quod situs B 135^a mundi cum componitur ex non quantis, habeat eorum compositionem, soli deo notam quam nos intelligendo convincimus insurgere ex puncto centrali duobus altrinsecus copulatis, constituendo triangulum minimum possibilem, et post quadratum A, ac 3^o pentagonum qui 25 primo habeat rationem circuli, cum omnes semidiametri bipunctales ducte a centro ad circumferenciam sunt equales Eptagonus autem primo habet complexius rationem spere; et sic de omnibus aliis numeris circularibus ex hiis dictis. Nec individuatur parcialis situs 30 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, sed 35 ex materiali substantia et figura secundum respectum ad immobiles differencias huius mundi. Et tales situs immobiles possunt ingredi quecunque partes mundi

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.

1. pteb^t B. 3. 13 B. 4. oia B. 5. esse pro oportet B.
 13. pta B. 19. f^u B.; *ib.* 93 2^{am} p^m B. 23. quti⁹ B. 24. coplat^e B.
 29. deo nubus B. 29-30. t'ubg B. 32. mundo B. 37. after mundi B.

proportionales aliis egredientibus a communi agregato, acquirendo et deperdendo ex illis sitibus sua ubi.

Ad primum dicitur quod quilibet circulus maior mundi est uniformiter minime curvatis, 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; et sic quaternarius qui 2^m Aristotelicos est primus numerus circularis sic est principium posicionis punctalium, sic et finis. Alia autem puncta que lateraliter ipsum respiciunt, sive puncto medio illius ordinis incidente, non sunt sic immediata vel ipsum tangencia, nisi forte equivoce, ut supra dicitur. Et correspondenter de compositione indivisibilium situum est dicendum. Concluditur igitur quod quemlibet punctum circuli immediate equinocciali supposite superstant tria puncta, unum directe terminando dyametrum, et alia duo lateraliter, que non tangunt nisi indirecte vel equivoce supra. Et tamen totus circulus equinoccialis non excedit datum circulum suppositum, nisi solummodo uno puncto; quia nec oportet nos sollicitari quis sit ille dispar punctus terminans dyametrum solo puncto ab alio differente, vel credere quod in illa porcione circuli tripunctali sit maior curvitas vel declinatio a rectitudine.

Et patet quod nec sequitur quod quemlibet punctum circumstant puncta infinita, sed et omnia puncta mundi, sicut et tota est universitas materialiter finita. Ymmo 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 B135^b contineant prime superficies intercluse; | et patet quod 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 quolibet linea quadrata proxima inferior continet per 4^{or} puncta paucius quam sua exterior; 4^o in circulo autem est excessus solummodo uno puncto;

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. fcuu^r B. 6. quinto B. 10. Ar^oca^r B. 21. cum pro tamen B. 34. pe B. 37. qrtu^r B.

patet quod est crementum multitudinis punctalium in figura A circulari, ratione uniformitatis linee et amplitudinis angulorum supra illud quod est infra B, ratione uniformitatis linee et strictitudinis angulorum. Et ita creditur esse radicalis causa demonstracionis in hac 5 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.

Nec sequitur ex istis quod triangulus magis, et multiangulus minus contineat, sed potius oppositum. Sed bene videtur dicendum contra quod pars porcio minoris circuli minorem curvitatē continet porcione maioris 10 circuli superius; sed omnes completi circuli equalem continent curvitatē. Nec est verum quod in curvitate vel parvitate circuli descenditur infinite, cum status utrobique ponitur ad finitum. Nec obest ad omnem punctum dati circuli minime curvitatē esse gradum 15 curvitatē maximum, qui non sit gradus minime curvitatē. Cum enim quilibet punctus equinoctialis eque distat a centro, nullus est supra alium, sicut nec puncta circuli cuiuscunque concentrici. Unde, sicut nec rectitudo, sic nec curvitas est formaliter in continuo 20 bipunctali; sed primo ad minimum in tripunctali causaliter, que est in qualibet eius parte. Ideo non oportet sollicitari circa partem punctalem rectitudinis aut curvitatē, sed intelligi oportet quod nulla sensibilis porcio cuiuscunque minoris circuli minus curvari poterit quam 25 pars porcio circuli magni mundi, cum gradus sit proximus non gradui curvitatē. 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 videtur 30 superficies proportionaliter curva et constanti colore visibilis summe recta, ut patet de superficie spherę aque.

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 oportet sollicitari circa quantitatem anguli contingencie tante ex contactu recte linee extra mundum; 35 quia, ut alias dictum est, differendum est a solucione talis argucie quousque positum sit probatum. Nec ymaginari est de curvitate, vel caliditate, vel qualitate simili uniformi quod quelibet pars quantitativa sit eque intensa cum suo integro, cum curvitas eiusdem circuli 40

1—2. infra A (?) B.

11. s'p⁹ B.

15. omnem pro esse B.

31. calore B.

32. fir⁹ B.

30. que pro quod.

maior mole sit minori intensior, et curvitas cuius-
 B136^a cunque | completi circuli summe intensa possibilis.

Unde ista consideracio de extensione curvitat^{is} vide-
 tur michi differenter contra quodlibet militare, cum
 5 quocunque curvo signato, ad omnem eius punctum
 intrinsecum est non gradus curvitat^{is}, et proporcionaliter
 ut pars circuli est minor, sibi correspondet gradus
 remissior curvitat^{is}. Et sic habent adversarii dicere
 quod totum circulum et quodlibet curvatum est non
 10 gradus curvitat^{is} et infinitum remissius in qualibet sui
 parte. Et hic vellem quod diligenter considerarent
 metaphisicam de puidditate et passionibus curvitat^{is} 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 parci^{um} curvitate, cum
 quelibet pars habet situatiter propriam curvitatem, que
 causat intrinsece propriam curvitatem.

Sed 2^o si dicatur quamlibet partem circuli eque
 20 curvatam qualibet et cum toto, eo quod curvitas atten-
 ditur penes curvitatem anguli ad punctum extrinsecum
 curvitat^{is} (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 cuiuscunque circuli, licet in infinitum
 magna sit alia. Nam sicut angulus contingencie est
 infinitum minor quam angulus rectilineus alius acutus,
 ut apparet, sic angulus intrinsecus sibi oppositus est
 30 maior quam alius angulus rectilineus. Sic videtur quod
 triangulus rectilineus sit infinitum curvior quam cir-
 culus, et est comparacio curvitat^{is} 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 curvior^{em} in fine quam
 in principio, posito quod ysocheles 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. q^o B.

18. propriam curvitatem (sic) B.

20. curvatum B.

25. minor B.

28. a's B.

30. a's B.

34. cē 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.

3^o 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 curvitas circuli ad curvitem cuiuslibet porcionis, sicut trianguli rectilinei ad angulum continencie et angulum sibi oppositum; sed, quibuscunque circulis | B 136^b annotatis, tantam curvitem 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 maiortate proporcionalis porcionis maioris mi- 20 noris circuli. Nunquam tamen venit ad paritatem curvitas porcionis circuli et curvitem cuiuscunque circuli, cum sint disparis racionis.

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.

Ex quo videtur quod curvitas circuli non habet partem quantitativam omogeneam, sicut 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 subjective, 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 punctualium Deo cognitorum, in quibus consistunt, dato circulo minimi gradus curvita- 35 tum. Nec est putandum quod in quolibet tripunctali circumferencie mundi sit curvitas subjective, que tunc foret per totum summe aspera atque curva. Sed satis

1. \hat{c} B. 17. fut B. 18, 19. utp porco B. 19. r'cupa^o B.
19-21. magis — circuli *twice*; *ib.* r'cupa^o B. 20, 21. d^{re} b^{rb} B. 26. quodlibet, *and so on very often* B. 27. c'ca B. 28. de' B; *ib.* cognita B. 30. ca^{ter} B.; *ib.* et B. 37. fbmcq³ B.

est quod quelibet pars [sit eque] curva cum qualibet sibi pari; penes hoc attenditur uniformitas curvitat^{is} circuli.

Et si dicatur quod quodocumque due linee recte applicantur ad idem, indirecte 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 sicut curvitas.

10 Ad 3^m patet ex dictis solummodo quod prima consequentia non valet; quia satis est quod quelibet pars curva sit eque curva cum qualibet sibi pari quod est sperale. Et ulterius de rectitudine angulorum duorum trianguli rectilinei, eo quod quelibet
 15 semidyiameter circuli causat ad eius circumferentiam angulum parem cum qualibet, et per consequens, una diametro stante orthogonaliter super arcum, tangendo angulum rectum, causabit et quelibet: quotlibet sunt petitiones, descriptiones, et conclusiones geometricae
 20 que videntur refringere istam sententiam; 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 geometricae de pure intelligibilibus, sicut de ymaginibus, leve verbum est et
 B 137^a sine probacionis efficacia eructatum; | et ideo non creditur sibi, nisi efficaciter approbetur. Quod si dicitur capacissimum et multos alios expositores Euclidis illud
 30 asserere; revera multi subtiliores, ut Pitagoras, Democritus, Plato, Epicurus, et inter moderniores Lincolniensis cum aliis, sequentes tramitem veritatis, constanter asserunt oppositum. Ille tales topice rationes in materia doctrinali, deficiente demonstracione, adducte,
 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.

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.

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. ele^{ter} B.
 11. quelibet *pro* qualibet B. 17. can^{do} B. 20. refu^{g'e} B. 23. mte^u B.
 25. verificatur B. 27. erugatum B. 29. capam^m B. 30. pita-
 go^{ess} B. 32. tntat^m B. 37. qu^m 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 of 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 geometricæ non demonstrant cum precisione, sed cum exclusione erroris sensibilis; sicut dictum est de divisione cuiuscunque continui date lineæ, vel dati anguli in duo equalia. Sed modicus in principio error maiorem efficit in processum in fine. Patet quod 5 nullibi demonstratur cum precisione medietas proportionalis duple, cum petitur quod quanta sit proporcio cuiuscunque dyametri quadrati ad suam costam sicut alicuius quadrati dyametri ad suam costam, quod arcus sit de numeris et per consequens de continuis claudicare. 10 Ymmo, capto quocunque 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 coniecturam 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 athomis 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 ratio mensurandi reperitur in numeris, excludens cum precisione quantitatem ad quantitatem proporcionis, attinet errorem quemlibet secundum superhabundanciam vel 40

9. ar⁹ B.
35. ee¹ B.

16. ff¹ B.

21. u^off^o B.

34. eo quod B.

defectum; sic quod si A est duplum ad B, non est plus vel minus quam eius medietas; et sic de aliis B137^b proporcionibus est sciendum. |

Consequenter restat dicere penes quid velocitas augmentacionis attendi debeat; primo tamen supponitur quod motus augmentacionis sit motus secundum quem substantia maioratur. Ex quo patet quod distinguitur a diminucione et motu locali, cum nichil diminucione formaliter maioratur, licet diminucio unius faciat ipsum 10 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] 15 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.

2^o supponitur quod, augmentacione large accepta 20 convertibiliter pro maioracione substantie, est aliqua augmentacio communiter dicta et aliqua proprie dicta augmentacio communiter dicta est maioracio inanimatae substantie. Augmentacio vero proprie dicta est in maioracione substantie animate per corporeum nutrimentum 25 quod sibi assimilat. Prima autem maioracio nomine rarefactionis, et 2^a nomine augmentacionis appropriate exprimitur. Et differunt, ut patet ex dictis. Nam iuxta sententiam Aristotelis (primo De Generatione), ad augmentacionem proprie dictam requiruntur 3^a per ordinem: 30 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.

2^o oportet quod quelibet pars quantitativa sensibilis 35 primo aucti secundum formam eandem sit aucta; et consimile oportet contingere in quolibet motu successivo. Et 3^o oportet quod fiat per alimentum cor-

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 local movement, and both it and the latter from alteration; for instead of different qualities, they only imply a new site acquired.

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,

that the sensible increase should bear on each part of it; and that it should be

11. materiam B. 14. qualitatem *deest* B. 16. est (!) cutis B.
20. aug^mitative B.

9. *Diminucio faciat ipsum . . . maiorari.* As, e. g. the pruning of a tree causes it to grow more vigorously

caused by the assimilation of food.

We must remember that every individual is individuated by what causes it, and that the form which actualises a substance is indivisible.

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 complement of augmentation.

poreum adveniens similitanti; quod speciale est augmentationi. Sed iste due posteriores condiciones habent difficultatem aput irretitos in singulis principiis. Ideo notandum, ut allibi diffuse exponitur, quod omne suppositum speciei capit individuacionem ab omni illo quo capit causacionem; et sic est dare gradus individualibus singularium secundum ydemptitatem numeralem unius vel plurium causarum a quibus individuacionem huiusmodi sorciuntur. Sed notandum quod quelibet forma substantialis mixti et specialiter anima quecunque, subiectum suum immediatum actuans, est indivisibilis quo ad molem. Sed et illud declaratur alibi diffusius.

Ex quibus 3^o potest convinci quod, manente eodem animali, manet eadem forma, a qua caput vel aliud organum habet propriam quantitatem. Et per consequens, 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 quantitativam [primo aucti sensibilem mentem eandem in numero secundum formam, oportet in aliqua parte temporis augmentari.

Nec obest quotlibet elementorum in humidorum inimicicias generari, cum sita prima digestionem in ore 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 3^o in corde alimento decocto, vel subtilius primo virtus regitiva distribuit per arteries et venas spiritus triplices cum sanguine membris augendis, quantum exigunt de natura. Et adhuc in venis capillaribus secundum rorem causabilium et glutinum est quantum sensibilis destillacio, et membrorum attractio, ad motus augmentationis ultimum complementum. Et sic semper manet membrum spermaticum aparentibus

3. un'los B.; *ib.* finis B. 24. hūnoi^o B. 27. tolebrari B.
28. sub^o B.; *ib.* a^o B.; *ib.* mit'co'i B. 33. ca^o cambium (?) B.

28. *Mitricori* and below, *mit'li*. 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 immediatum et essenciale vite vel anime.
- 5 Forme quidem complexionales inducuntur in cambium, quod continuatum cum membro augmentato, nec augetur, nec membri 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 mitriti ut membrum secundum terre dyametrum fiat maius, tamdiu manet augmentacionis potentia. Unde, sicut vis vini per aque infusionem adeo ebetatur 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 augmentacio satis velox. Et ad terminum status augmentati, claudicante calore, assimilacionem completant, in adipem vel arvinam animam; et deum in seminio, mortificatis corporalis spermaticis, defluit cibale humidum cum humido naturali, quo usque subiectum anime sit consumptum ad inum naturale.

The emm, given by the parents, always remains in the body, combined with the humours produced by alimention; and this compound seminal humour is the immedate 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 midril remains entire. But this assimilative force diminishes as more matter is assimilated.

- Et patet quod augmentacio differt a nutricione, a
- 25 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 auerentur. Nunc autem fit totum novum, et naturaliter deest virtus et organum, cum natura in [in] animatis non intendit
- B 138^b talem finem | .

Augmentacion thus differs from nutrition as it implies it from combination, since that which is increased merely gains quantity; and from the growth of inanimate things on account of the vital changes it produces.

- Ex istis tamen potest caveri error in quo quondam desipui, quod humidum cibale sit in aucto inbibitum, usque ad coextensionem alimente 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. canibm̄ B. 11. mit^{ti} B; *ib.* terram B. 17. et *pro* sic B.
 19. calore est B. 20. arm̄a B. 21. fem̄o B; *ib.* mortu^{is} B. 23. 9^{sup}
 adim̄ B. 29. di'git = dirigit ? B. 34. animatis B. 36. in quod, B.

for then man
might be
immortal by
nature, the
subject of life
being
indifferently the
humour given
by nature and
that supplied
by food.
On the
contrary, this
first subject
of vitality must
be continually
weakened by
the mixture of
fresh elements,
until the time
of dissolution
comes;
just as we see
that corn ripens
in the space
of a year, but
cannot be
made to live
longer.
And there
is besides an
action of the
celestial
spheres on the
human body,
limiting its
duration:
to which some
pay no
attention,
thinking it
can be
indefinitely
weakened.

The alimentary
humours
hinder this
action of the
spheres.
If the heavens

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 essenziale 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 qualitibus sic ipsam respiciant, est inevitabile quin vel ocius vel in fine sue peryodi corrumpatur. Sed sicut segetes infra annum naturaliter maturescunt, et, quantumcumque bene servate, 15
ad ultimum dissolvuntur; sic sciendum est de homine et de quocunque animali. In quolibet enim anno solari, deditus optimo regimini, inevitabiliter veterascit. Tunc vero foret accio tardissima inter calorem naturalem et humidum 2^m mocionem celi per medium continuitatis 20
et nutrimentum appositum instrumentaliter transmutatis, et istam mutacionem celi limitantis perodes, ex 2^o De generacione. [Hoc] pretermittunt pueri, putantes ex proporcionis equalitate, vel eius diminucione, accionem in mixto posse cessare similiter, vel remitti, vel tardari 25
eciam ad omnino [non] gradum. Sed indubie oportet tunc prohibere celum difforme, ne sic, secundum diversos angulos radorum variatorum in fortitudine, currat sibi opposito in circuitu, et percuciat sic varie partes mixti; et quod partes hominis uniformis mix- 30
tionis haberent continue alimentum eis adequatum: quod est impossibile propter necessitatem et omogeniarum parciim, et propter impossibilitatem motuum quibus paulative partes alimentum attrahunt, conglutinant, extendunt. 35

Sicut 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. 1^em^o B. 13. vtia notia? B. 20. 9t^a B.
23. Hoc deest B. 26. adomio; ib. non deest B. 29. 1^a fbioto B;
ib. pertuciat B. 36. Ach^{mo} B. 38. sed pro sic B.

staret, et elementa in homine essent ad tantam equalitatem proportionaliter sublimata quod non dissolveretur per accionem ab intrinseco, nec egerent influencia celi ad regulandum modum sue
 5 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 dispositio cui repugnat mortem succedere
 10 vel coesse. De istis autem dispoicionibus, quomodo sunt philosophice possibles, est teologorum discutere.

Quo potest caveri error quo creditur auctum, a
 B 139^b principio | augmentationis usque ad finem, continue
 augeri. Tunc enim foret omne auctum per tempus
 15 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 agregatum in fine servatum excederet totum mundum. Oportet ergo
 20 quod in certis instantibus, finitis eciam nobis, licet incognitis, fiant continuaciones minutarum parciū alimenti. Et per consequens oportet quod finite mutationes instantanee principient motum augmentationis, quem commentator ponit componi ex multis motibus
 25 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 augmentationem preparatorii, ut alteratio, motus localis, rarefaccio, condensacio, com-
 30 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 augmentationis temporalem, dicitur ut supra, quod ipsa est adequate per tempus compositum ex instantibus intercisis, et pro mensuris mediis non existit; in quibus tamen habet dispoicionem vel potenciam propinquam ad existenciam actualem. Et correspondenter dicitur de servacione,

5. $\widehat{\Pi}$ 1uq̄ B.
 deest B.

6. mortalitas B.

10. coec̄ B.

21. in concretis B.

23. augonis B.

18. oportet; ut

28. p̄pato'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.

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 it were so, no increase would be possible.

que ex magna augmentatione elicitur. Nec movet quod augmentatio vel ens post sui corrupcionem reincipit; quia talia successiva, tempore discontinua, 2^m partes frequenter desiniunt et incipiunt sicut continua, licet non possint, postquam totaliter deficerent, reincipere eadem in numero. Nec illud negabitur circumspecte ab aliquo qui concedit tremorem, sonum, saltum vel motum aliquem ex reflexis motibus agregatum. Sicut ergo progressus vel saltus per stadium requirit multas quietes interpollatas requisitas primarie ad partes posteras, et ex omnibus illis fit una progressio agregata seu cumulata; sic proporcionaliter de augmentatione 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.

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 vere continuus. Sed hoc non sapit vere ponentibus composicionem 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 tunc est quies sibi opposita; tunc non similiter vel si est, sicut 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, cavari 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 omnem partem assimilatione 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. nilens *pro* vel ens B. 10. ddecept^o (?) B. 26. 1ⁿ B. 31. c'c'o
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 augmentacionis mole indivisibilem multiplicari, ut dictum est de aliis formis, que individuationem suscipiunt a subiecto, et quotquot sunt 10 partes huiusmodi primo aucte, tot sunt augmentaciones mole indivisibiles que constituunt totum motum.

Unde, ad cognoscendum fundamentum huius materie, oportet scire quod parcium hominis sunt quedam simplices, et alie ex eis compositae. Simples autem 15 spermaticae sunt os, cartilago, et ligamentum, nervus, arteria, et vena; et quandoque non spermaticae, ut caro, pinguedo, adeps, auxongia, villus. Et ita sciendum de medulla, pilis, et unguibus, que ab aliquibus vocantur membra, et ab aliis partes superflue. Cuiuslibet enim talium quilibet pars quantitativa per se 20 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- 25 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, tibie, cum sibi similibus. Post 3^s quidem digestionem, generatis 4^{or} humoribus et 3^{bus} spiritibus, augentur tres manieres membrorum constancium. Sed membra simplicia et membra consimilia, membra composita communiter; 35 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. auxugi^o B.
21. est *deest* B. 23. pan^oclis B; *ib.* cunctis B. 34. gut^o 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; sicut 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 5 tempore augmentacionis augetur proprie; et per consequens habet in se augmentacionem | huiusmodi B 140^a successive; vel aliter est principium intrinsecum ita aucti, et tunc habet augmentacionem multiplicatam per se totum. Et patet quod assumptum argumenti peccat 10 in materia, cum multa membra antiqua augentur, et per consequens partes quantitative inaugmentabiles non subiciantur quieti ab augmentacione, cum eius oppositum non sit natum formaliter inesse. Conceditur tamen quod tam per partem novam quam per 15 partem antiquam est augmentacio modo suo, et simul cum hoc eius privacio, sicut Deus qui natus est in esse menti per gratiam, deest menti peccatrici ob eius culpam, licet assit secundum eius essencialem conservanciam. Sic augmentacio deest elemento secundum 20 formalem et denominativam inherenciam, licet insit secundum naturalem causanciam.

Et quo ad velocitatem motus augmentacionis, dicitur quod attenditur penes quantitatem aquisitionem primo aucto, in comparacione ad tempus. Non enim 25 est continue nova quantitas per totum, ut sompniavi quando negavi compositionem continui ex non quantis. Et proportionaliter dicendum est de rarefaccione. Illud enim rarefit velocius quod per equale tempus vel minus occupat cum corpore inibito plus. Et tantum de situ 30 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 potenciam propinquam in suis causis proportionaliter, sicut motus 35 dicitur inesse corporibus.

Et de istis incidit tractandum de velocitate motus alteracionis. Sed primo, supposita communi noticia

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.

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

3. S^e B. 26. nowa B. 33. exna³ 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.

de alteracione, quod est et quid est, notandum quod solum substantia sensibilis est proprie alterabilis, cum totum genus motus successivi sensibile commune sit. Substantie autem sensibiles, ut forme et materie; et 5 intelligencie sunt alterabiles alteracione communiter dicta, acquirendo bonitates, sciencias, et alias qualitates spirituales non habentes contraria, sed privative opposita. Sed fundamentaliter cognoscendo substantiam alterabilem, oportet cognoscere materiam vel formam 10 et earum compositionem, cum substantia sit prior accidente, cognitione et definitione et tempore. Quo ad noticiam, ymaginandum est igitur unam essenciam corpoream, in principio productam, esse ex indivisibilibus composita, et occupare omnem locum possibilem 15 nec esse secundum eius partem aliquam corruptibilem, nisi forte per divisionem vel separationem unius partis a reliqua. Sed cum oportet illam totam essenciam habere quamcunque partem talem aliqualiter continuatam, patet quod illa essencia simpliciter est 20 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 gramatici dicunt pronomen singulare meram substantiam. Sed philosophi, ulterius considerantes, B 140^b quamlibet | talem essencialem 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 30 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 substantia corporea, 35 que est genus, non univocatur, nisi et compositione ex materia et forma. Sed quando loquimur de materie et forma tantum, vocamus ipsas ipostas, vel naturas, vel supposita.

Considerando ergo specialiter partem sublunarem 40 mundi esse in potencia ad esse ignem vel aerem (vel sic de aliis sensibilibus corporum), posuerunt potenciam

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.

Restricting our speculations

25. quamlibet *twice* B.

29. $\widehat{\text{lucē}}$ B.

35. compositionem B.

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
mixture, 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 igneitate[m], aeritate[m] vel lapideitate[m] (et sic de aliis), esse formam. Et compositum qualitative ex hiis, quod est compositio, 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 subsistentiam vel usiasim; compositum vero ex hiis vocant superstans. Quarum quelibet differt a reliqua, et omnes ille sunt eadem singularis essentia; ut materia prima, 10 vel potencia dicens relacionem ad formam vel actum, est primum horum trium, ex quo procedit actus, cum claudit contradiccione[m] quod talis materialis potencia sit sine forma vel actu, sicut econtra claudit contradiccione[m] aliquam formam corpoream fore sine ma- 15 teria; et claudit contradiccione[m] illa duo reponi, nisi sequatur ex hiis compositio vel compositum, quorum trium quodlibet est eadem essentia singularis vel essentia corporea.

Unde, inter alias occupationes varias quas habui, 20 doleo de solitudine mea superflua, ymaginando formam et materiam esse absolutas res quarum utramque posicionem existere per se, et ex illis coextensis resultare unum ad aliqualem motum quo duo liquida ymaginantur 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 substantia, 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, compositio, vel quietacio aut finis intrinsecus.

Sed diversimode locuti sunt philosophi in illa materia; ut Plato voluit | concedere eandem materiam vel B 141^a essentiam quam appellavit hylene[m], tenebram, vel caos, 35 nunc fore ignem, nunc aerem, et sic de ceteris elementis ac mixtis; quia in nulla accione nature superadditur negativa essentia absoluta 2^m totum, eo quod generacio esset tunc creacio, et corrupcio esset annihilacio. 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. poi^om B.

formarum, negancium generacionem esse in corporibus, sed solum alteracionem.

Sed sermo Aristotelis est michi placencior, quia materia est eterna cum illa essencia, sed forma et compositum simul inceperunt. Et sic salvatur generacio substance, et tollitur annihilacio cum creacione forme extense.

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 essencia singularis, cum totum sit perfectius quam aliquod elementorum suorum. Similiter, expositorie sequitur quod quelibet talis substantia generata fuit eterna a parte ante, creata in principio instanti temporis, eo quod tam essencia quam materia, que est idem corpus, sic se habent; et ex alio latere sequitur quod tam essencia illa quam materia sunt naturaliter generabiles et corruptibiles; quia tam forma quam compositum est corruptibile, et utrumque illorum est essencia illa: ergo, illa essencia est corruptibilis. Similiter, iuxta illud sequitur quod generabile est ingenerabile, corruptibile incorruptibile, sive sensibile insensibile, calidum non calidum; et sic de quotlibet oppositis predicatis. Nam illa essencia est ingenerabilis, incorruptibilis est, et generabile, et corruptibile; quia illud compositum quod incepit esse per quantumlibet; quia tempus post illam essenciam; et alias corumpetur, illa essencia manente. Et conformiter patet (cum ignis sit calidus, et materia prima eius non calida), si essencia eadem sit utrumque, tunc calidum est non calidum: et sic de aliis oppositis.

Quantum ad primum dicitur quod prima consequencia 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 singularem essenciam quam quo ad suppositum (sed pars quantitativa est simultanea); sic pars qualitativa mediat in hoc, sed differet a suo toto, sed est eadem essencia.

Differt autem iste modus trinitatis a trinitate anime et a trinitate que Deus est, specialiter in hiis tribus.

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.

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. $\frac{1}{2}$ B.
37. $\widehat{\text{fimt}}^{\text{am}}$ B.

14. app^{a} B; $\widehat{\text{pu}}^{\text{a}}$ B.

33. unde *pro* sed bene 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.
II. 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 quo-
libet 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 tercium 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 ex-
trinseco efficiente; sed illis positus, sequitur } 2^m forma- B 141^b
liter de natura rei. Qui autem dicunt quod forma
potest exui a materia per se, sicut essentia a corpore,
dicunt quod compositio est accidens utrique compositi-
torum, cum forma prius creatur quam producitur a
natura 2^a. Sed gaudeant illi de invencionibus suis, 15
quia puto me scire quod nunquam probabunt ma-
teriam vel formam esse res distinctas ab essentia que
est illa 3^a. 3^o in hoc differt illa trinitas ab aliis supra-
dictis, 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 ge-
neribus 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) inceperunt 30
esse quando incepit esse quod *hoc est ignis*. Et per
idem non sequitur quod materia illa vel natura gener-
atur aut corrumpitur, quamvis illud compositum sic
se habet, et sic de syllogismo expositorio. Et si que-
ratur 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 substancialie essencie,
ut essentia ut huiusmodi est in aliqua specie. Ideo
dicunt autores quod ipsa et materia non possunt de- 40
monstrari, nec sunt quid, nec quantum, nec quale, nec

3. h' p'm B. 4. quid(!) B.
3g. before essentia nec pro ut (?) B.

26. ad pro aliud B.

34. et 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, sicut 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, desiisse, 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 conveniunt 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 | temporalibus 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, sicut allibi diffuse declaravi. Non ergo sequitur: *illa essentia est generabile et corruptibile naturaliter*: ergo, *sic generabilis et corruptibilis*. Nam essentia significat
25 absolute, ante eius genus, rem integram, sed natura significat concrete materiam vel formam, vel 3^o, integram essentiam esse hic vel illud in speciali.

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.

Ad 3^m, patet ex supradictis quomodo unum oppositorum predicatur de reliquo, et quomodo non. Nota
30 tamen quod materia prima nec est calida nec est frigida; et sic de aliis denominationibus accidentalibus, quamvis sit subiectum remotum huiusmodi qualitatium. Omnis namque qualitas est forma qua subiectum est formaliter accidentaliter quale; et sic est subiectum

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. *pa* 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. 2^d. Having this property only imparted and not natural; as a body in which there is much fire.

The two preceding are formally hot. 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 dispositio vocatur lumen, sive sufficiat ostendere se ipsum distincte (ut 10 dispositio in mixto terminato, que vocatur lumen reflexum); sive sufficiat confuse ostendere se et suum subiectum; ut dispositio in medio dyaphano ad ostendendum visibile extra medium, sicut que dicuntur species lucis, que lumen dicitur, vel species illud que 15 similitudo coloris appellatur. Lux autem est forma substantialis 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 migratione 20 luminis et de eius realitate sunt impossibilia. Stat tamen 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 disgregando. Et ex talibus modis miscendi atthoma habent lapides terre, nascencia 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 calefacere 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 potentia, virtus et sufficiencia a qua calefaciant, non vocantur caliditas, sed una qualitas supereminencior. 3^o 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 calefactive immutant gustum et non tactum; vel ut sunt mutativa complexionis 2^o 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 denominationibus calidum esse frigidum, humidum et siccum; et unum reliquo calidius 15 tot modis potest dici, quot modis dicitur calidum.

Notetur ergo denominacio univoca subjecti, et videatur quante distant lateraliter gradus denominationis 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 intensio. 25 Et quo ad velocitatem notant latitudinem qualitatis acquisite vel deperdite 2^o se totum subiecto suo toto primo; et penes illam in comparacione ad tempus attenditur velocitas alteracionis. Et illi dicunt quod, sicut non omne corpus est eque longum vel latum, 30 sicut aliqua eius pars; sic nec qualitas quo ad eius extensionem. Et sicut 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 acucies lancee, quanta est acucies 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. 3^o 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. f'udo B. 17. lat^{ior} 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 in 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 intensum quo ad subiectum, est tantum intensum sicut aliqua eius pars quantitativa usque ad minimam partem cui gradus secundum molem indivisibilis correspondet. Et sic | mixta dicuntur B 143^a 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 intensior caliditate aeris que est disparis speciei; sicut siccitas terre in genere suo est intensior frigiditate terre. Manet autem in transicione 15 subiectorum illud genus propinquum qualitatum huiusmodi, et idem secundum subiectum essencie extra genus, non autem secundum idem individuam substancie. Et sic, ratione raritatis aut densitatis, est unum elementum disposicius 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 qualitibus, vocatis vulgariter primis, sicut mixta imperfecta vocantur communiter elementa. Nec peccat suasio Aristotelis quod sunt quatuor elementa secundum combinaciones 4 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 porporcionalitate absolute penes intensionem vel multiplicacionem huiusmodi qualitatum respectu passi, quam porporcionem motus alteracionis consequitur, 35 sed penes sufficienciam huiusmodi qualitatum ex dispositione subiecti, ex influencia et aspectu celi, cum

14. frigiditati B. 15. trū^{one} fiblor^e 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 accionem propter proporcionem voco ydoneitatem ad agendum. Et sic potest eadem qualitas dici intensiva quo ad denominationes et acciones multiplices.

- 5 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 compositione [ut in] fumo, igne, aqua, terra, et aere; quandoque non manet, illa divisa. Et sic simplicia mixta possunt variare mixtionis gradus, stante eadem
- 15 forma, quia aliter non haberet mixtum permanenciam agendo vel paciendo.
- Unde, pro leviori locutione in illa materia, notandum, secundum modum loquendi Platonis et scripture, quod essencie possunt accipere denominationes 2^m species diversas. Et sic concedi potest quod ignis est
- H 14^{3b} 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 quicumque numerus corporum sit corpus. Quibus suppositis, potest dici quod corpus successivum, ex partibus vicissim generatis compositum, alteratur et recipit quantumlibet dispares denominationes 2^m partes huiusmodi, licet non sit aliqua earumdem. Ut, ponente
- 30 quod agregatum, 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 combustionibilium 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. mixtio^{nis} 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
are altered in
their parts
remain one
eternal being.
Yet I do not
see that this
can apply to
the
denominations
of *small* and
big.
We can say
that a man is
white, but not
that he is big,
because his
face is so.

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 fire-
ness 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

suis partibus alterantur. Non tamen video quod idem corpus stet simul quantumlibet parvum et magnum diversificari, sicut est simul 2^m partes dispariter qualificatum; quia quantificatio respicit totalitatem sicut parvificacionem uniformitas; et sic de aliis multis, de 5 quibus non sequitur: *hoc est unifornale magnum vel parvum* (et sic de ceteris denominacionibus condicionatis) 2^m partem: ergo hoc est similiter huiusmodi. Sed de qualitatibus denominacionibus, concedimus hominem esse album, quia secundum partem, ut faciem. Sed 10 tamen negamus hominem esse sic parvum vel magnum ut facies; quarum denominacionum distinctionem relinquo posteris.

Redeundo igitur ad proposicionem dicitur quod nec materia prima nec forma est calida, sed tam essencia 15 quam compositum ex materia et forma est calidum, sicut compositum per se generatur et corrumpitur; 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, sicut quantitas quantum. Sed tunc supponit terminus concretus similiter, ut patet allibi.

Uterius queritur quomodo igneitas (et sic de qua 30 libet forma substanciali extensa) non sit accidens, cum denominat illam essenciam accidentaliter formatam, eo quod talis forma potest sibi advenire et abesse preter eius corrupcionem. Huic dicitur quod omnis forma substancialis est accidens materie prime et illi essencie, 35 sicut et humanitas est accidens verbo; utrumque tamen est in se substancia, licet diversimode, et per consequens nulli inherens. Sed nulla essencia, sub ratione qua essencia, dicit vel genus vel speciem substancie, cum oporteat | hoc fieri per substancialem substancie B 144*

2. sit B. 3. dim'it' B. 4. totalitatē B. 5. p'uitū B. 6. uniforc B
7, 8. totalit' B. 10. 31^m (?) B. 11. Reddendo B. 26. frigidaceret 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
 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.
- 5 igneitas. Sed illa est prior quam caliditas, levitas, siccitas, vel aliud accidens in communi. Ideo est substantia faciens subiectum aliud, et non aliquantum, vel aliqualem, vel alicuiusmodi formaliter. Ideo, quicumque forma prius naturaliter inexistit illi essencie,
 Every form that determines only primordial matter, is substantial; all others are accidents. Being denotes the substance; generic terms add qualities.
- 10 est substantialis forma; et alie naturaliter consequentes sunt accidentia. Omne ergo formale quod nulli subiecto accidit, nisi materie prime, est substanciale; et composito ex tali et materia accidunt accidentia tanquam substancie alicuius certe speciei. Unde 2^m grammaticos, esse vel essencia dicit substanciam meram,
 Being denotes the substance; generic terms add qualities.
- 15 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 induccione 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,
 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
- 25 habent certas regulas agendi et quomodolibet aliter se habendi, limitatas sibi a natura: ut ignis, sicut est purissimum et perfectissimum elementum, sic est maxime activum, et minime violenter susceptivum peregrine impressionis; ut non putrescit, non fit humidus
- 30 aut frigidus, sicut cetera elementa extranee 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 improprias 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 inmixtum; terra humida, vel aqueum imbibitum; et sic de mixtis, habentibus
- 40 elementa talia. Admodum probabile autem est quod terrea mixta imperfecta agregata sunt talia, et non

10. eciam *pro* est B. 23. quomodo *deest* B. 40. admo B. 41. terra B.

owes it to herv
 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.

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

pura elementa. Non enim est possibile quod contraria
 sint extensa, sed dum unum elementum agit in reli-
 quum, subito generantur et corrumpuntur atthoma 2^m
 totas quantitates et formas substanciales; et cum idem
 quod dat formale dat tamen hoc correspondenter 5
 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; sicut patet per multa
 experimenta, quibus scitur violentum vigorosius redu- 10
 cere se ad dispositionem | naturalem, quam sufficit B 141^b
 non violentatum agere. Agit tamen in virtute super-
 prioris regulantis. Et ideo non mirum si dispariter
 agat cum disparibus circumstanciis. Apparet ergo
 nobis qualitates esse per totum, cum tamen non sit 15
 ita. Unde ignis, agendo in terreum vel aqueum, non
 immediate producit ignem, sed resolvit materiam in
 vapores vel fumos, et sic subtiliat ad aerem; et de-
 mum inducit formam ignis. Non quidem est possibile
 quod forma substancialis sit reliqua remissior 2^m partes 20
 eius intensivas, cum substancia non suscipit maius aut
 minus; sed partibilter inducitur quo ad subiectum.
 Et subito consecuntur qualitates nove in toto formas
 novas, cum impossibile sit qualitatem ultimam singu-
 larem in utroque elementorum manere symbolorum 25
 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 30
 hoc frigus, constipans aerem, generat ex eo aquam;
 sicut econtra calidum rarefaciens aut resolvens in fu-
 mos aut vapores, generat aerem aut ignem. Non
 tamen scio quod ex aliquo tali elemento immediate
 generatur terra, sed ex commixto, quod est terreum 35
 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. 17 B. 7. tam B.
 14. Oportet B. 23. non (!) B. 26. fymblore p^{ta} B. 34. im^o B.
 36. adm B.

omnia supponunt elementa agere sine regula limitante, et continue unum durancius tollere de suo subtriplo, et reliquam se habere, ut oportet, [ad] sensum; ratio tamen contradicit talibus ymaginibus. Probabile tamen est quod elementa possunt taliter misceri in mixto, quod nunquam unum aget in reliquam; ymmo quod anima sufficiat elevare corpus suum quantumlibet celeriter; et omnia corpora mundi fiunt incorporalia, propter novum modum componendi illa ex atthomis, et cessationem motus celi. Quis, queso, philosophus scit virtutes corporum quas possunt habere ex diversis mixtionibus et diversis formis, que adhuc latent in visceribus nature incognite?

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 disparem gradum humiditatis, exalacionem terrestrem, et vaporem aqueum. Quod si aer et ignis habundancius participant in mixtis imperfectis, principiant vegetabilia et sensibilia, secundum quotlibet gradum. Unde, inter sensibilia animata et inanimata, sunt quedam de quibus dubitatur utrum nutriuntur vel non; ut fungus terre inter vegetabilia. Et sensibilia sunt quedam de quibus dubitatur, utrum habent motum dilacionis vel constrictionis a sensu; ut spongia marina. Et sic mediant inter rationalia et irrationalia 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 durandi et recipiendi influenciam a celo; et breviter quomodocumque naturaliter se habendi.

Et conformiter ymaginandum est de generibus formarum substancialium: ut infima est forma elementaris, et proxima forma inanimati mixti, postquam 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 creatur a deo, et est multiplicata per totum hominem

3. ad. deest B.
24. untr'utr' B.

8. sunt B.

16. g^offati B.

20. pti^{tes} 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 indivisibiles, multiplicatae per totum, sed requirunt corpus organicum ad suum esse, sicut non habent operationem independentem ab organo corporali. Verumtamen 5 omnis anima multiplicata est cognitiva communis multiplicati ut transcendentis et communium accidentium. Sed non est possibile animam distincte cognoscere substantiam rationalem sub ratione substantie, nec animam multiplicatam et separabilem substantialiter 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 anulorum 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 habentium duo corda et ceteras partes geminatas supra diafragma, et sub diafragmate solum membra qualia convenirent 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 calculancium interimunt multas opiniones et multas ymaginaciones 30 modernorum. In omni namque veritatis examine precellit ratio, cum auctores trahendi sunt ad concordanciam rationis iuvamine, non e contra. Nam non dubium quin ratio docuit Aristotelem, Platonem, Parmenidem et Democritum, vel quemcunque alium ho- 35 minem, quidquid invenerit veritatis.

1. $\widehat{\text{cor}}^t$ B. 6. $\widehat{\text{g}}\widehat{\text{u}}\widehat{\text{u}}\widehat{\text{s}}$ B. 7. $\widehat{\text{u}}\widehat{\text{m}}^t$ B; *ib.* $\widehat{\text{g}}\widehat{\text{u}}\widehat{\text{u}}\widehat{\text{u}}^c$ B. 15. p'o B.
20. $\widehat{\text{c}}\widehat{\text{c}}$ ($\widehat{\text{c}}$) B. 28. in *deest* B. 30. $\widehat{\text{u}}\widehat{\text{m}}\widehat{\text{u}}\widehat{\text{t}}$ B. 33. $\widehat{\text{libac}}$ *pro* iuvamine B.

CAPITULUM DECIMUM.

Sequitur iam ultimo de propositionibus temporalibus tractandum. Cuiusmodi sunt yppothetice adverbii temporis copulate, cum correspondenti actu anime | ; 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 sicut proprietates localium. Idem enim est dicere *Sor est quando Plato est* et dicere quod *Sors 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*; sicut 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 2^o 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, sicut nec oportet quodlibet signatum esse ubicunque suum signum est, sed sufficit quod sit ubilibet. Nam, iuxta sic opinantes, quidlibet esset ubique commultiplicatum 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.
18. ego B. 20. vocalur B. 22. exore B.

9. q̄ pro quando 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 accidens esset immobile. quia esset ubique; cum tamen ex alio latere sequitur quod omne accidens acquisitum alicui sit acquisitum cuilibet subiecto, et sic quodlibet agens sufficit quantumlibet distanter agere, movendo omnem substantiam, mota substantia una, eo quod omnem motum vel materiam motus quam haberet aliqua substantia, haberet et quelibet. Ideo sic opinantes haberent 10 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 affir- 15 maciones positive que sunt in Deo principalius, sunt ubique, sicut accidentia eukaristie conceduntur a theologis concomitanter multiplicari cum Cristo. Et multo magis humanitas Cristi esset ubique, et per idem omnis substantia, cum vere in illo sit, commultiplicatur 20 cum illo ubique. Et sic conversaretur in celo, ymmo a nullo distaret.

Similiter, *te esse* non est extensum, sicut nec *te moveri*; et est alicubi, ex hoc quod est. Ergo est multiplicatum vel punctale; et cum non sit ratio quare 25 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 B 146^a tui, et non movebitur ad illum locum: ergo nunc est ibi; 30 conformiter mota parte tui, et residuo quiescente ad omnem punctum tui, foret tam motus quam quies contraria, quia ibi foret ita: *et hoc movetur et quiescit*.

Similiter ubicunque est ita quod homo est, ibi homo est; sed ubique est ita quod homo est: ergo, 35 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 40

11. modum B. 16. *nē pro* sunt B. 20. sit (!) B. 28. ptg
abscisio 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
 5 sunt in omni loco, cum quelibet affirmacio habeat
 suam rationem essendi in quocunque tali loco, sequitur
 quamlibet affirmacionem esse ubique. sicut ubique
 causat relaciones et quotlibet alias veritates; et per
 consequens est ibi secundum efficaciam et conser-
 10 vacionem.

Ad istud dicitur quod tripliciter dicitur *esse alicubi*:
 primo, potencialiter, sicut rex dicitur ubique esse in
 regno, ubi est eius potencia, vel habitus agendi et
 disponendi. Secundo presencialiter: sicut rex ubique
 15 dicitur esse in aula sua presens, dum habet actualem
 noticiam ex sua presencia que ibi sint, et ad omnem
 punctum illius cognoscitur esse presens. 3^o modo es-
 sencialiter quo ad locum in quo est adequate. Et
 michi videtur quod duo modi primi essendi alicubi
 20 sunt figurativi et negandi a loyco, si desit ibi modus
 essendi 3^o modo, quia tunc quilibet 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
 25 in diversis, sicut difformiter causat diversa: quod tan-
 tum 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 se-
 quitur *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 im-
 mediate 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 essen-
 cialiter. Sed est ordo secundum quem prius causat
 lumen sibi propius quam lumen sibi distancius; sed
 est longe aliter de causacione Dei.

Ad primum argumentum audivi 4 responsiones, qua-
 40 rum prima dicit quod tales veritates nullibi sunt, sed
 in Deo causaliter. 2^a 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

12. pot^r B. 13. h3 = habet B. 17-18. ≠^r B. 21. quod *pro*
 quia B. 27. n̄ B.

God only as in
their cause.

2. That they
are in God and
the world, but
in no part of
it.

3. That these
past and future
truths are only
where they
were or will be
true.

4. That they
are
everywhere;

mundo, sed in nulla parte mundi. 3^a dicit quod tales pretericiones et futuriciones solum sunt ibi ubi fuerunt vel erunt illa quorum sunt pretericiones vel futuriciones. 4^a via dicit quod tales veritates sunt ubique, quia ubique immediate causant quotlibet alias veritates; et 5 per consequens, cum non habent instrumenta per que causant, sed immediate per se ipsas, sequitur quod sunt ubi causant. | Si enim aliquis esset locus in quo B146^b 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^{um} 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
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

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 (dimittendo 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 habens alium modum essendi quam per causacionem in aliquo loco, solum est ubi illo alio modo est; ut 30 replecionem loci, actuacione in loco, vel alio tali affinio.

Unde negatur quod humanitas Cristi sit ubique, quamvis verbum, quod est illa humanitas, sit ubique; negatur eciam 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 quomodocunque accidentatum in Eukaristia quo ad accidentia absoluta independencia a 40

8. ubique B; *ib.* Si enim aliquid esset | si enim aliquis esset B.
31. affino; offv B. 34. correspondentis B. 35. sequitur nec sequitur B.

loco, sicut 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
 5 in Eukaristia; sed non est sic de accidentibus respectivis.
 Et ex hoc subtiliantur quotlibet conclusiones.

Christ's Body
 has in the
 Eucharist all
 the accidents
 that are
 independent of
 place.

Probabile vero videtur quod omnes partes correspon-
 dentes Cristi sunt in Eukaristia sine posicione, figura,
 vel quantitate harum continua, sicut humanitas Cristi
 10 non concomitatur ubique existenciam Verbi quamvis sit
 eadem persona; et quo ad permanenciam correspon-
 dentis transsubstantiati soleo dicere quod non anichi-
 latur vel corrumpitur ex vi conversionis, sed manet
 unum corpus subiectans accidentia panis, quod voco
 15 corpus mathematicum in abstractum. Sicut enim sub-
 stancia prius non est ens quam est quid, sic panis
 prius natura est corpus quam est panis vel cuius-
 cunque alterius speciei specialissime. Et sic idem esse,
 quod prius est panis, manet corpus sub illo gradu
 20 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
 B 147^a existens per illum | situm, sed subordinatur ut sit
 sacramentale signum corpori inibi principaliter existenti;
 ideo non manet post conversionem panis; sicut quidam
 dicunt propter talem causam elementa non manere in
 mixtis in actu, sed tantum in potencia. Quia vero ista
 30 materia isti loco est inpertinens, ideo non tracto eam
 ulterius, sed expecto determinationem tractare de
 speciali quidditate illius sacramenti sensibilis remanentis.
 Accidens autem est sicut quelibet creatura est sub-
 stancia, quia per se illis accidentibus que videmus
 35 subiectata; quia aliter foret nimia sensus illusio.

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
 transub-
 stantiation.
 But this being
 irrelevant
 matter, I prefer
 dealing with it
 separately.

2. figa B. 3. que B. 7—8. corr^e B. 25. per illum | per
 illum B. 26. ibe? 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.

We thus admit that things are said to be in different times and places most equivocally; as we see for spirit, matter, and compounds of both. The soul is more where its desire is than where its body is; the power of vision is with its object, and may be said to go forth towards it. It disposes the intervening space to become visible, and this is the image that we see confusedly. When we look in a glass, we see the mirror's shape, size, &c. confusedly and its place 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,

Redeundo ergo, concedendum est res esse valde equivoce in locis et temporibus, ut patet tam de corporalibus quam de spiritualibus. Res vero que simul sunt corporalia et spiritualia dicuntur locari equivoce, secundum disparem rationem verborum; ut heroyci⁵ sensibili modo dicuntur esse in celo, cum non solum causant in celo relaciones, sed supereminenter afficiuntur et laborant in terris circa celestia. Unde, secundum Lincolniensem, anima est verius cum illo cui afficitur quam ubi informat; et illo modo dicunt philosophi¹⁰ virtutem visivam (et alias) subito egredi et esse cum sentitis: quod sane intellectum non habet calumpniam. Et sic aliqui vocantes species sensibiles in medio dicunt quod ipsum multiplicat se intensius per totum medium; quia aliter non esset res principaliter naturalis, ubi¹⁵ cunque videtur. Et sententia illorum est unica cum ponentibus species; quia nemo dubitat quin medium habet disposicionem ad causandum visionem; et *medium sic disponi* est species illa quam homo sic confuse videt. Sed in speculo videt distincte disposicionem 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. Et²⁵ 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 immediate et essentialiter ultimate; et taliter claudit contradiccionem aliquid 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 fantasticce esse ibi; ideo nec active replent omnem locum ut deus, nec causant illud quod subiective replet locum. Ideo dicuntur ab

5. heroyci B. 14. intensior 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
 B 147^b 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 quotlibet instanti eius desunt quotlibet eius
 partes. Sed secus est de deo.

and the world
 itself, though
 everywhere,
 has not all its
 temporal and
 local parts
 everywhere in
 all time.

Ad 2^m dico quod omne corporeum est extensum,
 sicut 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 parcium 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 ali-
 mentum adveniēns noviter assimilatum, et demultiplicari
 per partem corporis abscisionem, et sic acquirere et
 deperdere locum sine sui motu locali per se vel per
 20 accidens. Habet tamen unum equivalens, 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.

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,
 but not entirely
 so.

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.

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.

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

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 the
part itself, are
moved
differently.

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

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 etiam quia *me movere* (quod differt 5 a motu brachii mei) est extensius 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 subiectis 10 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.]

B 148^a

Sed ulterius notandum quod motus potest capere 15 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 quamlibet 20 sui partem. 2^o modo contingit motum individuari a suo subiecto quod primo denominat et omnibus eius partibus quantitativis, sic quod, quecunque pars defuerit a suo motu, non foret idem motus in numero. Sed 3^o modo strictissime individuatur motus a suo primo 25 subiecto et singulis eius partibus ac materia motus, cum tempore mensurante; et isto modo motus extenditur; ut patet 6^o Physicorum: sed non motus mobilis 2^m partem.

Ex quo patet quod si mobile movetur formaliter 30 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. 2^o sequitur quod ad omnem punctum mundi sunt omnia genera 35 accidentium. Cum enim omnis substancia causata sit mundus vel pars mundi, omne autem accidens subiectatur in creata substancia, sequitur quod ad omnem punctum mundi sit species accidentis; quia quod ille mundus est sic accidentatus 2^m totum vel 2^m partem est ubique. 40 Et sic forte intelligit Aristoteles quod universalia sunt

ubique. 3^o sequitur quod de omni specie extensorum
 accidentium, mole indivisibilia et extensa accidentia
 simul sunt eiusdem speciei. Nam sicut species et
 suum individuum sunt eiusdem speciei: sicut species
 5 est sua quidditas; species autem multiplicatur, et in-
 dividuum non sic; individuum accidentis mole magnum
 causat per totum mundum accidens eiusdem speciei
 quo mundus est secundum partem accidentatus. Et
 patet quomodo refert accidens causare, quia efficienter
 10 denominare subiectum et ipsum formaliter denominare
 idem subiectum. Nam omne accidens partis mundi
 efficienter denominat totum mundum, sicut individuum
 causat suam speciem, et per consequens suum genus
 tanquam pars subiective. Et sicut hic causat, sic hic
 15 est, secundum modum loquendi essendi equivocum ab
 esse dimensionali in loco.

thus, saying
 that the
 universals are
 everywhere.
 All extended
 accidents are
 of the same
 species.

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*
 20 *futurum*, et *hic hoc est futurum*, cum quodlibet sit
 ubique. Sed cum in equivocis non sit contradicchio, 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 *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*.

This may be
 the meaning
 of Anaxagoras,
 saying that
 everything is in
 everything else;
 it being so in
 different
 senses, there is
 no
 contradiction.

Et iuxta istum sensum dicitur ad 3^m quod minor est
 falsa, nec valet consequentia deducta per eius pro-
 30 bacionem. 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.

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.

Uterius conceditur quod deus ubique cognoscit
 omnem veritatem, sicut 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

God knows
 all truth,
 everywhere.

Besides, universal being and truth is God; yet not when limited to created truth and being. Thus God, knowing himself alone, knows all things.

It is a sophism to deduce from this that every creature is God.

We must note in these fallacies 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!

aliis analogis significantibus meram essenciam sine qualitate substanciali vel accidentali. Nec sequitur ex isto quod sic omnis substancia vel qualitas sit deus, vel quod lapis vel quodlibet aliud sit deus. Et noticia fallacie figure dictionis solvit obiecta: ut patet in 5 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 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.*

Unde pro zophismatibus oportet loyquem 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 35 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 149^a ultima conclusionis. Benedictus autem sit deus eternaliter intuens omne tempus preteritum vel futurum 40

2. 9^{to} B. 9. omne B. 10. \widehat{oe} pro essenciam B; *ib.* \widehat{nt} B.
 11. addeo (!) B. 19. ut \widehat{n} B. 20. de ce u^o B. 22. p $\widehat{30}$ ^b B.
 37. t \widehat{um} noⁿ B.

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 quocunque instanti in quo tu nunc existis. Sed pro quocunque 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 primum *esse* et non verbum *sciendum*.

Sed 2^a pars conclusionis est impossibilis; cum semper fuit, erit, et est, nedum possibile sed verum, deum 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 *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 provento quod deus est heri et fuit cras, quam quod Christus sanitates perficit hodie et cras. Illis autem qui nesciunt elevare intellectum suum, videndo quomodo apud deum omnia que fuerunt vel erunt sunt presenciam, eciam secundum existenciam suam, iuge forent tales locuciones incongrue. Nec sequitur: *mundus est generandus; igitur mundus non est*; sed bene 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 est generandus. Et sic in eternitate non est, intelligendo formaliter; cum non potest esse inmutabiliter eterna eternus et tamen in eadem eternitate est totaliter, sicut quelibet creatura.

Consimiliter dicitur de hoc sophismate: *Necessario aliquid 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; it 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. ^h mūc B. 12. fci^h B. 16. gab^h B. 23. p vecto B. 25. clere B.
37. et'a et'uns B. 39. sophisma(!) B.

23. *Provento*. To one initiated.

something will be necessarily, when it will not be necessarily. Only absolute necessity is opposed to contingency of every sort.

quidem est. cum omne quod erit necessario erit pro quacunque mensura temporis pro qua erit, eo quod necessarium ex suppositione convertitur cum contingente, cuiusmodi est omne verum preter necessarium absolute. Et ita creata est necessitas in ista: *hoc erit* (demonstrata quacunque re contingente sicut in existencia sue speciei); et cum hoc habet causatam contingenciam ad utrumlibet in utroque; sed in permanencia, in prioritare, in maiori utilitate excedit unum commune suum singulare. Qui autem aliter in prioritare, in maiori utilitate excedit unumquemque suum hoc non solet. |

B 149^b

Loquebar in hoc tractatu, fuit ex ignorancia huius sentencie. Nec decet pueros aut provecos sic loqui, nisi sciolos, cum circumstanciis requisitis. Ideo expedit scire utramque scolarum; sed puerilis scola imbrigabiliter onerosa. Scola autem, eciam theologorum, est levis, dissensiones sophisticas statim excuciens correspondenter ad condiciones hominum quibus conveniunt iste scole. Nunc autem sum nimis senex ad penaliter incarcerationandum 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 commiseri 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 anteriorari poterit vel differri. Ista tamen oracio 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

3. q^{nta} B. 5—6. demonstrata B. 9. vii^{te} B. 12. fol^o B.
31. ant^{er}oraⁱ 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 equivocacione
 5 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*
 10 *quando non est futurum*. Et adhuc in quolibet tali potest zophista contendere secundum sensum equivocum.

Quidam autem inaniter subtiliantes concedunt quod quandocunque aliquid erit futurum, tunc erit; quos (ut videtur michi) oportet concedere *Omne quod erit in-*
 15 *mediate post hoc 'fore'*; ymmo, *omne quod erit, nunc erit*; sicut semper erit antequam erit, tolletur prioritas inter instancia vel quecunque futura, et sic parum finitum magnum tempus erit aliquot instancia; et quitlibet, ut diucius est futurum, diucius erit. Et sic patres
 20 in fine mundi longe diucius vivent quam vixerant patres in mundi principio. Et sic nichil posset senescere, alterari, vel moveri, cum inmediate post hoc habebunt omnem denominationem quam unquam habebunt. Et sic de preterito. Quotlibet talia sunt obicienda
 25 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.

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 denominationibus 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 differenciam vel aletatem sufficit quod pro aliquo tempore vel pro

And logicians do battle upon these equivocacions, and glory in vain appearances.

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

5. appucius 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, melancholici sunt demenciores seipsis in autumpno; et sic de quolibet proposicionibus philosophorum, quas quondam putavi fore puram demenciam. Verumtamen non sequitur ex istis quod idem differt a se, licet differat a se tali.

Unde, iuxta dicta de multitudine accidencium et de gradibus rerum communium, est dare unum subiectum commune quod primo subiectat tale accidens multiplicatum; verbi gracia, est dare unum ignem commune ad istum ignem accidentalem, et quamlibet suarum parcium, qui est subiectum motus multiplicati per totum. Nam, posito quod ignis partibiliter generetur a non gradu, quousque fuerit plene generatus, et abhinc incipiat corrumpi, ubi desit generari, est dare unum ignem ex omnibus istis ignibus aggregatum, subiectantem omnem illam generacionem et istam corrupcionem. Et ignis communis ad singulum istorum componencium est nunc magnus, nunc parvus, nunc sic accidentatus, et nunc modo opposito. Et est dare qualitatem, quantitatem, accidencia successiva, que nunc sunt magna vel intensa, et nunc opposito modo. Et sic quantitas, licet acquirat sibi quantitatem accidentalem, qua sit formaliter magna, acquirat tamen partes quibus quantificatur varie 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 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 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 earum continue | nova qualitas indivisibilis quo ad B150^b

3. Melancolya B.

7. the B.

17. ignis pro ignibus B.

28. dn^{tes} B.30. c^ontin^one 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 alteratio
 5 sit infinitum velox, qua subito inducitur talis gradus;
 quia illa non est velox vel tarda, cum sit subita.
 Alteratio autem successiva est velox, quia tanta latitudo
 qualitatis acquiritur vel deperditur quo ad tempus,
 tantum vel tantum; et diu fuit antequam cognovi
 10 huiusmodi successivum.

Non autem sequitur ex isto quod quelibet pars dati
 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, quaecunque
 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;
 igitur aliquid erit Sors quod nunc non est Sors.
 30 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 in-
 stanti quam nunc est; et per consequens tunc erit albus.

12. $\frac{1}{2}$ B.
 24. as^{109} B.

18. quod sors *twice* B.
 31. fore B.

19. in φ ti B.

20. in φ ti 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.

from him, and consequently from itself, since the individual was identical with whiteness.

Assumptum patet ex hoc quod, quam album erit Sor, tam album erit in B instanti, cum omne album quod 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 Dabitur: *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.

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 quolibet hominibus visus; et sic de similibus. Et tamen fiebat rex; et omnis faccio est generacio; sicut 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 accidentia, sicut habet propriam entitatem. Et tunc sine dubio nemo sentiret substantiam propter tale accidens, sicut nec sentiret animam vel materiam propter sensationem continui, aut indumentum propter sensationem indumenti. Quelibet 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 sensibile; quod est verum.

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, sequitur quod Sors non est indutus cappa Platonis, et erit indutus illa immediate post hoc; et 35 tamen Plato nunquam habebit aliam cappam quam nunc habet, sicut 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 factururus istam domum, et

1. a3⁹ a3^m B. 2. a3^m B. 4. a3⁹ a2^m B. 8. her B. 18. ac'1' B.
20. lo^c mi^or B; *ib.* 23. c'olle' B; *ib.* quin B. 40. mill'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 colorata. 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 corrumpentur vel annihilentur, 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 annihilat; 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 parciuum deus dimittat naturam unam
 de illis infinitis assumptis, et post illo modo in 2^a
 medietate eiusdem partis annihilat eandem, tunc enim
 nunquam foret aliud istorum hominum, iuxta conse-
 30 quenciam logicam. 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 fuisset genita
 a muliere, cum tamen illa non genuit illam, sed acqui-
 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. rómē B. 23. qu adi^{tor}e B. 27. pōiō^o i 2^a me^{ta} B. 29. aliud
 (sic) B. 31. mlie' B. 38. gmfendo B.

23. The text is certainly corrupt here.

by bringing
in other
but similar
confusions
between
substantial and
accidental
terms.
Examples.

infinitem procedere sophisticando: ut infinitum magnum spacium in ista hora futura erit pertransitum a Sorte; quod spacium 2^m totum formaliter in eadem hora et neutrius spacium corrumpetur, nec alter retrocedit; et tamen, in quacunq[ue] proporcione volueris, Plato in 5 eadem hora movebitur velocius Sorte. Ymmo non plus quam semipedale est pertransitum a Sorte, quamvis immediate post hoc infinitum magnum spacium erit pertransitum ab illo; et sic maius spacium 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 multiplicacio illorum. Ut, 20 posito quod sint infiniti homines admodum corporee dispositi, et quod verbum assumat successive omnes naturas eorum, ypostestante 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 sicut 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 suo 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. futar B. | 3. for B. | 20. raltio ^o or mltio ^o B. | 21. coree B. |
| 22. afm ^o mat B. | 29. assumat B. | 32. quidem B. | 33. grie B. |
| 35. quod B. | 38. dicitur B; <i>ib.</i> persone (?) <i>pro</i> 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 extravaganatur 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 sicut est maximus numerus mundi, et quodlibet mixtim ydemptificari, et sic de multis impossibilibus.

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.

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; aliquid 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.

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.

Ad 2^{am} negavi primam consequenciam; sed bene sequitur quod omne quod erit album in B instanti differet 30 a Sorte. Et pro ulteriori responsione in illo argumento 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, sicut *esse statutum* est aliud quam accidentatum, fiunt equivocaciones 2^m supposicionem simplicem aut personalem.

1. pom B. 5. uc B. 8. erragent^r B. 15. rudedi diffuse B.
16. tpuc B. 20. adte^r = adicere (!) B. 30. responsioni B. 35. potest
deest B. 36. vo^z B. 37. drut ce B. 38. accm B.

Nota ergo: albius vel albus erit Sortes in B instanti, quamvis album tunc erit Sortes. Nec sequitur ex hoc quod "tam album tunc erit Sor quam album unquam 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 premissis 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, sicut eleccionem creant papam, 10 cesares; et ita est dare baptismum vel mundacionem, quia continue baptizatur immundus. Nec obest quod generacione substanciali vel baptismate 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 immediate subiectum est taliter accidentatum. Et ita, sciendo album, vel quodcunque aliud accidens, scienciam 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 adquisicionem ille non participiet, ablati vel generati ipsis substancialiis. Vel an est dare unum per se sentitum, ad quod per se terminatur actus et per accidens ad quolibet 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.

4. *before* albus a|| B. 37. *ar* B.

32. *ar* B.

35. potest vicissim *twice* B.

38. *ar* B.

- Sed notandum secundum viam veritatis quam modo profiteor, quod possibile est, ymmo verum, quod homo genuit datum regem. Sic enim 2^m locucionem scripture et philosophorum: *Ceci vident, Sortes senex differt a se* B152^b *puero*; per idem *Yesse | genuit David regem*, quia genuit cum qui terre sue est rex. Unde propositiones huiusmodi sunt equivoce, ex hoc quod potest fieri compositio in sensu composito; ut pro eodem instanti sit inherencia predicati ad subiectum, vel divisim quod suppositum alterum extremum insit supposito reliqui extremi, ipsius pro diversis temporibus sic accidentatis. Unde, sicut 10 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*; sed satis est quod nunc sit gignicio, et ille est rex pro quocunque tempore assignando. Et ita de similibus est dicendum.
- 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 continue idem A ignis qui maneret, subducta corrupcione; ymmo qui maneret, corrupcione concomitante generacionem. Sed a tempore 35 mensurante generacionem videtur quod huiusmodi animatum capit suam individuacionem; 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 probabi- 40 liter potest dici quod non, sed ad minimum pro isto tempore quod includit faccionem istius hominis, et
- I assert that a man can truly beget a king, according to the expressions of Scripture and philosophy. But such propositions can be understood in two senses — in the compound or in the divided sense, either meaning that he who is a king was begotten before or when he is a king. 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. We do not admit that the begetting of a king is an instantaneous act.

3. Si pro sic B.

17. g̃ignico B.

20. queſt B.

39. g̃ignit B.

faccionem eiusdem ut sit rex. Et sic nemo incipit gignere ipsum regem, nisi sumendo gignicionem pro constitutione dignitatis regalis, quam deus vel populus diu post facit postquam est genitus ut homo.

1. I at first admitted the four conclusions of this argument, but now find them very childish.

Uterius quo ad 4^m concessi 4^{or} conclusiones tamquam 5
possibiles. Nunc autem videtur michi subtilitas nimium puerilis. Nam Sor est pro tempore suo indutus cappam Platonis. Ymmo iam est immediatus 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 colorata. Et correspondenter de conclusione 4^a.

It does not follow that because something is *non*, and is to have another quality, it has that quality *now*; because *non* qualifies *is*, not *is to have*.

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 quomodocunque accidentatum; ergo *Petrus modo est rex, album*; quia tunc quidlibet semper foret quomodocunque foret unquam. Quando ergo sic dicitur: *Petrus nunc rex est*, adverbium determinat hoc totum predicatum, *est rex*. Nam verbum cum suo apposito 20
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 preteritum vel futurum est in magno tempore secun- 25
dum se vel aliquam eius | partem, licet non modo B₁₅₃^a
ulterius.

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:

Quantum ad conclusiones deductas cum tribus evidenciis sequentibus, deum contester 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 omniaipotens et potencie infinite; quidem per locum *a simili*, quia 35
fecit magis mirabilia; quidam per locum ab auctore; et quidam, dum deficiunt argumenta, assumunt predicando quod pium est credere de deo quod sit tam omnipotens quam potest sustineri sine repugnancia ipsum esse;

2. *fimēda* B. 8. *i me*⁹ B. 9, 10. Platonis quia induitur cappa que alias est cappa Platonis quia, etc. B. 20. *appto* B. 29. *nūma* B. 30. *quō* 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.

thus shifting
 the burden of
 proof.

Uterius 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 ter-
 minatorum forent ultima simul; et per consequens nulla
 10 foret distancia, eo quod nichil esset solum, cum omnes
 viri et omnes mulieres simul habitarent, et comedere-
 rent, et dormirent, et quomodocunque aliter se haberent.

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.

Similiter, tunc omne instans futurum est, quando
 quodlibet reliquum erit; et ita, ut videtur, omne futurum
 15 semper erit, quia tunc dederō tempus eternum, et tunc
 erit semper; ergo, omne futurum erit semper. Et per
 idem immediate post hoc instans, quia tunc. Et illud
tunc est immediate post hoc; cum tamen deus erit semper,
 quia in hoc instanti quod est presens, non erit, cum
 20 per idem omne quod est immediate 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.*

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.

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
 etiam 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. 2^o per hoc
 quod, quodocunque illa propositio sic primarie signi-
 ficans est falsa: *hoc est*, tunc hoc non est; sed in illo
 tempore erit falsa: igitur in illo tempore non est. 3^o
 35 per hoc quod hec est falsa *per illud tempus, hoc est*,
 et sibi contradicit hoc; *in illo tempore, hoc non est*,
 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.

If a thing takes
 place in a
 certain part
 of a given
 time and space,
 it takes place
 then and there.

1. rñ^{li} B.15. ded^o B.

29. in nullo B.

41. eius *twice*.

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 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 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 ubique esset, quia cum illa sit universalis negativa: *In illo loco mundus non est*, videtur quod equipollet 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 sibi adequate non est, sic per totum istum locum non est, iuxta opinionem istam. Et sic in omni loco abest. Omne tamen indivisibile non ubique non est, quia est dare situm indivisibilem in quo sic esset quod nulla pars eius foret in quo non esset. Similiter, pari evidenciam 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 corruptionem tui eris; quia *tunc* (demonstrando tempus eternum), et tunc post corruptionem tui; igitur. Sic enim conceditur quod omnia que erunt, simul erunt, quia in tempore eterno; quamvis in nullo eius instanti. Dato ergo quod post corruptionem tui eris, et ante generationem tui fuisti, sequitur per idem quod infinitum diu post corruptionem tuam erit corruptio tua. Et breviter, omne 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

15. etc. *deest* B. 26. h^o p^o B. 36. del η co β 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
 5 stat in significacionibus terminorum. Videtur ergo michi probabile quod nulla sunt simul tempore, si non sunt simul in eodem instanti temporis, licet omnia sint simul secundum esse intelligibile pro instanti eternitatis. Aliqua autem esse simul in loco possunt intelligi 3^r. Primo,
 10 quando sunt per eundem locum, sicut deus et creatura, forma et suum subiectum. 2^o modo, quando ultima locatorum immediate constituuntur; ut corpora, vel quecunque alia se tangencia. Et 3^o modo, quando idem
 15 locus, quantumcunque amplius, continet utrumque; et 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 indivisibile temporis continet quotlibet temporalia secundum se tota; non sic autem de indivisibili loco. Ideo noviter
 20 restringitur simultas temporis plus quam loci. Quod si loycus non contentetur de casibus huiusmodi, dicat quod omnia simul sunt temporaliter sed non instanter, vel in quocunque 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 instancia et partes temporis possunt simul dici in magna tempore eterno. Stat enim duos comites ire simul, licet non sint immediati; nec differt talis simultas a similtate 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 deducio non procedit propter equivocacionem. Extendendo ergo hoc adverbium, *simul*, ad omnem essen-
 35 ciam in loco et tempore, potest dici quod prima deducio non procedit propter equivocacionem in similtate, cum illa tangunt se que sunt posita secundum se vel aliquas earum partes sine aliquo situalter intercepto, ut sunt res immediate habentes partes. Unde stat quantumlibet
 40 distancia 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.

10. nōnt^c B. 21. q̄nt̄r^c dec̄ais B. 26. dist̄nt B. 32—33. Tenendo—equivocacionem 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 quando 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 equivocacionem in li "semper". Nam ipsum potest teneri in habitudine nominativi casus, vel ablativi casus, vel accusativi 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, et similia, semper erunt; quia in omni tempore vel instanti; 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 naturaliter posterius. Nec sunt iste difference temporis contrarie, presens, preteritum, et futurum; sicut magnum et parvum non sunt difference contrarietatis quantitatis. Sed bene repugnat idem tempus respectu eiusdem instantis temporis esse secundum totum presens, preteritum, et futurum. Idem tamen tempus quod iam est presens, prius fuit futurum, et postea erit preteritum. Notandum tamen quod hoc adverbium, *semper*, sicut hoc adverbium *nunc*, potest nunc sumi adverbialiter nunc nominaliter, et ut plurimum non est diferencia quo ad sensum. 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 quodcunque perpetuum quod incipit post primum instans temporis, semper esse; et tamen aliquando 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*. Nec sequitur argumentum *a simili*; ut si aliqua pars

6. quilibet B.

9. albt^{ivi} B.

19. ipo' B.

31. fcu' pro sumi B.

illius videtur a te, et tamen non oportet si aliqua pars illius non videtur a te, quod hoc non videtur a te. Ad primam confirmacionem negatur maior, quia negacio, si est, est eterna. Per idem negatur assumptum 5 2^e confirmacionis. Et ad 3^{am} dicitur quod universali affirmative assignate confirmacionem contradicit hoc: per aliquam partem istius temporis successivam hoc non est, et neutra assignata ibidem.

if you do not see part of a thing, it does not follow that you do not see the thing.

Hoc tamen non potest teneri, nisi a concedentibus 10 continuum componi ex non quantis; quia motus terminatus ad dandum instans exclusive non durabit per tempus terminatum ad illud instans inclusive, nec per aliquam partem illius temporis non est, nisi ultimum instans ponitur pars illius temporis. Et conformiter 15 dicitur, capiendo divisionem, mortem, vel unum tale cuius non est dare mensuram in tempore, 2^m negantes composicionem continui ex non quantis. Nam tale semper non erit, sicut semper scietur esse falsum quod hoc est; et tamen aliquando hoc erit, quamvis nunquam B 154^b erit ita quod hoc est, ut | communiter dicitur. Illi enim assentiunt semper tali proposicioni, *Semper scietur hoc non esse*; et tunc oportet eos concedere quod, dato illo tempore, in illo scietur hoc non esse, et in illo non scietur hoc non esse, et per hoc tempus a principio 25 usque ad finem, et in illo non scietur hoc non esse. Et per hoc tempus a principio usque ad finem iam divisio non erit vel complecio pertransicionis, 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 terminis 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

To maintain this, however, we must grant that the Continuous consists of non-continuous elements. If we do not, instantaneous events, not forming part of time, will always be non-existent and yet will exist at a certain time, as in the case of cognition,

and division.

There is in every case a difficulty to find the

3—4. neo B.

4. a^m B.

6. assignat^o B.

7. $\widehat{\text{intra}}$ B.

27. $\widehat{\text{ptuonis}}$ B.

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 it 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 sciatur istam lineam non dividi*, et *semper non sciatur istam lineam non dividi*. Certum enim videtur, secundum communem opinionem, quod quandocumque deus erit, sciatur illam, lineam non dividi in casu communi, quia in omni 5 tempore et in omni instanti. Et notum est quod oportet particularem negativam quantumcumque aliquam horum trium in aliquo tempore, vel in aliquo instanti, vel per aliquod tempus vel instans, non sciatur istam lineam non dividi: relinquitur quod in tempore non sciatur 10 istam lineam non dividi. Constat quod non est signare tempus, quin in illo sciatur 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 15 instans est pars temporis; et repugnant 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 instanti. Et patet quomodo non sequitur si *in aliqua parte temporis vel* 20 *loci Petrus est*, tunc *in illa est*. Ergo per idem, si *in aliqua parte talis measure 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 25 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 30 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 propositio inferri expositorie; ut sic: *ab aliquo quod est non album vel non* 35 *vivum etc. pro danda mensura est mutacio 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 40

1. contradicta B. 11. frefre B. 23. aliud quite plain B. 32. mutacionibus 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
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, sicut 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
deduccionem: *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 proprie de quidditate temporis,
ut dicit absoluta essencia que potest per se esse), tamen
contingit cognoscere quod tempus sit quantitas succes-
siva, mensurans motum: quam quantitatem alias decla-
ravi esse duracionem mundi in esse transmutabili;
35 intelligendo per mundum maximam multitudinem crea-
turarum quecunque fuerint. Et sic tempus nostrum
est mundum durare in esse transmutabili.

Et ex istis cum aliis veris sequitur quod tempus in-
cipit 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. p^rifuis B.32. q^a 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.

iguis. 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, 10 manente eodem tempore. Unde prius naturaliter est motus dictus communiter quam est motus orbis celestis.

3^o 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 racione instantis quod compleat tempus preteritum cum futuro, nec potest instans per se esse instans sine successione novi in- B 155^b stantis.

4^o 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, sicut 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 racionis 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 disposicionem 40

1. inge B. 17. non B; *ib.* $\widehat{q}^{sm} (?)$ B; quod *deest* B. 19. mo^a B.
25 $\widehat{t}u$ B; *ib.* et *deest* B. 37. $\widehat{q}u \widehat{c}at\widehat{u}$ at^o B. 38. manet P.

alterius accidentis extensam, sicut requirit motus sensibilis esse. Ex isto patet quod idem tempus est, et idem instans aut instantia sunt ubique, sicut 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, sicut 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 universalialia esse ubique, ut universale corpus, universalis quantitas, que ubique habet singularia, infinitas tamen
 15 partes subiectivas habent talia universalialia, secundum quas non sunt ubique. Quarto modo veritas dicitur concomitanter esse ubique, racione 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 initium 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 instantia qua vel alias
 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 B. 9. 2^o B. 17. illitā^o B. 23. quod *deest*. 25. Sex^o B. 34. ^m 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 quodlibet esse in quolibet, quia quodlibet est dum quodlibet est. Oportet | ergo invenire B 156^a aliam rationem essendi in tempore quam est esse cum 5 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 quodlibet relaciones sibi adiacentes secundum quas dicitur esse, fuisse et fore secundum prius et posterius, quamvis aliter quam res create.

others, because they have accidental modes of being that are measured by time.

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 tall 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, sicut 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 30 continue inevitabiliter corrumpi. Sed tempus mensurando 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 expositorium quod tempus est per se causa generacionis illius, sicut est de partibus temporis, etsi contingencia 40

1. quodlibet B; *ib.* 9, 13 B. 8. 3^o B. 25. antiquit^{er} B. 28. Teineau^{er} 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 *corrumpti*, 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 proprie: "quodlibet ens per tempus durabile cui non est inevitabile habere partes in *generari et corrumpti*". Et talium sunt multi gradus; ut successiva sunt proprius permanencia quam mixta, cum materia hominis sit incontinens fluxum. Si autem instans et indivisibilia vocatur 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 sunt filii huius erroris tripartiti; ut aliqui dicunt omne B 156^b 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, immediate post instans quod est presens incipiet vel desinet esse; et sic de preterito. Et perit omnis 30 certitudo de rei diurnitate, cum nemo potest quitquam facere, nisi per tempus eternum fuerit in faciendo illud. Et sic perirent omnes policie, cum nemo potest secure iudicare de etate alterius, nec diurnitate operis, nec de prioritare aut posterioritate temporali, de quibus 35 naturaliter innatum est politicis communicare.

Et quamvis tam confusa insit istis congnicionem de tempore aut cognicio, tamen pompant se scire in quo instanti sit dies iudicii vel quecunque coniunctio, 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.

Yet those who maintain this say that they know when any event will take place; i. e. in the future. But past, present

1. futar^r B. 4. cor^rptⁱ B. 7. v^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
thing
known must be
so too;

diligenter examinentur patebit quod non refert illis dicere
quidquam fore, esse vel fuisse, cum utrobique sequitur
quocumque 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 volebatur celum, causando dies, menses, et annos,
ista stulticia dicit quod nunquam nisi semel, quia solum
uno die, qui sunt omnes dies, et cum mobile sit idem, 10
spacium idem, et tempus idem, omnis revolutio que
fuit erat revolutio tunc futura. Et examinetur ista posicio
in quacunque sciencia, et inveniatur 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.
or fte B.

32. esse B.

16. int'mēs B.
40. situm B.

29. est deest B.

31. ire

et sic ultra indivisibilem intercesa; quia sciencia nec
 est instantanea vel temporalis, sed semper nescitur
 nesciencia in deo vel qualibet creatura respectu motus
 vel temporis. Ex istis videtur quod motus non erit
 5 continuus quo ad tempus, quia continue scietur a deo
 non esse; quia in omni multitudine instancium in qua
 est quodcunque tempus. Aliter enim nullum esset in-
 stans temporis. Si enim instans est instans temporis,
 tunc est tempus in instanti; quia nec diu nec in in-
 10 stanti potest aliquid manere instans temporis. Et per
 idem, si est proporcio temporis ad eius medietates,
 vel aliter partes proporcionales, est dare instans pro-
 porcionis huiusmodi, sicut instans continuacionis, inci-
 piacionis, et finicionis temporis; et aliter superflueret
 15 distincio temporis 2^m gramaticos et loygycos in pres-
 ens, preteritum, et futurum. Ymmo omne verbum
 esset presentis temporis; et sicut nullum tempus foret in
 instanti, sic nec in aliqua eius parte, et per consequens
 omne tempus per se totum non foret, et tempus eternum
 20 non potuit fore vel fuisse, quia nec iam nec post hoc.

Est autem modus loquendi philosophorum et theo-
 logorum loqui non sic arte, 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
 25 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 sciencie sic locuntur. Unde propter tales
 evidencias fui primo motus ad ampliandum tempus,
 quia non vidi quomodo philosophus vel theologus posset
 30 negare huiusmodi successiva. Nec capit ingenium meum
 quod sint continua, nisi componantur ex partibus
 existentibus. Sicut ergo medium instans illius hore
 copulat medietates omnes ad invicem, sic illa copulantur,
 causantes tempus, continuacionem, prioritatem, corrup-
 35 cionem, 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

it 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. 16. $\hat{\Gamma}\hat{\Gamma}\psi$ B. 22. arte B. 36. $\widehat{sc}\hat{m}$ B; *th.*
 alf' B. 38. f.¹⁰⁸ B.

15. *Loygycos*. I have purposely preserved, here and else-
 where, such mistakes in spelling as leave the sense clear, while
 showing the copyist's negligence.

suis mensuris. Aliquod vero instans sic respicit partes temporis tanquam eis essentialiter intrinsecum, quia pars eorum, et aliquod tanquam eius extrinsecum, ut instans proximum priori. Nec aliter video quomodo verba sacramentalia, verba iurandi, et propositiones pollicite quibus fiunt contractus forent vere. Ymmo nullus sonus vel tremor, nec actus discursionis anime possit esse.

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;

This 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.

Item, supposito quod nichil est, nisi in hoc instanti, patet quod quelibet pars temporis deest in instanti. Suppono autem quod *deesse* sit ampliativum, vel ponendo subiectum abesse a loco vel officio cui poterit applicari (ut localiter distancia desunt nobis, licet habeamus eorum possessionem), vel 2^o ponendo rem que poterit esse [et] abesse ab instanti vel tempore pro quo est verum ipsum deesse. Sic enim perfectio 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 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 157^h quod deus semper est; quia si sic, quodlibet infinitum diu est, cum diucius 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 viarum que sunt fallacia isti viarum. 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 rationes, 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, sicut ipse scit, quod ego determinavi me esse facturum

15. et *deest* B.

31. sit B.

39. fu B.

aliquid, sed propter determinationem illud 2^m est necessarium, scilicet, quod ergo determinavi me esse facturum quodcumque: ergo, et primum. Ideo, sicut omne verum est necessarium absolute vel ex suppositione, sic omne necessarium absolute est contingens ad utrumlibet; quia quo ad causacione dei liberrimam, eque possibile est non esse sicut esse; que sententia non potest sustineri nisi ponendo deum esse ante instans temporis, et posse eque non causare datum effectum sicut 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. Sicut est necessarium quod Cristus sic vidit et dixit, ita est tam necessarium 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, dicentis nos omnes esse filios Adam, Cristum esse filium David et filium Abrahe, cum eius seminibus; quia cum quilibet nostrum ignorat geneloyam particulariter exemplative generacionem huiusmodi, oportet ad ultimum concedere quod dicti patriarche in magno tempore mediate generarunt illos filios; et per consequens, si aliquis sit filius talis patris, tunc habet talem patrem et alius habet ipsum filium. Ex quo sequitur quod relativa sunt convertibilia in tempore.

Unde alias posui adversantibus illum casum quod Petrus, Paulus, et Linus sint omnes homines, et Petro predestinato existente patre naturali utriusque sequencium prescitorum, sit Linus pater spiritualis Petri et Pauli, et sit Paulus pater naturalis Lini sine progressu ulteriori filiacionis. Quo posito, videtur quod cuiuslibet 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. Nullus autem catholicus negabit quin, sicut 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 Abraham, and, by nature, of Adam. How is this, if we say that nothing is, but what is non existing? B 158^a

posteri Judei, ut dicit beata virgo, etiam nos sequentes ipsos in moribus, ut dicit Apostolus, sumus filii Abrahæ imitatorii, et omnes nos filii Ade naturales. Nec occurrit michi quomodo restringentes tempus vere expriment sensum horum, cum secundum eos nec Adam generavit aliquem nostrum, nec aliquis nostrum descendit ab Adam; quia nec Adam pro primo instanti sui, nec ante, nec post, descendit de hominibus qui descenderunt ab Adam. Et per idem argumentum nec genitus de homine mortuo ante infusionem anime habet patrem; sed foret nude filius femine et non viri. Et sic de occisione hominis, de causacione sani distantis, de existencia oracionis, de successione generacionis et subiecti agregati ex diversitate sibi succedentibus, que omnia essent impossibile isti vie solvere, admissio modo loquendi autentico et vulgari.

They would also have to grant that a posthumous child has no father at all; and there are many other like difficulties.

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.

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 vulgus naturaliter nunc laxant et nunc restringent pertinenter suo sensui; et sic distribucio ac negacio acomoda tollunt controversiarum apparencias.

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.

3^a via dicit quod tempus et quantitas [sunt] continua, quasi multiplicata linea successiva, sed tantum profundatur 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 quod nullum ultimum singulare quantitatis potest maiorari vel minorari; quia, cum ad talem motum requiritur aquisicio vel deperdicio quantitatis tamquam sensibiliter motum huiusmodi; sed una successiva idem subiecto, sed non idem numero quo ad tempus et partes intrinsecas. Tempus ergo est diuturnum ad quod alia diuturna per accidens debent reduci tamquam primam mensuram illius generis; quia si sibi accidentaliter inesset duracio, per idem et illi duracioni; et sic infinite.

1. u'ga B. 12. tacone taccione? B. 12, 13. exna aro^{nis} B. 18. que deest B. 22. after ac an illegible word: looks like ac crossed off B. 24. sunt deest B. 26. exna 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 prioritare 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 indivisibile secundum successionem.
Et sic quilibet sciret prenosticare 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 diuturnitate.
Et sic oportet ponere tempus habere aliam quidditatem
B 158^b preter duracionem, | quia omnia tempore eque diu du-
rancia forent per illa, et per consequens deus prerogando
quodcunque 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 quodcunque tempus cum reliquo. Nam tunc
deus posset facere talia tempora simul incommunicanter
currencia informare subiecta; et per consequens cuius-
30 libet 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 in-
35 finitum magnum tempus durare et esse quantumlibet
brevis periodi; ut, posito quod infinite hore, simul
currentes quo ad fines et incia, constituent unum tempus
quod foret infinitum magnum tempus preter magnitu-
dinem molis. Talia multa possent excogitari contra vias
40 huiusmodi, circa que, ut dicit Aristoteles, est magis
fatum 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^{no} B. 18. p B. 23. progando B.
29. in fore B. 30. pom B.

The denial of all accidents is very unphilosophical;

subject and accident are contradistinguished.

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 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 accidencia esse; in hac evidencia: si sunt, tunc sunt res que possunt per se existere; que opinio nec est philosophica nec theologica sicut nec eius evidencia. Ideo accidens ex opposito metaphysice distinguitur a suo 5 subiecto. Alias tamen, cum declarative supposui quod mundus sit universitas creata, que est unum compositum ex omnibus subiectis preteritis et futuris, moralibus et materialibus, cui insunt omnia accidencia; et *illum mundum durare in transicione successiva* est tempus, 10 quod individuatur a mundo et genere motus, et mensurat omnem motum particularem. Et sic prius secundum genus sunt prius et posterius in analogo motus quod in tempore [est], licet prius fuit in tempore directe in tempore quam in aliqua specie motus. Et sic, licet 15 nullius partis mundi duracio sit tempus, tamen principalissime secundum Aristotelem est tempus in primo mobili vel corpore celesti quod est quasi forma mundi. Veruntamen, si totus orbis celestis annihilaretur, vel omnino quiesceret, mota sola rota figuli, foret continue 20 idem tempus. Et sic, cum pars mundi individuatur a tempore, patet quod absolute impossibile foret illum mundum, subiectum tempori, produci, nisi produceretur cum tempore eodem modo.

Ex quo videri potest ulterius quod sicut nullum 25 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 30 est de facto, eo quod habet gradum prioritatis summum possibile. Et immediate 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 35 instanti mundi singulariter propinquiora. Et cum nullum instans temporis potest sibi esse | propinquius, B 159^a videtur quod nullum instans temporis, nec ipsum nec aliud, poterit esse temporaliter ipso prius, et per consequens mundus, tempus, et instans, cum eius simili- 40

5. exa'o B. 9. malib9 z malib9 B. 13. ft' B. 14. est *deest* B;
ib. drē B. 21. ū dinia' B. 24. codēoo B. 28. novus 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 proposicionem, *homo est*, sic converterent: *ens est*, vel *potest* vel *intelligitur esse homo*; unde negarent istam consequenciam:
- 20 *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,*
- 25 *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.
- 30 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
- 35 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] 40 est, illud semper est, quia in instanti quod est presens,

We ought here to notice other modes of expression which are less philosophical and lead to apparent contradictions. The wise, extending entity to all things possible or thinkable, grant that *a man is a man*, even were there no men existing. But some will grant that a man is intelligible or possible, but not that he is a man, unless he exists. They say: *This is white*, and, *This white thing is white*, are not the same, the second meaning: *If this white thing exists, it is white*. It is useful to know these different points of view. We prefer to use the wider meaning, extending, *is* to all future and past time. All *is* in eternal time, but not at every instant of that time. A threefold proof of this.

I. Whatever is, is always;

5. locazphica B.

14. *zũfto pro* et in isto B.30. quod *deest* B.

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 quidlibet durat per omne tempus, concedendum est et [quod] quodlibet 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

It is too strict an interpretation to deny that God is always, because He exists only in one instant (of eternity). God's knowledge of everything is eternal; and therefore whatever is, is always, as the object of this knowledge. Yet we may grant that nothing is always except what is in all time or exists above all time.

Some writers say: God could have created the world before He did; but the world could not have been created before.

II. If all is not in eternal time, we must deny its existence, saying that it is made up of parts that are not.

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 150^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; sicut mundus et alia sempiterna que in- ²⁵ ceperunt esse. Sed deus ultra hoc est eternus, quia eius demonstracio est supra tempus. Ideo est prius tempore.

Et sic intelligendi sunt auctores qui concedunt quod deus prius potuit produxisse mundum, sed ipse non potuit prius fuisse productus. Deus enim habet in eter- ³⁰ nitate *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.* ³⁵

^{2°} 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, sicut omne ⁴⁰ *causare* presupponit esse. Nullum ergo tempus habet

2. at ¹ B.4. quod *deest* B.31. 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 continuarentur 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
 10 quando iste partes non possunt esse, tunc sine dubio omne tempus maneret continue indivisibile, nunc magis, nunc 2^m quod essent partes vel non essent partes a quibus caperet eius quantitatem.

Conceditur ergo quod omne tempus est divisibile,
 15 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
 20 *corrupti* sicut in *generari*. Nec potest esse, nisi ita velociter corruptetur et generaretur 2^m partes, sicut posset aliquod tempus corrupti. Nec sequitur per locum a *simili* quod sicut ponam esse de rebus permanentibus, cuius non est possibile dare causam ponendo tunc esse
 25 rem absolutam que ponam per se esse. Patet igitur quod non contingit bene examinatum vere loqui in materia de tempore, diffiniendo tempus vel continuitatem, temporis prioritatem et arietatem, et ceteras proprietates accidentales temporis et instantis, nisi ponendo
 30 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 instantia, vel unum instans prius reliquo, si semper necessarium est nullum instans esse cum reliquo?
 35 Semper enim sciretur sic non esse.

3^o confirmatur illud de fundamentali significacione vocabuli. Nam secundum precipuos hoc verbum rectum, *est*, significat mere substanciam, sicut pronomina, quia
 B 160^a significat *esse* [], quod est essencia, non quomodo ali-
 40 quam proprietatem accidentalem vel differenciam specificam a qua res caperet suam quantitatem, sicut

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*.

III. This can be proved besides by the very significacion of the word. *Est* is the substantive verb, signifying essence, and not accident;

11. \widehat{nc} B. 12. \widehat{nc} B; *ih.* essentt B. 17. \widehat{als} B. 23. \widehat{pom} B.
 25 \widehat{pom} , B.

thus it does not connote time by itself. If it did, God in eternity would not know himself to be, since there would be there no idea of time. *Est*, therefore, stands for the present, without any addition, as in adjective verbs,

faciunt omnia, non transcendencia; nec connotant de se aliquod tempus, sicut verba adiectiva; quia deus tunc non sciret se esse in eternitate subducto tempore, quod est impossibile cum in eternitate sit *esse* vel *fuisse* 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, sicut talia verba, *currere*, *movere*, *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 essencia 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. 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 grammatici determinant ipsum ad tempus presens connotandum, dicitur sine dubio quod indifferens est ad omne tempus connotandum secundum gramaticam; quia posito quod semper fuisset ista propositio: *Tempus est*, semper fuisset vera; et *hoc verum est* continue 30 connotasset omne tempus, cum non caderet a sua connotatione, 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*; sicut non sequitur *Sor currit*, igitur *Sor currit in hoc in-* 35 *stanti* vel *in ista parte temporis*. Nec sequitur cum medio ponente hoc instans vel istam partem temporis

and signifies merely existence, not genus nor species.

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.

14. io' B. 16. fubm^e fbm^e B. 17. t'ino^e B. 19. quid non B.
23. significat principaliter significat B. 31. gūōtaff^e B.

5. This definition is a famous one, given by Boetius (*De Consolatione Philosophica*, I. III. prosa 2. near the beginning), and generally adopted by Scholastics.

esse. Et isto modo intelligendi sunt sancti qui dicunt deo omnia esse presenciam 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 instancia possibilis 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 2^o 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 reliquocercius | quo ad deum.

Videtur 3^o 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.

Ad primum dicitur quod conclusio non sequitur; nec sequitur omnia possibilis simul esse possibilis inter se, quia multa sunt possibilis que nec erunt nec fuerunt 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. Sicut 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

All things are present to God in eternity; the whole of time being a sort of accident of eternity.

Objections:

1. All possible instants are simultaneous, being in eternal time; all that was or will be, is; nothing can begin, or end, or change.

2. Whatever happens, happens necessarily. For what will be, is, as determined to be, as necessarily now as it ever will be.

3. All contradictory truths exist at the same time: any individual's being and his not-being coexist; so do life and death, &c.

Answers.

1. It does not follow that all possibles are possible together, for many will never exist. As to past and future things, they exist each in their right time. Simultaneity requires two things to be at the same instant and entirely together.

As two things
in the world
are not
therefore in the
same place,

so they are not
simultaneous,
because they
both exist in
time.

Sameness of
place and
simultaneity
may, however,
be understood
in a wider
sense than
the above.

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.

Some assert
that there is no
'last of all
creatures', for
there is an

requiritur instans mensurare illa que sunt simul vel 2^m
suas essencias, ut contingit de motibus subitis, vel se-
cundum sua accidentia, ut contingit de modis essendi,
accidentibus instantaneis, quibus sunt omnes res tem-
porales. Sicut ergo non oportet res esse simul loco, 5
quamvis relaciones earum sint simul, sic non oportet
res esse simul tempore; et sic pretericiones aut futu-
riciones earum sunt simul, sed oportet unam vel par-
tem eius esse per locum per quem est aliud vel pars
eius. Unde Aristoteles concedit ultima contiguorum esse 10
per eundem 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 tem-
pore eterno, sed non omnis substantia que potest esse 15
est, quia creditur quod multe substantie possunt esse
que non fuerint vel erunt. Et creditur quod alius mun-
dus 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.

Uterius dico quod non sequitur ex isto quod nichil
potest incipere vel desinere esse, sed potius sequitur
oppositum; et cum omnis incepcio vel desinicio que
fuit vel erit est, quia in magno tempore eterno, 25
quelibet tamen in instanti suo, una prius et alia poste-
rius. Quamvis enim omnia instancia possibilis sunt,
non tamen simul, sed sunt deo presenciam, et ita pre-
sencia, et tamen unum alio prius aut posterius, secun-
dum elegantissimum ordinem. Nec ex hoc sequitur 30
quidlibet esse eternum, sed nichil novum; sed potius
oppositum. Quamvis enim omne bonum sit in eterni-
tate, nichil tamen formaliter est in eternitate nisi eter-
num. Novissimum ergo tempore est illud quod est post
omne aliud in tempore. Et sic non repugnant sed con- 35
secuntur se in deo *primum* et *novissimum*; non tamen
est recens aut senex.

Et dicitur a quibusdam quod non est dare simi-
liter novissimam vel ultimam creaturam singularem,
sicut est dare [primam], quia post omne instans vel 40

10. gūgror^o B. 18. nider^o B. 21. etad B; *ib.* fuit B. 35. rpūgt B.
38. Er B; *ib.* fuit B. 40. fūc da'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
 B161^a similiter novissimum | est solus deus, non sic quod sit
 inferior in ordine quam aliud, vel quod habeat *esse* vel
 perfeccionem accidentalem sicut partes mundi innovan-
 10 tur, sed, considerata quacunq[ue] novitate, invenietur
 ultra et extra illam aliquam novitatem, non secundum
 substantiam vel accidens absolutum, sed respectivum,
 cum causat omne in deo positum. Creatum est ergo
 secundum novas habitudines relativas, que vocantur
 15 *esse* accidentalialia a quibusdam.

Ad 2^m dicitur quod conclusio bene concepta est
 concedenda. Pro quo notandum quod aliquod est ne-
 cessarium absolute et aliquod ex suppositione. Abso-
 lute 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 cometam sue coste. Neces-
 sarium 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 volicionem 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 futuricionis 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. Sequi-
 tur 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 quolibet vera

endless
 succession,
 yet every
 creature can be
 called last
 at the moment
 it begins to be,

and the Last
 Day is the end
 of generation
 and corruption.
 God is also the
 last, i. e. in
 time, since His
 existence
 extends beyond
 all future time.

2 We admit
 the conclusion,
 if properly
 explained.
 There are two
 necessities:
 absolute
 necessity, such
 as $3 + 2 = 5$,
 or, the
 diagonal and
 the side of a
 square are
 incommen-
 surable,
 or hypothetical
 necessity, that
 is true at a
 certain time.
 God has an
 eternal will
 concerning all
 things.

Everything is
 necessary by
 the effect of the
 First Cause
 which produces
 it.

Everything true
 is determinately
 true, and
 therefore
 necessary;

11. a'quā novitatem B. 13. catū B. 20. cāta B. 22. quadratū B;
 1b. cometar^e B. 22-23. Nctriū B. 26. nctriū 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 deducionem 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 ipsum 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 ens 10
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

This is true for
absolutely
everything.

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 conveniunt 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 causare in diverso genere causandi. Tales ergo veritates sunt supra omne tempus | ut futuriciones, pretericiones, dis- B 161
iuncciones, et noticie dei. Et tamen contingentissimum est illud esse, cum potest non esse, sed non incipere vel desinere esse. Aliquid eciam tale necesse semper 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 inpositionis; 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. cu h^e twice B. 24. app^r B;
ib. app^r B. 30. ut B. 31. not^r 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*; igitur, *hoc non est*; quia impossibile est aliquid quod crit
 10 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 prescenciam, 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 quamecunque animam producendam, quia potest deus (sicut quondam potuit) non producere vel produxisse istum mundum. Sed summe libere potuit hoc in eternitate. Ergo adhuc sic hoc potest. Verum non est possibile 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 quodcunque 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 consequens 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 tree 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. plus B.

37. cam B.

38. cam B.

There are many things foreknown and fore-ordained, 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 hypothetically so; or that it necessarily follows from the existence of an eternal truth; or that, I being, it is against the ordinate 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 relacionem 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 lapsum 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 propositio, *necessarium est me esse*, dicitur quod altero 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 potencia dei 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, 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^o cū pro cum B; ib. sciam B. 10. Nam | nam B. 11. fuisse esse B.
13. after eterni; est illud lapsum in preteritum *underlined* B. 31. r'pūgnat B.

Et si queratur quando necesse est talem futuricionem esse, dicitur quod quocumque 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 quocumque 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 inmutabilis. 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 potencia 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 sciente veritatem 20 aliquam, fieri eius non sciens. Possibile tamen est quod deus sit cuiuscunque veritatis corruptibilis non sciens. 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 tempore quo vita mea est; et sic quando vel dum vita mea est; ergo, est simul temporaliter cum vita mea;* quia, sicut dictum est quod ad hoc quod aliqua sint 30 simul tempore, requiritur quod sint pro eodem instanti vel immediata; sed ad hoc quod aliqua sint simul in loco, requiritur quod ipsa vel aliqua eorum sint in B 162^b eodem situ indivisibili, vel immediata. | 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 natiuitatem Cristi; et inter terminos illius partis et ipsum nunc sunt mille trecenti et 83 anni. Unde, sicut po- 40 nendo universalia, de levi pronunciantur veritates quas particulares homines reprimerent 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. dep ata B.
41. rpm̄it B.

15. p^{ri} B.

21. scit B.

30. mille t'centi 7 83 B.

The doctrine of
universals helps
much towards
a clear
comprehension
of all these
things.

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
has them all
one after
another.

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.

in illa materia de levi et plane pronunciantur veritates continentes successione[m] ab illis quorum animus elevatur ad considerandum eternitatem supra tempus, ubi aliquando solum ymaginantes sensibilia intricantur. Ymmo, ut communiter loquendo de successivis, pronunciant nescii multas veritates ex quibus sequitur opinio supra dicta.

Patet ergo quod, si aliquid temporaneum vel durans per tempus sit temporale, quod non oportet deficere pro omne mensura temporali qua est, tunc ipsum est permanens. Et si sit aliquid 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*; patet quod omnes concedentes sic tempus esse, concedunt antecedens. Et patet michi quod consequencia non valet potius 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 instanti*. Nec dubito quod repugnat aliquid esse in tempore eterno, vel esse prioritatem et posterioritatem temporis, nisi incedendo in viam veritatis predicamentalis.

Et si obicitur communis sententia quod nichil habemus de tempore nisi instans, patet quod illud vere non potest intelligi ad verba, cum claudit contradiccione[m] 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 ratio quare duo instancia componencia tempus sunt, quin per idem omnia instancia preterita et futura sunt; et deus est in quotlibet istorum ita certus de quocunque vero sicut est de aliquo: quod non esset, nisi ita certe esset quotlibet verum, sicut est aliquid, et per consequens ita determinate, sed non ita stabiliter.

0. ut *perhaps* crossed off pro sit B. 21. quia pro quod B. 23. pre-
dictas B. 31. tite B. 35. 1^a 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 aliter esse relatam oppositionem inter prius tempore et suum posterius; 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 esse. Est ergo oppositio 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 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, sicut 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 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 mesurant.

30 Et si obicitur sic: *qualitercumque erit, est; sed necessarium erit Anticristum fuisse, ergo necessarium est Anticristum fuisse*, et sic de omni veritate dicitur concedendo conclusionem, sicut patet in descriptione 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 denominationibus, 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 posteriority, 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,^o 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 be 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 inter the existence of the thing, they are not that existence.

non est tunc vel tunc vel modo. Sicut non sequitur: A non est ibi; ergo, ipsum non est; sic ista non sequitur: 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 (demonstrando 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. Oppositio 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 scit contradiccionem, et cum non scit nisi quod est, sequitur quod contradiccio est: huic dicitur quod consequencia 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 illud esse nunc, quamvis nunc scit illud esse. Sicut enim tendit omne quod fuit vel erit esse in tempore suo, sic scit omne tale esse, et aliquando per consequens scit illud esse. Ymmo sic scio ego diem iudicii esse. Et multa olim horum corrupta scio nunc esse in 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 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 eius esse sit ut conceditur): hic videtur michi quod fuisse vel fore rei, cum sit sempiternum, et res illa temporalis, valde differt ab esse rei. Negatur: "hoc infert esse rei"; ergo "est illud esse"; quia tunc omnis

1. \bar{t} \bar{u} \bar{t} B. 2. ita B. 7. scit^l B. 11. e^o: *ib.* \bar{u} \bar{d} \bar{i} \bar{c} \bar{t} \bar{o} B.
12. essent B. 14. \bar{f} \bar{e} \bar{u} \bar{t} B. 22. t^o \bar{d} B. 26. scit B. 36. cuius? B;
ib. \bar{c} \bar{e} \bar{f} \bar{u} \bar{t} \bar{q} B. 38. Ne^o B.

causa esset suum causatum. Sed de sciencia dei tripliciter contingit loqui; vel formaliter, ut dicit relacionem in deo, et sic est accidens sibi prius naturaliter, sed ponens scita; vel ut dicit habitum vel actum elicutum; et sic non est sciencia essencie divine; vel 3^o, ut dicit substanciam scientem, et sic manet necessario eadem sciencia dei, non potius variata propter variacionem rei, quam variatur lux propter hoc quod illuminat manum et post aliud succedens in eodem situ post 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 futuro pcedit, et esse subsequitur, et pretericio postrema. Sicut eadem est substancia noti et visionis qua cognoscuntur membra maligna et antiqua ex tempore alterata, et membra parva et tenella tempore precedencia. Accipiendo ergo fidem pro isto credito omnis credens futuricionem rei vel eius pretericionem, credit esse rei in tempore eterno, quamvis non nunc.

Et ulterius obicitur quod sicut 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 differencia inter tempore verborum. Et consequencia patet ex hoc quod, si aliquid 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 propositio vera significat *hoc fuisse, et ita est*; ergo quod *hoc fuit*.

Hic dico quod videtur michi conclusionem esse concedendam de quolibet quod est in parte temporis; sed non sequitur formaliter de alio, cum *esse* sit prius naturaliter quam *fore* vel *fuisse*. Et ita conceditur omne tempus presens esse preteritum et futurum, sed non respectu eiusdem instantis. Unde in eternitate, *esse* non est formaliter *fore* vel *fuisse*; sed totum est ibi *esse* et presenciam erit. Hinc negant quidam quod deus prescit vel scivit aliquid, et hinc 2^m grammaticos forte ista obliqua verba sunt, et tunc non realiter formantur ab hoc verbo *sum*, sed a talibus verbis *fuo*, *fuis*, *ero*,

God's knowledge can be considered formally, expressing a relation in God, which posits the thing known, or as an act, or as implying the cognitive subject, and in this last sense the knowledge is no more varied by the variation of the object than light is by the removing of that which it shines upon. Faith is the belief in the existence of something, either in the past, or in the future.

It may be said that if what is future is, what is, is future and past; this would cause great confusion and mix up all the tenses; God existing in the future, knows the present as past, and the future too.

I do not object to this conclusion so far as it regards those things that take up a part of time, but the present is not past and future relatively to the same instant: In eternity all is present, there is no future, no past. Some deny God's prescience seeing all things

as present; and in fact grammarians point out that past and future come from other verbs than esse.

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.

eris, que sunt adiectiva connotancia pretericionem et futuricionem in tempore, valde dispariter a verbo substantivo; ideo argumentatur ab inferiore ad suum superius, dum sic argumentatur: *Ego fui vel ero; ergo, ego sum.*

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 rationes ydeales, que ponunt tales res esse in tempore suo; et secundum pretericionem causalem, concedunt auctores illas vias racionaliter 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 presenciam 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 dupliciter. Primo, non sequitur conclusio nec valet argumentum factum pro eius probacione. Unde, quando-
25
cunque in una kathegorica affirmatur predicatum de subiecto, hoc semper est intelligendum pro eadem mensura duracionis; sed quandoque seorsum in diversis affirmacionibus 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 istis patet quod repugnat scire *hoc esse non album* aut *non senem*, etsi hoc vel fuit erit senex vel album. Ex quo patet quod opposicio contraria vel privativa non infert oppositum contradictorium, nisi

9. h̄y 9th B. 12. p̄ticom̄ B. 13. fonel' e B. 23-24. dr d'r B.
34. scit B. 36. scit B; *ib.* scit B. 40. in lit (sic) B.

cum limitatione 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.

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.

5 Ex istis patet quod non repugnat aliquid moveri ad denominationem quam ipsum [non] habet et a denominatione 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 sanitate, 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
15 sunt termini infiniti, ut: *non esse illius albi est vel fuit tunc vel tunc.*

Sed 2^o probabiliter conceduntur omnes tales predicationes oppositorum positivorum pro diversis mensuris, sed non contradictorum; ut quod *ceci vident, claudi
20 ambulat, 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 alius qui est triennis. Sum enim
25 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.*

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;*

30 Sed ulterius argumentatur quod necessarium antecedit ad contingens ad utrumlibet; et per idem, ex contingenti sequitur impossibile. Sequitur enim ad *deum scire Antichristum fore, ipsum Antichristum esse;* sed antecedens est necessarium, cum sit veritas eterna que non
35 potest incipere vel corrumpi. 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*

4. c't B.
29. in p se B.

6. non *deest* B.
40. a^m B; meum *pro* verum B.

7. habet *deest* B.

27. a^r B; *ib.* seni^m B.

therefore I did
not exist:
which is false.

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.

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

But the
antecedent
cannot be true
at the moment
when the
consequence
is good.

Verumtamen hoc est impossibile quod pro eadem mensura qua consequentia est bona, et antecedens est verum, et consequens non.

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
tuturition
is without his
present
existence.

Nam data tali consequentia: *Deus scit Antichristum fore*:

ergo, Antichristus est, realis consequentia non est nisi

in tempore: ergo, est consequens cum antecedente. Et 15

ita in omni tali consequentia, consequens est ita verum

sicut suum antecedens. Et ita illud consequens est

necessarium et contingens, sicut antecedens est con-

tingens et necessarium. Nec est consequentia pro in-

stanti quo Antichristum fore est sine eius esse; quia con-

sequentia est habitudo relativa causati ad causatum

eiusdem. Unde aliqua est talis consequentia, quam sim-

pliciter est esse impossibile in tempore finito: ut patet

de tali consequentia: *Deus mult ista esse: ergo, ista*

sunt, demonstrando omnia instancia temporis eterni 25

cuius antecedens et consequens claudit contradiccionem

pro aliquo instanti esse vera. Ista ergo consequentia,

cum suis extremis, est primo in tempore eterno, et

respectu cuiuscunque temporis est dare talem conse-

quenciam et quotlibet alias veritates. Nec est incon-

veniens veritatem conneccionem manere, et quantum-

libet tempus, et positionem antecedentis manere con-

tinue veram positionem consequentis, manente contin-

gencia 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, sicut non sequitur: *hic scio hoc: igitur, hic*

est hoc. Ista non sequitur: *scio nunc resurrectionem* 40

mortuorum: ergo, nunc est resurreccio mortuorum. Unde

A consequence
may also be
true, and yet
not true in any
limate 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.

- patet quod, formato tali signo eterno: *deus scit omnia*
instancia fore; ergo, illa sunt, quod tam antecedens quam
consequens foret eternaliter verum. Non tamen bene
est distinguere inter veritatem connexionis, que est con-
5 ditionalis veritas, non ponens antecedens vel conse-
quens ex parte rei, et consequentiam ex parte rei. Stat
enim conclusionem veritatis ad suum antecedens esse
pro una mensura, pro qua suum antecedens non est,
et econtra, cum temporale sequitur ex eterno, et econtra.
- 10 Nec est verum quod deus unquam scivit vel scit me
non fuisse, sicut nunquam fuit ita quod ego non fui;
sed semper est ita quod ego non fui in isto vel in isto in-
stanti. Unde non sequitur: *Hoc in quolibet instanti non*
est; igitur, hoc non est, demonstrando multitudinem
15 omnium instancium, vel quodcunque aliud quod non
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; sicut
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*: sicut 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 replet orbem terrarum, sicut deus. Et conformiter
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 repugnant: *hoc fore et hoc non esse*;
et *hoc fore* fuit eternum ex omnibus cum talibus dictis.
Unde sequitur cum determinatione quod *vel est hoc*
esse nunc, vel est hoc non esse modo.
- 35 Sed ulterius dubitatur si antecedens eternum eter-
naliter causat suum consequens, ita quod, *si deus nunc*
causat A esse, nunc causat A. Quo dato, videtur quid-
libet esse eternum, cum omnis rei causa sit eterna, et
causa completa simul est et non est cum suo causato;
40 quia aliter consequentia bene alias posset esse sine
dato consequente, et tunc videtur quod deus eternaliter

And God's knowledge, and the consequent existence, of all the instants of time, is true in eternity.

The conclusion may be true at a time when the antecedent is not true, and vice versa.

God never knew that I did not exist, but that I did not exist at such or such a time. Other examples.

Whether an eternal antecedent causes its consequent eternally. If so, everything would be eternal, 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 sua ⁵ faccio. Hic dico quod | precipui philosophi concedunt B 165^a 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 men- 10* *sura: ergo, hoc est pro ista mensura.* Sed bene sequitur ex dato antecedente quod *hoc est in tempore suo*, ita quod ista sunt ampliata, sicut 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. 20 Ideo dixerunt subtiles philosophi quod est dare actum executivum voluntatis divine, distinctum ab illa volicione, sicut temporale posterius in natura distingwitur a suo priori eterno.

Ideo oportet notare que verba ponunt pro eadem 25 mensura rem ad extra, et que non; ut *operare* dei, *efficere* [quod] suum est, *formare, movere* 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; 30 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 nega- 35 cionis, 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.

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.

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.

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

13. terminum B. 34-35. ot'itum B.

18. it' pro scit B.

27. quod deest.

31. r'linq' B.

quod omne causans prius origine natura vel tempore causat suum causatum, antequam ipsum sit, sed in supposito causantis. Si causans pro aliquo instanti causat, vel est causa eorum, tunc illa sunt pro eodem instanti.

It does: neither in time, nor in nature, or by origin; but cause, *qua* cause, and effect are simultaneous.

5 Unde quamvis deus sit causa Anticristi, non tamen pro 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-

God is Antichrist's cause, but not now; and we may say that what causes at one instant exists at another.

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,

So a consequence exists only when the consequent exists, and the antecedent exists before it is properly an antecedent.

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 potest esse per tempus vel instans. Illud patet de veritatibus talibus eternis, primum instans erit, generatio mundi erit, etc. Patet etiam de talibus: *Ista omnia sunt,*

There are infinite things that are neither temporal nor instantaneous, as, v. g. eternal truths, collective propositions, propositions about varied motion,

25 quibuscunque 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-

sound,

B 165^b sophis quod oracio est | quantitas discreta, successiva, in qua sunt quotlibet intercisiones, eo quod tremor est motus causatus ex reflexione, qui non potest esse

and speech;

35 motus continuus, ex 6^o phisicorum. Ideo generaliter decipitur sensus de continuitate soni, sicut visus de continuitate situacionis [et] coloris: ut patet de ticione circumducta in nocte, et troco cuius basis est discolor circumducto in limine, ut declarat Boecius in prin-

which last is an intermittent and varied movement, in which our ears are deluded, as our eyes are in other cases.

40 cipiis musicæ.

2—3. fuppo B. 6. p̄t concedi pos B. 16. ca² = causa r B.
31—32. phis̄ = phisicis (?) B. 37. et deest B; ib. tione B. 39. hne 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 accionis 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 aliis 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 assereione 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, ymo non esse pro nunc, cum omne unum quod non est absolute necessarium est contingens ad utrumlibet et necessarium ex supposicione. Si ergo esset absolute necessarium omnia futura evenire, vel necessitate coaccionis, vel 3^o necessitate naturali excludente libertatem, periret meritum. Modo est necessarium meritum, consiliacionem, casum et fortunam esse: ymo potenciam

9. \widehat{no} pl' B.
30. atf'cone B.

13. \widehat{am} *pro* argumentum B.
31. \widehat{cata} B.

20. B *deest* 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, sicut 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 106^a deus | sit causa veritatis connexionis. Et ita vult quemlibet actum; sed non placet illi difformitas eius, que est peccatum. Vult ergo odium, sed non sic odere.

Sed postremo obicitur quod tota difficultas stat in 15 abusione verborum de presenti pro tempore preterito et futuro; in quo fundamento non est difficultas, sed voluntaria deviacio a grammatica, ut patet ex concedendis a sic opiniantibus. Nam querendo quid facit Adam, Anticristus vel quicumque alius, diceretur quod 20 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 25 *album est nigrum*; *omnis homo est mortuus*, *omnis homo est vivus*; ergo *omnis homo vivus est mortuus* vel *omnis homo mortuus est vivus*. *Nullum album est nigrum*; *omnis homo est albus*: igitur *nullus homo est niger*. *Omnis homo syloyz̄at*; *aliquis homo est mutus*; igitur 30 *aliquis homo mutus syloyz̄at*. 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, sicut ante fuit; et tam faciliter possum remediare quamcunque indisposicionem 35 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 40 est sapiencior me. Et per idem ipse est senior me in

If asked what causes the necessity of sin, I reply: not God but our free-will. Yet as the fact of sin is pleasing to God, it depends on His eternal will; for God wills every act that takes place, but not its wickedness. It is objected lastly that I misuse for the present for the past and the future, which is merely ungrammatical. What is Adam doing? he is beginning to exist. Yet he is dead. This theory, moreover, leads us to deny all expository syllogisms, and many others:

to affirm that it is as easy to keep from sin after sin as before; that, not having a son, I may think that my son is wiser than I, since he will perhaps be so; or even that he is older than I:

1. adom̄io B. 11. vocat B. 12. michi B. 27. vivus est mortuus B. 36. exm' B. 38. exm' B. 39. exm' B.

unless I wish
to contradict
all that is here
laid down.

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 and the
past is not,
nor the future;
meaning *not*
non; as, when
a common
person, asked
if he has heard
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.

Some admit
that a
movement past
or future, is;

casu, vel alias non valet explicio comparativi gradus,
nec explicio de *differt* et *aliud*, nec aliqua explicio
supra dicta, continens diversitatem temporis.

Hic dico quod loycus debet aptare locucionem suam
secundum exigenciam auditorii, pro loco, et tempore; 5
ut puta, quando queritur de rebus transmutabilibus
quomodo se habent ad circumstancias et actus parti-
culares, tunc dicendum est particulariter, considerando
hoc instans in quo sumus; et secundum hoc aptanda
sunt verba, concedenda aliqua esse et non fuisse, ut 10
illa que nunc sunt subita, alia fuisse et non esse, vel
fore, subtiliando ipsa non esse nunc. Sic enim locuntur
plebei, quando queritur si comederit vel audierit missam,
dicunt quod non, restringendo questionem ad illud
directe; et ad istum sensum locutus sum usque ad 15
istud capitulum. Quando vero locutum est cum ab-
stractis philosophis secundum consideraciones univer-
sales, transcendendo omnia corruptibilia, loquendum
est de tempore et suis partibus quibuscunque, cum om-
nibus 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 conno-
tacione particulari cuiuscunque temporis: quod sine
dubio singulariter grammatici rare sciencie swadent ad 25
faciendum.

Unde aliqui concedunt talia, solum ampliantes ver-
bum 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 racionem
locutum. Ideo, sicut ampliando intelligo ! verbum B 1166^b
sub figura presentis temporis, simpliciter sine conno-
tacione 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

Aliquis tamen probabiliter concederet quod omnis
motus qui fuit vel erit, est; sed negaret omne quod

o. pres B. 16. 1^a B. 25. fu duo B. 42 lit *pro* fit B.

- movebatur aut movebitur, moveri: ita quod non sequitur: *locucio Sortis est: ergo, Sortes loquitur*, propter equivocacionem 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 sententia 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 tempus preteritum, quod est pars temporis eterni, non contradicit neganti quod ipse facit aliquod tale, restringendo verbum ad ipsum *nunc*.
- 15 Nec sequitur ex ista opinione aliquem sylogismum esse negandum, quin potius sylogismos concedendos esse quos multi negant; ut patet de conclusionibus concedendis de oppositis predicatis de seipsis, sed non simul et semel. Et est propinquissima locucio quod deus est non solum ante generacionem Abrahe, sed etiam antequam fieret, et ante racionem stabilitatis sue, 20 quod est eternum. Et ita hodie et cras Christus vivit, et 3^a die consummatur. Ymmo, sicut credo carnis resurrectionem, Christi mortem quam aliqui crediderant, et per consequens cum actus fidei non sit falsus, sequitur fidem creditivam esse veram; et ita deus diligit 25 et vult omnia bona que erunt vel fuerunt, et per consequens cum [non] vult 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 35 instantibus. Nec sequitur hominem esse multiplicatum per diversa loca, etsi ille sit per diversa loca distancia, quia requiritur quod simul et semel sic esset, nec sequitur: *ista sunt: igitur sunt simul tempore*.
- 40 Sed ulterius dicitur quod non sequitur omnem regressionem 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 one who 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 syllogism; on the contrary, I admit syllogisms 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.

Nor do I admit that a return from a privation

11. dicitur B. 11. antecristum vel de B. 24. c t, p^o et B.
 26. g^oumat^r B. 28. 1^o B. 31. non *deest* B. 33. ecce tū *ā*^{is} B.
 34. *ā*^{is} B.

to a other
quality is
always possible.
A return implies
that the
quality has
been lost.
We may take
thought about
things past,
but not as past
things.

quod regressio ponit habitum fuisse, et privacionem postmodum fuisse. Unde non sequitur: *Ego possum habere istam formam et careo ista forma: ergo possum habere istam formam postquam carui ista forma.* Hoc enim ampliat hoc nomen, *regressio*. Nec obest consi- 5
liari 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 10
potencia 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.

Nec sequitur quod filius meus ex michi dubio sit sapiencior me, cum non habeam evidenciam quod ego habebo filium. Verum cum hoc est satis possibile. Nec sequitur a pari quod sit senior | me. Illud tamen est B 107^a
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 20
scio illum diem esse; quia credo absque contraria formidine, et iam est, sed non credo istum esse nunc.

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.

Alii vero comemorant verba sua sine fine, concedentes quotlibet impossibilia et adhuc vult esse; ut alii concedunt tempus et alia successiva componi ex 25
partibus que non sunt. Et proposicionem vocalem concedunt esse proposicionem, sed non esse. Alii autem dicunt quod hec proposicio vocalis: *hoc est corpus meum*, non est vera antequam, complecione residui proposicionis, foret Cristus sacramentaliter in hostia. Alii dicunt quod 30
non est possibile successivum esse vel aliquid moveri. Alii dicunt quod res moventur sine motu et durant sine duracione; et sic de multis quibuscunque impossibilibus, a quibus deus liberavit me sic loquendo. Non scirem enim aliter etatem meam, vel antiquitatem aliam susti- 35
nere; 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 suc- 40
cessive ex tempore; quia aliter tempus causaret illam

7. ar *pro* aliter B.8. ar, *pro* aut B.

12. exm̄ B.

24. w^t B

subito in fine, quin illud tempus non esset. Habito ergo quod etas sit successive magna, patet quod oportet ponere etatem ita proporcionaliter [ad] senem, et non pro illo instanti in quo est quantumlibet iuuenis. Ergo re-
 5 linquitur quod post, in tempore suo, sit sic senex. Sic ergo nunc senior per indivisibile quam prius fui, quia est dare quam senex prius fui, sicut et danda est maxima etas hominis qui nunc deficit esse, et incepit mecum. Aliter enim non est dare quamdiu viveret vel
 10 quamdiu esset vita vel mutacio sua, nec totum cuius forent parciales etates. Non ergo est verum quod aliquid semper non erit per tempora.

Quo ad 2^m dubium, videtur quod non idem tempus sit ubique, hoc est in omni loco; quia in nullo loco
 15 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 pre-
 20 supposita unitate subiecti sui; sed mundus non est aliquid unum, ymmo agregatum ex omnibus creaturis vel vivis ista agregata: ergo, nec tempus est unum. Maior patet ex hoc quod non est corpus animatum continuum, nec aliquod ens predicamentale, cum tunc haberet ani-
 25 mam, 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 tocuis, tanquam causa; et non extrinseca: igitur intrinseca. Sicut 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 on 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 saluberrimum et pulcherrimum foret turpissimum tempus et pestilencia; et sic de quotlibet denominationibus 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 expository 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, or 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 aliam medietatem anni erit in aliis sex signis distantioribus 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, sicut habitantes in celo extra umbram terre. Alii autem habebunt aliquando instans, vel verius agregatum 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 unius instantis vel tempus agregati 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 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 porporcionaliter, sicut lux solis sequitur umbram terre; et econtra. Sed illud videtur loyco derisorium et posticum mendacium, cum tunc tempus moveretur circulariter ad motum solis. Ymmo

1. et deest E.

23. *Sub polo 50 h'aci.* 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, sicut umbra terre et dies sicut residuum mundi; quod non conveniet multiplicatis. Et conclusio patet, ex hoc quod continue erit eadem nox numero oriencior et quiescenti propinquior.

5 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 acceleracionem diei supra fugam suam.

10 Similiter videtur quod idem tempus potest augeri et alterari, cum motus celeriter versus occidens haberet diem diucius 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.

10 Similiter videtur quod ad omnem punctum sub terra sit nox, et per idem omne corpus terreum eclipsans directum aspectum solis ad medium dyaphanum faceret 20 ibi noctem, cum non sit ratio quare mane est vel sero, cespes terre vel aliquid mixtum faceret noctem per eius adumbracionem, quin per illud quodlibet aliud mixtum terreum; sicut patet, ymaginando quod loco 25 terre ponatur quodvis terreum mixtum. Et tunc sequitur | quid quidem ad nutum, per interposicionem manus vel alterius eclipsantis faceret noctem ubicunque fuerit. Ymmo quilibet portaret, tam extrinsecus per 30 pannos vel alia tegumenta eclipsancia, quam intrinsecus, ad omnem punctum noctem suam secum. Et cum dies tam cerebro intercipitur, sequitur quod sunt mille noctes localiter distantes, sicut 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 dyafanum in eius composicione; et in infinitum in opposito loco potest esse nox adequate, sicut 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 bmer, the night darker, the year more or less plentiful. Night would be everywhere underneath the earth; and every earthy 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. mlti^{te} B 12. nouⁿ after et B.

pectu B. 28. tamquam B. 34. 17 B.

20. as-

day by beaming
on the earth;
otherwise every
cloud would
cause night;
and night is
when it
does not
beam; if the
sun tailed us,
both day and
night would
tail, or day and
night would be
equivalent to
light and
darkness.
This we admit,
and answer the
foregoing
arguments.
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 unity
a people, so
they do the
world;
and it does not
become other
merely because
of generation
and corruption
here below;

causat illam diem infra illam diem, eo quod aliter que-
libet abombracio per nubem terream causaret noctem.
Et si potest dies remitti usque ad non gradum in cla-
ritate pro medio instanti, non foret ratio quare esset
plus nox quam dies. Sicut ergo hic, tempore in quo 5
deficit illustrando, tunc hic est nox; quia aliter, defi-
ciente sole, deficeret tam dies quam nox; vel aliter
quelibet illuminacio causaret diem et quelibet abscuri-
tas indifferenter causaret noctem; sed nunquam in sole,
ubi non potest esse nox, sic dies. 10

Dicendum quod sic, aliter non esset in celo dies
eterna, suppositis predictis de tempore. Dicitur ad
primum quod assumptum est falsum, cum relaciones et
alii respectus, ymmo qualitates competentes composito
multiplicantur per subiectum; sicut patet de similitu- 15
dine, de sanitate, de voce, et multis similibus que non
habent partes corpore extensas. Verumtamen equivo-
cando 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 ano*
tuo, patet quod leve verbum est et in sententia nichil
movens; sicut nec: *pars mundi est in ore tuo et pars* 25
tui est in tuo ano. Nec oportet sentire ibi fetorem, cum
non habens ibi olfactum, nec sicut dimensor abstrac-
tus strictitudine loci, sicut deus qui est ibi.

Ad 2^m dicitur quod oportet ponere mundum habere
quandam unitatem; vel discretam quantitatem, ut habet 30
populus; vel continuam, ut habet homo. Vel quomodo-
cunque dicatur, mundus non est omnes creature, sed
agregatum ex omnibus substanciis; sicut populus non
est illi homines, sed agregatum ex hominibus conveni-
entibus in pollicia vel ritu. Unde, sicut 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 mul-
titudine naturalium principiorum. Non ergo est novus
mundus propter generacionem vel corrupcionem, corrup- 40
torum sublunarium, quia manet idem deus cum suis

legibus et quolibet punctalis materia prima. Et quando auctores dicunt quod totum est sue partes, predicacio materialis est. Sicut 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 dicerent quamlibet creaturam fuisse racionem eternam esse: ideo et ipsam racionem esse deum. Sic ergo intelligendo mundum discrete unum, ponit philosophus correspondenter quod genus temporis est numerus, hoc est mensura secundum naturales replicaciones instancium, mensurans motum.

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.

Ponendo autem mundum esse animatum, tunc patens eius est essenciam mundi (quia ipsam animam) esse ubique, sicut 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 instancium. 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 accionem vel perfeccionem quam habet pars integralis habet suum totum; sed pars mundi habet intellectionem, sensacionem, vegetativam, sensitivam, et motum ex se; ergo et mundus denominatur eisdem actibus, et per consequens vivit. Et pari evidenciam ex se movetur, et celum sic movetur; omnes ergo partes mundi sunt anima regulante, quamvis non proprie vivant, sicut est in minori mundo, cuius superfluitates alique 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;

But it 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. 9^{te} B. 42. Subi^o B.

et sic terra attribuitur corpori hominis, aqua sangwini, aër spiritibus et ignis calori. Regio vero capituli correspondet celo, regio pectorum aëri, regio vero intestinorum correspondet aque et regio generativorum, cum posterioribus membris solidis, correspondet terre. Et ut breviter dicatur, quelibet proportionalia 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 transmutabile. 10

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

Ad 3^m credo quod illud assumptum pro opinabili sit impossibile, cum nichil potest annihilari; 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 quandalitas ab illo causata; ergo, iuxta opinionem, duracio mundi foret prius quam duracio partis mundi. Consequens falsum, cum pars mundi sit causa mundi, et per consequens ipso prior; et per idem, ipsum *quando* foret prius tempore, potissime cum potest esse sine mundo; sicut patet in mundi produccionem, specialiter de animalibus. 25

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

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 prioritatem 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 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. mundus 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 producantur. cum quolibet anima sit accidens mundo. Correspondenter autem dicitur quod motus in communi est prior naturaliter tempore, et tamen tempus singulare est naturaliter prius quocumque motu singulari; sicut 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, sicut patet de duracione hominis que manet eadem corrupto membro, ymmo corrupto toto corpore. Aliter enim non foret periodus animalis continua, sicut vere conceditur esse. Si ergo fuerit res habens partes quibus potest carere, tunc
- 15 eius duracio omnino non dependet a duracionibus illorum partium; nec per consequens extenditur, sicut contingit in animali. Et per idem duracio mundi non extenditur. Nec sequitur, si duracio mundi presupponit duracionem dei, que est eternitas, et duracionem anime mundi vel intelligencie, que duracio dicitur evum, et
- 20 3^o duracionem materie prime, que est quandalitas, quod ex hinc ille duraciones presupposite sint eius partes; sed bene presupponuntur ut essencie extrinsee, non quo ad situm, sed quo ad essenciam; sicut qualitates prime sunt essencie extrinsee presupposite ad resultacionem qualitatum secundarum. Et sic de aliis multis accidentibus. Est ergo magna ratio quare duracio mundi, que est tempus, non extenditur, et motus mundi extenditur; quia, quolibet 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 tardus, uniformis vel difformis 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] ratio quare duracio 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.
1. 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 'aeon', 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. eodem B. 20. omnium? B. 22 sed *pro* quod B. 24—25 3^o B
30. 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 vivificacio ^{B 160^b} totius corporis est vita animalis, et nullius partis vivificacio, sed vita imperfeccior alterius racionis, 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 ¹⁵ 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 ²⁰ 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 ²⁵ tempus, sed sunt motiones solis. Alii dicunt quod sunt agregata ex motu et tempore. Et tercii dicunt quod sunt tempora.

Contra primum modum dicendi patet quod communiter negarent diem vel noctem esse extra solem; et ³⁰ 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 orisonte, per idem antipodes habent diem nostrum pro nocte, que est lacio solis sub orisonte eorum. Sed quid ³⁵ 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 ⁴⁰ omnem diem vel noctem rem permanentem, et omnem

1. quod *deest* B.

3. accipit B.

11. enim B.

38. fe ^{qu} ^{ir} ⁱ ^{te} B.

39. ^{pe} ^{om} 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 ratione 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, sicut patet discurrenti per dicta autorum et vulgarium. 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 alique 20 conclusiones sequentes ex illa posicione; notata tamen distincione inter dies artificiales et naturales, et quomodo denominationes predicte insunt temporis, sicut tangitur in responsione sequenti. Nec est inconveniens B 170^a tales | denominationes inesse eidem pro diversis locis 25 aut diversis temporibus, sed non simul et semel.

Tunc ad primum argumentum contra primam responsionem 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*; sicut non sequitur: *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.

1. (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. vucā biffe B. 12—13. quam artiste quam 9potifie B.
15. Sicut B. 28. am B.

11. I am quite unable to make anything out of these words, *vucā biffe*.

obliquitatem vel rectitudinem sperere quo ad habitantes dispariter in orbe terrarum; sicut patet considerantibus subtiliter istam materiam. Est tamen dare tam diem quam noctem longissimam, quam etiam brevissimam; sed non video adhuc quod quelibet pars diei aut noctis sit tam dies quam nox, cum quotlibet instancia nec sunt dies nec noctes.

of rather
neither the one
nor the other.

7. We deny
that time
moves.

Ad septimum respondetur, negando conclusionem primo assumptam; quia, cum omne tempus sit immobile localiter sicut mundus, patet quod non competit ipsi circulacio. Ymmo, si mundus moveretur motu recto, adhuc foret tempus ubicunque foret situs, sicut 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 or 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, sicut 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 aliquid notum sublunarem. Attendunt enim ad miliaria que punctus equinoctialis describit: et cum ille motus sit mensura temporis, et sic per accidens causa eius, dicunt in predicacione 2^{am} 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 spericus, sicut mundus et anima figurata sicut homo; et sic de aliis multiplicatis.

Nox ergo et dies sunt ubique, quamvis non ubique sicut 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 prestancius 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 (!) B.

7. sunt *twice* B.

9. a^{tam} B.

27. f^{us} B.

32. exp^{at}ius B.

33. erit B; *ib.* poit^m B.

34. p^{ua} B.

B 170^b Ac si concederetur | quod si deus michi posset esse
 propinquius homo per assumptionem humanitatis, sine
 hoc quod ipse moveatur (quod quidam concedunt posse
 fieri sine hoc quod aliquid moveatur). Unde conceditur
 5 de possibili quod continue propinquabo localiter isti
 homini cui nichil potest appropinquare localiter. Ymmo
 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 spacium. 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.

So I may come nearer in space to God as Christ, and yet God is nearer to me than any man can be.

Nota tamen quod contingit intelligere istos terminos
 accidentales temporis in suppositione simplici, modo
 quo superius dictum est, et consequenter negare quod
 dies est nox, et sic de aliis temporalibus conclusionibus
 20 concessis in suppositione predicabili. Nec sequitur ad
 sensum illum expository: *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.

We may also deny that day is night, merely admitting that *the time which is day is night.*

Ad 8^m dicitur quod conclusio non sequitur propria
 25 predicacione de eodem tempore in numero; quia motus
 sic versus occidentes haberet infinitas noctes et infinitos
 dies, communicantes tamen secundum mutacionem sui
 orisontis. Sed species diei vel noctis potest prolongari
 vel breviri secundum diversa eius individua, et eadem
 30 dies vel nox in numero potest large loquendo, alterari,
 serenari, vel obumbrari, fieri salubris vel obnoxia; non
 quia tempus sit substancia subiecta illis qualitatibus
 vel illis accidentibus, sed quia cum tempore ista con-
 tingunt; ut tempus dicitur amenum illi cui contingit
 35 amenitas in illo tempore.

8. A man travelling towards the west might have an infinite number of days and nights of different lengths, according as he changed his horizon; but this would not be properly the same individual time.

Ad nonum dicitur [quod], loquendo de die et nocte
 artificiali, contingit varie valde distingwere rationes
 eorum, ut aliqui dicunt ubique esse noctem ut non est
 40 sensibile lumen solare; et, sole existente in meridie
 emisperii nostri, habemus noctem tam inter nos quam
 extra, et [ad] alia puncta habemus simul diem, sed non

9. We must carefully distinguish the meaning of words. Some say there is night

7. propinquus B. 11. *scilicet* B. 18. *quo ad* B. 25. parte *pro*
 predicacione B. 27. 17 B. 30. *quod deest* B. 41. *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 ad 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, sicut est per reflectionem luminis solaris ad obstaculum, sed non per lumen incorporatum in luna vel alio astro. Artificiosius tamen et cercius videtur loqui, ut astronomi locuntur, concedentes ubique terrarum esse diem artificialem ubi sol est super orisontem ibi locati, causans lumen sensibile. Dies enim connotat lucem vel claritatem, nec refert quod corpus oppacum distingwit emisperia inter que orison intercidat, sive fuerit terra sive ter-
reum.

Et si queratur a sic dicentibus quare mixtum in ortu vel occasu solis causat noctem, ubi multum relinquitur de lumine, et non eclipsando solem super orisontem, plus tollendo de lumine; potissime cum sol ibi situato tam oritur quam occidit: dicitur quod huius ratio est, quia sol [est] supra orisontem ^{2^o} situati et non super orisontem | primi situati, et hoc sonat dies vel nox ^{B 171^a} 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 luposum quodcunque fuerit. Et sic potest dici quod illud tempus quod est hic nox foret subito hic dies per annihilacionem 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 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.

Uterius concedi potest quod ad omnem punctum 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 luposum quod non 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 quod ad hoc [quod] hic sit dies, requiritur hic esse tempus in quo sol est supra orizontem huius situs. De aliis vero partibus temporis ut 4 temporibus anni et aliis de quibus locuntur compotiste, oportet diligenter advertere quomodo causantur secundum denominationes accidentales, connotando extra rationem temporis, et quomodo iniciantur et equivocantur: et iuxta hoc respondere, 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 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 posterius ex se sine motu: quo dato non est fingendum quid tempus dicit ultra esse rei.
- 20 Item, pono quod non sit motus sensibilis, et ymaginetur homo de tempore; tunc patet quod esset tempus, quia aliter non esset ymaginatio diuturna gignitiva fastidii. Et quod non oportet ex hinc ponere motum, videtur ex hoc quod stat ymaginativam terminari continue ad idem simulacrum pro eadem re, sine generatione nove speciei vel nova terminacione actus ymaginandi. Et sic non potius foret ymaginacio successiva quam est visio vel quavis alius respectus, cum successio requirit diversitatem materie motus.
- 30 Item, si possibile est omnem partem mundi privari motu locali, possibile est omnem partem mundi quiescere similiter a motu. Pono ergo hoc, et sequitur ex quiete tempus esse, cum aliter non esset quies illa longa. Stat ergo tempus esse sine motu similiter. Nisi enim quies temporis esset temporanea, sequitur quod tempus immediate precedens illam quietem, et tempus immediate subsequens illam quietem ex incepcione motus, essent vere continuata ad instans quietis *ſet* per consequens
- Day is thus the time when the sun is above a given horizon.
- What has already been said will suffice to give a notion of the difficulties that surround the other parts of time.
- Whether movement implies time.
- (1) Where there is no movement at all, there would be no time, for time requires a *Before* and an *Afterwards*, which is found only in movement.
- (2) On the other hand, let us suppose that there is no movement, and that a man sets to fancying time; there would be time by the very fact.
- (3) As each part of the world can be deprived of local movement, it can rest from movement; suppose that done, and the world must rest in time, or the rest would not have any duration.

2. quod *deest* B. 5 *spotifite* B. 19—20. *ygner ho* B. 25. *giconel*
 32. *po* B; *ib.* *ſet* ex *twice* B. 33. *lo* B.

10. *Item.* The preceding argument proves that time depends on movement; those which follow go to prove the contrary.

continue), 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.

Item, contingit quantumlibet tarde motum esse velocissime | motum, cum quelibet pars mundi potest B 171^b quiescere, mota alia. Posito ergo quod orilogium cuius 5 dyiameter sit pedalis, volvatur semel per tantum temporis quanta est dies naturalis Et sequitur ex predictis de individualibus quod erunt infinite intercisiones in re- volucione A. sicut essent circumducto celo cum A; quia aliter essent tot puncta in circumferencia A, sicut 10 in circumferencia mundi sunt. Cum moveretur ergo per omnes istas penes istas moras intercidentes, non esset motus, quia nichil A vel pars eius. Sequitur quod tempus potest esse sine motu; et per idem quantum- libet magnum tempus. 15

Item, possibile est quod mundus creatus per quantum- libet tempus similiter quievisset et post motus fuisset; ergo tempus non requirit talem motum. Assumptum patet ex hoc quod quies est de se successiva, sicut 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, sicut necesse est tempus esse, sic 30 necesse est motum sensibilem esse. Unde, non in quocunque motu fundantur prius et posterius successiva, sicut patet de motu intelligencie a deo; et breviter de cuiuscunque substancie motu quo tendit in finem suum. Sic enim innitur 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, racione 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'logū B.

13. m¹ a ū 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 ymaginato quod totus mundus cesset a motu sensibili extrinseco perceptibili, lata ymaginacione super prius et posterius, videndum est utrum actus ymaginandi sit permanens; tunc sequitur tempus esse, eo quod ymaginans est pars mundi sensibiliter mota, et per consequens mundus secundum illam partem movetur.

10 Communiter eciam, quando ymaginativa fertur super preterito et futuro in particulari, non est facile hoc fieri, nisi successive, sicut quantumlibet ymaginamur prius tempore unum et posterius tempore aliud. Ex tali autem ymaginacione causatur intencio speciei fixius in
15 ymaginativa, et debilitas vel potencia ymaginantis ex delectacione vel tristicia, et bonitas vel malicia, fortitudo vel fastidium, aut alie huiusmodi qualitates, racione cuius acquisite vel deperdite, saltem secundum intensionem vel remissionem, ex sequitur tempus ad alteracionem
20 successivam. Nec est possibile ymaginacionem nostram coniunctam motui mundi secundum dispositionem in qua nunc sumus ferre super tempus in particulari sine
B 172^a successione actus ymaginandi; 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.

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 composicionem 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 ymaginandum 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 4^o vero est appetitiva mocionis orbibus, et 5^o finaliter est apprehensiva primi motoris.

1) 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.

Ner can it possibly be otherwise.

Comparison of the movements in an animal with those of the macrocosm

18. ite'ffiom B. 23. qui cū B. 27. ah vici^o B. 32. hac B.
39. t^{te} 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, fit 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 spiritualement 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 substantie, et omnis materialis alteracio vel motus in quantitate. Sed sicut est in minori mundo, est dare duas manieras motuum, quorum unus est a natura corporea et non alius, reliquus autem est ab anima: sic in maiori mundo est dare duas manieras motuum, quorum unus est sensibilis naturalis, cuius motor celi est principium; alius autem est spiritualis et intencionalis, cuius anima, que est supra omnia corpora, est principium. Manebit ergo tunc homo incorruptibilis, sicut et quilibet pars mundi ultimate perfecta, et mutabitur homo intencionaliter tam a sensibilibus quam ab intelligenciis insensibilibus mutacione successiva; et hoc secundum omnes vires anime. Non ergo est possibile mundum similiter 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 quacunq; mundi, sequitur quod non esset tempus sed mensura quedam porcionalis evitate intelligencie, sine prioritare vel posterioritate in successione, nec generaretur tunc fastidium vel aliud ens predicamentale; nec foret aliud tunc diuturnum, et si maneat sic eternaliter, quia cuiuslibet rei duracio foret

7. spūali B. 12. omnem *pro* oportet B. 20. mo^uo B. 37. em^u B.

37. *Evitate*. Derived from *erum*.

tota simul, sicut est de eternitate. Nec capit ymaginatio
 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 ymaginans 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 ymaginans habet
 suum tempus quod esset duracio sui actus ymaginandi.
 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 delecta-
 tionem in primo motore, et post hoc habebunt discursus
 cognoscendi omnes veritates causatas cum quadam
 20 successione, sine diminucione sui gaudii, propter se-
 curitatem sui habitus, excluso fastidio et errore in suo
 discursu. 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
 perfeccionem, erunt ibi ablate, et solum illud quod est
 perfectum ibi remanebit; ut nemo generabit ibi, nec
 augmentabitur, nutrietur, 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
 35 ad omnem punctum celi, dum quelibet eius pars violen-
 tacione alterius intelligitur suo ordini situati. Sed talem
 sonum non sufficimus nunc percipere propter peccatum
 inobediencie. Ideo dicimus quod non est talis sonus,
 cum tamen non sit ratio quod motus violentus causaret
 sonum, qui 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. pa^o nator^o B. 20. dicione B. 32. fancrosam B. 35. mth^r B.
 40. cō^r 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 5 inmutandum olfactum, nisi propter defectum virtutis. Et conformiter gustus habebit saporem temperatissimum sibi obiectum, cum ibi erit siccum terreum proporcionative mixtum cum humido aqueo et callido igneo movente. Et eodem modo sensus tactus percipiet suum 10 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. 15

Querendum autem est de circumstanciis et quidditate hic narratorum. Dicitur quod sonus idem est quod sonacio et disposicio secundum quam materiale est immutativum virtutis | auditive. Et sic odor vel odoracio B 173* est disposicio mixti aerei secundum quam ipsum est 20 motivum virtutis olfactive. Sapor vel saporositas est disposicio aquei humidi, 2^m quam ipsum est immutativum virtutis gustative; et sic de qualitatibus 2^{is} tangibilibus. Et omnes ille qualitates habent certas proporcionones miscendi elementa secundum atthoma vel par- 25 tes divisibiles, ex quibus resultant non quod sint res que possunt per se esse, sed sunt disposiciones vel potencie mixtarum ad taliter obiective inmutandum. 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 acquirere, sine immediacione obiectorum vel accione similium specierum per medium. Ymmo, vere loquendo, sensus sunt quodammodo cum obiectis a quibus afficiuntur, et rapiunt vel eliciunt species ab 35 illis quem ad modum specialiozem noscendum, cum non sit multum pertinens huic loco, relinquetur studentibus; capiendo quod tota imperfecio erit subducta, et totum quod erit perfeccionis persone tali possibile remanebit. 40

1. tume (*very plain*) B; *ib.* fualt B. 3. fumo B. 11. erit B. 12. f tume B. 18. fona^o B; *ib.* male, or mole B. 21. humidi aquei humidi B.

Et e contra in gente opposita. Illis enim erit dolor Of the damned.
 perpetuus sine dissoluzione alicuius particule vel virtutis.
 Nec obest ignem vel quodcunque horridum naturaliter
 hominem inmutare spiritualiter perpetuo sic punitum; They will
 suffer for ever,
 without losing
 anything of
 their body or
 their faculties.
 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 inper-
 tinens [est] sui dissolutio, patet ex hoc quod stat
 10 hominem quantumlibet gaudere in eius dissoluzione,
 et quantumlibet dolore terreri, vel horrere nichilominus
 eius deperdito. Si ergo queratur quid erit primum mo-
 uens omnium istorum, dicitur quod prima veritas,
 prima iusticia et prima causa, que est iam primus
 15 motor mundi et cuiuslibet sue partis; sed sicut iam
 movet motu extrinseco et materiali sensibili, mediante
 motu celi, ita movebit tunc motu spirituali, mediantibus
 rationibus iusticie, animas et eorum corpora; et forte
 movebit localiter tam beatos quam miseros. Raciones
 20 autem fundamentales hic dictorum relinquo theologis,
 sicut et totam materiam ulterius pertractandam, con-
 tentatus de hoc quod necessario est semper motus
 successivus.

Ad 3^m dicitur quod assumptum est impossibile, cum
 25 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 inconueniens
 delectacioni talem circularem apprehensionem esse
 successivam; quia non ex eius deperdicione deperditur
 beatitudo essenciale nec erit delectacio successiva.
 Veruntamen non claret michi adhuc utrum possibile
 B 173^b est omnem motum localem corporum hominum } cessare,
 vel necessarium sit aliquod corpus tale moveri localiter
 tam celeriter sicut movetur aliquis punctus mundi.
 Quod si sic, foret consequencia assumpta bona, sed
 antecedens eius impossibile, admitti.
 40 Vel illud antecedens potest admitti, tanquam pre-
 dicacio michi neutra, et negari consequencia; et potest

Pain is but the
 unpleasantness
 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 gema^r B. 9. est *deest* B. 10. disso B. 11. dolo^re 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.
Secondly, 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 positum, distin-
guendo de quiete, ut dictum est de motu. Aliquando
enim dicitur quies similiter pro carencia cuiuscunque
motu. Et isto modo dicitur deus anthropologicè quies-
cere in se eternaliter, quia est finis ultimus non potens
in aliquem extra se ad eius indigentiam tendere. Et
ista quandoque vocatur requies figurative, cum requies
opponitur labori, sicut quies motu. Et illo modo solum
essencia divina potest quiescere. Quandoque autem
dicitur agens quiescere, quando cessat a produccione
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 di-
citur aliquid quiescere, quando ipsum habet suum
finem extrinsecum cui innititur; et taliter quiescit que-
libet 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,
Alia vero carent multis finibus accidenti-
talibus requisitis ad eorum perfeccionem. Talis autem
quies non includit de se successionem, nec excludit
motum permanentem qui est nisus vel tendencia in
finem extrinsecum. 4^o modo dicitur aliquid quiescere,
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 3^o
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
dictam bene contingit intelligere cum necessitacione
motus successivi. Illa tamen quies non esset longa vel
diuturna, cum illam denominationem habet quies a
tempore. Ex quo sequitur quo talis quies compatitur
secum tempus; ymo sequitur ad esse temporis, nec
discontinuat tempora ab invicem. Ideo negandus est

4. antho^e B.7. figa tme^{cu} B.

24. visus B.

33. est B.

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 successione.

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.

B 174^a Illa ergo quies est ante omnem motum successivum 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, sicut 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 inceptio et desinectio 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 expectabit amplius quam per instans antequam indisposuerit materiam ad illam formam; quia aliter natura, inducens illam formam, frustra induxisset illam, et esset inpedita a sua induccione, cum agens naturale contrarium pro instanti induccionis forme
35 ageret eque fortiter ad eius educconem.

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 substancialiam, *per se esse*, simul incipere et desinere esse, quia non requiruntur contrarie
40 tanquam mutaciones in materia ex generacione et

And as the argument implies that such rest would be prior to succession, it must be denied.

Such rest would be naturally prior to successive movement, could not be preceded by time, and would be neither successive nor instantaneous.

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 so do.

corrumpcione istorum accidencium, sicut 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 elicentem illum produceret et actum. Non ergo foret in potestate elicentis actum illum non elicere, vel non elicuisse illum actum et per consequens rationale esset quod non obligaretur ad denuo elicendum 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.

No one can sin in the first instant of his being, because God, producing that being then, would also produce the illicit act of sin.

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 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 argumento, eo quod oportet mundum aliquam eius partem esse eque velociter motum sicut aliquod potest moveri, et sicut moto a horelogio modo quo ponitur, sequens est quod mundus moveatur vel motu locali vel motu alteracionis ita velociter sicut potest. Quod si motus alteracionis non potest esse univoce velox cum motu locali (et sic mundus non eque velociter alterari potest sicut movebatur localiter), tunc oportet quod eque velociter moveatur sicut potest. Unde, sicut prius tactum est, corrupta medietate materiarum punctalium mundi, quieta materia lineari in circumferencia mundi, adhuc foret mundus eque densus, ut prius dictum est |, sed non eque magnus, sed in 2^{lo} minor. Et ita quelibet dyiameter mundi, posita uniformitate densitatis materie, foret in 2^{lo} brevior, quamvis ymaginacio dicat oppositum.

9. adenuo B.
15 sunt deest B.

10. aluc pro a lumine B; ib. obli^o B.
25. velo^r B.

11. obli^o B.

Correspondenter intelligendum est de A hore-
 logio posito circumduci sine hoc quod aliqua pars
 mundi velociter moveatur; tunc in ea proporcione pluries
 volveretur in tanto tempore quam dies fuit naturalis,
 5 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
 10 mundi esse plura indivisibilia aquisita quam quocumque
 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
 15 quod ymaginatur successionem temporis. Ideo credit
 quod, quocumque 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
 20 impossibile, sicut in *a simili* dictum est de rarefactione
 et condensatione, ut quisquam non errans in ymagina-
 cione iudicaret tempus mensurans revolutionem A
 horelogii, subducto quocumque alio motu, esse tam
 diuturnum sicut est tempus mensurans revolutionem
 25 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 experigencia capta de situacionibus astrorum
 30 per suos radios. Istit enim subductis, iudicaret agitatus
 motu delectabili vel aliunde soporatus, tempus esse
 quantumlibet breve vel insensibile, et contristatus vel
 tediatus quantumlibet parvum tempus esse quantumlibet
 longum. Ideo nullus nisi levi estimacione iudicat quan-
 35 titatem temporis.

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*.

8. pla² B. 9. moto(!) B. 10. pla² B. 20. assimili B.
 29. expgenca 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.

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, sicut nec primum *mutare* vel *mutatum esse* motus: hic dicitur, ut prius, quod, si 5 tempus eque indifferenter consequitur motum alterationis sicut 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 indivisibile. 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 dispositio 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 difformiter motum quo ad subiectum simul incipere moveri secundum totum, Ymmo, pro ultimo instanti foret motus 30 completus, et mobile tunc annihilaretur, et mobile 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 evidenciam qua punctus motus primo instanti motus non pertransiret punctum suppositum, aliud autem per remocionem de presenti. Conceditur ergo quod si unum 40

2. *fc idm^{to}* B. 8—9. *dimutem* B. 18. *appj* B. 19. *fin^r* B.
 22. *fc^t* B. 23. *tlj* B. 26. *del^{to}* 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 desinente removeri per posicionem de presenti) anterior per instans, et in fine temporis (anichilato uno mobili, 5 desinente esse et moveri per remocionem de presenti) foret unus motus, reliquo diuturnior per instans. Utrobique tamen esset dare cuiuslibet talis motus, tam primum quam ultimum instans, cum sit dare instantia immediata, et sic, pro instanti pro quo est primum 10 *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 mutacionem pro 15 primo instanti: unde tale *mutari* requirit minimum motum pro instanti proximo esse in alio situ indivisibili, sicut *quietari* requirit punctale pro instanti proximo esse in eodem situ indivisibili. Ideo est impossibile quidquam quiescere vel moveri proprie solum per 20 instans. Nec video quomodo *mutari* posset esse instantaneum nisi sua materia foret indivisibilis, non successive aquisibilis, sed subito pro instanti quo mobile est supra illa, et in proximo instanti super indivisibili sibi proximo. Sic enim est dare terminum a *quo*, et terminum *ad quem*, cum *mutari* respicit futurum, sicut 25 *mutatum esse* respicit preteritum. Non quiescit mobile pro proximo *mutato esse* post motum et non pro ultimo *mutari* proximo precedente. In materia autem de acquisitione situum immediatorum consequenter secundum 30 processum instantaneum deficit ymaginacio nec quia virtus materialis est non potens capere nisi sensibiliter divisibile; [quod] non est instans, vel situs punctalis; et quelibet talia sunt que ratio convincit esse ponenda.
- 35 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 perfectione rei sit quiescere, et quies sit generaliter finis 40 motus, non tamen potest illa perfectio competere cuicumque, sed mundus potest esse in sua perfectione cum

since the mobile, during that instant, remains still in the same point of space. Explanation of how the mobile passes from the first point of space to the next;

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. mda B. 14-15. pp B. 28. p^o B. 30. after nec a very illegible word B. 32. quod deest B. 35. m B.

does not belong to all things; the world could be perfect, and yet move. Is it impossible for all men to be happy without successive movement? It is now; but if we admit that it was possible when the world began, then, Time would not have been.

hoc quod continue moveatur; nec, posito quod esset plene perfectus quo ad numerum hominum, et cessante omni generatione substance, foret ornatus in dispositionibus corporis ad eius ultimum, et homines circulariter tenderent in deum modo quo dictum est. Quod 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 argumenti, quod sit possibile pro inicio mundi; et tunc concedo quod non foret tempus; nec vere enunciaretur de aliquo quod ipsum fuit vel erit; sed totum foret esse, sicut est in eternitate; nec scimus loqui secundum istam dispositionem mundi, quia instans incepcionis mundi foret eius tota duracio, non successiva, sed permanens, ut aliquandiu foret mundus tunc, sicut nec semper. Sed amotis omnibus adverbiiis temporis, et mundus est, et permanent sine defectu vel desinicionem 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.

Sed difficultas est quomodo exponendo mundus eternalis incepit esse. Videtur enim pari evidencia quia mundus desinit esse; quia, sicut 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, sequitur quod faccio illa desinit esse. Nam, incipiente tempore, desinit esse; nec tempus ipsam corrumpet. Ergo, subducto tempore, desinet sic esse. Vel, si dicatur quod faccio illa sit eterna, cum necessario deus facit de quanto conservat mundum, loquitur de subita vel incepione mundi. Et tunc non occurit 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.

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. 1. Creation is the bringing of a creature from pure non-being to

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. Aliter enim non haberet creacio terminos a quo et ad quem

7. tellita'i B. 21. eternaliter B; *ib.* p^o B. 25. et fit B. 32. modo; *ib.* et *pro* in B. 31. non tangit non (!) B. 30. processit B.

nec posset bene describi differri ab aliis speciebus
 motuum, vel a generatione naturali, et a faccione arti-
 ficiali. Nam [cum] in generatione naturali factum a
 natura non sit de nichilo, sed ex materia, que est
 5 eadem substancia cum producto; sicut in opere artis
 humane non sit alia substancia, sed artificiosum per
 generacionem forme artificialis, sicut in opere nature
 sit compositum naturale per generacionem forme sub-
 stancialis: si ergo creati *non esse* precessit eius *esse*,
 10 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
 15 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*
 20 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 cre-
 andum, qualiter racio ydealis mundi non fuisset eter-
 25 naliter 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 consequencia
 patet, ex hoc quod, si aliquid est, tunc illud non est
 30 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
 35 alterum contradictorium 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 eter-
 nitate; quia tunc esset eternum. Ymmo tamen omne
 40 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
 definion 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 it
 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 uid'e B. 32. sui creacio B.
 36. *p̄us* B. 39. *t̄q̄* 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 intuition 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 in 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.

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 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 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, sicut et cuiuscumque alterius rei, sit eterna a parte 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 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 dei est instantanea, cum requirit ordinatum, et preordinacio dei precedit, si quidquam facit, non eternaliter, nec tempore imparcialiter, sed naturaliter. Non enim preordinat vel ordinat deus quod primum instans vel prima creacio erit, sed preordinat illud esse et non fore; quia nec fuit nec erit eius *fore*.

Ad 3^m dicitur quod hoc participium *creandus*, potest connotare futuricionem, vel dignitatem ut creetur vel sit creatus. Ad primum sensum patet quod falsum assumitur. Et in 2^o sensu patet quod mundus iam est

2. dem⁹ before deus B. 4. e'e' B. 11. aliquo (?) B. 14. q, fit q^m B.
20. app⁴ B. 24. tenta, tetm? B. 27. est pro esse B. 33. imp^r B.
39. secundum B.

creandus; hoc est, est dignus esse creatus ex bene placito creantis. Mundus ergo, et non eius futuricio ante actum, habet rationem ydealem eternam, priorem naturaliter mundo. Et illam rationem nunquam concomitabatur *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.

Innumerabilia autem dubia continencia materias hic superficialiter salutatas possent emergere. Sed considerans 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 quicquid inponendo, etc.
 15 Et sic est finis Tercii tractatus Magistri Johannis Wicleff, Doctoris Evangelici, cuius anima habeat eterne visionis iocunditatem. Fideliter correctus, etc.

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 innumerable 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.

1. ee¹ B. 1. 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.

INDEX.

- Absolute* positions of anything, the, are only two in number, 8.
- Absurdities*, the seeming, of Wyclif's theory that time is everywhere, 200—202; explained, 208—209.
- Absurdity*, the, of saying that God can do whatever may be maintained that He can do, 155.
- Act* of God's will, a twofold, 192.
- Action* of the heavenly bodies, the, upon animal life, 114, 115.
- Actions* of men, the, are not necessitated by the stars, 12.
- Activity*, the, of a quality varies in different subjects, 126; that of the imagination suffices for the sensible movement required by time, 213.
- Acts* of the mind, the, are not mere qualities, 24.
- Adam*, how we *are* in truth sons of, 169.
- Addition* of one unit, the, may make all the difference between the Finite and the relative Infinite, 37.
- Adverbs* may be taken as substantives, I.
- Aggregate*, an, has no regular unity of parts, 202.
- Aggregates* and compounds, difference between, 79.
- Aid*, the, given by colours to the act of vision, 87.
- Air* is the basis of the sense of hearing, 85.
- Albricus*, 23 *note*.
- All-Knowledge* of God, the, makes all things eternal in itself; but they are not in themselves eternal, 192.
- Alpetragius*, 23 *and note*.
- Alteration* is a species of movement, 11; properly belongs only to matter, 119.
- Ampliation*, the, of the verb *is* to mean all time, past, present, and future, 133.
- Analysis*, an, of the six halves of the world (right, left, &c.) 9.
- Anaxagoras*, 141.
- Angle*, an, of tangency outside the celestial sphere is not admissible, 106.
- Angle*, any, is either more or not more than the meeting of two lines, which is a point, 48. If more, is it indefinitely great? 47, 49, 50; if a point, can any number of angles be at once in the same? 49—52; the greatest possible angle, 62, and the smallest, 63.
- Angles*, species and divisions of, 48, 49.
- Animals*, brute, act under the influence of the skies, 12; space-relations of, compared to those of the world (right, left, up, down, &c.) 67.
- Animated* being, the world is probably an, 203.
- Annihilation* and re-creation, 92; if successive, would form time, 32; the first is not to be admitted in the Eucharist, 137, and is impossible, 204.
- Annulosa*, how the vital principle of the, is extended, 81, 132.
- Antecedent*, an, may be true at a time when its conclusion is not true, and *vice versa*, 191.
- Antipodes*, the, 206; people at the, see the sky turn in a contrary sense to us, 19.
- Apparent* and real movement; may one be taken as equivalent to the other? 18.
- Arctic Pole*, the, 9.
- Archetypes* of things, the, are in God, 188.
- Argument* an, drawn from the various seasons to prove that time is not the same everywhere, 200.
- Arguments*, proving that the Continuous is made up of indivisible points, 30—34.
- Aries*, the constellation of, 20.
- Aristotle*, 2, 5, 10, 14, 21, 35, 36, 53, 64, 75, 82, 84, 85, 94, 111, 114, 121, 126, 127, 132, 140, 152, 167, 171, 178, 183, 193, 203.

- Arrow*, an. goes forward and revolves lengthwise at the same time, thus having two movements at once. 22.
- Artificial* and natural day, the difference between. 207.
- Astronomy* considers as real such movements as are equivalent to real movements. 18.
- Atoms*, the world consists of. 1; the primordial atoms are triangles, squares, polygons or circles, pyramids or spheres as we may choose to name them. 60. 61; argument for their existence. 77 *and note*.
- Augmentation*, a species of movement. 11; defined. 111; is caused by nutrition. *ib.*; does not strictly include mere expansion. *ib.*; differs from nutrition. 113; is accompanied by certain acts. 115; is not a continuous motion. 116.
- Augustine*, St., 109, 110.
- Authority* cannot be urged against Wyclif's theory of the Continuous. 34.
- Averrhøes* (the Commentator), 4, 27, 75, 115.
- Aricenma*, 40, 79.
- Beginning* of the world, the, how it was possible. 224.
- Birth* of a king, impossibility of the. 148.
- Bisection* of a line, in the, what becomes of the medial point? 53.
- Blackness* and whiteness may coëxist. 93.
- Blessed*, the; their happiness in Heaven. 215, 216.
- Bodies*, two, cannot occupy the same space. 69.
- Boetius* (Boecius), 40, 61, 176 *and note*, 193, 216.
- Brutes* are compelled to act by the influence of the skies, 12.
- Cancer*, the constellation, 26.
- Capillary* vessels, 126.
- Capricorn*, the constellation, 26.
- Case*, the, of a body having no point of swiftest movement, 88.
- Categorical* propositions, 1.
- Causative esse*, the, of a solid mathematical angle, 51.
- Causes*, the, of a natural death, 114.
- Centre* of the world, the, is ever at rest, 3, and absolutely fixed, 98; is the lowest part of the world, 6, and consists of six mathematical points, 60.
- Change* is not from one contradictory to another, 160; change of the world's shape, impossible. 1; why. 1. 2; if change of place be not implied by movement, a stationary column may be said to move. 17, and rest to be movement, 38.
- Changing* and *having changed* places, distinction between, 99.
- Circles* are not more curved because their radius is less, 108.
- Circular* movement has no contrary, and is the most perfect of all, 14; the hypothesis of such movement enables us to dispense with a vacuum for atomic motions, 72.
- Circumference* and diameter, the relation between, 110.
- Circumference*, the, of the world is a perfect circle, with the least possible curve. 41.
- Cleavage*, the directions of, in wood or stone, 44.
- Clocks*, 221 *and note*.
- Coëxistence*, the, of the elements in the compound, 75.
- Colour* is subjectively a vital quality, 66; objectively, it exists only on the surface of bodies, 86.
- Column*, a, may be ascending and descending at the same time, 93.
- Combination*, chemical, three requisites for a, 74.
- Combustion*, explanation of, 68.
- Commensurability* of arcs, the, 110.
- Commentator*, the (Averrhøes) 4.
- Common* people, the, knows only of local movement, 23.
- Compenetration*, the supposed, of two bodies. 2; is impossible, 69, 71, 88.
- Complex*, as opposed to simple movement, 14.
- Complicated* movements of planets, the, 95.
- Compound*, a, is not necessarily the result of generation, 74.
- Concentric* circles have each a number of points proportional to the length of their circumferences, 4.
- Conception*, Wyclif's, of the creation of matter, 119.
- Condensation*; is it possible in Wyclif's cosmology? 63-70. Implies loss of matter, 69.

- Confusion*, the, between substantial and accidental terms is a source of many fallacies, 150.
- Contiguity* is a kind of continuity, 83.
- Contiguous* surfaces imply a difference between the two, though they touch, 32.
- Continuity* of movement is apparent only, not real, 40.
- Continuous*, the, Aristotles' definition of, 2; it consists of non-continuous elements, 159; in space, is made up of indivisible points, 30.
- Contradictions*, seeming, may be granted without danger, 28.
- Contraries* may exist at the same time in different parts of the same subject, 93, 116.
- Contrary* movements are such as do not coëxist in the same subject, 21.
- Corruptible* things are subject to time, 163.
- Creatures*, all, are moved by God, 24; *qua* created, are not identical with God, 141.
- Curvature* of the circle, the, 103; each great circle of the heavenly sphere has the least possible curvature, 105; curvature is impossible in one point only, 107; requires at least three points, 56.
- Damned*, misery of the, 217.
- Date* of the work, the, 183.
- Day* and night, adduced as arguments against Wyclif's theory, 200—202; refutation of the arguments, 206—211; they are but accidents of Time, 207.
- Death* is an instantaneous change; different kinds of, 100—101; at the moment of death, do we live or are we dead? 101; causes of natural death, 114.
- Definition* of place, 5; of creation (a making out of nothing), 226.
- Delusion* of our ears, the, when we think sound to be continuous, 193.
- Democritus*, 35, 109, 132.
- Density* and rarity, different meanings of, 64, 65.
- Dependence*, the, of the existence of things on God's knowledge of them, 191.
- De Quantitate Animæ*, 109.
- Development* is a continuous motion, 41.
- Diagonal*, the, and side of a square, brought as an argument against Wyclif's theory of the Continuous, 53, 54; answered at length, 54, 57, 110.
- Diameter* of the world, the, is the longest possible straight line, 42.
- Difference* of a thing from itself at various times, the, 146.
- Difference* in the elements, the, is caused by the varying proportions of matter and of form which they contain, 66.
- Different* points of view of God's knowledge; a relation, an act, or something that implies the knower, 187.
- Digestion* described, 112, 113.
- Dimensions*, if increased, imply a corresponding increase of matter, 63.
- Diminution*, any, of the world's size is impossible, 1; diminution may be the cause of increase, 111 *and note*.
- Dispositions* and qualities: can they exist longer than their subjects? 76.
- Dissolution*, a species of movement, 11.
- Distance*, the same, cannot be increased or diminished, 5.
- Distinction*, a, between location and the thing located, 4; between the sensibly and the absolutely Continuous, 35.
- Diversity*, the, of infinites, different to different men, according to their intelligence, 37.
- Divisibility* of man, the, 139.
- Division* of an angle, the, means division of the shape which it gives to the space it includes, 53.
- Dr. Beer's* opinion on the MS. of *Logic*, 98. *note*.
- Duration* of a body, the; must it be extended? 199; denied, 205.
- Durations*, the, of each part of the world: are they separate times, existing at once? 199.
- Earth*, giving solidity, is the basis of touch, 83.
- East*, the; does it move towards the West? 16.
- Eclipses*, 210.
- Elements*, the four, result from combinations of the four qualities, 126; have each their own special laws of activity, 129; remain in the compound, 74; are they all equally dense? 65.
- End*, the, of every being limits that being, 13.
- Epicurus*, 109, 110.
- Epicuretic* movement, 95.

- Equator*, the is equally curved in all its parts, 169.
- Equatorial line*, the movement of the celestial, 96; is the swiftest possible, 97.
- Equinoctial line*, the, 20.
- Equinoctial point*, the, 39 *and note*; 208.
- Equivocal meaning*, the, of the word *place*, 1.
- Essential presence*, the, of God in a sinner's soul, 118.
- Eternity*, the instant of, 172; time is an accident of eternity, 177.
- Fuchrist*, the accidents of the, 134, 136—138.
- Euclid*, 35, 58, 61.
- Euclid's geometry* deals only with such points, &c. as are perceptible to the sense, 46; must we deny his theory and definition of angles? 49, 52, 53.
- Everywhere*, different ways in which a thing may be, 163.
- Existence*, the, of God as First Motor proved, 12, 13.
- Expansion* implies increase of matter, 19.
- Explanation*, an, how lines that intersect (not at right angles) may touch at many points, 56.
- Experience* excludes error of the senses, 68; cannot militate against Wyclif's theory of the Continuous, 34.
- Extended*, the; can it consist of inextended parts? 96.
- Extensive parts*, 69 *and note*.
- Faith* is not to be judged, 71.
- Fallacia accedentis*, solutions of a, 151—154.
- Fallacies*, foolish and useless, concerning Time, 141.
- Farthest possible*, a, exists in every direction, 10.
- Feeling*, the act of, questions concerning, 152.
- Figures*; the fewer angles they have, the larger they are, 106.
- Fire* is in putrefying matter, and in cats' eyes, 77; is the basis of the sense of sight, 84.
- Fixity* of place means unaltered distance from the poles and the centre of the world, 3.
- Fly*, a, crawling up a descending lance; has it two contrary movements? 17.
- Foreknowledge*, God's, 182; man's, 183.
- Form*, matter and compound are the same essence, 120, not separate realities, *ib.*
- Freedom* to act is contrary only to absolute necessity of nature and that of coercion, 194; it is the cause which makes sin necessary, 195.
- Free will* of God, the, requires that the future should coëxist with the present, 168, 169.
- Future*, the, is present to God, 34, 35; can be known as past, and the past as future, 187.
- Futurition*, the, of the world was ordained in eternity, 226.
- Generation* is a species of movement, 11; like corruption, it cannot be eternal, 214.
- Generation*, the, of a man: remote, near, nearest, 153.
- Genetic definition* of an angle, the, given by Euclid, 52.
- Geometry* has nothing to do with Wyclif's theory, which goes beyond it, 36; may be only hypothetically true, 57; deals only with imaginable figures, 109.
- Gilbert de la Porée*, 64.
- Glorified bodies*; are they co-extended with the substances through which they pass? 70—74.
- God* could not make two spaces to occupy the same space, 5; could create a substance the size of a mathematical point, 33; exists in one instant — that of eternity, 174.
- Grammatical objection*, a, against using the present for the past, 195.
- Grosseteste*, 2, 3, 35, 109, 119, 138.
- Heat* is the 'being hot' of a subject, 124.
- Homogeneous substances* are united, heterogeneous substances separated by heat, 68.
- Human body*, the, is more than mere primordial matter informed by a soul, 76.
- Hypothetical necessity*, the, of some eternal truths, and of others not eternal, 180.
- Identity* may be reconciled with change, 127; the identity of contraries discussed, 188.

- Ignorance* in difficult matters should be confessed without false shame, 56.
- Illusions* of sight, 40.
- Imaginary* gigantic man, a, placed correspondingly to the parts of the world, 6.
- Imagination*, the, of time would suffice to cause time, 211; but the supposition of imagination without movement is impossible, 214.
- Immateriality*, the, of the human soul, 132.
- Immobility*, the, of the skies after Doomsday, 73.
- Immortality* of the body possible, if certain conditions are posited, 115.
- Impossibility*, the, of two spaces occupying the same space, 5.
- Incarnation*, the, brought forward to disprove an objection to Wyclif's theory, 123.
- Incorrupibility*, the, of the primordial material essence, 110.
- Increase* or diminution of the size of the world, impossible, 1.
- Indivision* of movement, three sources of, 140.
- Indivisible* present, if nothing of time exists but an, there is no time at all, 168.
- Inextended*, the, is not to be represented or grasped by our imagination, 45; neither is the touching of two distinct indivisible points by each other, 53.
- Inferior* and superior skies, the movements of the, are respectively more or less complicated, 66.
- Infidels* say that theological difficulties are mere absurdities, 70.
- Infinite*, the absolute, is an attribute of God alone, and for Him all numbers are finite, for He knows them all, 36; we know nothing exactly, even the size of things, and a number inconceivably great is infinite to us, 37; may one infinite be greater than another? 38, 39.
- Inflammable air*, 84 *and note*.
- Instant*, the, is the element of Time, has no bulk, and throughout the world is everywhere the same, 162, 175; cannot be made to last, 171.
- Instantaneity* implies neither rapidity nor slowness, 147.
- Instantaneous* movement, 11; change, 99.
- Intellect* should transcend imagination, 45.
- Intensive* parts, 99 *and note*.
- Judgment Day*, the, 170.
- Knowledge* of the future, God's, 34, 35.
- Last Day*, the, 179.
- Length*, breadth and thickness are consequent upon the position of continuous quantity, 47.
- Libra*, the constellation, 20, 23.
- Life* compared with time, 206; is a movement proceeding from an intrinsic principle, 11.
- Light* is inseparable from that which is luminous, 124.
- Line*, any, drawn from one point to another may be straight, even though it cannot touch the other point directly, 44.
- Lines* infinitely long, 38; impossible in the sense of absolute infinitude, 47; none are longer than the diameter of the world, 42; if they intersect, they may touch each other in many points, 56.
- Local* propositions, their definition, 1; local movement, its divisions, 11.
- Locality*, a; can it be itself located? 4.
- Logic*, a knowledge of, necessary to all judges, 152.
- Logical* equivocations, very contemptible, 145.
- Macrocosm* and microcosm, the, comparison between, 203, 204, 213.
- Magnitude* may be not quantitative, as in angles, 51.
- Mathematical* body, the, called the subject of the Eucharistic accidents, 137 *and note*.
- Matter*, according to Plato, is identical with the space occupied by a body, 2; cannot direct itself, 13; is the same essence as the form and the compound, 120, not a separate reality, *ib*.
- Maximum*, a, of points, lines, &c. in each body, 47.
- Measure* of velocity, the, of any movement, 85; cannot be a line outside the mobile, 89.
- Mediterranean*, the, 127.
- Mensuration* cannot be absolutely exact, 110, 111.

- Merit*, existing in one instant of time, proves that an instant is something separately existing, the element of time, 31.
- Metals*, the principles of, are sulphur and quicksilver, 131.
- Misleading* tendency of the senses, the, 40.
- Mixture*, under certain conditions, gives rise to a new substantial form, 81.
- Moon*, the, though it has really but one movement, may be said to have five, 18.
- Motor*, the First, demonstration of, 12, 13; cannot be extended, and is eternal, 13, indivisible, 14, and moves both intellectually and physically, 214.
- Motion*; must it be continuous? 116.
- Motion*, the, of time, 200, 201; denied, 208, 209.
- Movement* of a movement, there is no, 18; divisions of, 11; implies a mover distinct from the thing moved 12; is made up of numberless affirmations and negations, 27; is most intense at the surface of a body, 86; that of the skies will cease one day, 15; does time imply movement? 213.
- Multiplication* of a point through infinite space, possibility of the, 151.
- Multitude*, a, of instantaneous movements give us the vague idea of continuous motion, 40.
- Mutual aid*, the, of the various parts of the world, 86.
- Natural* as opposed to violent movement, 11.
- Necessity*, unless absolute, is not opposed to contingency, 144; must be admitted, 177, if properly understood, 179.
- Night and day*, adduced as arguments against Wyclif's theory, 200—206; refutation, 206—211; they are mere accidents of time, 207.
- Nominalistic* position, the, with regard to time, 198, 199.
- Nominalists* cannot urge geometrical difficulties, unless they first admit the reality of points, &c., 45; their doctrines preclude the universal idea of movement, 94.
- Oaths* cannot be binding, unless the present be extended to the past or to the future, 168.
- Objections* to Wyclif's theory of movement, 16—18; replies, 18—27.
- Occident* may mean either "the west" or "setting", 19.
- Odd numbers* may be halved in a sense, 36.
- Omniscience* of God, the, is absolutely infinite, 142.
- Opposite* propositions, if true at different times, do not contradict each other, 189.
- Orient* may mean either "the east", or "rising", 19.
- Pains* of the damned, the, 217.
- Parallelism*, the, of the planets' orbs to the Equator, is contrary to facts, 23.
- Parmenides*, 132.
- Partial* spaces are built up by points, 2.
- Parts*, the, and the whole cause each other reciprocally, 204.
- Passage*, the, of movement from one point to another, 99; of a mobile from one point to the next, 223.
- Past*, the, is present to God, 34, 35.
- Past*, the, and future; are they non-existent? 116.
- Perfection*, divers degrees of, in all beings, 131.
- Physical science* has nothing to do with Wyclif's theory, which goes beyond sensible phenomena, 36.
- Pigment*, a, when mixed with clay, is not coextended with it, 68.
- Place*, equivocal meaning of the word, 1; it is not a hollow in the surrounding bodies, 4; it gives dimensions to the body placed, and gets them from it, 10.
- Planet*, a; if it moved as rapidly as its own sphere, but in the contrary direction, would it be motionless? 17.
- Planets* have many movements, 87.
- Plato*, 2, 35, 109, 120, 127, 132.
- Pleasure* makes time seem short, 221.
- Point* of minimum movement, existence of a, 86.
- Points* are parts of lines, and cause them, 30; may touch each other without coinciding, 35; cannot coincide, because their essence is to have a position of their own, 42; joined together, they make up bodies; how, 104, 105.
- Poles*, the, of the world, and its centre are alone absolutely at rest, 3.

- Poles*, dwellers at the, have once a year a day, and once a night, of but one instant; why, 33, 200.
- Porous*, all bodies are, 64.
- Possibility*, the, of two bodies co-existing in the same space, 2.
- Possible* explanations of the seeming co-extension of glorified bodies with those through which they pass, 72.
- Posthumous child*, a: has it no father? 170.
- Postulate*, Euclid's, 54.
- Potter's wheel*, a, might measure time, were the rest of the universe motionless, 172.
- Predicates*, that can be truly affirmed at some time or other are never false without restriction, 161.
- Predominance*, the respective, of the various elements, 84, 85.
- Pre-ordination*, the, of all things by God's will, 225.
- Presence*, various senses of the word, 135.
- Present tense*, the, does not by itself denote time, 176.
- Probability*, the, of each star having its own proper movement, 3.
- Promise*, no, can be binding, unless the present be extended to the past or the future, 168.
- Proof*, there is no, that the movement of the world is not regular, 220.
- Proof*, a, of inextended points is God's power; if He can create them, no one can prove that He has not done so, 34.
- Propinquity* may have many senses, 209.
- Proportion*, the, of the diagonal to the side of a square cannot be known, 56.
- Propositions*, local (Ch. IX), 1—133; temporal (Ch. X) 133 to end.
- Propositions* which are true only if the copula refers to two different times, 153.
- Pythagoras*, 109.
- Quadrature* of the circle; can it be discovered? 59.
- Qualities*, the, of the whole depend upon those of each part, 126.
- Quantity* is given both by place and by the body placed, 10.
- Quasi-incorporeity* of bodies, possibility of the, 131.
- Quicksilver*, the origin of, 131.
- Quiddity*, the, of the divers feelings—sound, odour, taste, touch, 216.
- Quinary* number of atoms, the, is the beginning and the end of position in three-dimensioned space, 105.
- Rain*, the formation of, explained, 69.
- Rarefaction*: is it possible in Wyclif's cosmology? 263—270.
- Rarity* of anything means little in a wide extent, 67.
- Reason* alone ought to be judge of the objective value of sense-impressions, 40.
- Reasons* to prove that the non-being of the world preceded its being, 224—225; refuted, 225—227.
- Reciprocity*, the, of "body" and "place" as to quantification, 10.
- Re-creation*, 92.
- Relation* and movement are often expressed by the same term, 102.
- Relation*, every, must depend on two extremes, 185.
- Relative* positions of the parts of the world, 6.
- Relativeness* of past, present, and future time, 158.
- Rest* is no more than the negation of one kind of movement, 22, 23; different sorts of, 218; rest is a perfection which not all natures can possess, 224; if absolute, would be the negation of Time, *ib.*
- Results*, dangerous, of not admitting that to exist which is not in the present, 194.
- Retrogradation*, the apparent, of the planets, 95.
- Sacramental* multiplication, the, of an individual substance, 7.
- Sameness* of time everywhere, the, 199—211.
- Sense* cannot conceive Wyclif's doctrine of punctal atoms, 62.
- Serpent*, the constellation of the, 9.
- Seven* is the number of totality, 43.
- Sight* is not produced by rays from the eye, 84.
- Significations*, various, of the words "point", "line", "surface", and "angle", 46.
- Simple*, as opposed to complex, movement, 14.

- Simultaneity* of all things, the, attacked, 155—157; explained and defended, 157—161; does not mean that all things exist at the same instant, 178.
- Sin*, as an existing reality, not *qua sin*, is pleasing to God, 195; is impossible at the first instant of being, 220.
- Site* is a motionless quantity, 5.
- Six* absolutely unchangeable differences of position 6; six points and no more, touch one in the middle, 43.
- Size*, the, of raindrops accounted for, 69.
- Size*, the, of the universe is the measure of partial magnitudes, 2.
- Sleep* makes time seem short, 221.
- Smoke* does not really, but only apparently, fill a room, 64.
- Son*, my, is a mere possibility now; can he be said now to be wiser than I, if he is to be so one day? 195—198.
- Sophistical* arguments relative to position, 8.
- Soul*, the human, is created by God; each individual soul is an accident of the world, 205.
- Sounds* appear to be unbroken, though they are undulations, 41.
- Space*, according to Plato, is identical with matter, 2; may be occupied without implying quantity, 92; every point in, (except four) is east, west, north and south at once, 16.
- Speech* ought to be adapted to the hearer and to circumstances, 196.
- Speed* and slowness may co-exist in the same body, 93.
- Sphere*, movement of the, 95; in a revolving, each part moves faster or slower as it is farther from or nearer to its poles, 29; can a sphere revolve in two contrary directions at once? 16.
- Sponge*, the; is it an animal or a plant? 131.
- Square*, a, may be made up of two points only, 55; is a right line moved at right angles to its own length, 58.
- Stars*, the influence of the, does not necessitate the actions of men, 12.
- Straight*, as opposed to circular, movement, 14.
- Straight* lines, all, end at the circumference of the world, 8.
- Subject*, a universal, to which all attributes belong, must be admitted, 146.
- Subordination*, the, of causes, material, formal, efficient and final, 13.
- Substance*, a, composed of three points, is the simplest subject in which an angle is possible, 49; the simplest subject of a solid angle is the "substantia quadrupunctalis", 50.
- Substances* cannot begin and end at the same instant, 219.
- Substantial* forms exist everywhere throughout the compound, 80; are accidental as to primordial matter, 178.
- Succession* is, in Wyclif's theory, a series of instantaneous changes, 147.
- Sulphur*, the origin of, 131.
- Sun*, the, is not itself hot, 124, 125; ought it to move one day quicker in the 365 than its sphere? 17, 25, 26.
- Superlunary*, parts of the world, the, motion of the, 3.
- Swiftest* possible movement, the, 97.
- Swiftness*, the, of a body that does not change its place, is measured by the space it would pass through, if not prevented, 25.
- Syllogisms*, expository, does Wyclif reject? 195, 197.
- Tangency*, the angle of, 53.
- Temporal* propositions (Ch. X), 133 to end.
- Terminus*, the, of a movement, essential and accidental, 15.
- Themistus*, 61.
- Theological* arguments against Wyclif's cosmology, 70.
- Three* ways in which one thing is in another, 10, 11.
- Time* is made up of indivisible instants, 31—33; cannot possibly be known in itself, 161; a verbal definition of, *ib.*; it was necessary, like space, to the creation of the world, 162, and is not necessarily dependent on the First Mobile, *ib.*; it is in itself a cause of destruction, but accidentally a cause of production too, 164; is always in the act of mutation, 165; is not identical with God or with anything permanent, *ib.*
- Timeless*, things, i. e. neither temporal nor instantaneous, 193.
- Tissues*, elementary and compound, 117.

- Triangle* with two right angles, a: is it possible in Wyclif's system? 104.
- Trinity*, the, of matter, form, and compound 12, 122; difference between it and God's Trinity, and that of the soul, 122.
- Truth*, the ubiquity of, 134, 141, 142; all truth is determinate, 181.
- Truths*, some, are not true at any given instant of time, 190.
- Two* points that touch; do they form a straight or a curved line? 106.
- Ubication* is caused by place, 6.
- Undulations*, 41.
- Uniform* and varied movement, 27.
- Unimaginability*, of a point, 36.
- Universals* have no position in space but by accident, as in their singulars, 5; can be multiplied in their individuals, though the individuals themselves cannot, 6; are everywhere, in what sense, 140, 141.
- Universe*, the, is at once the highest and the lowest thing possible, 7.
- Useless* question, a, concerning the velocities of different points, 102.
- Varied* movement is uniformly or variably varied, 28, 29.
- Various* kinds of movement, 102.
- Various* senses of the word 'quantification', 10.
- Velocity*, the greatest possible, 39; implies time and cannot exist in but one instant, 222.
- Verbal* definitions, 8 *and note*.
- Violent* states are those from which there is a natural recoil, 130; violent, opposed to natural movement, 11; may be considerable, yet without any change of place, 25.
- Vital* movements are self-determined, 11.
- Vitellio* (Vitelo) teaches how to trisect a given angle, 51; enumerates 7 kinds of mirrors, 61.
- Water* is the basis of taste in man, 83.
- Weakness*, the, of such answers as take refuge in God's omnipotence, 71.
- Whiteness*, the, of a black man exists only in his teeth; so what is true of a figure may be true only of a certain part of it, 50.
- Whole*, the, is in each of its parts; verbal difficulties and quibbles against this position, 202.
- Wide* definition of movement, a, 24.
- Will* of man, the, is free, 181.
- World*, the, can be neither increased nor diminished, 1, 39; could not have been created but at the time when it was created, 174; does it form one being? 82; is it everywhere? 156, 199; was it known to God before its creation as non-existent? 225.
- Wyclif* hints at his age, 144.
- Wyclif's* position stated in modern terms, 123. *note*.
- Ylen*, 2 *and note*.
- Zeno's* argument against movement, 27.
- Zodiac*, movement of the signs of the, 20.

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, <i>omit</i>	cleaver	<i>supply</i>	clearer.
"	8,	"	1,	verbol	"	verbal.
"	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,	contineuce	"	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. l	"	sentence. I
"	99, text,	"	23,	pausant	"	pausat
"	101,	"	12,	puidditate	"	quidditate
"	108,	"	27,	punctualium	"	punctalium
"	111, <i>side-note</i> ,	"	23,	inanimate	"	inanimate
"	112,	"	27, 28,	and the midriff(?)	"	
"	112, text,	"	28,	mitricori	"	nutriciori
"	112, <i>omit the whole of the foot-note to l. 28.</i>	"			"	
"	112, text,	l.	8, <i>omit</i>	individuacionem	"	individuaciones
"	112,	"	29,	venibus	"	venis
"	112,	"	36,	aparentibus	"	a parentibus
"	112,	"	28,	subtili, a quo	"	subtili a quoso
"	113,	"	11,	mitriti	"	nutriti
"	113,	"	20,	animam	"	
"	113,	"	38,	alimenta	"	alimenti
"	113, <i>side-notes</i>	"	17, 18,	of the midriff	"	
"	114, text	"	1,	temperancia	"	temperancie
"	115,	"	3,	dissolveretur	"	dissolverentur
"	116,	"	23,	collectim, omnes illas	"	collectim omnes illas
"	116,	"	34,	procedere per	"	procedere. Per
"	116,	"	36, 37,	generatam. Est	"	generatam est
"	117,	"	37,	privacio, quo	"	privacio. Quo
"	117,	"	33,	constancium. Sed	"	constancium: scilicet

P.	117.	text.	l.	35.	<i>omit</i>	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	"	cappa
"	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.	"	obscuritas	"	obscuritas
"	202.	"	"	9.	"	sic	"	sit
"	202.	"	"	40.	"	corrupcionem.	"	corrupcionem
"	207.	"	"	7.	"	quem	"	que
"	208.	"	"	16.	"	tenebrem	"	tenebre
"	208.	"	"	19.	"	notum	"	motum
"	208.	"	"	26.	"	figuratum	"	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

WELLESLEY COLLEGE LIBRARY



3 5002 03208 2344

BR 75 .W8 14:7

Wycliffe, John, c. 1320-1384.

Johannis Wyclif Tractatus
logica

