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A table of contents for *Bibliotheca Sacra* can be found here:

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## ARTICLE VI.

## ARISTOTLE.

BY D. MCGREGOR MEANS, MIDDLEBURY, VT.

## No. II. — HIS CRITICISM OF THE PLATONIC IDEAS.

FEW subjects in the whole range of philosophy have excited, or indeed deserved, more interest than the Platonic theory of ideas. The charm of this theory is ever fresh; for in the higher walks of philosophy every new generation of men finds itself strange and unaccustomed to what has gone before. The society and religion of the ancients indeed arrest our attention, but we are conscious, however great our sympathy, that we are looking down, that we have reached a higher plane of development, and that "the gray barbarian" is "lower than the Christian child." But in philosophy every one must begin for himself anew from the starting point of the old Greeks, and he will not come into the inheritance of the intervening ages, nor fully understand his own position, unless he shall have penetrated into the spirit of the earlier times. For many centuries all science slumbered; but what was to natural science a new birth, to philosophy was but a re-awakening. "*Die Griechen, die Griechen, und immer die Griechen,*" cried Goethe, intoxicated with their art; and it is still to the Greeks that the philosopher looks back.

The first encounter with Plato's theory as given by himself, especially in the great passage in the Republic, is to the young student a veritable shock. For a moment there is the feeling of having received a revelation: The name of the theory had, perhaps, long been known, but the matchless words of the author add to it a fascination that transforms theory into living truth. The theory itself seems to acquire the creative force of its own ideas, and to impress itself instantly on the whole universe of fleeting phenomena,

bringing out of unintelligible chaos a beautiful order. As Plato himself says: "Any young man when he first tastes of these subtilties is delighted, and fancies that he has found a treasure of wisdom."<sup>1</sup> Nor is the charm confined to youth alone, for genuine Platonists are by no means extinct even in modern days. Even those who reject the theory can never be uninfluenced by it, and it will continually reassert its power over every poetic and aspiring mind. "The light dove, while cleaving in free flight the air whose resistance she feels, might easily imagine that her movements would be even freer in airless space. So Plato left the sensible world as setting too narrow limits to the mind, and ventured beyond on the wings of the ideas into the empty space of the pure understanding."<sup>2</sup> While such imaginative natures exist there will always be such wanderings, and it is, perhaps, well that there should. The office of those who attract and interest is not less important than that of those who analyze speculation and reduce it to system.

It would be a mistake to suppose that the controversy concerning the ideas is of interest to the metaphysician alone. All science is colored by metaphysics; and it is not a difficult task to classify the writers whose disputes occupy the pages of our periodicals according to the metaphysical schools to which they sometimes unconsciously belong. The discovery that the battles in which they are now engaged had been fought out by the Academics and the Peripatetics, the Realists and the Nominalists, might excite an astonishment less agreeable than, though similar to, that of the Frenchman who found out that all his life he had been writing prose. In the special field of philology, and the larger one of biology, the great controversy as to the origin of language, and the greater one as to the origin of species, are really metaphysical, and depend upon the definition of metaphysical terms. *Species*, be it remembered, is the word by which the Greek *form* or *idea* was rendered into Latin. The Platonic theory has a modern representative in Max Müller, and a still more

<sup>1</sup> Phil. 15. extr.

<sup>2</sup> Kant, Kritik Einl. iii.

open one in Professor Owen. The very title of one of the works of Professor Owen is in fact Platonic — The Archetype and Homologies of the Vertebrate Skeleton; and he seems to adopt the hypothesis of ideas as “a sort of models or moulds in which matter is cast, and which regularly produce the same number and diversity of species.”<sup>1</sup> It is not necessary, however, to connect the doctrine of special creations with the theory of Plato; for it is quite possible to adapt this theory to all modern discoveries, however fast they may occur. Spencer, in fact, employs the results of Owen as materials for his own hypothesis; acknowledging his indebtedness, but asserting independent conclusions. The question at issue in all these discussions lies back of phenomena, and can never be settled in the laboratory or dissecting-room.

It is, perhaps, hardly necessary to say that Plato left no exact statement of the theory that bears his name. He himself, in some of his Dialogues, as the *Parmenides*, brings forward objections that he nowhere else refutes. Although this is probably one of his later works, yet it appears that in his old age he did propound a theory in which the ideas were mingled with the Pythagoric numbers and the *Summum Bonum* in a somewhat perplexing manner. It is said that Aristotle during Plato's life opposed the theory,<sup>2</sup> which would imply that Plato had, at least, not abandoned it. The lost treatise of Aristotle on *The Good*, is supposed to have been a criticism of this later aspect of the theory. But whatever may have been Plato's relation to the ideas, the theory had evidently by the time of Aristotle assumed a tolerably definite form as a Platonic doctrine. It has been stated in modern times with almost Platonic eloquence, in a passage which is here given :

“That man's soul is made to contain, not merely a consistent scheme of its own notions, but a direct apprehension of *real and eternal laws*

<sup>1</sup> See Appendix to H. Spencer's *Principles of Biology* for a discussion of this theory.

<sup>2</sup> Scholium in *An. Post.* Brandis p, 228 b, 16, in the Berlin edition of Aristotle, which is quoted throughout.

*beyond it*, is not too absurd to be maintained. That these real and eternal laws are things *intelligible*, and not things sensible, is not very extravagant either. That these laws, impressed upon creation by its Creator and apprehended by man, are something distinct equally from the Creator and from man, and the whole mass of them may be fairly termed the world of things purely intelligible, is surely allowable. Nay, further, that there are qualities in the supreme and ultimate cause of all which are manifested in his creation, and not merely manifested, but in a manner — after being brought out of his super-essential nature into the stage of being below him, but next to him — are then by the causative act of creation deposited in things, differencing them one from the other, so that the things participate of them (*μετέχουσι*), communicate with them (*κοινωνοῦσι*); this, likewise, seems to present no incredible account of the relation of the world to its author. That the intelligence of man, excited to reflection by the impressions of these objects thus (though themselves transitory) participant of a divine quality, should rise to higher conceptions of the perfections thus faintly exhibited, — and, inasmuch as these perfections are unquestionably *real* existences and known to be such in the very act of contemplation, that this should be regarded as a direct intellectual apperception of them — a union of the reason with the ideas in that sphere of being which is common to both, — this is certainly no preposterous notion in substance, and by those who deeply study it will, perhaps, be judged no unwarrantable form of phrase. Finally, that the reason in proportion as it learns to contemplate the perfect and eternal, *desires* the enjoyment of such contemplations in a more consummate degree, and cannot be fully satisfied except in the actual fruition of the perfect itself — this seems not to contradict any received principle of psychology, or any known law of human nature. Yet these suppositions, taken together, constitute the famous *Theory of Ideas*," etc.<sup>1</sup>

It must, however, be said that the view here expressed is rather a development of the theory than a statement of it. There was no such pronounced theism in Plato's language; the relation of the human mind to the ideas is correctly given, but Plato is nowhere distinct as to the relation between the ideas and God. Some passages may be found, as in the *Timæus*, that suggest this relation, but they are very indistinct. We have here in fact, by implication at least, the celebrated proof of the existence of God that passes under the name of Anselm or Descartes, and it cannot be fathered upon Plato.

<sup>1</sup> W. Archer Butler, *Lectures on the History of Philosophy*, Vol. ii. p. 117 sq

The theory was really a compromise between two tendencies in the earlier philosophy. The Eleatic doctrine was that of an absolute *Ens* as opposed to Relative *Fientia*; true existence, and phenomenal existence or becoming. Heraclitus, on the other hand, denied or ignored the eternal and permanent Being, and maintained the celebrated theory of the "Flux,"—that all sensible things were in a constant process of change, and nothing positive could be asserted. Plato remarks that all previous philosophers except Parmenides, might be classed with Heraclitus.<sup>1</sup> Aristotle in the first book of the *Metaphysics* gives a short historical account of these philosophers,<sup>2</sup> confirming, to some extent, the remark of Plato about Parmenides,<sup>3</sup> and showing the relation of Plato to his predecessors. His statements are, on the whole, so clear, although condensed, that a translation of the whole passage is desirable; for the historians of philosophy rather becloud the discussion through over-much explanation. At least, we may say that this passage should be read in connection with the histories of philosophy. It should also be borne in mind, that when Aristotle speaks of Plato we are to understand his school, and not his personal opinions, which are often contradictory. Aristotle goes on in chapter sixth to say :

"After these philosophies there arose the system of Plato; in most respects following these Pythagoreans, but in others having peculiar tenets beyond the philosophy of the Italians. For while young, becoming associated first with Cratylus and the Heraclitean opinions, that all sensible things were always in a flux, and that there was no knowledge respecting them, these views he ever afterward entertained. But when Socrates concerned himself with the discussion of ethical problems, and not at all with nature as a whole, and in these problems was searching for the universal, and was the first to apply his reason to definition, Plato, praising him on account of this course, thought that concerning other things this could be done, and not concerning sensible particulars. For it was impossible in his view that there should be a common definition of sensible particulars, while these were always changing. He therefore called such existences ideas, while sensible things were beside these and according to them; for according to participation were most equivocal

<sup>1</sup> Plato, *Theatet.* 152 A.

<sup>2</sup> *Met.*, 1. 3-6.

<sup>3</sup> *Met.*, 1. 3. extr.

univocals with the ideas. But he changed merely the name of participation; for the Pythagoreans say that existing things are by imitation of numbers, but Plato says by participation, changing the name. However, they equally neglected to investigate the imitation or participation of the ideas, whichever it be called.

“And, further, beside the sensibles and the forms he affirms that mathematical things are media, differing from sensibles in being eternal and immovable, but from forms in that there are many of them alike, but every form is one alone. But since the forms are the causes of other things, he thought the elements of these were the elements of all things, and accordingly as matter he took the great and small as principles, but as substance he took the one; for out of these by participation of the one, the forms became numbers. But that the one was substance, and not that something else existing was called the one, is the Pythagorean doctrine, and also that numbers were the causes of other substances.

“But in place of the Infinite as one, Plato made the Dyad, and the Infinite from the great and small, which is peculiar to him; and, also, that he affirmed that numbers existed beside sensibles, while they said the numbers were things, and did not interpose mathematical existences. The fact that he made the one and the numbers beside the objects, and not identical with them, like the Pythagoreans, as well as the introduction of forms, arose from his dialectical method of treatment; for those before him had no share in dialectic. But the introduction of the Dyad as another nature arose from the fact that the numbers, except the first, are produced from it in a consistent way, as from a certain image. Now it is evident from what has been said that he employed two causes only, the essence and the material cause. For the forms are the causes of the essence to other things, and the one to the forms. And there is a certain underlying matter according to which the forms are said to be connected with sensibles, but the one is in the forms, because the Dyad itself is the great and small. Further, he assigned the well and the ill to the elements, each to each, which we regard as investigated especially by Empedocles and Anaxagoras.”

Another allusion to the school of Heraclitus is worth quoting for the gleam of humor with which Aristotle introduces his *reductio ad absurdum*:

“And seeing the whole of nature in motion, and nothing verified respecting what was changing, at least what was changing in every way and everywhere, they thought it impossible to truly assert. For from this principle there grew out that most extreme opinion of the philosophers just spoken of, the followers of Heraclitus, and such a view as that held by Cratylus, who, at last, held that one ought not to speak at all, and simply moved his finger; he also rebuked Heraclitus for saying that it

was impossible to go into the same river *twice*; for he thought that it was impossible to do it once."<sup>1</sup>

We cannot here examine Aristotle's refutation of these sceptical philosophers, although it is of great interest. As the principle of contradiction is the basis of his philosophy, — as, indeed, it is of any positive philosophy, — he feels obliged to enter into a long defence of this law. He certainly shows that Cratylus occupied his strongest position when he declined to make any assertion at all; for then, at least, he did not contradict himself. And this is perhaps as good a way as any of silencing scepticism. But when this was once done, Aristotle seemed to feel himself free to dismiss these philosophers from his mind as no longer dangerous opponents. On the other hand, the theory of ideas haunts him incessantly; and he is continually breaking off his argument to give a thrust at Plato. It is not necessary to suppose that there was any personal enmity between the men, nor even, as Maurice assumes, that Aristotle suffered from a vague feeling of inferiority.<sup>2</sup> It is rather to be maintained that he felt the seductive charm of Plato's theory, and was aware that others would feel it and yield to it, while he was himself convinced that the theory was not true, and would prove a hinderance to the truth. His position was that of one who knows that the truth is with himself, but who has at the same time the consciousness that it is too deep for popular apprehension; while the theory of his antagonist, though false, has such a delusive appearance of

<sup>1</sup> Met., iii. 5.

<sup>2</sup> Separated from these stories the quotations, we think, prove no more than that Aristotle felt a certain irritation and displeasure when he perceived there was something in the words of Plato which his large intellect and immense information did not enable him to comprehend. To be continually haunted with a consciousness of this kind; "In all definable qualities I am equal, nay, superior to my predecessor; I have reduced subjects into far greater order; I analyze far more perfectly; I have a far greater store of facts at my command; and yet there is in him something quite *undefinable*, which seems to make an incredible difference between us." This may, no doubt, have been very vexatious, even to an honest and great mind. — Maurice, Moral and Met. Phil., in Cyclop. Met., vi. Div. iii. Sect. ii.

truth, and is withal so easily laid hold of by the many, that it is almost hopeless to contend against it.

The foregoing extracts are perhaps sufficient to present the main points of the Platonic theory. The objections brought against it by Aristotle may now be classified and considered. And first, it should be remarked that the controversy mainly turns on the relation between universals and particulars. While it would not be correct to say that particulars are to Aristotle all that universals are to Plato, it is yet true that the philosophy of Aristotle rests upon his development of particulars. Aristotle would never deny the existence of universals, properly defined; nay, more, he would admit that they may exist, in some cases, as independently as Plato maintains.<sup>1</sup> But Plato has far less consideration for the world of particulars, as a reference to any of the Dialogues where the ideas are introduced will show. Plato recognized in the world of phenomena the doctrine of Herac- litus; but he did not rest content with scepticism. He recognized, also, something common in these fluctuating things, namely, their similarities. Here, then, was something permanent and unchanging, far more worthy to be called real existence than that of sensibles. So far Plato was right, and was followed by Aristotle; but he went farther, and removed these similarities, or forms, or ideas into a super-sensual world of their own, making the sensible world a mere shadow of the real world. This step marks the divergence of the system of Aristotle. He saw something common *in* the world of sensibles; but for that very reason he declined to see it outside of that world. He recognized the fact, which ever remained a mystery to Plato, that numbers were abstractions, and not real existences,—least of all, creative forces.<sup>2</sup> He was aware more certainly than Plato that the likenesses or forms discerned in sensibles ceased to exist if the sensibles ceased to exist, although he would maintain that the sensibles would equally cease existence if the forms no longer existed. In this respect he may be

<sup>1</sup> Met., vi. 16.

Vol. XXXIV. No. 135.

<sup>2</sup> Met., 12. 3; Phys., ii. 2; iii. 4.

classed as a moderate realist, holding to *universalia in re*, as a comparison of the following passages will show :

"Such, then, are the difficulties necessarily encountered in discussing the principles, whether they exist universally or, as we say, in individuals. For if they exist universally they will not be essences ; for nothing that is common to many things signifies a "this," but a "this kind." But an essence is a particular "this." If a universal were a particular essence, and that which is predicated as common were a particular, then Socrates would contain many animals — himself, and man, and animal — so far as each of these concepts signifies a "this" and a "one." This would be the result if principles are universals ; but if they are not, but are like particulars, they will not be cognizable, for the knowledge of all things is universal. So that if there is to be a science of principles, there must be other principles prior to these if they are predicated universally."<sup>1</sup>

In the fourth book at the end of the fifth chapter, he remarks :

"In general we may say if only what is perceived by the senses exists, then nothing would exist if there were no perceptive beings ; for there would be no perception. That in this case the sensible objects and the perceptions would not exist is true enough (for perception is a quality of a perceiving being), but that the "substratum" which causes the perception should not exist is impossible, whether there is any perception or no. For perception is not a perception of itself, but there is something different from it besides, which is necessarily before perception. For that which moves is by nature prior to that which is moved, and this is none the less true when both are spoken of in relation to each other."

We here recognize clearly enough the "Ding-an-sich" of Kant.

For a full understanding of the significance of Aristotle's position in regard to particulars, it would be necessary to examine the categories and analytics with considerable detail. We can only say that he asserts in the first category that the particular thing, the *hoc aliquid*, is the true existence ; the universal only existing together with it as a predicate, without being anything of itself apart from its subject. Again, the third category is quality ; but qualities such as the good, the true, etc., would be essences in the highest degree, according to Plato. This position is fundamental to the system of Aristotle ; and he adheres to it with great

<sup>1</sup> Met., ii. 6, extr.

consistency. He by no means denies existence to these qualities or predicates, for he spends much time in treating of them; but their separate existence is not admitted; the sensible particular being always for him the real existence. We might say that for him substance is the possibility of predicates; for so soon as predicates are added it is no longer mere substance. The most explicit statement of this view is in the *Metaphysics*, vi. 1 :

“ Substance is that which exists first, not any particular existence, but existence absolutely. Now what is first may be spoken of in many ways, yet of all things substance is first, in reason, in knowledge, and in time; for of the other categories none is separable but this alone. And in reason this is first, for in the reason (or definition) of everything that of its substance must inhere. And we then think that we know each thing, when we know *what* man is, or fire, rather than the quality or the quantity or the situation; since we then know each of these things when we know *what* the quantity or the quality is.”

The whole of the first part of this book is of great value as throwing light on Aristotle's conception of substance, but we must refer to the note for further extracts.<sup>1</sup>

It must always be a disputed point whether universals or particulars stand first. But in another respect Aristotle made a most important advance upon Plato,—an advance that has only partly been maintained by modern philosophy. The difficulty that led Plato and others to the ideal hypothesis was their inability to understand how one form could be in many objects at the same time. The trouble was and is that we find it almost impossible to conceive of existence

<sup>1</sup> See *Met.*, ii. 4, where the question is stated; vi. 8. extr.; vi. 13, where it is strenuously maintained that universals cannot be substances, and particulars are. Thomas Aquinas shows in his commentary here the importance of the Aristotelean distinction between potential and actual existence. “ Duo enim quae sunt in actu, numquam sunt unum actu; sed duo quae sunt in potentia sunt unum actu, sicut patet in partibus continui. Duo enim dimidia unius lineae sunt in potentia in ipsa linea dupla quae est una in actu. Ex hoc ideo quia actus habet virtutem separandi et dividendi.” Many of the difficulties propounded in the Platonic dialogues may be solved by bearing in mind this distinction which Plato is unconscious of. See also ix. 2; the discussion is reviewed in xii. 4. How definition is involved, *An. Post.* 11, p. 77 a, 5. See also *De An.* ii. 1. 412 a, 8, 2 extr., iii. 4. 429 a, 27.

except under spatial conditions, and it is an axiom that the same thing cannot be in two places at once. How strong this materializing tendency may be seen from the theory of Democritus, that the ideas that we have of sensible objects are effluvia or emanations from the bodies — their ghosts, so to speak. Now it is easily seen that this gives a materiality to forms that almost necessitates some such theory as that of Plato to afford at least a temporary escape from scepticism.<sup>1</sup> Aristotle, however, solved the difficulty completely, by showing that form might be one in every respect but number; and, hence, that we could properly say that the same form was in many objects. In a word, he discovered that such existences as forms had a real existence independent of spatial relations; and, hence, that the same form might be in many places, and many forms in the same place. Many of his objections to Plato cannot be understood without reference to this principle. Here Aristotle came very near to Kant.<sup>2</sup>

The third main point of difference between the view of Plato and that of Aristotle, and the one that has the greatest modern interest, is in reference to the causative or creative force of the ideas. It is on this ground that most of Aristotle's objections are brought, and so conscious is he of the vital importance of the point to his philosophy, and indeed to philosophy in general, that he incessantly in all his writings recurs to this question. We have indicated in a former Article his view of the causal force in the universe, that it was the Divine Energy, the unmoved Mover; a conception far more comprehensive than that of Plato, although, to a certain extent, combined with it in later speculations. Plato sought to escape from his difficulties in this world, first by assuming another. But it is plain that this could be only a temporary makeshift unless the perplexities in the present world ceased to exist in that of the ideas, and secondly unless this ideal world somehow explained the existence of the

<sup>1</sup> See Tylor's *Primitive Culture*, i. 497.

<sup>2</sup> *Met.*, iv. 6, extr.; vi. 8, extr.; ix. i. init. Space is discussed, *Phys.*, iv. 1 sq.

world of sensibles. Now Aristotle elaborately shows that neither of these conditions is complied with by Plato's hypothesis, and apart from other absurdities the law of parsimony would therefore compel its rejection. His own theory, on the other hand, avoids the difficulties that beset the path of Plato and is not exposed to the objection, "entia non multiplicanda." He remarks :

"But one is chiefly perplexed as to what the forms contribute to things that are eternal among sensibles, or to those that are generated and corrupted. For they are not the cause of any motion or change to them whatsoever. Nor are they of any assistance to the knowledge of other things (for they are not the substance of these, or they would be in them); nor to the existence of other things, not being inherent in the things that participate; for they might be conceived as causes possibly in the same way that the white mingled with the white might be a cause of whiteness. Since, in general, wisdom is concerned with the cause of phenomena, this will be overlooked, for we say nothing of that cause whence the principle of change arises; neither such as we see to be a cause to the sciences on account of which every mind and every nature operates; nor do the ideas have anything to do with that cause which we call one of the principles.<sup>1</sup>

"It would not be of any service if we should make substances eternal, as those do who hold to ideas, unless there should be inherent some principle capable of change. But this would not answer any better, nor would there be any other substance besides the forms; for if it does not energize there will be no motion, nor if it does energize; but its substance is in capacity, for there will not be eternal motion, for it is possible that what exists in capacity does not exist. Accordingly, it is necessary that there should be such a principle whose substance is energy.<sup>2</sup>

"Admitting that there are forms and numbers, they will not be the cause of anything; and if not, they will at least not be the cause of motion. Farther, how will magnitude and continuity arise from what has no magnitude? for number will not produce continuity either as moving or as form. But there will be nothing of the contraries that is both creative and moving, for it would be possible for it not to exist. But certainly to make is subsequent to the capacity; hence there are no eternal entities — but there are. Some one of these views must therefore be rejected (as said above). Now in what way numbers, or the soul and the body, and, in general, form and the thing may be one, no one says anything, nor can say anything, except as we say, viz. that that which causes motion is that which creates."<sup>3</sup>

Plato soon saw that to assume another world entirely

<sup>1</sup> Met., ix. 1, med.

<sup>2</sup> Met., xi. 6.

<sup>3</sup> Met., xi. 6, fin. See also De Gen. et Co.

distinct from the world of sensibles could be of no assistance in explaining this world. Accordingly he was led to propound the theory of participation. According to this view the ideas have indeed a separate existence, but they nevertheless participate in sensible objects. As Aristotle remarks, in the passage quoted above, this was but another form of the Pythagorean theory, that sensible objects are imitations of numbers. Aristotle perseveringly criticises this view, which, after all, is but another way of allowing a causative power to the ideas. Many of his objections are very striking, and in general his reasoning is able and acute, although sometimes hard to follow. It must be observed, however, that his objection to the separate existence of universals on the ground that they exist in sensibles is inconsistent with his own reasoning that there is a distinction between identity in species and identity in number. He would probably reply to this, that the separate existence of universals was merely potential, while their actual existence was to be found only in sensibles. In any case the objection is valid against Plato, for it is obvious that by introducing participation Plato really returned to the point from which he started, having still before him a mingled world of sense and idea. The original difficulty still remained—how to connect the ideas with sensibles. Aristotle shows that if any attempt is made to connect them they will have something in common.

“According to necessity and the opinions concerning forms, if they participate there can only be ideas of the substances; for they are not participated in according to accident; but they must participate in this way in each idea except in so far as it is said of the subject. For example, if anything participates in the two-fold-in-itself, it also participates in the eternal; but accidentally, for it is an accident to the two-fold to be eternal. Hence forms will be substance. For the same things both here (sensibles) and there (eternals) signify substance, or what will be the meaning of saying that there is something besides these things, the one in many? and if there is the same form of forms and of those things that participate there will be something in common. . . . . If there is not the same form, they would be equivocals, and it will be just as if we should call both Kallias and a stick of wood man, observing nothing in common to them.”<sup>1</sup>

<sup>1</sup> Met., i. 9. med. See also Top. vi. 10; Met., vi. 14; xii. 4. extr. The

A second attempt at establishing a connection between the world of eternal and unchangeable ideas and that of phenomena was made by interposing media, whether mathematical or of other nature. As it was seen that a participation of sensibles in the ideas involved numerous difficulties, while the entirely separate existence of the two worlds was of no assistance in understanding either, a third world was introduced as a mean between the two. This course of thought is of great historical interest as bearing, how directly we do not undertake to say, upon the development of the doctrine of the Trinity. In both cases there seems to have been a feeling that some bridge was necessary to establish relations between the eternal and the evanescent. Aristotle, however, pursues this new form of the theory with undiminished vigor. The most prominent of his objections is that there is nothing gained by increasing the number of things to be explained when all the difficulties remain unchanged. He in fact compares this process to that method of computation indicated by the formula, Guess at half and multiply by two. He states his opposition to this attempt, as well as to the ideal theory itself, in the following language:

“Those that assume ideas as causes, in the first place, seeking to ascertain the causes of existing things, brought forward other things equal in number to these, as if any one wishing to count things smaller in number should think himself unable, but by making them more should be able to

comments of Thomas Aquinas on this difficult subject are of considerable service. He observes (Lib. 1. Lectio x.), Plato first introduced the formal cause. He called *Universalialia* ideas or forms in so far as sensibles are constituted in their likeness, species in so far as through their participation they have substantial ease. Or Ideas “in quantum erant principium essendi, Species vero in quantum erant principium cognoscendi. Unde et sensibilia omnia habent esse propter predictas et secundum eas. Propter eas quidem in quantum Ideae sunt sensibilibus causa essendi. Secundum eas vero in quantum sunt eorum exemplaria.” This is unquestionably true, but it must not be taken to mean that Plato himself made this distinction, or was fully aware of it. . . . “Nam species vel idea est ipsa natura speciei qua est existens homo per essentiam. Individuum autem est homo per participationem, in quantum natura speciei in hac materia designata participatur. Quod enim totaliter est aliquid non participat illud sed est per essentiam idem illi. Quod vero non totaliter est aliquid habens aliquid aliud adjunctum propriae participare dicitur.” So of heat and fire, fire participates heat, but heat exists *per se*.

count them. For, doubtless, the forms are in number equal to, or not less than, those things from seeking the causes of which they passed to the forms; for there is an equivocal for each particular. Of some things there is no necessity that there should be a syllogism, but of others — and those not the ones we should expect — forms arise. For, according to the definitions from the sciences, there will be forms of all things of which there are sciences; and according to the idea of unity in plurality, there will be forms of negations; and according to our conception of what is corruptible, there will be forms of things corrupted; for there is a certain appearance of these things.”<sup>1</sup>

We give below, in the note,<sup>2</sup> a somewhat extended ar-

<sup>1</sup> Met., i. 9, init. Also Met., x. 2, init.; xii. 4, med.

<sup>2</sup> “How we call forms (or ideas) causes and substances in themselves has been already discussed; the absurdities are manifold; not the least is to say that there are other substances beside those in the heavens, but that they are the same with sensible objects, except that the former are eternal, the latter perishable. For they say that man-in-himself and horse-in-itself and health-in-itself exist, but nothing further; very much like those that say the gods exist, but are of the form of men. For they neither make them anything more than eternal men, nor do these (Platonists) make the ideas anything more than eternal sensible objects. And if one supposes in addition to the ideas and the sensible objects a mean between them, he falls into many difficulties. For it is evident there must exist lines beside the lines-in-themselves and sensible lines, and so of all genera; so that since astronomy is one of these genera there will be also a heaven beside the visible heaven, and sun and moon and all the other heavenly bodies in like manner will be two-fold. But how is this credible? for it is neither reasonable that such a heaven should be immovable, and it is entirely impossible that it should be movable. In like manner concerning the things of which optics and mathematical harmony treat, for it is impossible that these things should exist beside the sensible ones through the same causes. For, if there is a mean between things perceived and perceptions, it is plain that there must exist animals between the animals-in-themselves and perishable animals. And any one would be puzzled to know for what things such sciences must be investigated. For if geometry differs from surveying in this alone, that the one is of things not sensible while the other is of sensible objects, it is evident that together with the healing art there is another science (and also of each of the other sciences this is true) between the healing art in itself and the healing art in application. Yet how is this possible? for then there must be a health apart from the health of sensible objects and health-in-itself. Nor is it true that geodesy is confined to sensible objects and perishable magnitudes, for then if they were to perish it would perish. Even astronomy would not be a science of sensible magnitudes nor of this heaven; for neither are sensibles lines such as the geometer describes them, for nothing of sensible things is precisely straight or round. The circle in sensible objects does not exactly fit the rule as Protagoras showed in his refutation of the geometers, nor are the motions and windings of the heaven similar to those about which astronomy treats, nor the

gument showing the numerous absurdities consequent on the Platonic theory. The introduction of mathematical entities and especially of the Pythagorean numbers added complications to those already existing. A large part of what Aristotle brings forward on this head is either absolutely unintelligible, or else too trifling and indefinite to deserve repetition. We find in general that Aristotle discerned the same latent weaknesses in the theory, no matter how disguised. In some places he insists that a mere number or ratio could not be the cause of any particular thing; for all monads are alike, and they cannot, therefore, produce different objects. But we cannot wander into the vast field of possibilities opened by the introduction of Pythagorean proportions and harmonies, nor even follow Aristotle in his somewhat extended discussion of monads. The last two books of the *Metaphysics* are chiefly taken up with these abstruse speculations. Yet it would be inconsistent with the requirements of our subject to pass over the discussion concerning mathematical entities and numbers apart from their Pythagorean sense. The true character of numbers has ever been a matter of controversy on the same ground as the ideas, and in addition their singular properties of combination have given them a certain mysterious charm not possessed by other abstractions. In fact it might well be contended that there is far more ground for maintaining the separate existence of numbers than that of other generalities. Aristotle himself seems less positive in his objections to this development of the theory, although he consistently opposes all assignment of causal power to numbers. His criticism is to the following effect:

images of the stars of the same nature as the stars. There are some that say that this mean between ideas and sensible objects does exist, not apart from the sensible objects, but in them. It would be impossible to enumerate all the impossibilities that this would lead to, but the following may be mentioned. For it is not reasonable that this mean alone should exist in the sensible objects, but the ideas might also just as well, for both are governed by the same reason. Hence there must be two solids in one and the same place, and the mean could not be motionless if it was in a moving sensible object. In short, why is the mean supposed to exist, but to exist in sensible objects? All the before-mentioned difficulties recur; there would be a heaven beside the heaven, only not apart, but in the same place, which is even more impossible." — *Met.* "a ceta

“They have put mathematical entities between the ideas and sensibles as a certain third thing besides the forms and those things that are here; but there is no third man or horse besides itself and the particulars. But if not as they say, about what is the mathematician concerned? For it is not about those things that are here, for nothing of these matters is the subject of mathematics.”<sup>1</sup>

“In the *Phaedo* it is said that the forms are the causes of existence and generation. But even if the forms exist, still the things that participate would not be produced unless there were a moving force, and many other things would be produced, as a house and a ring, of which we do not say there are forms. Hence it appears that it is possible for the other things to exist, and to be generated by such causes as we speak of. And if the forms are numbers, how can they be causes? Will existing things be other numbers, as this number is man, and this one Socrates, and this one Kallias? In what respect would these be the causes of those? Nor will it make any difference if these are eternal and the others not. Now if the things here are ratios (*λόγοι*) of numbers, as harmony, it is evident that there must be some one thing of which they are ratios. Now if this be a particular thing, as matter, it is plain that the numbers themselves will be certain ratios of one thing with another. I mean, for example, that if Kallias is a certain ratio in numbers, of fire and earth and water and air, it will be also of certain other subjects, and the idea will be a number. And man-in-himself, whether there be a certain number or not, will nevertheless be a ratio in numbers of certain things, and not a number, nor would there be on this account any particular number. Moreover, out of many numbers one number results, but from forms how can one form result?”<sup>2</sup>

<sup>1</sup> *Met.*, x. 1, med.

<sup>2</sup> *Met.*, i. 9, med. See also *De Coelo*, i. 9. On the question of number, Thomas Aquinas throws considerable light. “Differunt vero Mathematica a speciebus quia in mathematicis inveniuntur differentiae secundum numerum, similia secundum speciem. Alias non salvarentur demonstrationes mathematicae scientiae. Nisi enim essent duo trianguli ejusdem speciei frustra demonstraret Geometria aliquos triangulos esse similes et similiter in aliis figuris; hoc autem in speciebus non accidit. Nam cum in specie separata nihil aliud sit nisi natura speciei, non potest esse singularis species nisi una. — Patet autem diligenter intuenti rationes Platonis quod ex hoc in sua positione erravit, quia credit, quod modus rei intellectae in suo esse, sit sicut modus intelligendi rem ipsam. Et ideo, quia invenit intellectum nostrum dupliciter abstracta intelligere, uno modo sicut universalialia intelligimus abstracta a sensibilibus, alio modo sicut mathematica abstracta a sensibilibus, utrique abstractioni intellectus posuit respondere abstractionem in essentiis rerum. Unde posuit et mathematica esse separata et species. Hoc autem non est necessarium. Nam intellectus et si intelligit res per hoc, quod similis est eis quantum ad speciem intelligibilem, per quam sit in actu, non tamen oportet quod modo illo sit species illa in intellectu quo in re intellecta. Nam omne quod est in aliquo est per modum ejus in quo est.

Although it is doubtful if Aristotle fully understood this subject, at least if we judge him by the writings that have come down to us, it is yet possible to see that his objections to the Platonic view of numbers were of three classes. In the first place he maintained that mathematical entities could not subsist in sensible bodies, that is, they could not in so far as they were *entities*; for, in the first place, there would then be two bodies occupying the same space, which was impossible; and, secondly, in case of the division of the bodies, what would become of the mathematical entities? <sup>1</sup> Perhaps Aristotle ought not to be blamed for a conception of mathematical entities that might be called materialistic, when our most prominent English logician holds very much the same view; and, farther, this argument, although inconsistent with the higher conception sometimes expressed by Aristotle, is good enough against the Platonists. The second class of objections must be regarded as an advance upon the first. "Granting," he says, "that mathematical entities are prior in definition (*λόγος*), it does not follow that they will be prior in substance." Separate and transcendent essences

Et ideo ex natura intellectus quae est alia a natura rei intellectae necessarium est quod alius sit modus intelligendi quo intellectus intelligit et alius sit modus essendi quo res existit. Licet enim id in re esse oporteat quod intellectus intelligit non tamen eodem modo. Unde quamvis intellectus intelligat mathematica non co-intelligendo sensibilia et universalia praeter particularia non tamen oportet quod mathematica sint praeter sensibilia et universalia praeter particularia. Nam videmus quod etiam visus percipit colorem sine sapore, cum tamen in sensibilibus sapor et color simul inveniuntur. Sicut species sunt sensibilibus formae ita unum est forma specierum.—Assignabant rebus pro materia magnum et parvum et quasi substantia rerum id est forma dicebant esse unum. Sicut sensibilia constituuntur ex principiis universalibus per participationem specierum ita species quas dicebat esse numeros constituuntur secundum eum (ex illis) scilicet magno et parvo. Unitas in diversas numerorum species constituit per additionem et subtractionem in quibus consistit ratio magni et parvi. Unde cum unum opinatur esse substantiam entis quia non distinguitur unum quod est principium numeri et unum quod convertitur cum ento, videbatur sibi quod hoc modo multiplicarentur diversae species separatae ex una quae est communis substantia sicut ex unitate diversae species numerorum multiplicantur. Other philosophers posited unity of matter and diversity of form, but Plato assigned duality to matter and unity to form. Aristotle compares form to the male animal which can impregnate many females.—Lib. i. Lectio, x.

<sup>1</sup> See note 2, p. 528, also Met., xii. 2, init.

are prior in substance ; but things are prior in definition when their definitions are from other definitions; Whiteness, for example, is not prior to a white man in substance, but in definition ; for it cannot exist separately, but must co-exist with the substance, in the concrete. The distinction is known to us in the phrases " order of nature " and " order of time."<sup>1</sup>

Thirdly, Aristotle declares that mathematical entities and numbers are abstractions. It cannot be maintained that he held very firmly to this argument, but when he does advance it he states his views with such distinctness that it is safe to regard it as his mature opinion, particularly as it would coincide with his general system. It is, perhaps, not going too far to say that the synthetic power of the intellect in conception, which Kant so forcibly insisted on, is really alluded to by Aristotle in speaking of mathematical diagrams. They are discerned, he observes, in actuality, that is, by division, or abstraction. Until the division is performed, the figures have a merely potential existence ; when we have abstracted, the figures appear. Now it is intellection that is the cause of this change from potential to actual existence ; by creating we know.<sup>2</sup> The best method of investigation, he elsewhere remarks, is to regard as separate or abstract that which is not separated, as the arithmeticians and geometers do. Man, in so far as man, is one and indivisible. The arithmetician treats of unity as indivisible, and then considers whether man in so far as he is indivisible has any accidents. The geometer looks on him neither as man nor as indivisible, but as solid. Solidity, therefore, may potentially exist in man, but its actual existence is determined by the mind of the geometer.<sup>3</sup> But after all it must be admitted that Aristotle is often obscure on this point, when we should welcome explicit statements.

The question as to genera and species is of course closely connected with the general one concerning ideas. It is,

<sup>1</sup> See note 2, p. 528, also *Met.*, xii. 2, extr.

<sup>2</sup> *Met.*, viii. 9, extr.

<sup>3</sup> *Met.*, xii. 3, extr.

however, rather logical in its character, and therefore of subordinate interest for our present purpose. We shall, therefore, pass over it briefly, calling attention only to the most important points. The chief objection of Aristotle, undoubtedly, was to the material character given to genera and species, for the absurdities arising from the co-existence of many genera and species in the same object, and of the same genus or species in many different objects, afforded a fruitful field for logomachies. In a word, by regarding species as having separable existence all the difficulties felt in regard to forms were repeated. Then there must be a species of species, and what kind of existence could be predicated of them? There must be a "third man"; that is, apart from the individual man and the man-in-himself, there must be a third man to embrace both. But it would be tedious and profitless to follow out a controversy that really involves no new arguments. Passages bearing on the question are given below in the note.<sup>1</sup>

<sup>1</sup> It is a false definition to divide genus by negation, as those do who define a line to be length without breadth, which signifies merely that it has no breadth. Now the genus must share in the species, since every length either lacks breadth or has breadth; for concerning everything either affirmation or negation may be truly maintained. Wherefore the genus of the line, which is length, will either lack breadth or have breadth. But length lacking breadth is the definition of the species, and likewise length having breadth, because without breadth and having breadth are differences; but the definition of the species is the genus plus the differences. Hence the genus might receive the definition of the species. In like manner the definition of difference, since of the given differences the other will be asserted of the genus by necessity. Now this is useful against those maintaining that there are ideas. For if length-in-itself exists, in what way can it be asserted of the genus that it lacks breadth or has breadth? For concerning every length one of these must be truly said, if it is to be truly said of the genus. But this is not the case, since there are lengths which lack breadth and which have breadth. So that this place is useful against those alone who maintain that genus is one in number; but those who hold to ideas do this, for they say that length-in-itself and animal-in-itself are genera. Top. vi. 6. 143 b, 24; 8. 147 a, 6; vii. 4. 154 a, 19; Phys., ii. 2. 193 b, 36; 3. 194 b, 9, 26. Thomas Aquinas gives a statement of the whole question; see note 1, p. 527, and the following comments: *Platonici enim assignabant solum principia substantiarum accidentia prætermittentes. Accidentia propria principia habent. — Species componuntur ex genere et differentia et sunt species universales substantiæ separatae. — Si enim ponantur species esse separatae constat quod unum genus est in pluribus speciebus simul sicut animal in homine et equo. Aut ergo hoc ipsum quod est*

Several minor objections are from time to time brought forward by Aristotle as they suggest themselves either in the course of his criticism of the general theory, or as they occur to him while considering other topics. Such things as come after numbers — that is lengths and surfaces and solids — he asserts have no grounds in reason; for they cannot possibly be forms if they are not numbers; or media, for those are mathematical; or things corruptible; they must, therefore, make a fourth genus unprovided for by Plato.<sup>1</sup> He indulges in a sneer at the doctrine of anamnesis, that has been a staple weapon for modern disbelievers in intuitive knowledge. It is impossible, he says, that we already know what we propose to ourselves to learn. If we have a knowledge of things born within us, it is very remarkable that we are in ignorance of our possession of such a treasure as this most excellent of sciences.<sup>2</sup> Occasionally he introduces a practical objection to the effect that, if forms are immovable they cannot exist in movable objects. The heaven, for example, moves, and therefore it can have no form.<sup>3</sup> So if it were said that there are forms in us; for

animal in homine et equo existens est unum et idem numero aut alterum in homine et alterum in equo. Inducit autem hanc divisionem quia Plato ponebat ideas specierum non autem generum cum tamen poneret communiter universalia esse substantias. — Species componuntur ex genere et differentia et sunt species universales substantiæ separatae — cum genus sit in specie sicut substantiam rei significans sic erit animal in equo sicut tu es in te ipso qui es substantia tui ipsius. Sic autem non est possibile aliquid unum esse in pluribus separatim existentibus; non enim tu es nisi in te ipso. Es enim in pluribus non separatim existentibus sicut in carnibus ossibusque quæ sunt tui partes. Animal igitur si sit unum et idem non poteret esse in pluribus speciebus ut in homine et equo cum species separatae secundum Platonicos sint quaedam substantiæ ad invicem diversæ. Platonicus ponebant solas species esse ideas particularium, genera vero et differentias non esse ideas specierum. Et hoc ideo quia idea est proprie exemplar ideati secundum suam formam. Forma autem generis non est propria in formis specierum sicut forma speciei est propria in dividuis quæ conveniunt secundum formam et differunt secundum materiam. Sed si sunt diversa animalia secundum diversas species unicuique speciei respondebit aliquid de substantia sui generis sicut propria idea. Et ita etiam erunt genera ideæ et similiter differentiæ. Non ergo alteri universalium erit quod sit idea et alteri quod sit substantia, sicut Platonicus ponebant dicentes quidem genera esse substantias specierum species vero ideas individuorum. — Lib. vi., cap. xiv.

<sup>1</sup> Met., i. 9, med.

<sup>2</sup> Ibid., extr.

<sup>3</sup> Met., xii. 2, med.

they must be both moved and motionless, sensibles and intelligibles; it cannot be denied that we move, and if we have immovable forms within us, they must move at the same time.<sup>1</sup> Again, in the *Ethics*, Aristotle falls foul of this theory, and devotes a long time to repeating his objections; in this case to the separate existence, or the mixed existence, of the good as a substance.<sup>2</sup> But nowhere are the objections so fully stated as in the *Metaphysics*, to which he evidently refers when he speaks of the "full discussion elsewhere indulged in."

We have reserved for our final consideration the theory that the forms are types, plans, or models, or even the ideas or thoughts of God, possessing a strange ethereal sort of existence, something like that of the angels, between God and man. Unquestionably this is the most popular form of the theory now, as is seen by the vigorous defence of the permanence of species by many naturalists — a doctrine that has positively nothing to stand upon but the Platonic theory. Aristotle considers that forms are called paradigms, in which other things participate, by a mere figure of speech, a "poetic metaphor." It is quite possible that there should both exist and be generated something similar to another without being made in its image. (This is just the ground of the modern evolutionist.) A being like Socrates could be produced whether Socrates did or did not exist, and if Socrates were eternal, there would be many paradigms of the same thing, as also forms, as of man there would be animal and two-footed and man-in-himself. There would also be paradigms of forms as well as sensible objects.<sup>3</sup> But the main ground of his objection is that this or any form of the theory supposes that universals exist prior in time to particulars, and independent of them.

The fundamental ground of repugnance in the mind of Aristotle arose from his inability to admit the proposition that a cause can act where it is not. It has been generally

<sup>1</sup> *Top.* ii. 7.

<sup>2</sup> *Nik. Eth.*, i. 4; viii. 2, 4, 5; *Eud.*, i. 8; vii. 2; viii. 1; *Mag.*, i. 1.

<sup>3</sup> *Met.*, i. 9, med.; vi. 8, extr.; xii. 5, extr.

accepted that a cause requires immediate connection, or at least, an intervening medium, in order to operate. This dogma was assailed by John Stuart Mill in his *Logic*, and in place of it the assertion is made that place has nothing to do with causation. The moon is held to the earth not by the force of gravity, but simply by the earth; not because of the earth's attraction, but because of the earth. Recent investigations, however, tend to establish the existence of an ether that exists as the medium through which heat, light, electricity, and even gravity operate. The retardation of comets is one of the most important facts in support of this view. Granting the existence of this ether, the old dogma reasserts itself in a still more positive manner; for this all-pervasive ether supplies it with all that was necessary to establish its validity.

This dogma being established, it is obvious that it is fatal to the creative power of the Platonic world of ideas. If they have an entirely separate and motionless subsistence, how can they cause sensible phenomena? They cannot act where they are not. The interposition of media does relieve the difficulty, for these media must be either in motion or not in motion. If they are in motion, how can the media be affected by the motionless archetypes? If they are not in motion, how can the changing world of sensibles be affected by motionless media? Obviously, as Aristotle again and again insists, Plato omits the efficient cause, and without this all his creations are of no avail. The great fact of motion, of change, that unexplained element that we denominate *force*, is the lacking condition, and this Aristotle supplies in the creative mind of God. All secondary forces are in his grand scheme mere names for the different modes of operation of the one unmoved Mover of the world. There can be no special acts of creation according to this view, no pre-existent types that impress themselves somehow on matter, but one eternal and incessant force that creates every instant, in the act of preservation, and whose influence throbs through every pulsation of the world of life, and shows

itself in every change in the world of matter. Even matter itself is a manifestation of this infinite force, and all our thoughts are but forms of its motion. In this way the ideas of Plato lose their independent active existence, and become objects of thought, principles of knowledge; eternal, it is true, but only as the mind of man is eternal, and active only in his activity.

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## ARTICLE VII.

### NOTES ON EGYPTOLOGY.

BY JOSEPH P. THOMPSON, D.D., LL.D., BERLIN.

DR. BRUGSCH's History of Egypt under the Pharaohs<sup>1</sup> will hardly prove what the Germans style an "epoch-making" book; but it certainly does mark an epoch in the science of Egyptology—the transformation of scattered individual monuments and dismembered inscriptions into a consecutive chronological history of the Egyptian empire. Thirty years ago Bunsen made his bold attempt to determine "Egypt's place in Universal History." The materials were not then ready for such an undertaking, and hence Bunsen's was too much a work of speculation to serve as a permanent basis of history. Yet Bunsen had the true notion of what was to be learned in Egypt, and through Egypt for the history of mankind, and though his methods were faulty and his results incomplete, his principles were unquestionably sound. He grasped the conception that the monuments of Egypt were true records of her chronology; that by means of the monuments it would be possible to restore the chronology embodied in the dynasties of Manetho; and that this chronology would furnish a sure foundation for Egyptian history. And he declared his confidence in this system of investigation in

<sup>1</sup> Geschichte Aegyptens unter den Pharaonen. Nach den Denkmälern bearbeitet von Dr. Heinrich Brugsch-Bey. Erste deutsche Ausgabe. Mit 2 Karten von Unter und Ober-Aegypten und 4 Genealogischen Tafeln. Leipzig: J. C. Hinrichs. 1877.