

second of the three steps above mentioned, and in this field it is that all its recent triumphs have been won. Psychology is gradually but surely learning to confine itself to this its true field; at the same time sloughing its old skin of ontological prejudices. But while the sloughing is still going on, the old skin seems to it another snake's, and alive; as yet it does not see that it is its own, and dead. There is no other snake it can belong to. Metaphysic has likewise sloughed the old skin which grew to it in the Kantian epoch, and now psychology is following its example.

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## ON THE MEANING OF LIFE.

By REV. W. L. GILDEA, D.D.

A "pure intelligence" is, according to St. Thomas, one who can read into the heart of a thing at a glance. St. Thomas even derives the word "intelligere" from "intus legere," reading into, reading within. We are not pure intelligences. We acquire our knowledge not by intuition, but by means of reasoning; a circuitous, round-about process, and hence called discursus. Our knowledge of substances and things is not immediate. We can know them only through their special manifestations, their properties, their effects. *Operatio sequitur esse*. As a thing is, so it operates, and conversely as it operates, so it is. Effects require a cause proportioned to their production. As are the effects, the manifestations; so, in its proportion, will be the thing made manifest. We do not know life in itself, but we may know the manifestations, the properties of life. And from the manifestations we shall argue to the nature of life. The nature is that whence the properties spring. Nature is so called by reason of this. *Id unde nascuntur proprietates*.

Having premised that life and the living thing are to be known by their manifestations, we commence our enquiry on life. Place, on one side, a piece of lifeless matter, and on the other, some very low form of living thing; say, for instance, an amoeba. What special manifestation do we find in the amoeba to mark it off from the piece of lifeless matter? Evidently it is the power of self-movement. The lifeless matter is not wanting in movement. On the contrary, its every atom is throbbing with constant movement in response to the mighty forces of nature working around it and about it. But its movement it derives entirely from without. It has within itself neither operation of self-movement nor source thereof. Now look at

the amœba, or at one of the monera of Haeckel. There is self-movement at every instant, and of a very high order; for the lowest form of self-movement is high. Some particle of organic matter suitable for its nourishment is carried near to the amœba. The amœba is at once aware of its presence and will appropriate it and feed on it. But how accomplish this? The amœba is a mere shapeless mass of jelly-like protoplasm. It has neither hand to seize, nor stomach to digest. Fear not for the amœba. It has a splendid faculty for improvisation. It extemporises an arm and seizes its prey. It thrusts the luscious morsel into its own soft substance; improvises a stomach without more ado; digests its food and assimilates it. Thus appropriating, digesting, and assimilating, the amœba grows till it reaches maturity, and then multiplying itself by fission, it forms new individuals of its kind. In short, it exercises all those functions which are exercised by organisms of perfect structure, and which we call functions of life. Living matter is then easily distinguished from non-living matter. It is distinguished by the power of self-movement. No matter what form self-movement may take provided there be self-movement, there is life. In his treatise on "Plants" Aristotle says that life is manifest in animals. Now, we say that an animal lives from the time that it exhibits power of self-movement. Let it lose this power of self-movement and we say that it is dead. Those things then are living which move themselves according to any species of movement; whether movement be taken strictly and materially, or whether it be taken metaphorically, that is, in the sense in which any action by which an agent passes from potentia to act is called movement. In this latter and metaphorical sense, Aristotle, in his treatise on the "Soul," calls intellection and sensation movements. Indeed, in his "Ethics," Aristotle states that the movements of intellection and sensation are more than any other movements the movements of life. The truth of this dictum of Aristotle will appear from the quotation from St. Thomas with which I shall conclude the present paper. Such things as lack power of self-movement are called non-living, though they may be, figuratively, called living in so far as they simulate life. In this sense a brook of running water is called living. Life then is the power of self-movement. Whence comes this power of self-movement, this life? Are we to seek its origin in matter? Certainly, matter *qua* matter cannot be the source of life; otherwise, as St. Thomas has pointed out, matter would always connote life. "Some ancient philosophers," says St. Thomas, "unable to transcend imagination, thought that bodies were the sole realities, and that what is not body is nothing. And thus they said that the soul or first principle of life is a body. The error of this opinion might be demonstrated by many arguments. We content

ourselves with a single argument. It is evident that not every principle of vital operation is the soul, for thus the eye would be the soul, as it is a principle of vision; and so with the other instruments of the soul. But we say that the first principle of life is the soul. For although a body can be a principle of life, still no body can be the first principle of life. For it is manifest that to be the first principle of life, or living, does not belong to the body, *qua* body, else every body would be living or the principle of life. It belongs then to the body to be living or the principle of life, *qua tale corpus*; inasmuch as it is *such* a body. But that which is *actu tale* is such by reason of some principle which is called its act. The soul, therefore, which is the first principle of life, is not body, but the act of body." Still, may not life be nothing more than the result of a certain arrangement of molecules of matter? In all living bodies there is Protoplasm; and Mr. Huxley has in consequence called protoplasm the "physical basis" of life. It may be remarked in passing that the title "physical basis" does not seem a good one. The word "basis" suggests either a mechanical support, or the principal element in a chemical combination. But we cannot consider life either as a substance mechanically supported by another substance; or as one chemical element in combination with another. A less misleading title for protoplasm would be life medium or physical condition of life. May not life then be a property of matter in the combination of protoplasm? The reply to this question must be a very emphatic No. Protoplasm is reducible into carbonic acid, water, and ammonia, or more ultimately into carbon, hydrogen, oxygen, and nitrogen; not to mention certain other elements which are present in much smaller quantities. Now just as in protoplasm, carbon and hydrogen combine to form carbonic acid; nitrogen and hydrogen combine to form ammonia, and oxygen and hydrogen combine to form water, so from analogy it might seem that carbonic acid, ammonia and water combined form living matter. But this is really not the case. The chemist combines carbon and oxygen, and the result is carbonic acid. He combines nitrogen and hydrogen, and the result is ammonia. He combines oxygen and hydrogen, and the result is water. But he may combine carbonic acid, ammonia and water, till he is black in the face, yet he will never produce living matter. We know exactly of what elements the egg-contents are composed. Their proportions and affinities can be expressed in arithmetical formulas: how much oxygen, how much hydrogen, how much nitrogen. We can blend these elements in the same proportions for ourselves. Yet all the powers of science cannot make an egg that shall hatch as much as a tadpole. No doubt science has been successful in artificially producing substances which are identical with organic secretions, as, for

instance, ammonia. But we are still as far as ever from the power to produce living matter. "We are doubtless able," says Liebig, "to adapt, alter, intensify, and neutralise the cohesive forces in the atoms of organic combinations. We can by the combination of two, three, or four organic atoms create molecules of a higher order, or we can resolve such combinations back into their constituent atoms. But we cannot from its constituent elements produce even one of these organic combinations. No laboratory will ever create a cell, a muscle, a nerve; in a word, any truly living particle of an organism." But nature often succeeds where art fails. Yet not even nature can beget life save by means of life. Men of science are now universally agreed that there is no trustworthy evidence of living creatures coming into existence save by the intervention of parental organisms. Thus Balfour, Stewart and Tait declare that "all really scientific experience tells us that life can be produced from a living being only." Virchow asserts that the doctrine of abiogenesis is "utterly discredited." And in his Wiesbaden address (1872) Virchow says, "Never has a living being, or even a living element, let us say a living cell, been found of which it could be predicated that it was the first of its species. Nor have any fossil remains ever been found, of which it could ever be likely that they belonged to a being, the first of its kind, or produced by spontaneous generation."

Mr. Wallace affirms that "the three distinct stages of progress from the inorganic world of matter and motion up to man (he means the stages of life, sensation, and intelligence), point clearly to an unseen universe—to a world of spirit, to which the world of matter is altogether subordinate." Professor Huxley and Professor Tyndal speak in words which are well known. "No shred of trustworthy evidence," says Mr. Tyndal, "exists to prove that life, in our day, has ever appeared independently of antecedent life." The "in our day" of Mr. Tyndal is of a rather more restrictive character than we like. Professor Huxley speaks somewhat more fully. "The fact is," he says, "that there is not, at the present moment, a shadow of trustworthy direct evidence that abiogenesis does take place, or has taken place within the period during which the existence of life on earth is recorded. "But," he continues, "it need hardly be pointed out, that the fact does not, in the slightest degree, interfere with any conclusions that may be arrived at deductively from other considerations that at some time or other abiogenesis must have taken place." What are these considerations? We find them in the next paragraph of the article (Biology, *Encyc. Brit.*) from which the last quotation has been taken. "If the hypothesis of evolution be true, living matter must have arisen from not living matter; for, by the hypothesis, the condition of the globe was at one time such that

living matter could not have existed in it; life being entirely incompatible with the gaseous state." The considerations then resolve themselves into a tender consideration for the evolution theory. In spite of every reason to the contrary abiogenesis must be true. Why? Because if it is not true evolution must lie on the ground a headless, armless, lifeless Dagon. We cannot permit this. We must save Dagon even if it be at the cost of consistency. Well does Professor Mirart say, "Those who affirm that though life does not arise from inorganic matter now, nevertheless it did so 'a long time ago,' affirm what is at the least contrary to all the evidence we possess. And they bring forward nothing more in favour of it, than the undoubted fact, that it is a supposition which is necessary for the validity of their own speculative views." Mr. Huxley will not give up abiogenesis, because, if abiogenesis goes, evolution must go. Burmeister and Büchner have a better reason still. They will not give up abiogenesis, because if abiogenesis goes, God must come. Burmeister says that the hypothesis of spontaneous generation must be accepted "since without it, the appearance of organic life upon the earth could only be explained by the immediate operation of a higher Power." "How this development of organic being took place," says Büchner, "cannot be as yet explained with scientific precision. But it is to be hoped that future investigations may throw more light on the subject." Here is one more admission that materialism is, in our day, as impotent to assign a scientific basis for its position as it was in the days of Lucretius. But whether future investigations throw more light on the subject or not Büchner will remain true to the hypothesis of abiogenesis. And here is his reason. "If science," he says, "found itself obliged to admit a vital force, our principle of the universality of the laws of nature and the unchangeableness of the mechanical order of the world would fall to the ground. We should have to admit the intervention of a higher Hand, changing the course of nature and producing effects outside of our calculations." We must keep out that higher Hand, apparently, at all costs. And thus these writers, who are so fond of insisting that all science rests on experience, throw over, what they acknowledge to be, the sole experience of the origin of life, because they are convinced, with an eminent English Positivist, that "you cannot make the slightest concession to metaphysics, without ending in a theology!" I may here recall to mind one of the attempts which have been made to bridge over the chasm which separates the organic from the inorganic world without the assistance of God or theology. In the first Deep Sea Dredging Expedition, some slimy matter which was dredged up from the bottom of the sea and which was fondly hoped to be a portion of a layer of semi-living matter, covering a large area

of sea-bottom, was preserved with all becoming reverence in spirit of wine. Life in its simplest form was now discovered. The realms of life and not-life were no longer separated by an abyss. Haeckel is undoubtedly a name deserving of honourable mention; and it is also a name which confers honour. Professor Huxley thought to honour both Haeckel and the slime by entitling the latter *Bathybius Haeckelii*. Bathos had perhaps been a better chosen name than *Bathybius*; for, some ten years after the momentous discovery, another discovery was made not without its relevancy to the previous one. Mr. Huxley set the results of the new discovery before the public, in his speech at the Sheffield meeting of the British Association; and he washed his hands of *Bathybius*. "For some time after that interesting *Bathybius* was launched into the world," said the Professor, "a number of admirable persons took the little thing by the hand and made very much of it. . . . And so things went on, and I thought my young friend *Bathybius* would turn out a credit to me. But, I am sorry to say, as time has gone on, he has not altogether verified the promise of his youth. In the first place he could not be found when he was wanted; and, in the second place, when he was found all sorts of things were said about him. Indeed, I regret to be obliged to tell you that some persons, of severe mind, went so far as to say that he was nothing but simply a gelatinous precipitate of slime which had carried down organic matter." Mr. Huxley acknowledged his defeat in a manner which was graceful and winning. But gracefully or grudgingly the acknowledgment had to come. There had been some more deep sea dredging, and on this fresh occasion *Bathybius* had not been so thoroughly soaked with spirit of wine. No longer disguised in liquor, *Bathybius* nailed his colours to the mast and stood in his own shoes. The consequence was that he was easily seen to be sulphate of lime; or—to translate technical terms into plain English—honest plaster of Paris. But, it is argued, though abiogenesis be impossible under the actual conditions of nature, still it may have been possible in earlier periods, when the chemical forces were more intense. Wagner shows that this conjecture is worse than arbitrary. "Any greater degree of intensity," he says, "of the physico-chemical processes, any increase of light, heat, electricity and the like, above their normal degree of energy, weakens instead of strengthening vital power; and, after a certain point of intensity, utterly destroys all organic life. Consequently," he concludes, "to assume that to be the cause of the production of organic life, which is pernicious to and destructive of its existence, is a self-evident contradiction." Life, I will say finally, is not a property even of protoplasm which has been produced by antecedent life. What does science understand by a property? The inalienable

characteristic of a thing—a characteristic which is so closely identified with a subject that you cannot separate characteristic from subject without destroying the subject. Does life stand thus inalienably related to protoplasm? Certainly not. Cut off the arm of a living man. The separated member is true protoplasm. Not only the appearance but also the constitution of the substance remain the same. But the arm no longer manifests the phenomena of life. It is true protoplasm. But it is dead.

Over and above then the forces which are the properties of matter, we must admit, as of an entirely distinct order, a vital force. Mr. G. H. Lewis objected to the term "vital force." "You might as well speak of a 'watch force,'" said he. His objection is a baseless one. There is no parallelism between a "watch force" and a "vital force." "Watch force" is identical with the force with which many mechanical operations, other than those involved in the working of a watch, are effected. "Watch force" is no more than the elasticity of a coiled spring. But the manifestations of life are the outcome of a force which cannot be fully and adequately described in terms common to other forces. Any purely mechanical definition, any purely chemical definition of living protoplasm, must necessarily omit the grand characteristic of vitality which gives to living protoplasm its essential and unique position in the system of Nature. Doubtless in every organism physical and chemical forces are at work. But they do not act independently of the organism; nor is the organism the result of these forces. St. Thomas remarks that the processes of nutrition and growth, and even those of sensation and motion, are effected by the vital force through the instrumentality of physical and chemical forces. But, exclude the "vital force," and it will then be impossible for us to explain why matter, which is indifferent to all forms, should assume the form of this particular organism, germ, or species. I think I may say that, after many flounders in the bog of materialism, philosophers are now at length reverting to the teaching of Aristotle on the principle of life. Lotze, who, at one time, was among the foremost advocates of a mechanical conception of nature, now asserts in the most uncompromising way the existence in each animal of a soul or "psyche"; an entity, which, though clearly to be perceived by the reason, is, he tells us, as impossible to imagine as it is to imagine "how things look in the dark." Concerning this "psyche," Wünder says, "The psychical life is not a production of the bodily organism, but the bodily organism is rather a psychical creation in all that by its purposive power of self-regulation gives it precedence over inorganic bodies." To the testimony of these eminent philosophers I will add the witness of the famous naturalist Müller. "In the systematic

co-ordination of its parts," says Müller, "to effect certain results, the organism resembles a machine. But in the germ which it produces it repeats and propogates its own mechanism. Not only does the energy of the organism depend upon the harmonious co-operation of its parts, but further it is itself the primary cause of this harmony. Nor is each part self-subsistent, but each exists only in virtue of the existence of the whole. A machine is constructed by its inventor to do certain works, according to his preconceived idea, for a designed end. And thus each organism corresponds to an idea, and all its parts are arranged in accordance with this end. But the idea is not outside, as in the case of the machine, but within the organism, which necessarily acts in accordance with its own law. Hence the unity and harmony of the organism depend, not on matter taken from without, but on the inward primary principle, already present in the germ before the ultimate differentiation of the parts which it produces, as they are required for the realization of an idea."

Instead, then, of matter producing life, it is the vital principle, which, by the use it makes of material forces, builds up and fashions each individual body as a real existing whole. This is indeed made sufficiently evident by the fact that as soon as the vital principle is withdrawn dissolution follows. The chemical elements, emancipated from the control of the vital principle, obey their own laws, and in consequence corruption ensues.

Carried thus back to the teaching of Aristotle, let us consider the definition which Aristotle gives of this principle of life, or, as he calls it, soul. Aristotle defines the soul as "the first act of a natural organised body having life in potentia." This definition needs some explanation:—

(1) "Act."—As Aristotle points out in his *Metaphysics*, the word "act" (*ἐντελεχία*) was originally employed to signify the sensible movements of bodies; thence it was transferred to indicate the formal principle of operation; and finally it was used to express the formal principle of being. Aristotle uses the word here in the last-mentioned sense. The soul, then, is classed by Aristotle under the genus of form.

(2) "First Act."—That is to say, the actuality which does not presuppose another actuality, but rather itself confers the being which is substantial and absolutely first. By this particle "first" the soul is distinguished from accidental forms, and from the vital powers and functions; for all these presuppose another act, the primary and substantial act on which they are founded. It is distinguished, too, from subsistence and substantial existence; for though these also are substantial actualities, they are not primary but

ultimate. It must be mentioned, however, that the term "first act" is sometimes taken by Aristotle in a large sense, and is applied by him even to certain accidental forms—to habits, for instance. Such forms—while they confer upon the subject an accidental or secondary being, and, in view of this, are themselves secondary acts—nevertheless, at the same time, dispose their subject for operation, a secondary act; and in respect to this term of operation for which they dispose their subject, they may be called themselves first acts. Such a form would be, to employ the illustration of Aristotle, the habit of science. The habit of science is a secondary act in relation to the accidental being which it confers; but it may also be called a first act, if it be considered as a principle disposing the subject of science for the actual consideration of truth. Now Aristotle defines the soul as a "first act" both because it is the formal principle which gives primary being to its subject, and also because it disposes its subject for the secondary act of operation. But there is, as St. Thomas points out, still another reason for calling the soul the first act of the organic body; a reason which does not hold good with respect to the inferior substantial forms; and it consists in this, that the soul is separable from its operations, or that it can stand without at least some of them; or, shall we say it consists in this, that the animated body can desist from some of the operations of which it is capable. Plants possess the faculties of increase and germination, but they are not always exercising themselves in these processes. Brutes are possessed of various passions, yet they exercise these passions not constantly, but only in consequence of certain adventitious apprehensions. While, on the contrary, elementary forms are always *in actu secundo* of operation throughout the entire range of their energies and activities unless they be impeded by some external agent. "The Philosopher," says St. Thomas (St. Thomas always names Aristotle *The Philosopher*) "calls the soul the first act, not only to distinguish the soul from the second act, which is operation, but also to distinguish it from the elementary forms which are always exercising their activity unless they be impeded." That this interpretation is in accordance with the mind of Aristotle is clear from the comparison which Aristotle institutes between the soul as the act of the organic body and the habit of science as the act of the scientist. Just as the habit of science, or the subject who possesses it, can go forth into the act of speculation or desist from that act; so the soul, or the animated thing, can exercise itself in some of the operations of which it is capable, or desist from such operations.

(3) "Of a Body."—By "body" here we are not to understand a composition of first matter and of some form constituting the matter

in the grade of corporeity, and leaving the composition ulteriorly determinable as vegetative, sensitive, or human; for in this hypothesis the soul would actuate a subject already energised by another substantial form; and thus the soul would not be a first and substantial, but a second and accidental act; whereas, according to Aristotle, it is by the same formal principle that the living body receives being, being of body and being of living body. "We are not to understand," says St. Thomas in his commentary on Aristotle's definition of soul, "that the soul is the act of the body, and the body the matter of the soul, as though the body were constituted by a form which makes it to be body; and that the soul supervening makes the body to be living; but rather that it is from the soul that the body exists, is a body, and is a living body."

(4) "Natural" or "physical."—This signifies that the soul is not the actuality of a merely artificial aggregate.

(5) "Organic."—"That is as organic body," says St. Thomas, "which possesses a diversity of organs." Now a diversity of organs is required in the body which is the subject of life, for the sake of the diverse operations of the soul. For since the soul is the most perfect form, amongst the forms of corporeal things, it is the principle of diverse operations and thus requires a diversity of organs *in suo perfectibili*. But the forms of inanimate things are the principles of but few operations, and in consequence do not require a diversity of organs *in suis perfectibilibus*." Just as the body is not presupposed by the soul, but is itself the product of the soul; so the organization of the body is a product of the soul. "In the definition of forms," says St. Thomas, "sometimes the subject is posited as uninformed, as, when we say 'movement is the act of that which exists in potentia'; sometimes the subject is posited as informed, as, when we say 'movement is the act of the thing moved'; and in this latter sense the soul is said to be the act of the natural organic body, for the soul makes the body to be an organic body, just as light makes a thing to be illuminated." From the words of Wünder, which were quoted above, it is evident that that philosopher is in full agreement with St. Thomas on this matter. I find a similar agreement in Virchow. "There is no limit," says Virchow, "to the growth of a crystal so long as the requisite matter and conditions are supplied; but for the organism, the imminent, specific form is the limit of its internal development." To define the soul, then, the act of an organic body is to explain the soul by the formal effects which it produces in its proper subject.

(6) "Having life in potentia."—Since Aristotle, as has just been remarked, in defining the soul "the first act of a natural organic body," did not consider the subject of the soul as uninformed but as

informed, it follows that the life, which the body is now said to possess in potentia, is not substantial life, for that is supposed to be actually possessed, but accidental life. The soul confers accidental life on the body, inasmuch as, through the medium of its faculties, it renders the body capable of exercising vital functions and operations. "A thing," says St. Thomas, "is said to be in potentia in two ways: when it has not as yet the principle of operation, or when it already possesses this, but does not as yet operate in accordance with it. The body is said to possess life in potentia not in the first sense, but in the second." St. Thomas further remarks that the words, "having life in potentia," were added by Aristotle solely with the view to securing greater clearness of definition. For, as a matter of fact, every organic body has life in potentia; and every body which has life in potentia is organic. Another definition which Aristotle gives of the soul is "that by which we primarily live and have sensation and move and understand." This definition differs from the former (1) because the former definition considers the soul in its relation to the organic body of which it is the form; while the present definition considers the soul in relation to the vital operations of which it is the principle. (2) The former definition, according to all its particles, applies to all souls. But the terms of the present definition must be applied *disjunctive*. So that its sense is: the soul is the principle of vegetation in the plant; of vegetation and sensation in the imperfect animal; of vegetation, sensation, and locomotion in the perfect animal; of vegetation, sensation, locomotion and understanding in man. When Aristotle defines the soul, "that by which we primarily live and have sensation and move and understand," he must not be understood as distinguishing life from sensation, locomotion and understanding. Sensation, locomotion and understanding are with Aristotle true operations of life. Indeed, as has been already pointed out, Aristotle declares that sensation and intellection are, more than any other movements, the movements of life. When, then, Aristotle says "that by which we primarily live," he is speaking of the lowest form of life, the vegetative life. He gives to the lowest species of life the generic name, just as we give to the brute, the lowest species of animal, the generic name of animal. St. Thomas, following Aristotle, makes very manifest the predominance of life in such living things as are possessed of sensation, and especially in such as are possessed of understanding. The exposition of St. Thomas is, in substance, as follows. In every operation there are three things to be considered. The first is the end for which the operator operates and by which the operator is moved to operation. The second is the form by which the operation is effected. The third is the execution of the operation. Now

there are some agents which can neither determine for themselves the end for which they operate, nor acquire for themselves the form by which they operate, nor, of themselves, execute the operation. Such agents, in no wise, possess life. They are mere instruments as a saw or an axe. The saw has its part in shaping the wood into a bench; but the end is pre-ordained, not by the saw, but by the carpenter. The form of saw was received by the iron from the smith; and, finally, the saw cannot do its work unless it be moved by the carpenter. There are other agents which can in some way act of themselves, and such are all living things. Of living things there are three grades. In the case of some, the end for which they operate is predetermined by another; and the form by which they operate is received from another; still they can of themselves execute certain operations. These constitute the lowest grade of living things; and to this grade belong plants, which receive from nature both the form by which they operate and the end for which they operate; yet, of themselves, execute their operations. The second grade of living things consists of those which can not only execute, of themselves, their operations, but also can acquire for themselves the forms by which they operate, while, however, the end of their operation is determined for them by another; and in this grade are animals which possess sense. Animals exercise sensation, not by a form implanted by nature, but by a form acquired by the sense, that is, by the sensible species. This grade of living things admits of two subdivisions. There are some animals which have only the sense of touch; and these have species only of present objects. There are others, again, which have sensation not only of present but also of distant objects; and such are all animals which possess the power of locomotion. But, though these living things move themselves, not only by executing of themselves their operations, but even by acquiring for themselves the forms by which they operate; nevertheless, the end for which they operate is predetermined for them by nature; for it is by the instinct of nature that they are moved to operate for such an end. The third grade of living things consists of those which not only, of themselves, execute their operations, and acquire for themselves the forms by which they operate, but, furthermore, determine for themselves the end for which they operate; and this is the most perfect grade of living things; and to this belong such living things as act by intellect and will. But this grade also admits of two subdivisions. For, some intellectual agents, while they can of themselves execute their operations, and acquire for themselves many of the forms by which they operate, and determine for themselves many of the ends for which they operate, nevertheless receive the first forms by which

they operate and the last end for which they operate from another. To this grade we ourselves belong; for, while we can acquire for ourselves many intelligible forms, and determine for ourselves many ends, nevertheless, the first principles of the intellect and the last end of the will we must ascribe not to ourselves but to nature. But there is one intellectual agent whose nature is identical with his intellect, and for whom what he naturally possesses is not determined by another. This intellectual agent is God. In God there is found life in its plenitude. "Whence," says St. Thomas, "the Philosopher (Aristotle), in his *Metaphysics*, having shown that God is intelligent, concludes that he possesses the most perfect and eternal life, because his intellect is most perfect and always in act."

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## THEORIES OF PLEASURE.

*By* MR. G. E. UNDERHILL.

My feelings after I had chosen this subject for my paper were much what I imagine those of the undergraduate to have been, who, according to an old Oxford story, was told by the Master of his college to write as an essay, "Something New on the Freedom of the Will." The London Aristotelian Society however will not, I hope, make such an exacting demand upon my powers of originality. So I will ask its members to be content, if I do my best to put together what seems to me to be some of the most striking results of modern research upon this difficult and obscure question.

From the title of my paper you might be led to infer that my method of treatment would be purely historical and psychological. But as a matter of fact, philosophers from the time of Aristippus downwards seem first to have invented their ethical theory of the moral value of pleasure, and then looked about for a psychological foundation on which to base it. The reason for this is not far to seek. All moralists, whether Hedonists or the reverse, have been forced by experience of facts to recognize the extreme, if not paramount, importance of pleasure and pain in moral action and moral character. Consequently the two sides of their theories of pleasure—I mean, the moral and psychological—tend to be complementary one of the other. One of the chief aims of this paper, therefore, will be to show how error in the one theory has infallibly led to error in the other—how it is impossible to obtain a satisfactory theory of morals in general without first discovering a true theory of the psychology of pleasure, and how that the best criterion of the truth