PANPSYCHISM AND PANBIOTISM.

I. PROFESSOR HAECKEL'S PANPSYCHISM.

PROFESSOR HAECKEL, in his article "Our Monism,"* propounds the theory of Panpsychism, which he considers as an essential feature of Monism. He says:

"One highly important principle of my monism seems to me to be that I regard *all* matter as *ensouled*, that is to say, as endowed with feeling (pleasure and pain) and with motion, or, better, with the power of motion. As elementary (atomistic) attraction and repulsion these powers are asserted in every simplest chemical process, and on them is based also every other phenomenon, consequently also the highest developed soul-activity of man.

"Simplest example: sulphur and quicksilver rubbed together form cinnabar, a new body of entirely different properties. This is possible only on the supposition that the molecules (or atoms) of the two elements if brought within the proper distance, mutually *feel* each other, by attraction move toward each other; on the decomposition of a simple chemical compound the contrary takes place: repulsion. (Empedocles's doctrine of 'the love and hatred of atoms.')"

Not being able to accept Professor Haeckel's doctrine of Panpsychism, I propose what might best be called Panbiotism, briefly set forth in the maxim *πᾶν βιωτόν*; that is, everything is fraught with life; it contains life; it has the ability to live.

The word *βιωτός* is mostly used by Greek authors in the negative, as in the phrase *βίον οὐ βιωτόν*, an unlivable life, in the sense of a life unendurable or not worth living. Thus Sophocles and others. The word *βιωτός* is embodied in the term Panbiotism in its etymological sense of "livable."

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* *The Monist*, Vol. II, No. 4.

I am willing to concede to Professor Haeckel that all nature is alive. Indeed, I have most emphatically insisted on the doctrine that there is a spontaneity pervading all nature. (See "Fundamental Problems," 2d ed., pp. 110 et seqq.)

By spontaneity is to be understood that kind of activity which springs from the nature of the being or thing which is active. A motion that is caused by pressure or push is not spontaneous; but a motion, the motive power of which resides in the moving object, is spontaneous. Thus a cart rolling down a hill by its own weight performs a spontaneous motion, but when drawn by horses moves, or rather is moved, by pull without any spontaneity.* Now everything that exists is possessed of certain qualities; its existence is of some definite, peculiar kind, and this its peculiar kind is the character of the thing. In the character of a thing lies the source of its spontaneous actions. The spontaneous actions of the chemical elements depend upon their qualities, which always react under certain circumstances in a definite way, and under the same conditions in the same way. The action of sulphur and quicksilver lies in the nature of these elements. Their union is not passive, but active. They *are* not combined, but they *do* combine. He who observes and studies nature cannot be blind to the fact that an inalienable, intrinsic power is resident in every thing that exists. This is true not only of organised life, but also of the chemical elements as well as of gravitating masses. The motion of a falling stone can, no more than the actions of oxydising substances, be considered as ultimately due to an extraneous pressure that makes them move by push, or to a *vis a tergo* acting upon inert matter. These motions must be spontaneous; they are due to powers inherent in the nature of reality. They are self-motions, and in this sense we say that all nature is alive.

The term "life" is here used in a broader sense than ordinarily. It means spontaneity or self-motion, while in its common signification the term "life" is restricted only to the spontaneous action of

* Spontaneous motion (as here defined) does not mean action without a cause; nor does the spontaneity of the cart exclude the co-operation of other spontaneities (*e. g.* the attraction of the earth) entering as factors in bringing about the final result.

organised beings, i. e. of plants and animals. In order to distinguish life in the broader sense from the narrower or common acceptance of the term, we call the latter "organised life."

It is not impossible, and I consider it even as most probable, that the difference between Professor Haeckel and myself rests on a different usage of the term soul. But a vague or inconsistent usage of the term, unless we are especially careful in so defining it as to prevent misunderstandings, will inevitably beget errors. Thus the doctrine of Panpsychism is liable to lead to fantastic ideas, and to cause great confusion concerning the activity of what is generally called inanimate nature.

Soul (as I understand the term) is a system of sentient symbols.

The problem of the origin of the soul is solved as soon as we understand how feelings can acquire meaning.

Suppose we have some sentient substance exposed to the impressions of the surrounding world. The sense-impressions of the surrounding world leave traces in the sentient substance; these traces, which are structures of a certain form corresponding exactly to the various impressions, are preserved and constitute a predisposition to being very easily revived by impressions of the same kind. The revival of feeling in traces left in the sentient structure from former impressions is called memory. If a new impression of the same kind as the traces of the former impressions affects a sentient being, the new impression already finds a convenient path for its reception prepared. Its peculiar vibration fits in the old trace and thus runs along very easily in the memory-grooves of former impressions, reviving at the same time the feelings perceived at their original formation. The feeling thus caused is composed of several elements, which naturally melt into one: first, there is that kind of feeling which is produced by the present impression; secondly, there is the revival of former feelings or memory-sensations; and thirdly, there is a feeling of congruence resulting from the combination of these two. This third element is a new and a very important feature. We suppose that it is extremely insignificant in the beginning, but being a constantly growing factor, it rapidly increases in importance. The stronger and the more independent the memory-structures become, the more

clearly will their congruence with fresh sense-impressions be felt as a congruence.

This feeling of congruence is the simplest form of what psychologists generally call "recognition."

The recognition of a sense-impression, as being the same as some former sense-impression, adds to the feeling a new quality; it imparts meaning to it. This feeling of a special kind will now stand for something. In this way impressions upon sentient substance will, in the course of their natural development, simply by the repetition of similar and same impressions, come to indicate the presence of certain conditions that cause the impression. This act of indicating something, of symbolising the presence of a reality, of possessing meaning, is the birth of soul. Sense-impressions that have acquired meaning are called sensations. A sensation standing for a special object symbolises that object. Abstract ideas are symbols of a higher degree, but they remain symbols just the same. And it is the sentient symbols which constitute the soul.

Those actions which are regulated by the meanings of sentient symbols of which a soul consists should alone, according to a strict terminology, be called "psychical." The falling stone, the chemical elements, when combining or separating, etc., are alive; there is a spontaneously acting power even in unorganised nature; but the actions of unorganised nature are not determined by the meaning of feelings, and, in truth, we have no reason to believe that their feelings—granting that they really do possess feelings of some kind—are freighted with even so much as the slightest inkling of significance. In a word, there is no soul in the stone; there is no mind in the water-fall; and there is nothing psychical in either oxygen or hydrogen. But there is soul wherever meaning can be found as the regulating motive of actions; there is purpose. And wherever purpose is, there is mind.

PLEASURE AND PAIN.

Professor Haeckel goes still farther in the application of his theory of Panpsychism: he speaks of the atoms not only as feeling each other, but also as having pleasure and pain. This indicates

either that he is serious in his belief in the psychical nature of all things, or it proves how dangerous it is to introduce an allegorical expression the allegorical character of which is from the beginning lost sight of.

What are pleasure and pain?

Pleasure and pain are known to us by experience; they are feelings. Pleasure is an agreeable, pain a disagreeable feeling.

Pleasure and pain are different from sensation. Sensations are representative of certain somethings called objects. Pleasures and pains, however, are not representative, they are purely subjective states. There may be pleasurable or painful sensations, and there may be pain indicating the presence of pain-producing objects, but that does not concern us now. When speaking of pleasure and pain we do not refer to the representative value of feelings, but consider a merely subjective aspect, pleasure being the agreeableness, pain the disagreeableness of feeling.

Accordingly pleasure and pain presuppose the existence of an organised system of feelings. An isolated feeling, we have learned, is meaningless; it is still less pleasurable or painful. In order to agree or disagree, there must be something with which to agree or disagree. Therefore, although pleasure and pain are not symbols indicative of some objective presence, they can take place only in sentient organisms, in systems of feelings, in souls. Where these complex conditions, indicative of the presence of a soul, are absent, we have no right to speak of the presence of pleasure and pain.

We cannot interpret the phenomena of unorganised nature as being endowed with feelings of pleasure and pain. Pleasure and pain are psychical phenomena, and psychical phenomena can take place in souls only.

We might as well speak of the presence of positive and negative electricity in the cataract, the water-power of which is employed to produce electricity. Electricity is, in such a case, transformed water-power; but can we, for that reason, say that the motion of water is either positive or negative electricity?

All the motions of the objective world must be supposed to have their subjective correlates; but the simplest forms of objective

phenomena cannot have those subjective correlates which, according to our experience, appear and have their conditions of appearance only in the most complex and highest developed forms of existence—in organised nature.

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The physiological conditions of pleasure and pain are now just beginning to be investigated (see Goldscheider's article in Dubois-Reymond's *Archiv*, 1891), and most philosophical theories concerning the nature of pleasure and pain are mere assumptions. Almost all the views that are now current attempt an explanation by generalising the idea of pleasure and pain so as to regard the feelings of pleasure and pain as a universal feature of nature. This vicious method of generalisation at the cost of discrimination has produced much confusion in the world; and its influence is the more pernicious as average minds are easily satisfied with generalities.

Now, the theory of making pleasure and pain universal features of existence is a palpably erroneous theory; it is a wrong generalisation. It is true that sentient beings naturally seek pleasure and avoid pain. But are we allowed, according to the laws of logic, to transfer the special feature of the case to the whole class of all processes where a seeking and an avoiding can be observed? Certainly not. Because sentient beings are repelled by pain and attracted by pleasure, we cannot say that every repulsion is due to pain and that every attraction is due to pleasure.

The theory according to which pleasure and pain alone are the causes of attraction and repulsion we may fairly consider as a poetical license justifiable within certain narrow limits, and actually justified in so far as there is in every natural process some peculiar feature that is analogous to the feelings of sentient beings. This peculiar feature—viz. its subjectivity—is, as we have seen, not visible, not observable; yet it exists: it is that something which in the course of evolution becomes, in special combinations, first feeling and then consciousness. But for that reason it is not as yet either consciousness or feeling.

While on the one hand the theories of pleasure and pain that regard pleasure and pain as universal features of natural pheno-

mena, are arrived at by a wrong method of generalisation, we find on the other hand they do not agree with facts. They neither explain nor account for the appearance or disappearance of real pleasures and pains such as take place in animal life.

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Starting from merely theoretical considerations, Kant defines pleasure as a feeling of furtherance, pain, as a feeling of hindrance of life; and so prominent a physiologist and psychologist as Alexander Bain says that "States of pleasure are connected with an increase, states of pain, with an abatement of some or of all the vital functions."

A consideration of the actual causes of our pleasures and pains will prove the incorrectness of these views, which are also due to wrong generalisations. An increase of the vital functions and a further growth, either of the organs or of the whole organism, is very often accompanied with pain. A growing tooth causes, as a rule, as much pain as a decaying tooth. And if by some drug the decay is hastened and the nerve is killed, there is, connected with the suppression and sometimes with the mere abatement of the vital function, an abatement of the pain also.

Feelings of pleasure and pain presuppose that habits have been formed in a sentient organism.

Pain is not always a hindrance of life, nor is every hindrance of life painful. Pain is not an abatement of the functions of life, not a decay, nor a destruction. But pain is always a disturbance of life and of the habits that have been formed.

Growth is, under certain circumstances, as much a disturbance as is decay. And decay, if it is simply an abatement or cessation of function, is not accompanied with pain.

While pain is always a disturbance of the functions of an organism, pleasure is simply the gratification of wants; functions and wants being formed by habits, we may briefly say that pleasure is agreement, pain disagreement, with habits.

There are natural wants and unnatural wants. There are habits beneficial to the furtherance of life, and there are habits injurious to the furtherance of life. The pleasure connected with the gratifi-

cation of wants does not depend on its being a furtherance or a hindrance of life, but solely on the intensity of the want. And the intensity of the want, again, depends on the degree to which a habit has become inveterate.*

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The theory of pleasure and pain which regards pleasure as indicative of the growth, and pain, of the decay of life, leads ultimately to the ethics of hedonism, which identifies the good with the pleasurable. However, if our view of pleasure and pain be correct, it is apparent that the pleasure theory in ethics is wrong in its very foundation. The pleasurable would cease to be a criterion of goodness; for many things are pleasurable that are bad, and many things are painful that are good. Growth, development, progress, evolution have often been, nay must mostly be bought with great pain, tribulation, anxiety, and also with the renunciation of pleasures. On the other hand the fulness of pleasure is always a very dangerous symptom for any state of existence.

The seeking of pleasure and the avoiding of pain are certainly very questionable guides in determining what right conduct is. In adopting pleasure and pain as the principles of ethics, we adulterate the nature of morality; for morality exists and has been called into being simply to counteract the dangerous allurances of that which promises to produce pleasure and to avoid pain. Ethics has to teach us how to live, how to develop, how to grow, how to make our lives useful and serviceable. If ethics were simply a method of how to obtain the greatest amount of pleasure, we might better openly confess that there is no moral goodness but only pleasurableness, and consequently that morality is a chimera and ethics a farce.

A defender of the pleasure theory in ethics writes in reply to this criticism of his view: "To seek pleasure and to avoid pain is

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* This theory of pleasure and pain was first set forth in an editorial article of No. 120 of *The Open Court*, which has been republished in the chapter "Pleasure and Pain," pp. 338–345, of *The Soul of Man*. A correct view of the nature of pleasure and pain is of great importance, especially in ethics. Notwithstanding the palpable erroneousness of the old view, several articles written by prominent authors have appeared of late, that continue in the old strain without taking notice of the criticism that overthrows the basis of their theories.

not wrong. Why shall we deprive men of their enjoyments?" Certainly, everyone has a right to enjoy himself; every one has a right to seek pleasure and to avoid pain. But seeking pleasure and avoiding pain is not as yet ethical. Under ordinary circumstances it is right enough to follow the natural impulses of seeking pleasure and avoiding pain. But there are cases where seeking pleasure, be it for ourselves or for others, and avoiding pain, be it for ourselves or for others, become actual wrongs; not because present pleasures will lead to future pains, but because certain pleasures are a hindrance to the higher evolution of the soul.

It is often said that the renunciation of pleasures is richly made up for by the pleasures which are afforded in a more fully developed life. But this, in my opinion, is not true. The adult has rather less pleasures than the child, and the civilised or highly cultured man does not enjoy himself as much, as easily, and as cheaply as does the savage, the uncultured, the fool.

III. MR. THOMAS A. EDISON'S PANPSYCHISM.

Some time ago Mr. Thomas A. Edison was interviewed on the question, "What is life?" Mr. Edison answered the question; and his view is quite in accord with Professor Haeckel's idea of panpsychism. The article appeared first in a daily newspaper. Being remarkable for its coincidence with the views of a great scientist, and coming from the pen of so interesting a man as the famous inventor of the phonograph, we deem it best to republish it in full, with Mr. Edison's permission, who, at the same time, acknowledged the copy we sent him as correct.

This is the article:

INTELLIGENT ATOMS.

BY THOMAS A. EDISON.

My mind is not of a speculative order, it is essentially practical, and when I am making an experiment, I think only of getting something useful, of making electricity perform work.

I don't soar; I keep down pretty close to earth. Of course there are problems in life I can't help thinking about, but I don't try to study them out. It is necessary that they should be studied, and men fitted for that work are doing it. I am not fitted

for it. I leave the theoretical study of electricity to the physicists, confining my work to the practical application of the force. It is my belief, however, that every atom of matter is intelligent, deriving energy from the primordial germ. The intelligence of man is, I take it, the sum of the intelligences of the atoms of which he is composed. Every atom has an intelligent power of selection and is always striving to get into harmonious relation with other atoms. The human body is, I think, maintained in its integrity by the intelligent persistence of its atoms, or rather by an agreement between the atoms so to persist. When the harmonious adjustment is destroyed the man dies, and the atoms seek other relations.

I cannot regard the odor of decay but as the result of the efforts of the atoms to dissociate themselves; they want to get away and make new combinations. Man, therefore, may be regarded in some sort as a microcosm of atoms agreeing to constitute his life as long as order and discipline can be maintained. But, of course, there is dissatisfaction, rebellion and anarchy leading eventually to death, and through death to new forms of life. For life I regard as indestructible.

All matter lives, and everything that lives possesses intelligence. Consider growing corn, for example. An atom of oxygen comes flying along the air. It seeks combination with other atoms and goes to the corn, not by chance, but by intention. It is seized by other atoms that need oxygen, and is packed away in the corn where it can do its work. Now carbon, hydrogen and oxygen enter into the composition of every organic substance in one form of arrangement or another. The formula *CHO*, in fact, is almost universal.

Very well, then, why does a free atom of carbon select any particular one out of 50,000 or more possible positions unless it wants to? I cannot see how we can deny intelligence to this act of volition on the part of the atom. To say that one atom has an affinity for another is simply to use a big word. The atom is conscious if man is conscious, is intelligent if man is intelligent, exercises will-power if man does, is, in its own little way, all that man is. We are told by geologists that in the earliest periods no form of life could exist on the earth.

How do they know that? A crystal is devoid of this vital principle, they say, and yet certain kinds of atoms invariably arrange themselves in a particular way to form a crystal. They did that in geological periods antedating the appearance of any form of life and have been doing it ever since in precisely the same way. Some crystals form in branches like a fern. Why is there not life in the growth of a crystal? Was the vital principle specially created at some particular period of the earth's history, or did it exist and control every atom of matter when the earth was molten? I cannot avoid the conclusion that all matter is composed of intelligent atoms and that life and mind are merely synonyms for the aggregation of atomic intelligence.

Of course there is a source of energy. Nature is a perpetual motion machine, and perpetual motion implies a sustaining and impelling force.

When I was in Berlin I met Du Bois-Reymond, and, wagging the end of my

finger, I said to him, "What is that? What moves that finger?" He said he didn't know; that investigators have for twenty-five years been trying to find out. If anybody could tell him what wagged this finger, the problem of life would be solved.

There are many forms of energy resulting from the combustion of coal under a boiler. Some of these forms we know something about in a practical way, but there may be many others we don't know anything about.

Perhaps electricity will itself be superseded in time, who knows? Now a beefsteak in the human stomach is equivalent to coal under a boiler. By oxidisation it excites energy that does work, but what form of energy is it? It is not steam pressure. It acts through the nerve-cells, performs work that can be measured in foot pounds, and can be transformed into electricity, but the actual nature of this force which produces this work—which makes effectual the mandate of the will—is unknown.

It is not magnetism, it doesn't attract iron. It is not electricity—at least such a form of electricity as we are familiar with. Still, here it is necessary to be guarded, because so many different forms of electricity are known to science that it would be rash to say positively that we shall not class vital energy as a form of electrical energy. We cannot argue anything from difference in speed. Nerve-force may travel as fast as electricity, once it gets started. The apparent slowness may be in the brain. It may take an appreciable time for the brain to set the force going.

I made an experiment with a frog's leg that indicates something of the kind. I took a leg that was susceptible to galvanic current. The vibration produced a note that was as high as a piccoto. While the leg was alive it responded to the electrical current; when it was dead it would not respond. After the frog's leg had been lying in the laboratory three days I couldn't make it squeal. The experiment was conclusive as to this point: The vital force in the nerves of the leg was capable of acting with speed enough to induce the vibration of the diaphragm necessary to produce sound.

Certainly this rate of speed is greater than physiologists appear to allow, and it seems reasonable that there is a close affinity between vital energy and electricity. I do not say they are identical; on the contrary I say they are very like. If one could learn to make vital energy directly without fuel, that is without beefsteak in the stomach, and in such manner that the human system could appropriate it, the elixir of life would no longer be a dream of alchemy. But we have not yet learned to make electricity directly, without the aid of fuel and steam.

I believe this is possible; indeed, I have been experimenting in this direction for some time past. But until we can learn to make electricity, like nature, out of disturbed air, I am afraid the more delicate task of manufacturing vital energy so that it can be bottled and sold at the family grocery store will have to be deferred.

Electricity, by the way, is properly merely a form of energy, and not a fluid. As for the ether which speculative science supposes to exist, I don't know anything about it. Nobody has discovered anything of the kind. In order to make their

theories hold together they have, it seems to me, created the ether But the ether imagined by them is unthinkable to me. I don't say I disagree with them, because I don't pretend to have any theories of that kind, and am not competent to dispute with speculative scientists. All I can say is, my mind is unable to accept the theory. The ether, they say, is as rigid as steel and as soft as butter. I can't catch on to that idea.

I believe that there are only two things in the universe—matter and energy. Matter I can understand to be intelligent, for man himself I regard as so much matter. Energy I know can take various forms, and manifest itself in various ways. I can understand also that it works not only upon, but through, matter. What this matter is, what this energy is, I do not know.

However, it is possible that it is simply matter and energy, and that any desire to know too much about the whole question should be diagnosed as a disease; such a disease as German doctors are said to have discovered among the students of their universities—the disease of asking questions.

THE NATURE OF INTELLIGENCE.

Mr. Thomas A. Edison's article is full of suggestions which invite further discussion. We must here limit ourselves solely to those which touch the problem of Panpsychism and Panbiotism.

Any one who has read Mr. Edison's article will be struck with the strange coincidence that obtains between his and Professor Haeckel's views. The famous naturalist considers what he calls panpsychism as the corner-stone of his monism: he says that atoms possess souls; and in a similar way the famous inventor believes in the intelligence of atoms, he declares that atoms are endowed with minds. There is certainly a deep truth in this conception of nature; and yet we cannot accept it in the way it is presented by either Professor Haeckel or Mr. Edison.

With reference to Professor Haeckel's views we have explained why atoms, the actions of which are not endowed with meaning, have no soul, and also why they cannot feel pleasure and pain. It remains for us to explain why atoms are not in possession of intelligence.

What is intelligence?

That reaction upon a stimulus which takes place in the way it does because of the presence of meaning, is called mental, or in-

telligent action; and the ability to adjust action to mental representations is intelligence.

Intelligence is a psychical quality, and the psychical process which is preparing to act with intelligence is called deliberation. Deliberation is the successive revival of several soul-structures, either of memories of former experiences, or of rules derived therefrom, or of advice formerly received, including also new combinations of these mental structures, and keeping in view the probable results of the intended action. In a word, deliberation is thought, and thought is an interaction among meaning-freighted feelings.

Among these ideas, which in so far as they can influence action (i. e. purposive motions) are called "motives," the strongest one will determine the result. Now, any atom of non-organised matter, say an atom of hydrogen, acts (as we said above) with spontaneity. It is in this sense as much alive as is any ever so complex vegetable or animal substance. It is self-acting, and its action reveals the innermost nature of its being just as much as the action of the man shows the character of the man.

There is, however, a great difference between the action of animal beings whose action is regulated by the meanings of their feelings, which in their totality we call the soul, and the actions of inorganic matter, of crystals, minerals, gases, chemical elements, and gravitating masses, all of which we comprise under the name "inanimate nature." The stone's fall does not depend upon any representative feeling; it depends solely upon that quality of the stone which we popularly call its weight. Nor has the falling stone any choice whether to fall or not to fall. Under certain circumstances it falls. There is no act of deliberation preceding the fall. Nor has it any choice concerning the direction of its fall. The surrounding conditions, viz., its position with regard to the centre of the earth together with its mass, determine the process. The stone's action can satisfactorily be explained without attributing to it psychical qualities. The stone possesses no soul; it is void of mentality; and although we believe that everything, organised or unorganised, is endowed with subjectivity (by which we understand the conditions of psychical life, or the potentiality of feeling and consciousness), this

subjectivity can only be analogous to the blind impulse of the stone's mass. If some other, psychical or mental, subjectivity were present, we should say that it apparently does not enter as a factor in the determination of the event. Accordingly such an assumption is gratuitous. There is subjectivity, but there is no intelligence. There is potentiality of feeling, but there is no consciousness. There is present the elementary condition of that something which is going to develop into mind, but there is no mind; there is no meaning-freighted awareness of the surrounding conditions.

Says Mr. Edison:

"The intelligence of man is, I take it, the sum of the intelligences of the atoms of which he is composed."

The sum total of the intelligences of the atoms in a human body (if, in this connection, for the sake of argument, we grant that atoms are intelligent) would not as yet make up the intelligence of man. Suppose we are contemplating a mosaic picture or inscription. Are such compositions really only the sum of the little stones? Are they not rather a certain peculiar form in which these colored stones are arranged? It is not the sum of the stones that makes the picture, but the form of their composition. The picture is not contained in any single one of them, nor is it the whole number of all the single stones: it originates through their peculiar combination and consists of the form in which they are combined.

Mr. Edison's explanation of the soul, applied to this example of a mosaic picture, would be as follows: Every little stone is in itself a little mosaic picture. The whole picture of the mosaic is the sum of the little pictures of the stones of which it is composed.

The intelligence of the soul, however, is not even as yet the form in which feeling structures combine; it originates with the representative faculty of the feeling structures. The soul is the organised totality of a set of images and abstract mental symbols representing the qualities, the influences, and the interactions of the different objects of the surrounding world, the thinking subject included.

Says Mr. Edison:

"Every atom has an intelligent power of selection, and is always striving to get nto harmonious relation with other atoms."

The latter is true; the former is an error. Every atom "is always striving to get into harmonious relation with other atoms"; this is its nature; and its nature being stable, consisting of certain inalienable and intrinsic qualities, the atom acts with consistency. Certain atoms, say atoms of hydrogen, are of such a nature as to combine with certain other atoms, say atoms of oxygen, into molecules that form a certain substance of peculiar properties, which, if each atom of oxygen combines with two atoms of hydrogen, would be H_2O, or water. This substance again, having certain definite qualities, will in a temperature below freezing point crystallise at a definite angle. The angle of crystallisation being the same for all molecules H_2O, the result will necessarily be one of most marvellous regularity. And not being able to observe the atoms in their secret activity, not knowing all the details of nature's marvellous laboratory, we are astonished to find such a wonderfully harmonious relation. And yet, considering the nature of things, we are urged to confess that it is the result of an inevitable necessity, which takes place according to strict mathematical laws.

Although every atom strives, according to its nature, to get into harmonious relation with other atoms, we do not see any "intelligent power of selection" in the province of inorganic nature. Every atom of inorganic substances acts according to its nature in one and the same way throughout. There is no choice, no selection, allowed. Choice and selection are faculties that are reserved for the higher domains of psychical life, which originates in the domain of animal existence when meaning, conditioned by the presence of sentiency, rises into being and creates the soul.

Supposing that through some combination of atoms their subjectivity be combined in such a form as to produce sentiency or feeling, we can very easily understand how this feeling will in time become representative of the conditions by which it is affected. The soul does not consist of the atoms of its organism, nor of the sum of the qualities of the atoms. The soul consists of something more subtle than matter: the soul consists of the meaning that is attached to the different forms of the feelings which obtain in living organisms.

THE PROBLEM OF THEISM.

The problem as to whether or not there is an element of feeling present in the unorganised realm of nature, is connected also with the problem of theism. The monistic view of the world, which considers nature as alive throughout, can neither accept the old supernaturalism, nor the materialistic theory of atheism. Theism, as it is usually conceived, believes in a personal creator and ruler of the world. Materialism denies the existence of any God; it regards matter and its actions as the only reality.

Monism does not regard mental phenomena as an incidental by-play of blindly operating forces. It regards mind as a necessary product of reality. Mind and the peculiar qualities of mind are characteristic of the world-tree, of which it is the highest efflorescence we know. From the fruit we can know the root, from the product we can judge of the factors, in the creature we see the creator.

That great something which has produced us, the All-power in which we live and move and have our being, and obedience to the laws of which are the conditions of life, of welfare, and of an advance to higher life, is called with a popular religious name "God."

Let us comprise under the name "theism" all those views which recognise *any* conception of God, and reserve the term anthropotheism for that view which regards God as a person, a mind, a conscious being, or a world-ego. Atheism in that case will be a negation of the existence of God in any form, a negation of the All-power of which we are parts and to which we have to conform; and accordingly atheism will be also a negation of any authority of moral conduct.

We call attention to the fact that many who call themselves atheists, simply because they do not believe in anthropotheism, are according to this definition not to be classed among the atheists.

What has monism to say on the problem of the existence of God?

Prof. George J. Romanes, in an article which appeared some time ago in the *Contemporary Review* under the title "The World as

an Eject," declares that monism has left the problem of theism in the same state it was in before. He says:

"The views of the late Professor Clifford concerning the influence of monism on theism, are unsound. I am in full agreement with him in believing that monism is destined to become the generally accepted theory of things, seeing that it is the only theory of things which can receive the sanction of science on the one hand, and of feeling on the other. But I disagree with him in holding that this theory is fraught with implications of an anti-theistic kind. In my opinion, *this theory leaves the question of theism very much where it was before.** That is to say, while not furnishing any independent proof of theism, it likewise fails to furnish any independent disproof.

"As a matter of methodical reasoning it appears to me that monism alone can only lead to agnosticism. That is to say, it leaves a clear field of choice as between theism and atheism."†

Clifford says in the passage referred to by Professor Romanes:

"Reason, intelligence, and volition are properties of a complex which is made up of elements themselves not rational, not intelligent, not conscious."

Rational, intelligent, conscious beings, so far as their material existence is concerned, are made up of elements not rational, not intelligent, not conscious. But mind, reason, intelligence are not at all made up of material elements; they are neither latent nor germinal and least of all fully developed properties of the single atoms. Reason can in our conception never be explained as a complex result of the interaction of absolutely irrational elements. The material elements of the world, it is true, are not intelligent, not conscious; but the world as a whole (although *not* conscious and *not* endowed with purposive volition) is at least *not ir*rational and not void of determination. On the contrary the world as a whole is the prototype of all rationality, and human reason is a mere image of the world-order. What is the reason of a rational being but an incarnation of this world-order?

Reason is not a thing of matter; exactly so the world-order is not a thing of matter. But it exists none the less; it is a reality.

* *Italics are ours.*

† This same position is maintained with equal vigor in Professor Romanes's latest work *Darwin and After Darwin*, pp. 412–442. The Open Court Publishing Co., 1892.

On the other hand, the world-order need neither be a personal being nor the work of a personal being. The order that prevails in the real world and in the laws of nature appears also in the ideal world, in the laws of formal thought, in mathematics, and its kindred sciences; and the same rationality that obtains in the ideal domain permeates the realms of reality, the universe of objective existence.

The idea that God created the world-order and dictated its laws is a fanciful and poetical allegory; it is as such a pagan notion which belongs in the same category with Hesiod's Cosmology, but it is scientifically and philosophically unthinkable. For God is eternal and God's being is eternal. God has not created his own attributes and the world-order is simply an attribute of God; it is part and parcel of his nature. Or can you think of God without that attribute of irrefragable order that appears to science as necessity, to religion as holiness, to ethics as justice, to art as the law of beauty, to the mystic as the key to all the wonders of existence which though solving all the problems remains most wonderful itself?

The world as a whole, the cosmos, God, or whatever we call the One and All, is the prototype of all reason, but he is not a mind; he is not a system of sentient symbols; he is not a soul. Minds are a special kind of God's creatures; but God is not a creature: he is the condition of the existence of creatures, he is the creator.

The objection is made from materialistic quarters: "What is the world as a whole but the sum of all atoms!" This is an error. The world is not merely the sum of all its atoms; the universe does not consist of innumerable little particles which in their combination form the All. On the contrary: the world as a whole, existence in its oneness, or speaking religiously God, is alone the only true reality; all other things and beings are parts of him. Atoms are abstract concepts; the existence of an atom and of its actions presupposes the existence of the great whole of which it is a part, and without which it would have no reality. There are no atoms in themselves. Atoms regarded as things in themselves are a scientific superstition.

Professor Romanes advances the proposition, that cosmical events, being as highly complex as nervous phenomena, might be possessed of a similar subjectivity. The nervous phenomena which

constitute the physiological action of mind in the province of objectivity are, it is true, very complex, but complexity does not constitute that characteristic feature on the presence of which depends the origin of mind.

Professor Romanes says:

"Both mind and matter in motion admit of degrees: first as to quantity, next as to velocity, and lastly as to *complexity*. But the degrees of matter in motion are found, in point of observable fact, not to correspond with those of mind, save in the last particular of complexity, where there is unquestionably an evident correspondence.

"Now, if we fix our attention merely on this subject-matter of complexity, and refuse to be led astray by obviously false analogies of a more special kind, I think that there can be no question that the macrocosm does furnish amply sufficient opportunity, as it were, for the presence of subjectivity, even if it be assumed that subjectivity can only be yielded by an order of complexity analogous to that of a nervous system. For, considering the natural and dynamical system of the universe as a whole, it is obvious that the complexity presented is greater than any of its parts. Not only is it true that all these parts are included in the whole, and that even the visible sidereal system alone presents movements of enormous intricacy, but we find, for instance, that even within the limits of this small planet there is presented to actual observation a peculiar form of circumscribed complex, fully comparable to that of the individual brain, and yet external to each individual brain. For the so-called 'social organism,' although composed of innumerable individual personalities, is, with regard to each of its constituent units, a part of the objective world—just as the human brain would be, were each of its constituent cells of a construction sufficiently complex to yield a separate personality."

The so-called social organism which is composed of innumerable personalities undoubtedly yields a peculiar spiritual existence, which cannot be explained solely as the sum of the parts and actions of its constituent individuals. The relations in which the members of society stand to each other are of an analogous importance to the relations of the cells and organs in an organism. It is the form that constitutes this or that kind of an organism, not the sum of atoms, nor the intricacy or complexity of their combinations. Different forms of perhaps the same material amount, and of the same intricacy of combination, yield quite distinct types of individuality, and every state, every nation, every society possesses, as it were a personality of its own.

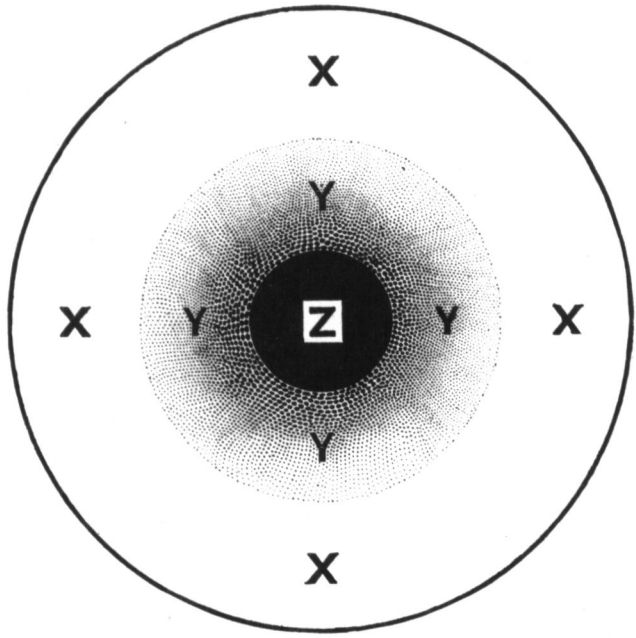
Mind is not constituted by complexity. Mind is a system of sentient symbols. Wherever we find organisms acting in such a way that their actions depend upon the *meanings* of certain stimuli, we have to attribute to them that characteristic feature which we call mind, or soul. The action of a falling stone is explainable without attributing to it any mentality. There is no representative value, no meaning in that quality of the stone which, under certain conditions, makes the stone fall. However, if a man acts, the motive of his action does not consist in the gravity of certain material particles of his brain. It consists in the meaning that resides in certain feelings. Without taking into consideration the meaning that dominates the man's motives, we cannot explain his action, and it is the meaning of feelings that the soul consists of. Only where and when we can discern the presence of meaning as the raison d' être of actions, are we justified in calling phenomena mental. When the action that takes place in response to a stimulus depends solely upon the significance of a symbol, the inference is legitimate, nay, it is inevitable and conclusive, that we have to deal with a mind. The motion of a comet, which depends perhaps not only upon the gravity of its mass, but also upon the chemical actions and explosions of its constituent elements during its approach to the sun, may be ever so intricate; but this does not in the least justify the assumption of the presence of mind in the comet.

The assumption of mind in inorganic nature is not only fantastical, it is also needless. Facts are better explained without this speculation.

The world as a whole is not bare of subjectivity. In this we agree with both Clifford and Romanes. But we do not identify subjectivity and mind, the latter being a special and indeed a very complex form of subjectivity. We suppose that subjectivity pervades also all the processes of unorganised nature, and no less the cosmic events; but be they ever so much more complex than nervous phenomena, there is present only a non-mental subjectivity.

Yet although the phenomena of so-called inanimate nature, be they motions of celestial bodies or physical and chemical processes, are non-mental, there is in every one of them present that grand

feature which is as it were the breath of God. This feature appears in all the phenomena of nature, but in none of them more gloriously than in the soul of man. Even the cosmical events of marvellous sublimity appear as a mere prelude to the appearance of soul-life, for in soul-life is focused all the divinity of nature. Reason is the reflex of the world-order and thus a rational being is made in the likeness of God.



Professor Romanes presents the problem of the subjectivity of existence by the adjoined diagram, which he explains as follows:

"Following Clifford, I will call these inferred subjectivities by the name of 'ejects,' and assign to them the symbol *Y*. Thus in the following discussion *X* = the objective world, *Y*, the ejective world, and *Z*, the subjective world. Now, the theory of monism supposes that *X*, *Y* and *Z* are all alike in kind, but presents no definite teaching as to how far they may differ in degree. We may, however, at once allow that between the psychological value of *Z* and that of *X*, there is a wide difference of degree, and also that while the value of *Z* is a fixed quantity, that of *Y* varies greatly in the different parts of the area *Y*."

The deep shading of *Z* indicates consciousness, and consciousness is that form of subjectivity which constitutes our mind. *Z* is

not, as Professor Romanes asserts that it is, a fixed quantity; it varies greatly, as every one knows from his own experience. It is lowest in trance or swoon or profound sleep. It is highest in the state of concentrated attention. The ejective element, which we assume to be present as a correlative concomitant in the objective world, we assume, with Professor Romanes, varies greatly in the different parts of the area *Y*. Like Professor Romanes, we also do *not* assume the existence of any unshaded *X*. There is no objectivity without its subjective correlate. But, according to the theory of monism, the nature of the concomitant subjectivity is not unknowable: it can be inferred from the nature of objective existence. The subjectivity of the falling stone is most elementary, and *not mental*; its action is not prompted by meaning. That something which impels the stone to fall, and which science calls gravity, does not possess any representative element. There is no symbolism involved in gravity. There is no soul in the stone. The stone is not incited to falling by any purpose; it has no end in view. Purpose originates with and through the presence of representative symbols. According to the theory of monism the shading of the surrounding zones is not a matter concerning which we have to suspend our judgment. If monism is true, we know very well how deeply we have to shade the different phenomena of objective nature.

Taking this view, we object to Professor Romanes's conclusion when he says:

> "Without in any way straining the theory of monism, we may provisionally shade *X* more deeply than *Z*, and this in some immeasurable degree.
>
> "Monism sanctions the shading of *X* as deeply as we choose; but the shading which it sanctions is only provisional."

While the presence of mind in the phenomena of the stellar universe and of inorganic nature must decidedly be denied, I would not, for that reason, declare that monism is atheistic.

Monism is decidedly theistic although not anthropotheistic. It is monotheistic in so far as it recognises that the all-existence in which we live and move and have our being is the *'EN KAI ΠAN*, the One and All. But there is not the slightest reason for the theory,

and there are sufficient reasons against it, that the universe is possessed of a huge world-ego, that it is a person or a mind.

We maintain on the one hand that the laws of nature are not designs arranged with consciously preconceived purposes. Yet on the other hand, we do not forget, that the world-order possesses quite definite features and that the course of evolution runs in a very unmistakable direction. We can plainly decipher its character, and the great religious teachers of mankind have with a truly prophetic instinct proclaimed the ethical injunctions to be derived therefrom—injunctions which, millenniums after them, science has discovered to be founded in the nature of things.

God is no mind, yet God is mentality, the source of all mind: God is not a spirit, but he is spirituality. The subjectivity of the universe from which all consciousness rises is part of his being, and whatever that subjectivity, considered as a whole, be or be not, that much is certain, that in grandeur it corresponds to the objectivity of the world. It does not think in symbols as a man does; it is not a mind: but it exists nevertheless. Whatever it is like we learn from the revelation of its appearance in objective existence, from the cosmic order, the laws of nature, and the moral ideas of mankind.

Knowledge of nature means knowledge of God, for nature is God as he appears and the objectivity of being is the revelation of God.

We would not limit God to the subjectivity of nature: God is both subjectivity and objectivity combined. He is that All-power that is, was, and will be, thus being the ultimate authority of conduct.

God is not a mind, he is more than a mind; God is not a system of symbols, he is the reality symbolised in mind. He is not a person, he is super-personal.

He who does not see that the God of monism is greater than the God of anthropotheism, had better believe in a personal God, until he appreciates the truth that God is not personal but super-personal. For after all anthropotheism is nearer the truth than atheism, for atheism (well understood, the atheism of our definition above) is a moral nihilism devised to shake off all ethical obligation

so as to make the lust of the moment and the pleasure of the individual the supreme rule of action.

Monism, accordingly, does not leave the problem of theism where it was before. Monism proves that God is not to be conceived in the likeness of man, but the reverse: man, being a system of symbols representing the world, is to be conceived as having been made or rather as having originated in the likeness of God. God is the original, man is the copy. God is the whole, man is the part, in which the whole finds a more or less correct representation. The picture is not perfect, but the grandest duty a man has is the constant approach to a greater perfection. Man is the temporal, God is the eternal. Man is limited, God is the infinite.

EDITOR.