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Divine Wisdom Brotherhood Occult Science

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"IN HIM WE LIVE AND MOVE"

By his frequent allusions and quotations St. Paul betrays a scholarly familiarity with classical literature and with the higher levels of the contemporary thought of his time, that indicates his open mind. He had no fear of God. Awe and reverence he entertained but no fear. The fear that actually paralyzes many Christians is the product of priestly dogmatism. Immanuel, the name given to Jesus on the first page of the New Testament, means "God is in us," but they translated it "God is with us." They constantly forget that God is love. Many regard with something akin to horror the passage in which St. Paul describes the consummation of all spiritual evolution, when God shall be all and in all. Such is the result of the materialistic preaching of our day in which the Divine Eternal event of the Incarnation is placed two thousand years ago, while the fact of the Lamb slain from the foundation of the world is overlooked or forgotten, while Paul's reminder that we crucify Christ daily and the daily continual process of death and rebirth are misunderstood. The technical reference by Jesus to reincarnation (*Matthew xix.* 28, *palingenesia*) is disguised as *regeneration.* Life is a continual adjustment of the individual to the environment which he has earned and which is provided for him by his Karma, this being the working out by divine justice of the results of his actions in past lives. Necessarily there can be no cessation in this process until the climax which we call death has been reached when the evolutionary process is carried on in other spheres until the individual is prepared to renew his efforts in another birth. This process is carried on in the Divine Body which is the body of the Sun which includes the whole Solar Universe. This Solar Universe is a distinct and separate evolutionary entity so recognized by astronomical science, the next nearest star or sun being three light years distance away. Our sun is a minor organism compared with many of the great stars like Antares or Sirius. St. Paul says: "Though there be Lords many and Gods many, to us there is but one Lord and one God." It would seem obvious that he meant the God which Christians celebrate weekly on Sunday and those who study comparative religion will have little difficulty in agreeing with this. The Hebrew nation chose the minor deity Jehovah or Saturn as their mentor and so keep the seventh day holy. The Moslems observe Friday the day for Venus but the religion of the Sun includes all these. Of course the solar universe comes under the same general law of spiritual evolution which governs all the other mighty universes in space in all their different stages of progress.

A. E. S. S.

OCCULTISM AND MODERN PHYSICAL THEORY

BY PHILLIPS NEWCOMBE

This is but an informal discussion, without any idea of completeness, of the ultimate constituent of matter as presently conceived by Science, with also the aim to place our conclusions alongside of general occult conceptions as given in The Secret Doctrine. It will have particularly to do with the atom.

H. P. Blavatsky in her day placed occult theory against the scientific theories rampant at that time. Her trenchant arguments covering many pages of The Secret Doctrine, showed science then to be in a chaotic and inadequate condition. Since her time several persons within the ranks of Theosophy have joined the lines of battle. But this has been sporadic and since the turn of the century when there has been such profoundly revolutionary advances in science, there has really been no substantial effort to compare occultism with science.

May one deferentially submit that the time has come when the work should be taken up where Madame Blavatsky was forced to leave off and also that it is the duty of present day Theosophists to do so? That this task should now be performed is implicit in the writings of Madame Blavatsky. Indeed, the first page of the volumes of The Secret Doctrine states that it is "The Synthesis of Science, Religion and Philosophy". This certainly puts Theosophy upon the look-out for every advance of both Science and philosophy.

In Madame Blavatsky's day occultism was on the defensive vis à vis science. But now the scene has changed to quite a degree, and what a difference Madame Blavatsky would experience today sitting at her table and writing a monograph on occultism versus science. She would find, I believe, an agreeable answer to her question—"How far especially has modern science gone in the direction of those secrets and what is it doing to solve them"? And undoubtedly it would be agreeable for her to find that modern science has laid the basis, or at any rate has opened the door for some of the very conceptions which Madame Blavatsky was contending for against the scientific authorities of her generation.

That one of the objects of The Theosophical Society, inter alia, is to encourage the study of philosophy and science may be for the purpose that we shall be the better prepared to conduct our own self examinations and to inhibit us from grasping at the merely fanciful and untenable. And of course the study of these subjects enables the Theosophist to uphold his views to the best advantage, because it not only helps to clarify his own position, but it also establishes a healthy contact with other members of society. But withal it may be taken that Madame Blavatsky in encouraging these studies had an abiding faith that the time would come when certain principles set forth in The Secret Doctrine would receive confirmation at the hands of philosophy and science.

Now the purpose of this writing is to indicate in a measure that that faith has been justified; that Science has opened the doors to occult theory. I express my appreciation to those who have so kindly offered me this opportunity to demonstrate this point, relying, as I do, upon the forbearance of the reader for any errors and omissions. This article contains arranged extracts from the discussions given before The Theosophical Societies of Toronto and Hamilton. The parts dealing with force, gravity, space, time, relativity and the macrocosm generally, although perhaps referred to, are omitted, as are also the more extended correspondences with The Secret Doctrine dealt with more particularly in the

Hamilton talk. It will be enough to just deal with that part of the microcosm known as the atom. But first let us take a glance at the field as a whole to see how things fit right from the outset. Subjectively, I am indebted to the ideas and language of Poincare, Minkowski, Eddington, Lee, Gray and Einstein.

We may sum up the end-point of Science to date as follows: Science today postulates a single primary factor as the fundamental of the Universe. It is energy. Various descriptions are used but they may be summarized under the general idea of electrical stuff. Matter, light, radio waves and all sorts of radiation are but different aspects of this same basic entity. In essence they constitute a unity. Atoms, men and stars are the same offspring. Structurally, two different aspects are presented. There are waves of electrical energy, radiant energy, the wave transference of energy through space. Then there are the "particles" which are expressed as points of extreme condensations of this energy. These particles according to their various characteristics are referred to as electrons, neutrons, protons and so forth. Matter appears to be the result of the constitution or aggregation of these particles or units of electricity into systems of certain structural configurations. This reference to matter is serviceable and is not meant to be definitive.

Now science has a grip upon a certain other aspect of the universe which it calls change. This so-called electrical stuff is undergoing ceaseless change. Some scientists are fond of describing the universe as "a series of events". There is a continuous redistribution of energy whether in the form of matter or of radiation or vibrant energy and the two we must recognize are interconvertible. In the atomic bomb, for instance, man has simply played a trick upon Nature by hurrying up the redistribution process.

There is a continual interaction of forms, particles and radiation. This incessant intermingling and transmutation throughout the whole cosmos gives rise to the events of our experience. And we are also reminded that everything in the universe is in relation to everything else. The processes of nature are the observable effects of this pervasive inter-relatedness which accounts for events and their orderly sequence. Planets, stars, man and atoms are one, a whole, a system of intersections and in their turn they are composed of processes of continuous interactions. Science would describe this quivering Universe as electro-dynamical. The age of mechanical causality has really been ushered out. The beginning of the Twentieth Century saw the mechanical theory of the universe passing into history—and the new dynamic theory then began to be formulated.

The following quotations are taken from The Secret Doctrine, quite sketchily, with the idea of indicating the basal tenor of Occultism.—"To occult science force and matter are only two sides of the same substance".—"It (i.e. Science) might learn for instance the mystical significance, alchemical and transcendental of the many imponderable substances that fill interplanetary space, and which interpenetrating each other are the direct cause, at the lower end of the production of natural phenomena manifesting through so-called vibration".—"Now the Occultists who trace every atom in the Universe, whether an aggregate or single to one Unity, the Universal Life"—"What then is the "Primordial Substance". What can it be finally, even in its phenomenal predifferentiation? . . . for it is in every molecule of that which, in our illusion or ignorance, we regard as Matter in any of its states," . . . "Fohat, then, is the personified electric vital power, the transcendental binding unity of all cosmic energies, on the unseen as on the

manifested planes . . . ' These few excerpts taken from many in The Secret Doctrine will suffice for us to make our comparison. We see at once the remarkable correspondence in basic ideation. The principles of modern physical theory in Science are drawing closer to those of Occultism. Science has travelled far since Madame Blavatsky's day!

We shall gain a better understanding of this trend in modern scientific development by examining the explorations of the physicists into the atom. So we shall now take a peep into the subatomic part of the Universe to learn of its dynamics or conditions of motion, its events which constitute its reality, the life and adventures of the electro-dynamic particle—the electron, proton and neutron.

It is about a year now since I took advantage of the kindly offices of the Thursday Night Group of The Toronto Theosophical Society to attempt an anaylsis of the results of atomic research for the purpose of bringing to the attention of students of occultism the measure in which these developments were continuing to confirm and even approximate certain general or basic concepts of occultism and also that they were supporting certain expressions of these tenets as contained in The Secret Doctrine.

It is nearly forty years since William Kingsland wrote his "The Physics of The Secret Doctrine", and also "Scientific Idealism", the latter dealing with matter and force and their relation to life and consciousness. He had before him only the discoveries of the Cathode-ray, radioactivity and the electron. But today we have Quantum Theory and Wave Mechanics, Relativity, the epistomological school and mentalistic aspect in physics, the Heisenberg Principle of Indeterminancy and other vital factors. At this juncture we shall aim to mention only enough to indicate how atomic science has brought us over the threshold into the metaphysical and to the very door of the occult.

Dalton's atomic concept early in the 19th Century laid the basis of modern chemistry. As the ultimate unit of matter the atom was indivisible. In 1897 Sir J. J. Thomson opened the door into the atom by the discovery of the electron. Here commences the downfall of the "billiard ball" idea of the atom. Here commences the chain of events which finally led to the atomic bomb. It was Lord Rutherford however who was first to give to the world a real understanding as to the state of affairs inside of the atom. The ordinary concept of the atom as we have it today is largely the result of his genius.

In the early years of this century Rutherford from his laboratory in the MacDonald Physics Building, McGill University, made an announcement which rocked the scientific world. It was that the process of radioactivity was accompanied by the transmutation of the atom of one element into the atom of another element. And by the way, this confirmed an old idea in occultism respecting the interaction and change within the atom. Later at his laboratory at Manchester University Rutherford demonstrated the nucleus and proton of the atom. He is the pioneer of nuclear bombardment and in 1919, while Director of the famous Cavendish Laboratory of Cambridge University, he blasted forever the idea of the atom, and of matter, as being solid stuff. He performed the first transmutation of the elements in recorded history. He became the modern Alchemist. He bombarded the nitrogen nucleus with alpha particles (the helium nuclei) and got hydrogen and oxygen. Baron Rutherford of Nelson (New Zealand) was the first atom smasher of history and the founder of the school of nuclear research which has led to the atomic bomb and the coming nuclear energy. He may

truly be called the Father of the coming "atomic age".

So we see the old idea of the indivisible atom demolished and the traditional substance (of impermeability) is gone. If all the protons and electrons of one's body were collected in one mass without any attendant porosity man would be reduced to a speck no larger than a dot made by a point of a pencil.

It is interesting to note that when Sir J. J. Thomson discovered the electron in 1897 he was experimenting with electricity passing through a Crooks tube and he discovered it to be a flow of discrete particles, the electrons. The Secret Doctrine of 1888 had stated—"yet it may be and Occultism says it (viz. electricity) is atomic".

Over half a century ago Sir Oliver Lodge said that the particles of matter were forms of concentrated energy. The first suggestion that mass and energy are related came from Thomson. The revolutionary concept in modern science that matter and energy are equivalent stems from Thomson's astounding discovery that an electron's entire mass was electro-magnetic and that it had a greater mass in motion than at rest. Science was well versed in chemical reactions and the energy changes connected with them, but it was for Rutherford and his school to demonstrate to the world the enormously greater energies associated with nuclear reactions. It was at Cavendish Laboratory in 1931, then under the direction of Rutherford, that James Chadwick discovered the neutron which was to prove to be the key to unlock these energies. The neutron is used as the activating particle to penetrate the nucleus of an atom. It is the "trigger" which sets up the chain reaction which produces the explosion in the atomic bomb.

Previous to the discovery of the neutron and its properties, Rutherford used the alpha particle of radioactivity as a bombarding projectile upon the nucleus of the atom. Now protons came tumbling out of the nitrogen nucleus with greater energies than the alpha particles used. This proved that the atomic nucleus was a deposit of releasable energy. The release of atomic energy was definitely established at Cavendish Laboratory when J. D. Cockcroft and E. T. S. Walton under Rutherford accomplished transmutation of elements with artificially accelerated particles.

It was William Prout back in 1815 who postulated the hydrogen atom as the fundamental unit. This atom contains one proton and one electron. The quantities of these particles progressively increase as the atoms grow heavier in the ascending series of the atomic table of 90 elements plus the recently discovered transuranic elements. So subsequent atomic developments seem to have borne out Prout's idea.

Now what is radiation? What is the relationship of the photon of electromagnetic radiation such as light, for instance, to matter? Of course the old concept of the atom could not satisfactorily account for radiation. It became the problem of the physicist to solve. To connect up the activities within the atom with radiation and to explain it in an intelligible fashion so that the whole physical universe could be one unitary field, as it were, represents one of the triumphs of the human mind. The Rutherford model of the atom as containing a nucleus with positively charged protons around which the electrons swirled like a miniature solar system supplied the factor of a vibrator but even this model needed improvement to account for all the energies coming out of the radiating body. Now classical Newtonian mechanics could not account for all these variations of energies as revealed by that remarkable finger-print of the physical universe, the electromagnetic spectrum. We start

with long radio waves of low frequency of oscillation, then as we go across the octaves, the wave lengths decrease proportionately as the frequencies increase, so next we have short radio waves, then infra red heat radiation, next visible light, then ultra violet, next x-rays, then gamma rays and then on to the cosmic rays.

Neils Bohr, the noted Danish physicist, went to England to work in the laboratories of Rutherford and Thomson; later from Copenhagen he added to the Rutherford model the concept of the quantized atom. He showed how the adventurous electron was able to emit these various quanta of energies. This accounted for the linking up of the universe into one inter-communicating system of basic energy existing in one aspect as matter and in the other aspect as radiation, linked together by absorption and emission of energy by the quantum process.

Max Planck had already brought out his Quantum Theory which stated that radiation was emitted in small packets or "quanta" which varied with the frequency. The size of the quantum was always equal to a certain constant called "h" multiplied by the frequency of radiation. Bohr coupled Rutherford's ideas with this theory of Planck's. Every time an electron jumps from an outer orbit to an inner one, it gives off a photon or quantum of radiation which represents the difference in energy between the outer orbit just left and the lower orbit newly occupied. This is how we get our light. The Bohr account gave meaning to it all.

But subsequent experiments showed more lines in the spectrum. The electron was proving to be very eccentric in its behaviour. Its motions appeared not to conform to traditional mechanical ideas as set forth by science. The atom became more complicated. The idea of elliptical orbits, then precessing orbits was introduced. Then came Prince Louis de Broglie with his wave theory. He argued that as radiant energy was found to have mass, which is a distinctive quality of matter, may not then matter possess wave lengths, the quality which we customarily associate with radiant energy?

Now by the theory of Relativity, the mass of a moving body changes with its velocity. The velocity of an electron varies from orbit to orbit. De Broglie worked it out that an electron of certain mass must of necessity occupy an orbit of a certain circumference because the wave length would fit that orbit and no other. Furthermore de Broglie's formula showed the wave length depended upon the product of mass and velocity divided into Planck's constant "h". So now we have a wave concept of matter, a wave idea of the electron which, still governed by the quantum proportion, would account for all the variations of wave lengths and frequencies of radiation and which also would explain some of the "Misbehaviour" of the seemingly erratic electron. Computations showed that the matter waves would be of the order of the X-rays in length which would be much finer than the coarser light waves. Now this was all a mathematical prediction of de Broglie's. But it wasn't long before electron waves were demonstrated by the experiment of diffraction, and photographs were obtained showing the uniform pattern of concentric rings. The same results have been obtained with protons and even the behaviour of the atom itself as a whole. Matter as waves! What a paradox we have arrived at—all waves are particles and all particles may be waves! And now we come to the wave mechanics as developed by Erwin Schrodinger and others. The electron and the proton are electrical charges concentrated to a point. The charge operates as a miniature dynamo quivering into space the

(*Continued on Page* 55.)

MY BOOKS

H. P. B.'S LAST ARTICLE

(Reprinted from LUCIFER*)*

(Concluded from Page 32.*)*

Hitherto, I have abstained—except on very rare occasions—from answering any criticism on my works, and have even left direct slanders and lies unrefuted, because in the case of *Isis* I found almost every kind of criticism justifiable, and in that of "slanders and lies", my contempt for the slanderers was too great to permit me to notice them. Especially was it the case with regard to the libellous matter emanating from America. It has all come from one and the same source, well known to all Theosophists, a *person* most indefatigable in attacking me personally for the last twelve years*, though I have never seen or met the creature. Neither do I intend to answer him now. But, as *Isis* is now attacked for at least the tenth time, the day has come when my perplexed friends and that portion of the public which may be in sympathy with Theosophy, are entitled to the whole truth—*and nothing but the truth.* Not that I seek to excuse myself in anything even before them or to "explain things". It is nothing of the kind. What I am determined to do is to give *facts*, undeniable and not to be gainsaid, simply by stating the peculiar, well known to many but now almost forgotten, circumstances, under which I wrote my first English work. I give them *seriatim.*

(1) When I came to America in 1873, I had not spoken English—which I had learned in my childhood colloquially—for over thirty years. I could understand when I read it, but could hardly speak the language.

(2) I had never been at any college, and what I knew I had taught myself; I have never pretended to any scholarship in the sense of modern research; I had then hardly read any scientific European works, knew little of Western philosophy and sciences. The little which I had studied and learned of these, disgusted me with its materialism, its limitations, narrow cut-and-dried spirit of dogmatism, and its air of superiority over the philosophies and sciences of antiquity.

(3) Until 1874 I had never written one word in English, nor had I published any work in any language. Therefore—

(4) I had not the least idea of literary rules. The art of writing books, of preparing them for print and publication, reading and correcting proofs, were so many close secrets to me.

(5) When I started to write that which developed later into *Isis Unveiled,* I had no more idea than the man in the moon what would come of it. I had no plan; did not know whether it would be an essay, a pamphlet, a book, or an article. I knew that *I had to write it,* that was all. I began the work before I knew Colonel Olcott well, and some months before the formation of the Theosophical Society.

Thus, the conditions for becoming the author of an English theosophical and scientific work were hopeful, as everyone will see. Nevertheless I had written enough to fill four such volumes as *Isis,* before I submitted my work to Colonel Olcott. Of course he said that everything save the pages dictated—had to be rewritten. Then we started on our literary labours and worked together every evening. Some pages the English of which he had corrected, I copied: others which would yield to no mortal correction, he used to read aloud from my pages, Englishing them verbally as he went on, dictating to me from my

* I will not name him. There are names which carry a moral stench about them, unfit for any decent journal or publication. His words and deeds emanate from the *cloaca maxima* of the Universe of matter and have to return to it, without touching me.

almost undecipherable MSS. It is to him that I am indebted for the English in *Isis*. It is he again who suggested that the work should be divided into chapters, and the first volume devoted to SCIENCE and the second to THEOLOGY. To do this, the matter had to be re-shifted, and many of the chapters also; repetitions had to be erased, and the literary connection of subjects attended to. When the work was ready, we submitted it to Professor Alexander Wilder, the well-known scholar and Platonist of New York, who after reading the matter, recommended it to Mr. Bouton for publication. Next to Colonel Olcott, it is Professor Wilder who did the most for me. It is he who made the excellent *Index*, who corrected the Greek, Latin and Hebrew words, suggested quotations and wrote the greater part of the *Introduction* "Before the Veil". If this was not acknowledged in the work, the fault is not mine, but because it was Dr. Wilder's express wish that his name should not appear except in footnotes. I have never made a secret of it, and every one of my numerous acquaintances in New York knew it. When ready the work went to press.

From that moment the real difficulty began. I had no idea of correcting galley-proofs; Colonel Olcott had little leisure to do so; and the result was that I made a mess of it from the beginning. Before we were through with the first three chapters, there was a bill for six hundred dollars for corrections and alterations, and I had to give up the proof-reading. Pressed by the publisher, Colonel Olcott doing all that he possibly could do, but having no time except in the evenings, and Dr. Wilder far away at Jersey City, the result was that the proofs and pages of *Isis* passed through a number of willing but not very careful hands, and were finally left to the tender mercies of the publisher's proof-reader. Can one wonder after this if "Vaivaswata" (Manu) became transformed in the published volumes into "Viswamitra", that thirty-six pages of the Index were irretrievably lost, and quotation-marks placed where none were needed (as in some of my own sentences!) and left out entirely in many a passage cited from various authors? If asked why these fatal mistakes have not been corrected in a subsequent edition, my answer is simple: the plates were stereotyped; and notwithstanding all my desire to do so, I could not put it into practice, as the plates were the property of the publisher; I had no money to pay for the expenses, and finally the firm was quite satisfied to let things be as they are, since, notwithstanding all its glaring defects, the work—which has now reached its seventh or eighth edition, is still in demand.

And now—and perhaps in consequence of all this—comes a new accusation: I am charged *with wholesale plagiarism* in the Introductory Chapter "Before the Veil"!

Well, had I committed plagiarism, I should not feel the slightest hesitation in admitting the "borrowing". But all "parallel passages" to the contrary, as I have not done so, I do not see why I should confess it; even though "thought transference" as the *Pall Mall Gazette* wittily calls it, is in fashion, and at a premium just now. Since the day when the American press raised a howl against Longfellow, who, borrowing from some (then) unknown German translation of the Finnish epic, the *Kalevala*, published it as his own superb poem, *Hiawatha*, and forgot to acknowledge the source of his inspiration, the Continental press has repeatedly brought out other like accusations. The present year is especially fruitful in such "thought transferences". Here we have the Lord Mayor of the City of London, repeating word for word an old forgotten sermon by Mr. Spurgeon and swearing he had never read or heard of

it. The Rev. Robert Bradlaugh writes a book, and forthwith the *Pall Mall Gazette* denounces it as a verbal copy from somebody else's work. Mr. Harry de Windt, the Oriental traveller, and a F.R.G.S. to boot, finds several pages out of his just published *A Ride to India, across Persia and Beluchistan*, in the London *Academy* paralleled with extracts from *The Country of Belochistan*, by A. W. Hughes, which are identical *verbatim et literatim*. Mrs. Parr denies in the *British Weekly* that her novel *Sally* was borrowed consciously or unconsciously from Miss Wilkins' *Sally*, and states that she had never read the said story, nor even heard the author's name, and so on. Finally, every one who has read *Le Vie de Jesus*, by Renan, will find that he has plagiarized *by anticipation*, some descriptive passages rendered in flowing verse in the *Light of the World*. Yet even Sir Edwin Arnold, whose versatile and recognized genius needs no borrowed imagery, has failed to thank the French Academician for his pictures of Mount Tabor and Galilee in prose, which he has so elegantly versified in his last poem. Indeed, at this stage of our civilization and *fin de siecle*, one should feel highly honoured to be placed in such good and numerous company, even as a —plagiarist. But I cannot claim such a privilege and, simply for the reason already told that out of the whole Introductory chapter "Before the Veil", I can claim as my own only certain passages in the Glossary appended to it, the Platonic portion of it, that which is now denounced as "a bare-faced plagiarism", having been written by Professor A. Wilder.

That gentleman is still living in or near New York, and can be asked whether my statement is true or not. He is too honourable, too great a scholar, to deny or fear anything. He insisted upon a kind of *Glossary*, explaining the Greek and Sanskrit names and words with which the work abounds, being appended to an Introduction, and furnished a few himself. I begged him to give me a short summary of the Platonic philosophers, which he kindly did. Thus from p. 11 down to 22 the text is his, save a few intercalated passages which break the Platonic narrative, to show the identity of ideas in the Hindu Scriptures. Now who of those who know Dr. A. Wilder personally, or by name, who are aware of the great scholarship of that eminent Platonist, the editor of so many learned works,* would be insane enough to accuse *him* of "plagiarizing" from any author's work! I give in the foot-note the names of a few of the Platonic and other works he has edited. The charge would be simply preposterous!

The fact is that Dr. Wilder must have either forgotten to place quotes before and after the passages copied by him from various authors in his Summary; or else, owing to his very difficult handwriting, he has failed to mark them with

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* A. Wilder, M.D., the editor of *Serpent and Siva Worship*, by Hyde Clarke and C. Staniland Wake; of *Ancient Art and Mythology*, by Richard Payne Knight, to which the editor has appended an Introduction, Notes translated into English and a new and complete Index; of *Ancient Symbol Worship*, by Hodder M. Westropp and C. Staniland Wake, with an Introduction, additional Notes and Appendix by the editor; and finally, of *The Eleusinian and Bacchic Mysteries;* "A Dissertation, by Thomas Taylor, translator of 'Plato,' 'Plotinus,' 'Porphyry,' 'Jamblichus,' 'Proclus,' 'Aristotle,' etc., etc., etc.", edited with Introduction, Notes, Emendations, and Glossary, by Alexander Wilder, M.D.; and the author of various learned works, pamphlets and articles for which we have no space here. Also the editor of the "Older Academy" a quarterly journal of New York, and the translator of the *Mysteries* by Jamblichus.

sufficient clearness. It is impossible, after the lapse of almost fifteen years, to remember or verify the facts. To this day I had imagined that this disquisition on the Platonists was his, and never gave a further thought to it. But now enemies have ferretted out unquoted passages and proclaim louder than ever "the author of *Isis Unveiled*" to be a plagiarist and a fraud. Very likely more may be found, as that work is an inexhaustible mine of misquotations, errors and blunders, to which it is impossible for me to plead "guilty" in the ordinary sense. Let then the slanderers go on, only to find in another fifteen years as they have found in the preceding period, that whatever they do, *they cannot ruin Theosophy, nor even hurt me.* I have no author's vanity; and years of unjust persecution and abuse have made me entirely callous to what the public may think of me—personally.

But in view of the facts as given above; and considering that—

(a) The language in *Isis* is not mine; but (with the exception of that portion of the work which, as I claim, was *dictated*), may be called only a sort of translation of my facts and ideas into English;

(b) It was not written for the public —the latter having always been only a secondary consideration with me—but for the use of Theosophists and members of the Theosophical Society to which *Isis* is dedicated;

(c) Though I have since learned sufficient English to have been enabled to edit two magazines—the *Theosophist* and LUCIFER—yet, to the present hour I never write an article, an editorial or even a simple paragraph, without submitting its English to close scrutiny and correction.

Considering all this and much more, I ask now every impartial and honest man and woman whether it is just or even fair to criticize my works—*Isis*, above all others—as one would the writings of a born American or English author! What I claim in them as my own is only the fruit of my learning and studies in a department, hitherto left uninvestigated by Science, and almost unknown to the European world. I am perfectly willing to leave the honour of the English grammar in them, the glory of the quotations from scientific works brought occasionally to me to be used as passages for comparison with, or refutation by, the old Science, and finally the general make-up of the volumes, to every one of those who have helped me. Even for the *Secret Doctrine* there are about half-a-dozen Theosophists who have been busy in editing it, who have helped me to arrange the matter, correct the imperfect English, and prepare it for print. But that which none of them will ever claim from first to last, is the fundamental doctrine, the philosophical conclusions and teachings. Nothing of that have I invented, but simply given it out as I have been taught; or as quoted by me in the *Secret Doctrine* (Vol. I, p. 46) from Montaigne: "I have here made only a nosegay of culled (Eastern) flowers, and have brought nothing of my own but the string that ties them."

Is any one of my helpers prepared to say that I have not paid the full price for the string?

H. P. BLAVATSKY.

April 27, 1891.

"If thou art taught that sin is born of action and bliss of absolute inaction, then tell them they err. Non-permanence of human action; deliverance of mind from thraldom by the cessation of sin and faults, are not for 'Deva Egos'."

—The Voice of the Silence.

APHORISMS ON KARMA

The following, among others not yet used, were given to me by teachers, among them being H. P. Blavatsky. Some were written, others communicated in other ways. To me they were declared to be from manuscripts not now accessible to the general public. Each one was submitted for my judgment and reason; and just as they, aside from any authority, approved themselves to my reason after serious consideration of them, so I hope they will gain the approval of those my fellow workers to whom I now publish them.

William Q. Judge.

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(1) There is no Karma unless there is a being to make it or feel its effects.

(2) Karma is the adjustment of effects flowing from causes, during which the being upon whom and through whom that adjustment is effected experiences pain or pleasure.

(3) Karma is an undeviating and unerring tendency in the Universe to restore equilibrium, and it operates incessantly.

(4) The apparent stoppage of this restoration to equilibrium is due to the necessary adjustment of disturbance at some other spot, place, or focus which is visible only to the Yogi, to the Sage, or the perfect Seer: there is therefore no stoppage, but only a hiding from view.

(5) Karma operates on all things and beings from the minutest conceivable atom up to Brahma. Proceeding in the three worlds of men, gods, and the elemental beings, no spot in the manifested universe is exempt from its sway.

(6) Karma is not subject to time, and therefore he who knows what is the ultimate division of time in this Universe knows Karma.

(7) For all other men Karma is in its essential nature unknown and unknowable.

(8) But its action may be known by calculation from cause to effect; and this calculation is possible because the effect is wrapped up in and is not succedent to the cause.

(9) The Karma of this earth is the combination of the acts and thoughts of all beings of every grade which were concerned in the preceding Manvantara or evolutionary stream from which ours flows.

(10) And as those beings include Lords of Power and Holy Men, as well as weak and wicked ones, the period of the earth's duration is greater than that of any entity or race upon it.

(11) Because the Karma of this earth and its races began in a past too far back for human minds to reach, an inquiry into its beginning is useless and profitless.

(12) Karmic causes already set in motion must be allowed to sweep on until exhausted, but this permits no man to refuse to help his fellows and every sentient being.

(13) The effects may be counteracted or mitigated by the thoughts and acts of oneself or of another, and then the resulting effects represent the combination and interaction of the whole number of causes involved in producing the effects.

(14) In the life of worlds, races, nations, and individuals, Karma cannot act unless there is an appropriate instrument provided for its action.

(15) And until such appropriate instrument is found, that Karma related to it remains unexpended.

(16) While a man is experiencing Karma in the instrument provided, his other unexpended Karma is not exhausted through other beings or means, but is held reserved for future operation; and lapse of time during which no operation of that Karma is felt causes no deterioration in its force or change in its nature.

(17) The appropriateness of an instrument for the operation of Karma

consists in the exact connection and relation of the Karma with the body, mind, intellectual and psychical nature acquired for use by the Ego in any life.

(18) Every instrument used by any Ego in any life is appropriate to the Karma operating through it.

(19) Changes may occur in the instrument during one life so as to make it appropriate for a new class of Karma, and this may take place in two ways: (a) through intensity of thought and the power of a vow, and (b) through natural alterations due to complete exhaustion of old causes.

(20) As body and mind and soul have each a power of independent action, any one of these may exhaust, independently of the others, some Karmic causes more remote from or nearer to the time of their inception than those operating through other channels.

(21) Karma is both merciful and just. Mercy and Justice are only opposite poles of a single whole; and Mercy without Justice is not possible in the operations of Karma. That which man calls Mercy and Justice is defective, errant, and impure.

(22) Karma may be of three sorts: (a) presently operative in this life through the appropriate instruments; (b) that which is being made or stored up to be exhausted in the future; (c) Karma held over from past life or lives and not operating yet because inhibited by inappropriateness of the instrument in use by the Ego, or by the force of Karma now operating.

(23) Three fields of operation are used in each being by Karma: (a) the body and the circumstances; (b) the mind and intellect; (c) the psychic and astral planes.

(24) Held-over Karma or present Karma may each, or both at once, operate in all of the three fields of Karmic operation at once, or in each of those fields a different class of Karma from that using the others may operate at the same time.

(25) Birth into any sort of body and to obtain the fruits of any sort of Karma is due to the preponderance of the line of Karmic tendency.

(26) The sway of Karmic tendency will influence the incarnation of an Ego, or a family of Egos, for three lives at least, when measures of repression, elimination, or counteraction are not adopted.

(27) Measures taken by an Ego to repress tendency, eliminate defects, and to counteract by setting up different causes, will alter the sway of Karmic tendency and shorten its influence in accordance with the strength or weakness of the efforts expended in carrying out the measures adopted.

(28) No man but a Sage or true Seer can judge another's Karma. Hence while each receives his deserts, appearances may deceive, and birth into poverty or heavy trial may not be punishment for bad Karma, for Egos continually incarnate into poor surroundings where they experience difficulties and trials which are for the discipline of the Ego and result in strength, fortitude and sympathy.

(29) Race-Karma influences each unit in the race through the law of Distribution. National Karma operates on the members of the nation by the same law more concentrated. Family Karma governs only with a nation where families have been kept pure and distinct; for in any nation where there is a mixture of family—as obtains in each Kaliyuga period—family Karma is in general distributed over a nation. But even at such periods some families remain coherent for long periods, and then the members feel the sway of family Karma. The word "family" may include several smaller families.

(30) Karma operates to produce cataclysms of nature by concatenation through the mental and astral planes of being. A cataclysm may be traced to an

immediate physical cause such as internal fire and atmospheric disturbance, but these have been brought on by the disturbance created through the dynamic power of human thought.

(31) Egos who have no Karmic connection with a portion of the globe where a cataclysm is coming on are kept without the latter's operation in two ways: (a) by repulsion acting on their inner nature, and (b) by being called and warned by those who watch the progress of the world.

[The Aphorisms are re-printed, first, because they are of perennial interest, and second because there have been several enquiries for them recently through the Travelling Library.]

MANUSCRIPTS

It was a pleasant and instructive custom in ancient China, for a few sages and poets to forgather occasionally in a friend's house for the sacred tea hour. While the water in its iron pot was heating to its first and second boil and during the brewing and drinking of tea, each of the friends would read for the consideration and edification of the others, a short story or poem which he had written. On occasions the general subject would be 'Happiness' and each would tell of some incident or scene which had moved him to deep happiness. In the famous "Thirty Three Happy Moments" of Chin Shengt'an, each little word-picture ends with the phrase, "Is this not happiness?"

With perhaps some stirring of memories of previous incarnations spent in China, the acting editor was moved to set down his 'happy moment';

"To come home in the evening and to discover a large envelope waiting; to open it and find a manuscript, well-written around a good idea which has been clearly thought out; to feel the thrill of joy that comes when some aspect of the ancient wisdom has been expressed in a way that will be of deep interest and service to many students; Is this not happiness?"

Manuscripts are very welcome. If possible they should be typed—double spaced, please, for the convenience of our compositor.

THE GREAT ORPHAN

Woe stalks abroad in all the land,
Want and despair together stand,
God's image trampled in the dust!
How long, O Lord! and Thou art just?
  How long! How long! O just and wise?
  These empty hands, these hungry cries?

God's providence is always seen
Through man, in garb of Nazarene;
Man prays to God with up-turned eyes,
While at his feet his brother lies;
  How long! How long! O Pharisee!
  Ere brazen skies will answer thee.

All store of food, all wealth of gold,
Are given to man to have and hold;
To hold at peril, if he dare
Deprive his brother of his share,
  Enough for all by measure just,
  Who holdeth more but holds in trust.

The almoner of God is he
Whose hands are filled by destiny.
God's special providence to show
Through man, to man, to lighten woe.
  Relief of needs through human deeds,
  All Heaven waits; all Nature pleads.

Great suffering soul! Humanity!
Father divine! Humanity!
Mother divine, no more concealed,
Behold the mystery revealed!
  These three in one, and one in three,
  God all in all, Humanity!

—Harij.

[This was first printed by Mr. Judge in the *Path*, March 1888.]

NOTES AND COMMENTS BY THE GENERAL SECRETARY

When bereavement comes to a family it is sad and bewildering enough but when it comes at a time of stress in other fields it is often confusion worse confounded. Thus in the midst of taking over and producing the next issue of our magazine the acting editor suffered the loss of his mother who passed away peacefully at an advanced age. Even though full of years the passing of a loved one inevitably brings sorrow in its train. The sympathy and condolences of us all are extended to Mr. Dudley Barr and the family in their irreparable loss.

* * * *

I have received a letter from a subscriber resident in British Columbia who informs me that the nefarious Bow and Arrow Hunting is becoming very popular in that part of the country, adding that a craze for this so-called sport is sweeping the United States. To me it is horrible that anyone can find pleasure in killing animals let alone in so barbarous a fashion. Some years ago I was instrumental to some degree in stopping it in Ontario. My method was by publicity. I would suggest that our lodges do likewise, for instance in passing resolutions deploring such cruelty and sending them to the Press. Public opinion thus aroused may help to shame these hunters from their cruel practises. The lust to kill is all too prevalent and is a survival of the primitive instinct lately brought to the front by the bestial war the world has just undergone. We are supposed to have advanced from the early days of savagery but I often think that this veneer of culture is but a very, very thin one on our much vaunted civilization.

* * * *

It was my privilege by invitation from the Hamilton Lodge to welcome Professor and Mrs. Ernest Wood at a dinner at the Wentworth Arms Hotel and later take the Chair at the inaugural meeting of his lecture tour of the Eastern Lodges. As the Hamilton report has it his week's stay in that city was very successful and productive of much local interest. The following Sunday I introduced him to the Toronto Lodge where by the way he was not quite a stranger for he had spoken in the same hall some twenty years ago; and here he was welcomed by several old friends. The same interest accompanied by large audiences was evinced in this city. At the "Members Only" meeting held during the week the audience was regaled with first hand information regarding past and present personalities in the Theosophical World which were very illuminating. Following the Sunday meeting after a week's intensive work he and his wife, both of whom had endeared themselves to all they met left for Montreal where their arrival was being looked forward to with the same great interest.

* * * *

The following letter recently received helps to make us realize how active the Theosophical Society is in all parts of the world: "The New Zealand Section Theosophical Society, Auckland, 27th January, 1947. Dear Colonel Thomson, Our Section very warmly thanks you for your greetings to our Jubilee Convention. It was the first time in New Zealand that we received cables and letters of greetings from all over the world. It enriched our work. We had a very fine convention and have indeed been privileged to have Mr. Sri Ram from Adyar as our Presiding Officer. He won all hearts with his gentleness, his wisdom and his culture. Yours sincerely, E. Hunt, General Secretary". We are very happy to learn that the Convention was a great success and that our greetings helped to enrich their efforts in the propagation of Theosophy in the Antipodes.

All those interested in a humane diet will be glad to know that a group exists in Toronto "to provide a means of fellowship for those who believe in vegetarianism". Recent speakers at such a dinner meeting included Dr. Scott Nearing and Professor Ernest Wood. The Secretary is Miss Eva M. Budd, 28 Walker Avenue, Toronto, 5., who will be glad to hear from anyone desiring information.

E. L. T.

LATENT POWERS

The Case of the Man with Radar Eyes

M. Bottineau lived 160 years ago and was a French officer stationed at Mauritius. He was a lover of nature who delighted in gazing at sea and sky. He developed the ability to predict correctly the approach of vessels 100 miles to 600 miles distant.

A wealth of evidence endorses his claim. The Vicomte de Souillac, Governor of the island, set it on record that "for the last fifteen years M. Bottineau has foretold the appearance of vessels, announcing them several days beforehand. We can certify that he is almost always right." M. Melis, Commissary-General of the Navy at Mauritius, stated that Bottineau announced 109 vessels within six months from one to four days before observers on the mountain tops could see them, and was only twice mistaken.

In instances in which Bottineau was wrong it was afterwards proved that the vessels had approached the island but changed course. From aboard ship he could also estimate the distance and bearing of land far below the horizon.

Bottineau's own explanation of his strange gift was that through long staring at the sky he began to notice atmospheric effects "visible to every eye" when a ship was approaching land.

He attributed this to the "disturbance of gases (produced by fermentation of the vast amount of matter entering the sea), by the passage of ships through the water." Stirred up by the ship, he said, they form "a vaporous envelope around it, which ascends into the atmosphere and becomes visible. Storms do not destroy it. They only retard it."

The cloudy mass, said Bottineau, builds up gradually. "Its form develops by degrees, the colours assume tone, the volume acquires consistence."

Science may scoff at this. The fact remains that Bottineau experienced it, and guess-work or coincidence cannot account for his accuracy.

Theosophical students will remember that in the Yoga Aphorisms of Patanjali (sloka 26, book 3) it is written "By concentrating his mind upon minute, concealed or distant objects in every department of nature, the ascetic acquires thorough knowledge concerning them."

KARMA

If you think you are suffering from more "bad" karma than anyone ever before experienced; if you are feeling very sorry for yourself; if there is not a single crack visible in the stone walls that surround you, think for a moment about some of the high lights in the career of Abraham Lincoln:

1831 Failed in business.
1832 Defeated for the Legislature.
1833 Failed in business again.
1835 Sweetheart died.
1836 Nervous breakdown.
1838 Defeated for Elector.
1840 Defeated for Land Office.
1843 Defeated for Congress.
1855 Defeated for Vice-President.
1860 Elected President.

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OFFICE NOTES

Isolated students and those unable to have access to Theosophical literature should avail themselves of the Travelling Library conducted by the Toronto volumes loaned. For particulars write Theosophical Society. There are no to the Librarian, 52 Isabella Street, Toronto, Ont.

☼ ☼ ☼

I am sorry for the delay in getting out the March issue of the magazine. Circumstances made it impossible to get copy to the printer before March 6th. In rushing through the page proofs it was not noted that Mr. Smythe's front page article was incorrectly titled, and this is deeply regretted.

"We, the people of the United Nations" is the heading of the editorial in the American Theosophist for March. The editorial discusses the conference held at Lake Success between Feb. 10th and 14th of over one hundred non-governmental international organizations which Mr. James S. Perkins, President of the Theosophical Society in America attended in his capacity as appointee of the President Mr. Jinarajadasa, who had been requested to nominate a representative of the Theosophical Society. "The pace is necessarily slow and unsensational. Amidst all the exciting headline news, these fragmentary gains appear in the press as inconsequential, achieving relatively small recognition. Yet each gain in this struggle toward world unity is of immeasurable value to the spiritual welfare of mankind." Prime Minister Atlee drew attention to the same point when he said: "The trouble is . . . all the differences make for dramatic news, but I think it is worthwhile paying some attention to the area of activity in which there's agreement."

☼ ☼ ☼

Two contrasting pictures appeared on the same page of a local newspaper; one showed a huge mound of thousands upon thousands of bushels of surplus potatoes dumped at Fort Fairfield, Me., in the heart of the potato farming region. Some concept of the size could be obtained from the relatively tiny figures of men working on the top dumping more bags of potatoes. The other picture showed a ragged child in Greece sitting on a pile of rubble gulping a bowl of soup provided through UNRRA. Now if the surplus potatoes had been dumped in the hold of a ship bound for starving Europe—but perhaps that's not good economics.

☼ ☼ ☼

"The U.S. army air forces $20,000,000 B-36, heralded as able to 'carry an atomic bomb to any inhabited region of the world and return' is safe to fly

another day." (A.P. despatch, Forth Worth, Texas) What incredible labour and ingenuity goes into the making of wars! I was reminded on reading the above newspaper item of a bit from *The Gorilla Who Went to Harvard,* a travesty on human civilization written by Perry Adams. The Gorilla who had returned to Africa, planned to start a human zoo for the benefit of wild animals. Animals long for the opportunity to study humans safely at close range. "They are so eager to discover just what manner of intellect it is that moves with such studied precision toward self destruction."

☼ ☼ ☼

Two pages of the American Theosophist for March are given over to the Olcott Foundation, an activity established to encourage creative expression and the spirit of research among members of the Society in America. Diplomas are awarded for works of outstanding excellence in the following fields: (1) Public Lectures, (2) Short Story, (3) Poetry, (4) Drama, (5) Symbolic or Mystical Painting, (6) Musical Composition, (7) Radio Script. This year the Foundation Committee is particularly eager to receive contributions from artists and such members are encouraged to submit paintings, musical compositions, dramas and radio scripts.

☼ ☼ ☼

Atlantean Atomic Bombs? The first atomic bomb which was exploded in New Mexico turned the desert sand into fused green glass. Recently, archeologists digging down through layers of soil in Mesopotamia in search of traces of 'pre-caveman' civilization, uncovered a layer of *fused green glass.*

☼ ☼ ☼

Route No. 8? "The straight and narrow path gets there quickly and the travelling is better because there isn't so much traffic" says a contemporary. Also, its a one way street.

Mr. Jinarajadasa's address to the 71st Convention which appeared in the March issue has doubtless been read with much interest. The accounts of the suppression of all Theosophical activities in certain war areas should serve to remind us that it can happen here or anywhere. This cycle of free thinking and free expressoin is of comparatively recent rise; a few hundred years ago Theosophists would have been heretics and the torture chamber and stake would have suppressed any attempt to express the very basic concepts of Theosophy.

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The President also stressed the view that 'Theosophists are on the side of every material improvement for our fellowmen . . . Yet nevertheless we are the opposite of being materialists. It is because Matter is the mirror of Spirit that we need to organize Matter to such a height of perfection and co-ordination, till the light of the Spirit is reflected in every object of matter in daily use, and in each moment when we use leisure rightly.' In an article in *Lucifer* of January 1888, H.P.B. quoted the following from one of the *Letters*: "Theosophy should not represent merely a collection of moral verities, a bundle of metaphysical ethics, epitomized in theoretical dissertations. Theosophy *must be made practical* . . . Forget SELF in working for others—and the task will become an easy and a light one for you."

☼ ☼ ☼

Theosophia published in Los Angeles and sponsored by an international group of Theosophists is an excellent magazine. "Farewell to Matter" by Boris de Zirkoff, the editor, which appears in the March-April issue, draws from many modern sources to substantiate the claim that the results of modern research in atomics all tend to confirm the science of the Secret Doctrine. The editorial and other articles are also noteworthy. *Theosophia* is a magazine of the Theo-

sophical Movement, not any one Society and equal publicity is given to The Theosophical Society (Adyar), The Theosophical Society (Covina), and the United Lodge of Theosophists. The subscription rate is $1.50; Room 240, Western Bldg., 553 South Western Ave., Los Angeles 5, California.

☼ ☼ ☼

There should be a wide circulation among Canadians of the magazine *Canadian Art*. This is published under the direction of a board representing The National Gallery of Canada, The Vancouver Art Gallery and various art associations. The Feb.-March issue carries a colour reproduction of Arthur Lismer's "Rain in the North Country". There are two colour reproductions in the magazine, one a very lovely woodcut by Walter J. Phillips, which is used to illustrate an interesting article on the art of wood-cut. This 46 page publication on coated paper, well illustrated and with articles of interest to all Canadian art-lovers is issued four times a year; subscription $1.00.

THE THREE TRUTHS

There are three truths which are absolute, and which cannot be lost, but yet may remain silent for lack of speech.

The soul of man is immortal, and its future is the future of a thing whose growth and splendour have no limit.

The principle which gives life dwells in us, and without us, is undying and eternally beneficent, is not heard or seen, or smelt, but is perceived by the man who desires perception.

Each man is his own absolute lawgiver, the dispenser of glory or gloom to himself; the decreer of his life, his reward, his punishment.

These truths, which are as great as is life itself, are as simple as the simplest mind of man. Feed the hungry with them.—Idyll of the White Lotus.

MRS. WILLIAMS' "PRIESTESS"

After reading Mr. Barr's terse, crisp and tart survey of Mrs. Williams' abominable book, I fully agreed with him that we were giving it too much free advertising. I do not wish to suppress discussion nor to place a taboo on the book. Every man to his taste. The mean, low, sneaking and suspicious nature will revel in its pages. The open-minded and noble-hearted will wonder how such a character as Mrs. Williams has imagined could have won the admiration and devotion of many of the cleverest, the wisest and best of her contemporaries.

I have been presented with a copy of the book, and with the request that I review it. To do so adequately would require a volume as large as the original. I possess neither the strength nor the length of days for such a task. Mr. Barr refers two points to me—the Coulomb plot, and the charges of plagiarism. The General Secretary desires me to deal fully with the problem of the Mahatmas. My personal interest in the book is its motive, its sponsors, its aims, and its ethics. On reflection I could think of only one organization with memory long enough and malice deep enough to prompt the digging up of a grave of fifty years ago. I suspected the hand of the Roman Catholic hierarchy. But how to identify it? The spread of Theosophy and Theosophical ideas in literature, in art and in the general thought of the world is positively startling to those who remember the mental atmosphere of two generations back. The issues remain the same, however, and the old war between the priests and the prophets, which Madame Blavatsky emphasized, continues as fiercely as ever. Science has been revolutionized by the ideas absorbed from the Mahatmas and *The Secret Doctrine*. The latter has been complimented with a new name by Aldous Huxley—*The Per-*

ennial Philosophy. A helpful Philadelphia correspondent has furnished me with an identifying link between the book and what I believe to be its Roman Catholic sponsors. The letter following explains:

"Dear Mr. Smythe:

"The enclosed copy of the 'Catholic Digest' will no doubt interest you, on account of its article 'Madame Blavatsky'. A friend of mine, who is neither a Theosophist nor a Roman Catholic, was given a copy of it. Even to her limited knowledge, the statements in the article seemed so outrageous and ill-founded that instead of being convinced by it, she passed it on to me.

"I thought you should see it, since it purports to be a review of Gertrude Marvin Williams' book. I got several extra copies of the magazine, and am sending this article to Mr. Redfern also. From several sources, I have heard the suggestion that the Roman Catholic Church is behind Mrs. Williams' book, and this article certainly shows that they are at least using the book as a starting point for an 'all-out' attack. I believe all theosophists ought to know about this.

"I hope you have a copy of the book by now. I got a copy shortly before Christmas, and found it very cleverly written. It is not a book which can be dismissed by such a comment as that made at the close of Mr. Van Mater's article. Instead of becoming 'disgusted after the first twenty pages' because it made 'shallow and sensational reading', I found it so cleverly written that it held my attention from the moment I opened it until around 3 a.m. It is alleged to be 'admirably documented', and as I read it, part of my time was consumed in occasional checking of this supposed 'documentation'. I did not have either the time or the material for a complete check, but I checked enough to see that the book was deliberately and intentionally 'slanted',—allegedly giving impartial evidence, yet actually presenting a preconceived picture. What Mrs. Williams' motive could have been in so distorting her material, I leave you to judge. But the distortion is so extremely subtle that *if* I had been only a newcomer at theosophical study, I really believe this book could have convinced me (as it tries to do) that the Mahatmas were only a fabrication and the whole structure of theosophy an invention of Madame's ingenious brain. I myself am sufficiently familiar with the independent evidence and source material to see through Mrs. Williams' supposed evidence, but I fear greatly that the majority of the readers of the book will accept her statements.

"The strangest thing about the situation is that each reviewer of the book, in the attempt to build up the case against H.P.B., adds statements which are not in the book at all, yet does it in such a way as to leave the unguarded reader with the impression that *all* of these statements are to be found in the 'admirably documented' 'work of scholarship'. The New York 'Times' review made a number of such additions. But this article in the Catholic 'Register', condensed in the 'Catholic Digest', carries the process to an extreme. Besides the last two pages, which attempt to give the Catholic reader the official opinion about theosophy and the Theosophical Society in general, its supposed review gives a number of statements which are not justified by anything in Mrs. Williams' book, even distorted as the book is itself. I have marked some of these statements, and I hope you will quote some of them in your magazine, so that theosophists may see how the 'Holy Catholic Church' deals with truth.

"When Madame Blavatsky was alive, she attacked the Jesuitical organization in every way possible, but many theosophists in the last fifty years have failed to realize that theosophy and organized Roman Catholicism are diametrically

opposed, and that some day one of them must destroy the other. If we have forgotten, *they* have not. The gradual spread of theosophical ideas into the general thinking of the world is something which they rightly look upon with fear and hatred, and the appearance of this book seems to be the basis of a fresh attack which we need to offset if we can. Of course non-Catholics would not be impressed by the palpably outrageous statements in this Catholic magazine, but the book itself gives no hint of being connected in any way with the Roman Church. And I repeat that the book itself is far from being palpably outrageous. It tells an apparently straightforward story, in great detail, with footnote references to the 'Mahatma Letters' and 'Old Diary Leaves' and other theosophical source books. The New York 'Times' reviewer, judging by the letter which you quote on page 371 of your February number, takes all these references as proof positive that all of Mrs. Williams' statements are correct. Many other less critical people will do so also. How many will or can check, and find, for instance, that a quotation from 'Old Diary Leaves' from which she draws an utterly unwarranted conclusion as to Olcott's opinion of H.P.B., if read *in its context*, would *not* suggest such a conclusion? The quotation itself is correct. She has a bibliography of neary one hundred and fifty titles,—an impressive list which includes everything vital that has ever been written on the subject. Most people, who do not care to read extensively and draw their own conclusions, will assume that if she has read all those books, her conclusions should be trusted. I do not believe she has actually read them, or even necessarily seen them all. Her book was written with a definite purpose, and since the book fits so admirably with the purposes of the Roman Catholic Church, should we not wonder whether that Church is ultimately responsible for the writing of the book?

"Yours most sincerely,
Anna K. Winner."

This is an excellent letter, and should convey to the reader who has not seen the book a fairly correct estimate of its contents and methods. It may be asked why one charges the Roman Catholic church with such unscrupulous treatment of Madame Blavatsky. The church seems to agree with the old saying that all is fair in love and war. We have already noted the undying war between the priests and the prophets. But why should the church be expected to treat Madame Blavatsky any better than it treats Jesus? For example: in St. Luke's Gospel, ix. 24, a fundamental teaching of Jesus is altered by the change of a word in the English translation—of *soul, psuche*, into *life*. This reading is found in the Roman Catholic or Douai version of the Bible printed in 1582, thirty years before the Authorized Version, in which the Protestant bishops and translators, through ignorance or folly, adopted the false translation. Many other instances of such false translations could be given.

A. E. S. S.

(To Be Concluded)

VISIT OF PROFESSOR ERNEST E. WOOD

Professor Ernest E. Wood of India, accompanied by Mrs. Wood, spent a week in Toronto during the latter part of March,—their first visit to Toronto Lodge since 1922. Mr. Wood gave a special series of lectures commencing on Sunday evening, March 23rd, with one entitled "The Meaning and Purpose of Theosophy". Approximately three hundred people attended this lecture and Lt.-Col. E. L. Thomson, the General Secretary for Canada, was chairman of the meeting. Professor Wood stressed the God knowledge aspect of the word

"theosophy" and the desirability of man knowing more of his own nature in its relationship to the God. His illustrations were taken from everyday life and events experienced by us all. The numerous questions sent up by the audience were handled in an able and understanding manner, which was much appreciated by those present.

At the conclusion of his address Professor and Mrs. Wood were guests of honour at an informal reception in the Lotus Room. Mr. N. W. J. Haydon, President of Toronto Lodge, and Mr. and Mrs. G. I. Kinman, greeted the visitors and the long tea-table was presided over by Miss Madeline Hindsley and Miss Mary Butchart. Mrs. E. Cunningham was tea hostess assisted by Mrs. R. Illingworth, Mrs. Roy Emsley, Miss Frances Moon, Miss Irene McArthur, and Miss Laura Gaunt.

On week-night evenings at eight o'clock, commencing with Monday, March 24th, Mr. Wood gave talks on "Karma and the Self"; "The Human Life Cycle"; and "The Stanzas of Dzyan". On Friday evening, March 28th, Mr. Wood addressed the members of Toronto Lodge.

The concluding lecture by Professor Wood was given on Sunday evening, March 30th, and was entitled "How to Concentrate and Meditate". At this meeting the President of Toronto Lodge, Mr. N. W. J. Haydon, was in the chair.

Mr. Wood, who is an eminent Indologist, studied Sanskrit in his early years in Manchester, England. He has written over twenty original psychological and philosophical works based on his knowledge of Sanskrit originals, and in addition has translated two ancient Hindu books into English. An educationist, Mr. Wood has been responsible for starting several high schools in India and two first-grade colleges. One of these is named in his honour and he was its president for a number of years. The Indian National University, of which Rabindranath Tagore was Chancellor, uses "A Textbook of Indian Citizenship" written by Mr. Wood and the first of its kind from a sociological point of view. "An Englishman Defends Mother India", another of Mr. Wood's books, is a valiant defence of the country and gives in addition a deep insight into the heart of Indian culture. Mr. Wood, who is a fluent and sincere speaker, has lectured in many lands and Sir S. Radhakrishnan, of Benares and Oxford Universities, said of him "Professor Wood has made a deep study of the Indian classics, philosophical and religious, and more than that he has got into the spirit of Indian Wisdom."

Mr. Wood has been lecturing during the past few months in the large centres in California, and after his Toronto engagement will go on to Montreal and Ottawa.

Mrs. G. I. Kinman, Secretary,
Toronto Theosophical Society.

PROFESSOR WOOD IN HAMILTON

Professor Ernest E. Wood and Mrs. Wood visited in Hamilton prior to the lecture series in Toronto.

On Sunday evening, March 15th, Lt.-Col. E. L. Thomson, D.S.O., General Secretary of the Theosophical Society in Canada, kindly came over to Hamilton to welcome Prof. Wood and preside over that meeting. On this occasion the subject was "The Human Life Cycle" and was well received by a larger audience than the Hamilton Theosophical Society has had for many years.

On Tuesday evening, March 18th, Professor Wood's subject was "How to Concentrate and Meditate". This aroused much interest in another good sized audience. Refreshments were served after the question period.

On three other evenings during the week, smaller gatherings held informal discussions in members' homes.

Miss M. Carr,
Secretary, Hamilton Lodge.

ILLUMINATION

The opening verse in the Voice of the Silence reads: "He who would hear the voice of Nada, the 'Soundless Sound' and comprehend it, he has to learn the nature of Dharana." The 'voice of Nada' is the inner voice of intuition, illumination, spiritual realization, and Dharana is defined as 'the intense and perfect concentration of the mind upon some one interior object, accompanied by complete abstraction from everything pertaining to the external universe, or the world of the senses.'

From this it is apparent that the ancient sages considered that on the path of spiritual progress, the mind is a very important factor. The first requirement is that the mind shall be a fully efficient machine and that its quality of operation shall be raised to the highest possible level. That many persons have had flashes of spiritual insight without undertaking the preliminary discipline of the mind, is undeniable. Very often, however, such flashes are viewed without proper perspective and sense of proportion. All spiritual intuitions must pass through the mind in order to be comprehended and expressed, and if the mind is not a good instrument, distortion and over-emphasis may occur. If the Soundless Sound is to be understood, then the mind must be disciplined in meditation, concentration and contemplation. The Voice of the Silence goes on to say that "The mind is the great slayer of the Real," and the disciple is advised to 'slay the slayer'. This does not mean killing the mind, for a person without a mind is an idiot. The mind is 'slain' by rendering inoperative its lower, separative quality and making it a perfect instrument for the higher self.

It is interesting to note that this ancient teaching had found modern corroboration. The Science Digest for December quotes from an article on "Illumination" by William H. Easton in Mechanical Engineering. According to Mr. Easton, illumination can be evoked whenever certain conditions are fulfilled. First, one must have a difficult problem to solve. Second, one must think deliberately and intensely about the problem. All essential factors of the problem must be carefully considered and there must be diligent and concentrated thought in an effort to find a solution.

The third essential is that deliberate thinking must fail to solve the problem. This is reminiscent of Zen Buddhism where a student is confronted with a question to which there is no rational answer; he is faced with an intellectual impass. Obviously if an answer was found through thought, illumination would not be required. To find an answer which satisfies is to shut the door to any higher assistance.

The fourth requirement is that interest in the problem must be maintained. If interest is diverted to something else, nothing happens. Illumination comes only if the problem is one of paramount importance.

The final requirement is that the mind must be allowed to relax from its intense effort to solve the problem. Illumination must have opportunities to use the mental machinery without interference from the rationalizing consciousness. The author suggests that conditions for illumination are especially favourable at certain times, as for example, when awakening from a night's sleep, during reveries and daydreams, after work is put away and dismissed from the mind.

The short article from which we have quoted above does not give any examples of the problems which were solved by Mr. Easton through illumination. These may have been problems connected with his professional work or with other work-a-day matters. The interesting point is that the requirements outlined

are so similar to those suggested for mystical illumination. First there must be dharana, intense and perfect concentration; then the lower reasoning mind must be stilled, because that mind is 'the slayer of the Real' and then, when it is quietened, illumination can use the mental machinery.—*From Toronto Theosophical News.*

THE ANNUAL ELECTIONS

In a previous issue notice was given to all Secretaries of Lodges that nominations for the coming year should be sent in before April 1st. Up to date the larger Lodges have sent in Motions that the General Secretary and the present members of the General Executive be nominated, and it is presumed that the others, in the absence of any notification, are satisfied with the status quo. But a vacancy was caused in the General Executive owing to the fact that Mr. E. B. Dustan at the meeting of the Toronto Lodge when the question of nominations was brought forward, intimated that he did not wish to stand for re-election. This was the first intimation of his intention to retire and the Lodge then nominated Mr. D. C. Hatt.

As there were no other nominations, the election goes by acclamation and I hereby declare that the nominees for General Secretary and for the General Executive are elected for the coming year as from July 1st, 1947.

The General Secretary.

EXCHANGE MAGAZINES

We acknowledge with thanks the receipt of the following exchange magazines:

The American Vegetarian, March and April.
Bombay Theosophical Bulletin, Feb.-March.
Evolucion (Buenos Aires), Jan. and February.
The Golden Lotus, March.
L'Action Theosophique, January.
The Maha-Bodhi (Calcutta), Sept.-Oct. and Nov.-Dec.
O Naturist (Rio de Janeiro), Jan. and February.
Osiris (Portugal), Oct.-Nov.-Dec. and Jan.-Feb.-March.
Revista Teosofica Colombiana, Jan.
Revista Teosofica Cubana, March and April.
Teosofica (Santiago), March.
O Teosofista (Brazil), January.
The Theosophical Movement (Bombay), February.
Theosophy in New Zealand, Jan.-Mar.

OCCULTISM AND MODERN PHYSICAL THEORY

(*Continued from Page* 38.)

perpetual undulations of the electromagnetic field. This is the familiar picture of the particle in motion generating a pattern of waves. Let us reverse the picture and imagine waves in motion generating the particle.

The plot thinkens! Schrodinger posits waves of high frequency, terrific speeds, so much so that the individual waves are imperceptible to the gross senses of man and his instruments. It is only when ripple meets ripple, so as to combine into longer wave lengths, that regions of concentrated agitation and slower velocity are produced. Then patterns arise which can make an impression upon our coarse sensibilities. These disturbed regions of piled-up agitation are what we have called "particles". The electron is a wave packet. Matter is a form of vibrant energy. Schrodinger explains radiation as resulting from the intermittent heterodyning of different frequencies which overlap. When this happens many millions of times per second we see a ray of light. Variations of the

frequency of this process produces the other gradations of radiation. Of such is our rhythmic universe as presented by these wave mechanics. Some one has given us this simple approximation—that matter is made up of waves that go round in circles and that radiation is made up of waves travelling in a straight line. The disintegration of the atoms of matter is merely the unwinding of the circular wave track. Thus we have the interconvertibility of matter and energy. We should not of course take this too literally but it may help us to gain a better understanding of the intra-atomic process as conceived by the modern physicist.

At this stage it would be apt to discuss a number of quotations from The Secret Doctrine but I fear it would be trespassing both upon the good nature of the Editor and the patience of the reader. Reference should be made however to one of the ideas expressed in The Secret Doctrine so many times, namely, that the atom contains life, intelligence and consciousness. This is the animated theory. It could well be re-examined in the light of philosophy both of the East and the West, and also in view of the Heisenberg Theory of Indeterminancy. It has been done so, though briefly, from the view point of the Heisenberg principle, by R. D. Kanga, M.A. (Adyar), who finds modern science supporting the animated theory in this respect.

Madame Blavatsky states—"It is on the doctrine of the illusive nature of Matter, and the infinite divisibility of the Atom, that the whole science of Occultism is built. It opens limitless horizons to Substance . . . states still undreamed of by the most spiritually disposed Chemists and Physicists." It may now be argued that the concept of the atom as we now gather it from the findings of science admits of this infinite divisibility. From Schrodinger's wave functions we go on to the matrix and operational mechanics—to some brilliant thinking by P. A. M. Dirac. We get ideas about the state of matter and of the atom to which we can ascribe no substantial content. So far as the waves are concerned we cannot find anything that does the undulating. It appears like a psychical realm. There is no underlying materiality at all. These wave constructs of light and matter are only forms and yet Heisenberg would deny them any geometrical properties. All that the theoretical physicist can find to grasp is a mathematical foundation. Some of the laws which are being ravelled from inside the atom appear to be beyond anything we can imagine as taking place in space and time. These new ideas handled only by mathematical functions cannot be explained in words or by familiar symbols. And as Dirac says the ultimate reality of nature as viewed by these investigations is not picturable. Her laws "control a substratum of which we cannot form a mental picture . . . "

It seems that the "limitless horizons" have now been opened up and that Science has arrived at the "states still undreamed of" in Madame Blavatsky's time of writing. Of course we recognize that infinite divisibility *per se* is not a something which we can expect science to find. It is not capable of empirical demonstration. Neither is the concept in its completeness amenable to human comprehension. And it is true that physics still has to take account of both the "particle" and the "wave" concepts and it continues to demonstrate the interplay of continuity and discontinuity. This argument has permeated Western thought for over 2500 years, with Empedocles, Leucippus and his pupil Democritus talking about a discretness which they called "the atom", and the Pythagoreans giving a certain geometric form to elementary particles. And then came the Eleatics, Parmenides, and Zeno with his famous arguments

over the infinite regress. This involves the whole mathematical question of infinitesimals upon which we have recently had some intriguing ideas from Bertrand Russell. We can leave it to the warring mathematical schools to argue about, as they always have. It will be pointed out that even in the region of radiant energy we have Planck's constant. And there is a principle which science itself has discovered which puts a limit upon the exactitude of its own observations. These are but a few of the factors to be taken into consideration in any attempt to determine the question.

Yet we have in the nuclear fission equations a disclosure of the annihilation of matter and the transference to energy. The newer particle, the positron is even more elusive than the electron. If an electron is anywhere about, the positron seizes it and the pair disappear giving birth to radiant energy. Perhaps the interpretation of Intra-atomic conditions as now presented to us by modern science simply depends upon what point of view in philosophy we as individuals hold to. We do have the example of leading scientists such as Eddington and Jeans throwing these problems into the lap of metaphysics.

So far as the writer's philosophy, or even theosophy is concerned, he is content to rest upon a certain other quotation from The Secret Doctrine—"But infinite divisibility of Atoms resolves Matter into simple centres of Force . . " This definition should suffice for any practicable purpose. It is probably about as far as human experiment can go. As Science has arrived at the stage of "centres of Force", it would seem there is no issue left between Science and Occultism upon this point.

"There is no miracle. Everything that happens is the result of law—eternal, immutable, ever active."

H. P. Blavatsky.

"CREATIVE THINKING"

[The following article which appeared in "Mechanical Engineering" for August 1946 aroused considerable interest among engineers, chemists, research workers and other professional men, some of whom had had practical experience of the 'illumination' of which the author speaks. One of our Theosophical friends in New York thought so highly of the article that he had it re-printed in pamphlet form and distributed to all his staff. I trust that it will be of equal interest to the readers of this magazine. There is published elsewhere in this issue a short article from the Toronto Theosophical News which was written after reading a digest of the original article.

Acting Editor.]

CREATIVE THINKING AND HOW TO DEVELOP IT

BY WILLIAM H. EASTON

The object of this article is to assist inventors, scientists, writers, public speakers, artists, composers, and others doing original work in the more efficient use of their creative mental machinery.

If the reader expects to be shown how to think creatively without hard labour, he will be disappointed. On the contrary, almost every phase of creative thinking calls for intense mental effort. What I have tried to do is to indicate how this effort can be applied to the best advantage.

The discussion throughout is from the standpoint of the reader who is not concerned with psycholoy. The creative mental processes as here defined are practical concepts; whatever they may be psychologically, they are, for the man who makes a living with their aid, what

the hammer, the chisel, and the saw are for the carpenter.[1]

I—Creative Thinking

Ever since man first became man, people with a talent for original thought have played decisive parts in advancing human progress.

Back in the Old Stone Age, such people laid the foundations of the arts and the sciences. They introduced the use of fire, invented weapons and tools, designed decorative motifs for articles of daily use, painted lifelike pictures of animals on cavern walls, and told stories that, in the form of myths and fairy tales, are still being told all over the world. Doubtless, too, they exercised their mental ingenuity in many other ways that have left no traces.

But they were few and far between. The vast majority of our paleolithic ancestors never originated anything. Throughout periods lasting for centuries, as the record shows, they made no change whatever in their way of living or the artifacts they produced.

This uncreativeness was not due to a lack of intelligence. Once shown how to make and use an invention, these ancient people could become expert in the often complicated techniques involved. But the vast majority were unable to think out new ways of doing things; only the more highly gifted could do that.

Today we are far more progressive because we have many more innovators in every field of human endeavour. But the general situation is not greatly altered. Most people in modern society do only what others have done before them, and, if they have original ideas, they fail to develop them. All really new things of importance are still being produced by a relatively small number of exceptional individuals.

We shall call these exceptional individuals "creative thinkers" and the mental processes that enables them to produce new things "creative thinking."

Creative Thinkers

It is probable that creative thinkers are born, not made. Some people want to think creatively while others do not. Education can, of course, help to develop latent powers, but it is not a vital factor. Many highly trained persons are sterile creatively, while others (like Edison) accomplish outstanding results in spite of an almost total lack of formal instruction.

But what traits are essential for genuine achievement in creative thinking? With the aid of data derived from a study by Walter B. Pitkin,[2] we can draw up a list that will be useful for self-analysis or for appraising the capabilities of others.

The creative thinker must have ambition, for a clear and powerful urge to accomplish something notable is the mainspring of all creative endeavour.

When he meets with the difficulties that inevitably arise in the course of his work, he must persist in struggling with

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The author of this article died shortly after he had submitted it.—EDITOR.

[1] Those who wish for further information on creative thinking are advised to read the publications by John Dewey, Elliott Dunlap Smith, and Jacques Hadamard referred to in the article. The first is a study of deliberate thinking; the other two deal with creative processes.

To avoid possible confusion, I must point out that in a series of articles for *The Writer* (March, 1941; March, 1942; July, 1942) I used names for some of the creative mental processes that differ from those used here.

[2] "Psychology of Achievement," by Walter B. Pitkin, Simon and Schuster, New York, N. Y., 1930.

them until he has overcome them, no matter how long it may take. For this he requires both energy great enough to sustain him in the most arduous kind of mental labour and also complete confidence in his ability to attain final success.

As the scope of his creative work depends upon his store of knowledge, he should be constantly engaged in enlarging this store by study, experiment, and observation. He must therefore have a high capacity for self-instruction.

He must have enthusiasm, devotions, passions. Creative thinking is not a purely intellectual process; on the contrary, the thinker is dominated by his emotions from the start to the finish of his work.

He must possess an inquiring mind, and above all, a creative imagination.

The importance of these traits will become amply clear as we study the work of the creative thinker.

The Tools of the Creative Thinker

This work is the subject which will engage our attention from now on. We shall consider how the creative thinker goes about bringing new things into existence, what obstacles he is likely to encounter, and what he can do to surmount these obstacles. In other words, we shall try to find out how he can make good use of the mental tools of his trade.

It is probably the general impression that these tools are of many different kinds, some being used by writers, others by composers, still others by inventors, and so on. But this is not the case. There is only a single set, which is used by every creative thinker regardless of his line of work.

Woodworkers furnish us with a rough analogy. These men employ only a few simple implements, but with their aid they can turn out an unlimited variety of products, ranging from crude articles of utility to works of the highest artistic excellence. The differences in individual output depend upon differences in the native ability and acquired skill of the workers, their objectives, and the raw materials available to them.

The use of the same mental equipment for all purposes explains why a man like Leonardo da Vinci could be, alternately, a painter, a sculptor, a musician, a scientist, an inventor, and an engineer. He employed identical methods of thinking in each capacity.

There have been many other multisided thinkers, but they are rare these days. It is becoming increasingly difficult to gain a mastery of more than one subject, so that most people, after perhaps trying out several different kinds of creative work in their early years, end up by specializing in some one particular line.

We must now turn to what, for many, are the dry bones of our study—the tools that the creative thinker uses.

Most people have little interest in their mental processes. They merely take them for granted and use them as a child uses its muscles—without the slightest regard for the mechanisms involved.

This attitude is well enough for the average individual; but if the creative thinker wishes to become an efficient workman he must know his tools and understand their uses. Hence it is necessary to take a look at the contents of his toolbox.

There is only a single set of mental processes here, for all are indispensable; but for our purposes we shall divide them into two groups, which we shall call noncreative and creative, respectively.

Chief among *the noncreative mental processes* are the following:

Observation — studying perceived objects and circumstances.

Reflection—reviewing the content of the mind.

Remembering—recalling past experiences and previously acquired ideas.

Reasoning—determining the conse-

quences of assumed conditions and courses of action.

Judgment—formulating decisions.

With the aid of these processes the thinker deals with his available supply of raw material. They enable him to collect data from his store of knowledge and from the results of his research; to evaluate each item in terms of his immediate purposes; to select those that are of use to him and to reject the rest; and to organize his selections in some systematic manner.

They also enable him to come to certain conclusions as to the significance of his collected material; and finally, they provide him with means for determining the probable validity of these conclusions.

All this is merely a verbose way of saying that the noncreative mental processes form the basis of logical thought and therefore of all sound creative thinking.

As these processes are fully discussed in an extensive literature that is available to everyone, we need not give them further consideration here, except to point out one of their very important limitations—they are incapable of originating what is entirely new.

In the words of Abbot Payson Usher,[3] the noncreative processes are "cold and conservative; without the purpose or the power for great achievement."

Elliott Dunlap Smith,[4] in tracing the steps that led to a typical invention, stresses the fact that the "act of inventiveness which achieved the solution was not logical scientific thought at all," and he also says that "unless the inventor is willing to relax the meticulous step-by-step procedure of logical science . . . he will get nowhere."

Hence for the highly special tools used by the creative thinker, the ones with which he brings into existence that which did not exist before, we must look to the *creative mental processes*.

Before examining these, however, we must call attention to two points that require explanation.

In the first place, it is commonly said that the innovator "evolves new ideas," but this is a misstatement. He actually evolves new combinations of ideas that are already in his mind. Sometimes these combinations consist wholly of long-known ideas, and sometimes they form around ideas that have just been acquired; but in no case does the thinker create the ideas. They come to him in various groupings and are rearranged by the creative mental processes.

Secondly, though the creative processes are quite unlike in action, results, and controllability, they are seldom clearly differentiated and do not even have generally accepted names. Consequently, they have to be assigned names here that are ordinarily used with somewhat different meanings.

There are three creative processes which are used by every thinker. These are:

Imagination, which is the power that enables a thinker to weave ideas into new combinations while he is engaged in deliberate thinking. It usually deals with easily remembered ideas.

Inspiration, which is the result of an accidental stimulus. It occurs when new ideas derived from some observed object or circumstance suddenly and automatically combine with old ideas.

Illumination, which is evoked by intense deliberate thinking and forms new combinations of ideas after the thinking has ceased. It resembles inspiration in occurring without present effort, but

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[3] "History of Mechanical Inventions," by Abbot Payson Usher, McGraw-Hill Book Inc., New Lork, N. Y., 1929.

[4] "Some Psychological Factors Favouring Industrial Inventiveness," by Elliott Dunlap Smith, MECHANICAL ENGINEERING, March, 1944. pp. 159-162.

has an entirely different cause. It frequently brings to the surface long-forgotten ideas.

In addition to these three processes there may be others. Thinkers of all lands and of all times have claimed that ideas have come to them through such media as intuitive insight, visions, and communications from the spirit world.

Many of these manifestations can probably be referred to the listed processes, which not infrequently operate so dramatically and unexpectedly as to favour a mystical explanation of the results; but in some cases, creative powers of a different order may be involved. If so, these powers act sporadically and unpredictably and have no place in a discussion of normal creative thinking.

The Use of the Creative Mental Processes

The creative thinker differs from other people, not in using the creative mental processes, but in the way he uses them.

Everyone employs these processes for building castles in the air, for worrying about anticipated evil, and for devising methods of escaping from trouble. But such excursions into the creative field are about all the average individual undertakes, and he rarely undertakes these intentionally. For him, creative thinking is either a matter of drifting into idle flights of fancy or of engaging in disagreeable mental labour under the pressure of necessity. As a rule, he does as little of it as possible.

The creative thinker, on the other hand, uses the creative processes deliberately, purposefully, and for definitely selected ends. In particular, he enjoys using them and, proverbially, will sacrifice much for opportunities to do so. Thus he stands quite apart from the noncreative majority. He is not necessarily more intelligent than his fellows; he simply has a different temperament.

The actual use of the creative processes is instinctive; no one needs to be told how to exercise his imagination or what to do when inspiration occurs. But the efficient use of these processes is a different matter.

Efficiency in creative thinking consists in carrying on creative work to a successful conclusion with a minimum expenditure of time, mental effort, and nervous energy. It is a subject that so far has been given little attention by thinkers, but there are probably few who cannot do better work by using their mental tools more efficiently.

To utilize the creative processes efficiently, one must know:

What process will be employed under given circumstances.

What are the capabilities and limitations of each process.

What conditions favour and what conditions inhibit the activity of each process.

How each process can be controlled, in so far as this is possible.

These matters now require consideration.

II—Imagination and Deliberate Creative Thinking

In what may be called the deliberate type of creative thinking, one starts with a more or less clearly defined objective and then takes steps that will lead to its attainment.

These steps will necessarily vary with circumstances; but in all cases, one of the first is to use the imagination to construct, out of data supplied by memory and observation, a framework of ideas that will serve as a foundation for further work.

Thus the writer uses imagination to outline the composition he will write. The artist uses it to transform the model or the landscape before him into the picture he will paint. The inventor uses it to determine the details of the device he is developing. The scientist uses it to draw inferences that will form the

basis of a hypothesis.

Imagination builds the framework, but its operations are closely supervised by reason. Reason inspects each proposed idea and passes upon its suitability for the end in view. If reason is satisfied, the idea is retained; if not, the idea is dropped, and imagination hunts around for something better.

Without imagination, there would be no framework, and the thinker would never get started on his project; but without the guidance of reason, the result would be mere fantasy.

This co-operation between imagination and reason in the preliminary stages of creative work is clearly seen in Robert Louis Stevenson's account of "The Genesis of the Master of Ballantrae."

On a cold, clear night, Stevenson was walking on the verandah of his house near Saranac, after he had finished reading Marryat's "Phantom Ship." The story stirred his imagination, and he decided that he, too, would make a tale "of many years and countries, of the sea and the land, savagery and civilization." As he turned the idea over in his mind, the case of a buried and resuscitated fakir occurred to him.

"The next moment I had seen the circumstances transplanted from India and the tropics to the Adirondack wilderness and the stringent cold of the Canadian border. Here, then, almost before I had begun my story I had two countries, two of the ends of the earth involved; and then though the notion of a resuscitated man failed entirely on the ground of general acceptance, or even (as I have since found) acceptability, it fitted at once with my design of a tale of many lands, and this decided me to consider further its possibilities.

The man who should thus be buried was the first question; a good man, whose return to life would be hailed by the reader and the other characters with gladness? This entrenched upon the Christian picture and was dismissed. If the idea was to be of any use at all for me, I had to create a kind of evil genius to his friends and family, take him through many disappearances, and make this final restoration from the pit of death, in the icy American wilderness, the last and grimmest of the series."

Here we have a typical case of deliberate creative thinking. It forms the first step in the creation of a story but a thinker in any other field would work along similar lines.

This is true even though it is often said that the creative work of the scientist is fundamentally different from that of the writer or artist, because the former must be sure that the products of his imagination accord with the facts whereas the latter's fancies are untrammeled.

The difference, however, is more apparent than real. Every intelligent worker in the field of art develops ideas for a definite purpose—to arouse specific emotions in his readers, spectators, or audience. Hence he too must test the products of his imagination for their value before accepting them as parts of his finished work. This he does by noting the emotional reactions they cause in himself and in competent critics.

Such tests are much less satisfactory than those the scientist can apply in the course of his work, and as is evident from Stevenson's admission in the passage cited, they sometimes fail. But they are all that are available to the artist, and he uses them as rigorously as the scientist uses his.

The creation of a good work of art is therefore the same in principle as the creation of a sound scientific theory.

The Development of the Work

Sometimes the preliminary framework is so complete that the rest of the work is purely mechanical; as when a writer thinks out a short composition in

its entirety, or when an inventor visualizes a new device so clearly that he can make a working drawing of it immediately.

Creation, however, is rarely so easy. As a rule, the thinker does not attempt to develop his ideas fully in advance but draws up a plan consisting largely of problems to be dealt with later. Stevenson's outline illustrates this procedure.

Consequently, regardless of the nature of the plan—whether it be for a poem, a statue, or a piece of research—its execution is mainly a matter of solving the problems involved in it.

These problems, taken as a whole, are infinitely varied in character; yet they can be grouped into three well-defined classes, depending upon the mental processes used in handling them.

The simplest of these problems are those that the thinker solves offhand by virtue of his training and with the aid of his imagination. He takes these in his stride; and as long as his work presents nothing else, he can proceed with it easily and without interruption. But as soon as he encounters a problem that resists immediate solution, he has to stop.

This more difficult kind of a problem demands reflection. As Dewey[5] points out, the thinker begins by studying the situation and forming an estimate of the requirements to be met. He then searches his mind for helpful ideas; and, as various suggestions for overcoming the difficulty occur to him, he reasons out the suitability of each.

Finally, a suggestion that seems to fit the case is selected and tried out. If it is successful the thinker is free to go on with his work. If not, the problem must be studied anew, other suggestions must be selected and applied, and, until a satisfactory one is found, the work cannot proceed.

Deliberate thinking, thus employed, may suffice to solve all the problems encountered while carrying on the work; but problems of another class may arise.

These problems call for solutions that lie outside the scope of the thinker's imagination and reasoning power, and he cannot, therefore, solve them by deliberate thinking. But, even so, his position is not necessarily a hopeless one. He still has recourse to another mental process, illumination, which will be discussed in a later section.

The Independence of the Imagination

In noncreative deliberate thinking, such as reasoning, performing mathematical operations, and preparing factual reports, the imagination is prohibited from taking a leading part, for it cannot be permitted to alter any of the data being dealt with.

But in all phases of creative deliberate thinking, the imagination is continuously active; the thinker employs it at every stage of his work.

He cannot, however, always use his imagination when he needs it. It is not like a machine that can be utilized at will; it is more like an able but unreliable servant who works only when he pleases. Sometimes it is ready to do what the thinker wants it to do, and sometimes it isn't.

This independence of the imagination gives every thinker many bad hours. Nothing is more exasperating than to settle down with every intention of working and then find that one's imagination has pressing business elsewhere.

Under these circumstances, creative thinking is impossible. One may try to concentrate on the job in hand, but one's thoughts insist on wandering away from it. They can be dragged back again as often as one wishes, but they are soon busy with something entirely different.

It takes determination to stand this

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[5] "How We Think," by John Dewey, D. C. Heath and Co., New York, N.Y., 1933.

sort of thing for any length of time. Most people, after a few fruitless efforts to keep their minds on their work, become convinced that they are in the wrong mood and quit in disgust.

This inability to work on demand does not occur with non-creative thinking. The clerk can always carry on his routine duties; but the creative thinker is at the mercy of his imagination, and that, in turn, is dominated by his emotional state.

In other words, creative thinking cannot be undertaken in cold blood. The imagination concerns itself only with whatever has the stronger emotional appeal for the thinker at the moment and refuses to deal with anything else.

This does not mean that the thinker should drop work whenever he is not in the proper mood, for that wastes time. Nor does it mean that he should try to force an unwilling mind to function, for that wastes energy.

What it does mean is that, if he wants to get on with his work, he must gain something that he lacks temporarily; namely an overwhelming interest in the job before him.

(To Be Continued.)

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