

Theosophy and Science

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THEOSOPHISTS

WHERE THEOSOPHY & SCIENCE MEET.

VIDHUSHEKHARA BHATTACHARYA

THE BASIC CONCEPTION OF BUDDHISM.

BHIKKHU SILACARA

KARMA

G.R. MALKANI

THE MEANING AND THE PROBLEM OF PHILOSOPHY.

G.R. MALKANI

THE CRITERION OF TRUTH.

**Where Theosophy and Science Meet: A Stimulus to
Modern Thought (Part I and II)**



H.P. BLAVATSKY
(12-8-1831 – 8-5-1891)

WHERE THEOSOPHY AND SCIENCE MEET

A STIMULUS TO MODERN THOUGHT

A COLLECTIVE WORK

EDITED BY

D.D. KANGA, I.E.S. (RETIRED)

*Managing Editor, Physical Science Section,
"Journal of the University of Bombay"*

PART I: NATURE
FROM MACROCOSM TO MICROCOSM

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THE SEMI-CENTENARY OF THE PUBLICATION

OF

The Secret Doctrine

1888-1938

FOREWORD

I MOST heartily commend this book, compiled by writers learned both in Theosophy and in Science, and the result of Professor Kanga's trained enthusiasm for both, to all who really want to know what the world and the individual are about, who would discover Order, Law and Purpose in Life as they perceive it in themselves and in the world about them.

Theosophy is the experience of the greatly wise from time immemorial. Those who have restated the Science of Life for the examination of the modern world declare it to be the fruit of their own experience, however much the greater part of the experience must needs be beyond verification even by those deemed wisest by the consent of the majority of their fellows.

Thus is Theosophy the eternal mountain of experienced Truth. It is a mountain which all are climbing, some being here and some being there on the mountain side. Theosophy is a mountain of the universal Truth, fashioned out of the kingdoms of nature we know and out of those we do not yet know, fashioned out of the intimate lives of every citizen in these kingdoms, fashioned out of the lives of Gods, of men, of the whole of evolving Life from dwellers in valleys and in plains, from dwellers in the hills, to the Gods reigning on evolution's Olympian heights. Theosophy reveals the Thread of Immortality on which are strung¹ these Beads of Living. Theosophy discloses the universal Law, the inexorable Purpose, the Divine Design, whereby all Life is moving, through an infinite series of Divine Events, the daily happenings in the lives of all, to that far-off Divine Event which shall be the climax, the triumph, the fulfilment, and verily the justification, for the æon-long way.

Science is busy in many fields seeking to understand this mountain of Truth, both as to its actual physical nature and in many other modes of its manifestation. Science is busy experiencing, seeking foothold after foothold for its upward climbing. Time was when all save perhaps the greater votaries of science ignored the mighty splendours of this Everest for the minutæ of the immediate fields of their endeavour. But in these days the spirit of the aeroplane dwells in man's conceiving no less than in his physical creation—indeed but for the conceiving elsewhere there could have been no physical creation. And so it is that the thoughts and the dreams and the visions of man, and in particular of the scientist, soar high, and he bows as reverently before theory as he does before fact.

Theosophy still remains theory for him. But his science is also largely theory, and no less science for that. And thus Theosophy and Science are actually beginning to

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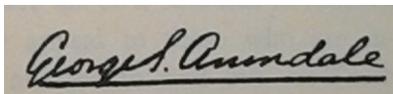
meet in the realms of theory, and even in the realms of so-called fact the statements of Theosophy are slowly beginning to find endorsement in the discoveries of Science.

In truth, of course, there is no distinction whatever between Theosophy and Science, only between Theosophy and what is called science. Theosophy is the experience of the Wise. What we call science is the convention of the learned, and all conventions come and go impermanent, as the more learned among the scientists, those who are beginning to be wise, are telling us with that humility which is always the beginning of wisdom.

Even, perhaps, the experience of the Wise is by no means final. Naught can be final to that which, however exalted, still is finite.

But Theosophy is at the very least a magnificently bold speculation, and since science is now holding speculation no less precious than experiment, the scientist who knows that dreaming is part of his scientific function may well make contact with a boldness which will carry him right out of himself, loosen him from all his present moorings, and plunge him for his exhilaration into the vastnesses of so far uncharted seas.

Let him ignore the statement that Theosophy is the experience of the Wise. But let him be inquiring even as to its apparent fantasies, for he himself is already in the realm of fantasy, and often the fantastic leads him to a truth. Already, I make bold to say, the scientist is dreaming Theosophy, and here and there is discovering that a dream comes true. Theosophy and Science are already meeting, both in that dreamland which is the most real land, and in this dreamland of ours which we think is fact-land. This admirable book tells us how this is so, and I commend it most earnestly to all who seek Truth everywhere, are happy to find it anywhere, and always hold it lightly, knowing that while Truth is everywhere, our understanding of it must ever be less than it really is.

A rectangular box containing a handwritten signature in cursive script that reads "George S. Amundale".

PUBLISHERS' NOTE

It is with great pleasure that I have undertaken, on behalf of the Adyar Library, the publication of this book entitled *WHERE THEOSOPHY AND SCIENCE MEET, A Stimulus to Modern Thought*, edited by Professor D.D. Kanga. The book is the result of a joint and co-operative effort of a number of members of The Theosophical Society from different parts of the world, who have each written a monograph on some branch or branches of science and philosophy of which each has made a special study in the light of Theosophy with a view to correlate the two. This book is published in four parts at

intervals of two or three months, Part I appearing in May 1938. Prof. Kanga has recently retired from the Indian Educational Service and come to stay at Adyar. He is still connected with the Bombay University, which is his Alma Mater, as a member of the Chemistry Editorial Board and the Managing Editor of the Physical Science section of the *Journal of the University of Bombay*. Being a keen student of both Theosophy and Science he is eminently fitted to undertake a work of this nature. As the sub-title indicates, it is the hope of the Editor that the book will act as a stimulus to modern thought and will particularly appeal to those who are intellectually discontented and anxious to find out the Truth for themselves and apply it to the solution of the many complicated problems facing society.

G. SRINIVASA MURTI,
Director, The Adyar Library.

EDITOR'S PREFACE

THE labour of many an earnest student both of Theosophy and Science from different parts of the world has contributed to the production of this book. It is the fruit of a joint and co-operative endeavour. The book is published in four parts. Each part is complete in itself and also forms an important link with the other parts in the scheme of the book. The monographs in the book are written in a popular form and should therefore appeal to a wide public.

The book draws pointed attention to the study of *man*, both from without by the ordinary scientific method of research and *from within by the occult method*. The *occult* method is merely an *extension* of the *scientific* method.¹ To be an occultist means to live rationally and not to go through life blindly. To be an occultist means to understand the mainsprings of our thoughts, feelings and actions and thus to live a fuller, richer and nobler life. It is worth noting that "there is an occult side to every act of daily life, and it often happens that if we know this occult side we can perform these daily actions more perfectly or more usefully."² There is nothing mysterious about occultism. "Occultism is the study of the hidden side of nature; or, rather, it is the study of the *whole* of nature, instead of only that small part of it which comes under the¹ investigation of modern science."¹ It should never be forgotten that the *ethical life* is always the foundation in all occultism. The talisman in occult life is a clean, loving, unselfish life of service and sacrifice. "Occultism—the study of Mind in Nature—is intended among other things, to make a man master of his various bodies physical, emotional and mental, etc., to make him understand the inner planes of his own being, the similar planes external to himself, and the relations between them."² Every man is a potential occultist.

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The world is passing through a crisis. The knotty international problems of poverty, unemployment and war are defying solution. At such a juncture as this the point of view put forward in the book will, it is hoped, enable us to see the different problems in their proper perspective and to know where to look for their solution.

The editor is grateful to those mentioned below for giving permission to reproduce certain of the illustrations:

To the American Geographical Society of New York for fig. 4 (Archæology), reproduced from the *Geographical Review* by Mr G. Nevin Drinkwater; to Sir Aurel Stein, Messrs. Macmillan and the High Commissioner for India, London, for fig. 5 (Archæology); to the Theosophical Publishing House, Adyar, Madras, India, for the photograph of Madame H.P. Blavatsky. The editor is also grateful to Mr Conrad Woldring and Mr Hariharier for their kind help in preparing a number of diagrams.

The Theosophical Society,
Adyar, Madras, India,
8th May 1938.

D.D.K.

THE SCHEME OF THE BOOK

PART I. NATURE

FROM MACROCOSM TO MICROCOSM

From Macrocosm to Microcosm
Man and the Universe
Geology and The Secret Doctrine Compared
Archæology
The Meaning of Symbols: A Psychological and Philosophical Survey

PART II. MAN

FROM ATOM TO MAN

Matter and the Atom
Chemistry
Physics (Light, Sound, etc.)
Relativity
Modern Mathematical Thought
Evolutionary Biology: The Evolution of Form
From Mineral to Man

PARTIII. GOD

FROM HUMANITY TO DIVINITY

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LIST OF CONTRIBUTORS

1. **Mr A. Rangaswamy Aiyar, B.A., B.L.**, Advocate, Madura, India.
2. **Miss Margaret A. Anderson**, Member of the Theosophical Research Centre, London. Writer.
3. **Dr G.S. Arundale, M.A., LL.B., F.R. Hist. S., D. Litt.**, President of The Theosophical Society. Educationist, Lecturer, Author, Internationalist.
4. **Dr B.L. Atreya, M.A., D. Litt.**, Professor of Philosophy and Psychology, Benares Hindu University, India.
5. **Dr M. Beddow Bayly, M.R.C.S. (England), L.R.C.P. (London)**. Holds many offices in medical and animal welfare societies.
6. **Dr L.G. Bendit, M.A. (Cantab.), M.R.C.S. (Eng.), L.R.C.P. (Lond.), D.P.M.**, Medical Psychologist, Lecturer, Author. Member of the Medical Group, the Theosophical Research Centre, London.
7. **Mr Claude Bragdon**, New York. Architect, author of works on art, architecture and occultism. Co-translator with Nicholas Bessarokoff of Ouspensky's *Tertium Organum*.
8. **Dr (Miss) Thérèse Brosse, M.D. (Paris)**, on the staff of the Paris Hospital, expert in Cardiology. In 1935-36 toured India with a commission from the French Government to investigate physical reactions to states of consciousness in Yogis.
9. **Prof. Shyam Charan, M.A., M.Sc., (Lond.)**, Head of the Department of Mathematics, Agra College, Agra, India.
10. **Mr G. Nevin Drinkwater, B.Sc. (Lond.)**, Diplômée of the Museums Association, England. Author of *Corroboration of Occult Archaeology*. Member of the Theosophical Research Centre, London.
11. **Mr Peter Freeman**, Member of the House of Commons (Labour), 1929-31. General Secretary of The Theosophical Society in Wales since 1922.
12. **Mr Iwan A. Hawliczek, B.Sc. (Mathematics)**. Member of the Theosophical Research Centre, London. Joint Author with Prof. Marcault of *The Next Step in Evolution*. Travelling Lecturer. Librarian, The Theosophical Society, England.
13. **Mr C. Jinarajadasa, M.A. (Cantab.)**, formerly Vice-President of The Theosophical Society. World Traveller, Internationalist, Lecturer and Author.
14. **Prof. D.D. Kanga, M.A., A.I.C., A.I.I.Sc., I.E.S. (Retd.)**, Member of the Chemistry Editorial Board, and Managing Editor of the Physical Science Section of the *Journal of the University of Bombay*. Editor, *Where Theosophy and Science Meet*.
15. **Mr R.D. Kanga, M.A.**, Assistant Secretary, The Bombay Electric Supply and Tramways Co. Ltd., Bombay.
16. **Shri Vishwanath Keskar**, Teacher of religion and philosophy, Lecturer and Author.
17. **Mr A.F. Knudsen**, Civil Engineer; has made seven world tours. Presidential Agent, The Theosophical Society, East Asia (Headquarters, Shanghai).

18. **Mr Fritz Kunz, B.A.**, National Lecturer, U.S.A. Director of Research Seminars and Originator of Visual Education Service; Author of *The Men Beyond Mankind*, etc.
19. **Mr Charles E. Luntz**, Author; specializes in occult interpretation of the Bible and Esoteric Astrology; 12 years Lecturer on Theosophy in Central, Eastern and Southern States, U.S.A.
20. **Prof. J. Emile Marcault, M.A., LL.B.**, Scholar, Psychologist, Educationist. Professor of Psychology and French Literature, University of Claremont (1909-17), University of Pisa (Psychology) 1917-1924. General Secretary of The Theosophical Society in France.
21. **Madame Marguerite Mertens-Stienon**, Theosophical Lecturer in England and abroad. Author of *Symbology*. Convener, Symbology Group, the Theosophical Research Centre, London.
22. **Prof. G.E. Monod-Herzen, D.Sc.**, Professor of Physics, Faculty of Medicine, Kabul University, Afghanistan.
23. **Capt. A.G. Pape**, Author of *Is There a New Race Type?* Founding Fellow of the Anthropological Society of Scotland.
24. **Miss Edith F. Pinchin, M.R.S.T.**, Montessori Diplomée; on the staff of the Besant Memorial School, Adyar. Member of the Theosophical Research Centre, London. Member of the Folk-Lore Society. Author of *The Bridge of the Gods, A Study in Gaelic Mythology*. Chief Knight for England of The Round Table for many years.
25. **Mr Gaston Polak**, Civil Mining Engineer. General Secretary, The Theosophical Society, Belgium.
26. **Dr D.H. Prins**, Editor and Writer. The Hague, Holland.
27. **Dr Peter K. Roest, Ph.D. (Chicago)**. National Lecturer for The Theosophical Society in the United States of America since 1934.
28. **Miss Julia K. Sommer, B.Sc. (Chicago), M.A. (Columbia)**. Chairman, American Section of the Theosophical World University Movement, and of its Research Department. Editor, *Child Training in the Light of Theosophy*. Lecturer and writer for the spread of ideas of progressive education.
29. **Dr (Miss) Corona G. Trew, B.Sc., Ph.D. (London)**. Member of the Theosophical Research Centre, London. Joint Author of *Studies in Evolutionary Psychology*. Lecturer in Chemistry, Bedford College, London.

INTRODUCTION

Modern Science, an Ally of Theosophy.

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It may appear strange, but is nevertheless true, that a number Modern Science of statements regarding Man and Nature made some years ago in the classic literature of Theosophy and Ancient Wisdom are now, year after year, being corroborated by science.¹ Thus Theosophy finds in Modern Science a great ally, for it supports in an increasing measure the truths given in theosophical literature.

Appreciation of Science.

We have deep respect and veneration for the great scientists who have given us the new knowledge and consequently a new outlook on life by giving a new orientation to scientific thought. We yield to none in our admiration of the scientific method which is so thorough and so exact. We fully appreciate what the scientists have so far been able to do by means of the scientific method, the value of which all the world acknowledges.

Methods of Research Compared.

But if it is true that a large number of recent scientific discoveries have been anticipated in so many directions by the Ancient Wisdom, which Theosophy embodies; or, as Sir Oliver Lodge has put it, that modern science is rediscovering some of the truths of ancient science; or, again, in the words of Professor Soddy, that we are treading today the road which the ancients trod in the unrecorded history of the world,² then there must be another method¹ of investigation of which the Ancient Wisdom was the result, and it would be pertinent to inquire what that method is and who the persons are who use it. The method by which the truths given out in the Ancient Wisdom were discovered, is known as the Occult Method and those who use it are known as occultists, seers and sages, for they possessed powers of which present-day science is just beginning to be aware. This method is not contradictory but supplementary to, or merely an extension of, the scientific method, and superior to it inasmuch as, first, it is more comprehensive than the scientific method, having a wider range of data from which to draw inferences, for, in addition to scientific data it includes also data obtained by clairvoyant research—and clairvoyance is now recognized as a fact in nature;¹ secondly, it collects its data by actually seeing the inner working of the phenomena and not only by the observation of their external behaviour as is done by science; and thirdly, it can survey a long stretch of time extending over tens of thousands of years, clairvoyant observations of which have been made by a very large number of seers and sages of the past.

These observations were classified and inferences drawn there from; these inferences were tested and either modified, amplified or rejected; those which stood the

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test were checked and verified over and over and over again in the light of further observations. Time has been one of the great assets of the occult researchers, and the strictly scientific method of investigation which they followed has been another.² A number of statements given in recent theosophical literature and confirmed by science are the results of *independent* clairvoyant researches of Dr Annie Besant and C.W. Leadbeater.³

Physical Science and Philosophy.

In view of what has been stated above, the recent discussion in *Nature* which began with the article by Dr Dingle on "Modern Aristotelianism,"¹ the letters by different scientists which appeared in reply to this article under the title "Physical Science and Philosophy," and Dr Dingle's counter-reply to these letters under the heading "Deductive and Inductive Methods in Science"² were opportune and illuminating. It was a discussion in which the intellectual giants of the day took part, many of them being Fellows of the Royal Society. Dr Dingle favoured the strict inductive method for the discovery of truth about Nature. He "inveighed against a new departure in scientific method [followed by Sir Arthur Eddington and others] which had grown out of the revolution of thought provoked by relativity theory."

"The question," in his words, was "whether we could discover the truth about Nature rationally without recourse to experience." He was against the metaphysical line of attack on physical problems. The discussion "raised the matter of the curious relationship which at present subsists between metaphysics and science."

We are of the opinion that this new departure in scientific method is inevitable as a result of evolution in the consciousness of man. The gradual evolution of physics into metaphysics and of metaphysics into occultism, is bound to take place in the case of some few people who are so constituted that they are more susceptible to discover truth, first, by pure reason and later on by intuition. In the light which Theosophy sheds on the constitution of man and his intellectual evolution, from the analytical mind stage to that of the synthetic mind, and then to the stage of the intuitional mind, all the¹ three methods of investigation, namely, the inductive, the metaphysical and the occult, take their rightful places, so that the present metaphysical phase we are witnessing is a necessary stage in the evolution of the scientific method. Each method is important and great in its own way. However much the new departure in the scientific method may be criticized, it is bound to spread more and more as time goes on and as the new type of men and women are born in greater numbers in the world, for the Next Step in Evolution is the development of the subtler senses, the awakening of the intuitive faculty.

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There are signs that a new sub-race is appearing, that a "New Age in Consciousness" is commencing, and that this new consciousness touches the intuitional world.¹ But this does not mean that we should give up the old well-tried inductive method for discovering truth; it will be used and with very good results strictly within the domain of science by those in whom the intuitive faculty is practically dormant. And there is no reason why those in whom the subtler senses are developing and the intuitive faculty is awakening, should not depart from the strict scientific method of induction in their researches into the borderland of science.

How Intuition Works.

In the domain of science also, intuition perhaps plays a far more important part than we realize. The illumination may come as the outcome of months or years of mental search but the moment when it comes the intellect is passive. Take, for example, the flash of intuition which came to Kekulé when he was day-dreaming; he saw a serpent devouring its tail and hit upon the theory of a closed chain or ring-structure to explain benzene and its derivatives. This had a far-reaching effect in the development of one of the most important sections of organic chemistry. Similarly, a flash of intuition came to Newton when he watched the fall of an apple; his mind was quiet and at rest then, and that was the most suitable condition for the intuition to work in and he found what he had been searching for. Jagadish Chunder Bose, in dedicating the Bose Institute on 30 November 1917 as a Temple of Learning, brought out this point very clearly when he said: "This I know, that no vision of truth can come except in the absence of all sources of distraction, and when the mind has reached the point of rest."

Borderland Phenomena.

For the investigation of subtler forces and subtler worlds the employment of subtler senses is required. The use of physical power and physical apparatus may be of help up to a certain point, but beyond that point it fails as we have seen in the case of the further breaking up of the atomic nucleus.¹ If the scientist has not developed these subtler senses in himself then the other alternative would be that he might utilize these powers in another person and collaborate with him in order to carry on his investigations further. Then an immense sub-atomic world would open out to him, and what is obscure and hidden to him now as regards the "detailed structure and stability of different forms of atomic nuclei and the origin of elements" in the physical sciences, or the nature of disease in the science of medicine, or the nature of consciousness in the science of psychology, would be better understood.

The immediate next phase in scientific research seems to be the phase in which scientists will collaborate, in their researches into borderland phenomena, with persons who have within themselves these subtler faculties developed, of penetrating the larger

or the smaller worlds which are beyond thereach¹ of the physical instruments. The scientific method is not the *only* method to discover the truth regarding Man and Nature. There are other methods also of investigation, just as there are other worlds besides the external world of the physicist.¹

Limitations of Science.

It would be quite appropriate to point out here, as H.P. of Blavatsky did most truly many years ago, that "Science cannot, owing to the very nature of things, unveil the mystery of the Universe around us. Science can, it is true, collect, classify and generalize upon phenomena; but ... the daring explorer, who would probe the inmost secrets of Nature, must transcend the narrow limitations of sense, and transfer his consciousness into the region of Noumena and the sphere of Primal Causes. To effect this he must develop faculties which are ... dormant."² There are latent faculties in man which can be developed by suitable training and discipline; these are just as necessary for occult research as is the hard training which a scientist has to undergo for scientific research.

This, again, is an age of specialization. Such an age has its place in the intellectual evolution of man and should by no means be under-rated, but it has a tendency to narrow and cramp the mind. This tendency requires to be corrected and counterbalanced by the synthetic faculty of the mind, a mind illuminated with Divine Wisdom of which Theosophy is the embodiment. The aim of this Series is to act as a bridge between the present and the past, between the known and the unknown, and between Theosophy and Science, so as to enable one to catch a glimpse of the Divine Plan and recognize the value of any special researches in the general scheme of things.

Pictures of Man and the Universe.

Just as the metaphysical method of research is a necessary phase in the evolution of scientific research, so was the materialism of the nineteenth century a necessary stage in the evolution of scientific thought. The findings of modern science and the philosophic beliefs of some great men of science, such as Sir James Jeans, Sir Arthur Eddington, Professor Millikan, General Smuts, to mention only a few, are away from the materialism and strict determinism of the last century. It is now recognized that there is Order and Intelligence in Nature, that there is a Plan, and that Plan is Evolution, that evolution is not, as was hitherto supposed, "the result of a fortuitous concourse of atoms," but that there is mathematical precision, ordered harmony and a great design and consequently a Purposive and Directive Mind behind the great drama of creation and evolution.

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Though this picture of Man and the Universe of modern Science approaches to some extent that given by Theosophy, yet it is a very feeble reflection of the grand scheme of cosmogenesis and anthropogenesis given therein. If the latest scientific picture is found to be in agreement in some of its design with the picture given by Theosophy, then it is possible that the rest of the design of the theosophic picture may also be true, and it is therefore worthwhile for the scientists to know what that whole picture is and to take that as a working hypothesis, for who knows it may prove a good guide and helpmate in their further investigations.

Realization of the Difficulties.

We very well realize the difficulties which many of the materialist scientists and philosophers of more than a generation ago experienced in grasping the teachings of Theosophy, for in the first place they supposed Theosophy to be nothing else but mere speculations of the ancients, and mixed it up with orthodox religions; secondly, they were obsessed with the mistaken idea of¹ the human race being only a few hundred thousand years old or a couple of million years at most; thirdly, they had no adequate knowledge of the past history of the earth and man, or of the existence of the mighty civilizations of old and of the history of their rise and fall, etc. Thanks to the admirable courage shown by Madame Blavatsky in putting forth views which were in advance¹ of those held by nineteenth century orthodox science steeped in materialism, orthodox philosophy submerged in classicism, and orthodox religions soaked in superstition and distorted by the slavish following of outworn dogmas and soulless traditions; thanks again to the pointed attention drawn by her to the great antiquity of man, the greater antiquity of the earth, the existence of great ancient civilizations, of archaic knowledge, of the living Adepts in possession of this knowledge and the possibility of coming in contact with Them, the Inner Government of the World by an Occult Hierarchy, etc.; thanks once more to the valuable researches of modern scholars and scientists and their corroborations of many of the statements made in 1888 by Madame Blavatsky in her monumental work *The Secret Doctrine* and other classic literature of Theosophy, the present generation of scientists and philosophers have begun to see things in their proper perspective.

Contributions of Theosophy.

Theosophy Gives Right Values.

If once the fact is recognized and grasped that what is known as Theosophy is not a figment of the imagination or the speculations of the ancients, but that it is the

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accumulated wisdom of ages arrived at by the occult method—a method worthy of study and investigation as the times are now ripe—then it will be realized that the study and knowledge of the whole Plan of Evolution as given in Theosophy, beginning with the dim past millions of years ago and stretching far into the future, is of the greatest importance, for with its help we can see the significance of the epoch-making events of the past and the present, trace their connection, find a guiding-hand in their occurrence, and realize that all of them are intended to lead humanity forward to a goal which is glorious and wonderful. A grasp of the theosophical outlook heartens and inspires us, makes us optimistic, and helps us to give right values to all events happening in the world, and to realize that all is well with the world, and that it is not at the tender mercy of unknown forces but guided by the Great Masters of the Wisdom to a magnificent end and purpose.

Phases of Consciousness.

There is a sequence of psychological phases of consciousness in evolution and the same succession of phases is observed in all evolutionary cycles, whether of a Root-race, a sub-race or a man, whether of an institution or a branch of knowledge. "In every case consciousness has been found to work through functions which follow each other in definite sequence," which is expressed diagrammatically in the table below:

TABLE¹

Sequence of Phases of Consciousness:

- 1st Phase, Consciousness centred in Perception.
- 2nd Phase, Consciousness centred in Action.
- 3rd Phase, Consciousness centred in Emotion.
- 4th Phase, Consciousness centred in Analytical Mind.
- 5th Phase, Consciousness centred in Synthetic Mind.
- 6th Phase, Consciousness centred in Intuition.
- 7th Phase, Consciousness centred in Will.

Externalnature¹ does not change, it is man's understanding of it that changes. It is the scientist who makes science, not science the scientist. And so according to the phase of evolution a scientist has reached will he give colouring to his science. The phase in the evolution of science and philosophy which we see now is nothing but the reflection of the phase in the evolution of consciousness reached by the scientist and the philosopher. This is a most helpful thought and is brought out in a number of monographs in this Series.

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Importance of the Study of Man.

This will explain the necessity of turning one's attention to the study of man himself, his inner nature, its development and improvement. It is gratifying to note that the trend of world-events of some years past, and the impending danger to civilization by the likely misuse of nature's forces discovered by science, have also forced pointed attention to, and shown the extreme urgency of, the study of man, which has been very much neglected and which has now become the centre of scientific study. This study of man—of his inner nature and his latent powers—and of the superphysical worlds, cannot be done, and it is necessary to emphasize this point here, by the orthodox scientific method. Theosophy holds the key to the unravelling of the superphysical mysteries. The scientist of today is the occultist of tomorrow.

Present Crisis, a Transitional Phase.

In the light of the knowledge of the Plan and of what has been stated above, the crisis through which we are at present passing and which threatens the disruption of our mighty civilization, which has been so laboriously built up, is only a transitional phase. We see before our very eyes fundamental changes and upheavals in every department of life. The old forms are breaking up as they should, in view of the fact that the world is entering upon a new age of consciousness. *What is needed is to give a correct lead to the thought of the world.* What we have to be careful about is to see that the new forms we build are of the right type, so that through them the new life may express itself fully. In this revaluation in all departments of life and in the building up of new institutions in place of the old, Theosophy will be found to be of the greatest help.

Cause of the Present Crisis.

The present world-crisis is due to the State-chariot being driven by three uncontrolled horses proceeding with unequal speed. The first represented by Science and Engineering is flying, as it were, with the speed of an aeroplane, the second and third represented respectively by Economics-Politics and Ethics-Spirituality are walking with the speed of a bullock-cart. What is wanted is a uniform steady progress of all the three, so that the State-chariot may run smoothly without danger of being dashed to pieces. The key to the situation is the study and practice of Theosophy.

Does Human Nature Change?ⁱ

The intellectual progress of man has outstripped the progress in his moral and spiritual nature, so much so that some people have begun to doubt, to despair and to be despondent whether human nature is changing at all. There is no doubt that human nature does change, but extremely slowly in the beginning in absence of the knowledge of the Plan; not knowing what he really is, not knowing the purpose and goal of life,

man is merely drifting on the ocean of life; but once he becomes aware of the Plan and grasps it, once he gets a glimpse of his own spiritual and divine nature, once he knows the purpose of life and his goal, and knowing that follows the discipline—which inculcates the highest morality, the most unselfish life, a life of spontaneous service and sacrifice—to bring his dormant divinity into activity in his¹ own life, then he feels impelled to take his life into his own hands and finds that the unfoldment of his spiritual nature now becomes very rapid. Such a man in whom the inner directing Self is awakening, in whom the dynamic powers of his spiritual nature are developing, never becomes a danger to society, for he does not only believe in, but is beginning to realize, the essential unity of all beings, nay, of the whole creation.

How the Inner Urge Comes.

Solution of the Crisis.

Look at this question from any angle we may we cannot but come to the conclusion that what is required is right knowledge and understanding and a proper perspective. Man has gone out from the centre, has conquered the outside world, has gained control over nature's forces and does not know how to use them; the centrifugal force has been most active in him and this is the cause of the present menace to society. He should now change his focus, reverse his motion, make the centripetal force more and more active, retreat within himself and conquer the *inner* invisible world of his mental, emotional and spiritual nature. When he has achieved a balance between these two forces within himself then progress will be smooth and uniform.

Theosophy and Rationalism.

A very important thing about Theosophy is that it gives a rational exposition of the Eternal Truths which are fundamental to all the religions; it gives the *modus operandi* of the noumena and phenomena of nature. Theosophy gives the step-by-step process and the why and wherefore of religious doctrines, and therefore its interpretations appeal to us more than the simple and dogmatic assertions of the theologian. The line dividing the Free Thought and Rationalistic Movements on the one hand and the Theosophical Movement on the other is very thin. Both are opposed to blind belief, superstition, and irrational, orthodox religiosity. Both aim at giving a rational exposition of truths in nature. Both are highly rational and scientific. But the Theosophical teachings have an advantage over those of the Rationalistic school inasmuch as they fill up the gaps and supply the *motive power* and give a rationale for the *inner and upward urge* in life by showing the origin of man, his purpose in life, his relation to the universe, and his continuous evolution and glorious destiny.

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Theosophy is science shorn of its materialism. Theosophy is philosophy shorn of its classicism. Theosophy is religion shorn of its worn-out dogmas and soulless traditions. Theosophy is a synthesis of dematerialised science and philosophy and liberalized religion.ⁱⁱ

Theosophy, Pre-eminently Practical.

The beauty of Theosophy is that it not only gives the knowledge of the Plan and the goal, but that it is also pre-eminently practical, inasmuch as it shows the *method* as to how to attain the goal. Many have tried the method and realized the goal for themselves.

The study of Theosophy, then, brings out among others the following points:

1. That there are other worlds besides the physical world of the scientist which exist here and now, interpenetrating the coarser physical world, and these other worlds are composed of matter very much subtler and finer than, and of a different type from, that of the physical world.ⁱⁱⁱ
2. That there is another method of investigation of Truth besides the Inductive Method of the scientist; it is called the Occult Method. This Occult Method is used for the investigation of the subtler worlds noted above.
3. That¹ the scientists seem to have come to the end of their resources in the further disintegration of the atom, no matter what tremendous power and however delicate instruments or complicated apparatus they use. The projectile used to bombard the atom seems to combine with the products of disintegration and form other atoms; disintegration is followed by reintegration and artificial radioactivity is the result. (*Vide supra* p. 5.)

Man Himself, the instrument of Research.

This shows that the scientists will have to make use of another method, not the inductive method, and another type of instrument if they wish to penetrate and investigate the worlds beyond the physical. Theosophy demonstrates other methods of investigation and other types of instruments to be employed. The method to be used is the metaphysical, followed by the occult, and the instruments to be used are within the person himself. This presupposes a knowledge of the constitution of man which Theosophy gives. Theosophy says that man is more than his body and mind.

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Theosophy again gives the method, and shows how each person may convert himself into a suitable instrument by purifying his body, emotions and mind by following an altruistic life, and thereby developing within himself the requisite instruments of research.

Theosophy, further, says that man, once he has caught a glimpse of the Plan of Evolution, becomes *a conscious and willing co-operator* in helping humanity onwards. In this laudable effort, he incidentally develops the capacity to solve many of the great problems facing society. Realizing that he is a unit in the whole cosmos, recognizing the unity of life in the diversity of forms, with its corollary the Brotherhood of Man, as facts in nature and not merely as noble ideals, he becomes more and more capable of using *unselfishly* the powers which present-day science gives him and the still greater inner spiritual powers he is likely to attain. This again automatically solves another great problem facing the world, namely, the menace to our present civilization by the misuse of nature's forces for selfish ends.

No Appeal to Blind Faith or Authority.

It should not be supposed that this Series, WHERE THEOSOPHY AND SCIENCE MEET, is intended only for students of Science and Theosophy. No greater mistake could be made. The book is meant for every man and woman who will take a little trouble to think, for it does not appeal to blind faith. It is intended for those who are dissatisfied with the present state of affairs, and are anxious to do what they can for society; it is intended also for those who are intellectually discontented and therefore curious to know and find out the Truth for themselves. It is again meant for those who have in them a spirit of adventure, who are desirous of exploring the latent faculties and hidden powers within their own selves, of discovering the Reality within. And this discovery each man has to make for *himself*; no other person, however great he may be, can do that for him. The utmost another person can do is to show the way, but the way is to be trodden by each man by himself.

A Stimulus to Modern Thought.

Action springs from conviction, conviction comes through right understanding, right understanding arises from right knowledge. The aim of WHERE THEOSOPHY AND SCIENCE MEET is to give this right knowledge and understanding, also to inspire and stimulate thought. The Series does not claim consideration by any appeal to dogmatic authority, nor does it desire or claim to teach the doctrines, but with their help to interpret the world-drama, to emphasize the spiritual nature of man, that he is more than his body and mind, to show his rightful place in the scheme of¹ the universe, and to point out the Next Step in Evolution.

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Scheme of the Book.

To bring out the aims given above and to show the Plan of Evolution as given in Theosophy, a tentative scheme is given elsewhere. The scheme is merely suggestive. No one is more conscious than the editor himself of the many gaps in the scheme.

The book is divided into four parts. Part I treats of *Nature*, of involution from Macrocosm to Microcosm; Part II treats of *Man*, of evolution from Atom to Man; Part III treats of *God*, of evolution from Humanity to Divinity; Part IV treats of subjects showing the practical applications of the teachings of Theosophy. The order in which the subjects are given in Part III will show the rationale of their arrangement. It follows the focussing of consciousness in the different bodies of man, thus:

1. The Physical (Physiology).
2. The Etheric (Western Scientific Research and the Etheric Double).
3. The Emotional (Mythology).
4. The Mental (concrete, analytical), (Anthropology).
5. The Mental (abstract, synthetic), (Philosophy and Theosophy).
6. The Intuitional (Psychology).
7. The Volitional (spiritual), (Yoga).

The interpretation of the world-drama as given in this Series, WHERE THEOSOPHY AND SCIENCE MEET, in the light of the Ancient Wisdom will, it is hoped, give the reader a proper background for the conduct of life—a background which *amplifies* that given by Modern Science, and consequently gives a proper perspective and a wider outlook on the nature of Man and the Universe and their bearing on his life and destiny.

D.D. KANGA

THEOSOPHY AND MODERN SCIENCE

SOME FUNDAMENTAL CONSIDERATIONS

BY PIETER K. ROEST

THE rigid mechanistic materialism of nineteenth century Science has broken down and a new scientific philosophy is re-establishing idealism—or rather mentalism—to a place of honour, if not of supreme authority. We need not review here the fascinating history of this revolution in modern thought. But among its many consequences are the rather premature shouts of victory from many believers of various idealistic creeds who have

not even been witnesses of the battle, let alone fighters in it. Since Theosophy is often erroneously presented as an idealistic creed, one frequently finds members of theosophical groups maintaining that Science is at last beginning to see *their* light and will soon confirm *their* particular beliefs. Let us examine how valid this assumption is likely to be.

It proceeds from two notions. First: that reality can be represented by ideas, and that the particular ideas put forth in elementary theosophical literature are, if not the *complete* truth, at least completely “true.” Second: that inasmuch as modern scientists seek truth, they will therefore eventually embrace these same ideas. The first of these notions was repeatedly exposed as fallacious by the greatest of recent theosophical¹ authors, H.P. Blavatsky. Her point of view was that truth lies beyond any ideas we can formulate or express, and she frankly said of her *magnum opus*, *The Secret Doctrine*, that its study was but “a means of exercising and developing the mind never touched by other studies.” “Come to *The Secret Doctrine*,” she said, “without any hope of getting the final truth of existence from it, or with any idea other than seeing how far it may lead towards the truth.”^{iv}

One may ask: “Why then present ideas at all? Theosophy *is* a system of ideas, *or* it is nothing but a name for something non-existent or for something no one knows anything about—which is *practically* the same.” The answer to this is that Theosophy is the vision of reality common to members of the oldest occult fraternity in the world, and what has been publicly put forth as “Theosophy” since 1875 is either an effort by members of this fraternity to present a *fragment* of the *intellectual* aspects of this vision, or merely the personal interpretation of such fragments by others. Hence real Theosophy is by no means identical with “ideas presented in ‘theosophical’ literature”; although many of these ideas are indeed bridges by which the mind may reach—but only through its own vigorous efforts—that vision of reality to which the name of Theosophy really applies. As soon as this is realized, the fallacy of the second notion—that scientists and all other truth-seekers must eventually arrive at the ideas now held by a majority of the members of The Theosophical Society—stands also exposed. For obviously these ideas are a mixture of views and interpretations for which their originators claim nothing but a certain helpfulness in reaching the larger vision. No real *student* of theosophical ideas will claim finality for them; that is done only by thoughtless believers.

It is therefore only as *mental concepts approaching truth* that we can discuss “theosophical” ideas. While in the minds of teachers and students of these ideas they are woven together to form “the theosophical view of life,” we must remember that such a scheme of thought is by no means identical with the “Theosophia” of the occult

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brotherhood already mentioned, but at best a more or less distorted fragment of it. Consequently no two “theosophists” do—or should —agree on any set of ideas as the real, the only Theosophy. In a really *Theosophical Society* there can be no orthodoxy!

We can therefore readily see that a comparison between “Theosophy” and “Science” is at best a labour of temporary compromise on what we shall consider as Theosophy and what as Science. And, incidentally, there is a good deal more agreement on the latter than on the former. This is largely due to better intellectual organization among scientists and to the voluntary but enforced restriction of their field of investigation; but also to the profoundly different methods of teaching used. Popular scientific literature seeks to present its subjects in the clearest possible manner and in language which appeals to the simplest minds. High-school textbooks leave no room for doubt; all the mind has to do is to assimilate the images and ideas presented. Popular theosophical literature, while also striving for clarity and precision of expression, must needs use unfamiliar language for unfamiliar ideas even where it does seek to make learning easy. But all deeper theosophical works—especially those of H.P. Blavatsky—are written in such a way that some passages are difficult to understand. And this is inevitable because of the necessity of veiling certain truths for fear of their being misused and the consequent danger to society. The wisdom of this policy modern Science is beginning to realize. Hence such works are full of magnificent and suggestive phrases¹ hidden amongst innumerable symbols and often apparently contradictory commentaries which is enough to scare away the spoon-fed mind immediately, and to make the disciplined western thinker frantic with irritation. It is only the persistent seeker who will find the gold that is hidden in these mines; while most readers will reject the popularized presentations of theosophical thought as mediocre, and the deeper works as fit for lunatics only.

So if these ill-definable “universes of discourse,” Science and Theosophy, show any points of contact, that is indeed most gratifying; but it should by no means be taken as proof of the “truth” of either. We shall realize this more fully if we briefly examine the methods used by these two different disciplines of thought to arrive at “true” concepts.

Science relies, for valid information about reality, entirely on “objective facts,” *i.e.*, on events perceived by the mind via sensation through the ordinary five senses—with or without the extensions of the latter which we call scientific instruments: the microscope, the spectroscope, the galvanometer, the camera, etc. To these it applies the most rigorous inductive reasoning; preferably devising experiments to force nature to indicate which of its hypotheses is nearer to the “truth,” *i.e.*, covers most of the facts observed. It makes no claim to studying reality (not today at least—it did so surely a

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few decades ago!); but frankly admits that “its subject of study is primarily our observations of nature, and not nature itself.”^v It seeks to reduce these “observables” to the simplest order, or scheme of concepts, which it can conceive. It frankly recognizes that all its “established laws” are conjectural – hypotheses acceptable today but perhaps overthrown by new discoveries tomorrow. It surmises behind the “observables” a number of “unobservables” which it names protons, electrons, photons, etc., but acknowledges the hypothetical nature of the latter: “Our unobservables are at best mere guesses.”¹ Science, in our days, is no longer “organized common sense” – an old and honoured definition – nor does it boast of its formulations as final “truths”; it is acknowledged by its greatest representatives as “an Art Form” in the construction of which a vast number of “artists” collaborate on the basis of well-defined principles accepted by all. Amongst these are an impersonal honesty; extreme accuracy of observation, recording and calculation; clarity and precision of thought and expression; the duty of doubt and of criticism; and the “parsimony of hypotheses.” The latter is very dear to scientists, and is at once the strength and the weakness of the “Art Form” they create. Its strength, because the simpler and fewer the “unobservables” which are conceived to give rise to the “observables” – the phenomena perceived – the easier will be our control of the latter, *i.e.*, of the world we live in. Yet also its weakness, because in the anxiety to explain a multitude of phenomena by very few hypotheses it is easy to mistake the latter for the truth, the reality behind phenomena, and to refuse to consider any other hypothesis which may in fact be nearer to reality. And in some cases it has led to the wilful exclusion of “recalcitrant” facts from the field of scientific observation; as has long been the case with “psychic” phenomena.

Now Theosophy, as we said, is a vision of reality of which in theosophical literature we can catch only glimpses. Fragments of this vision are presented, which later are “interpreted” and put into some sort of order by lesser minds. Such “theosophical” schemes may be known by the authors as merely suggestive reconstructions, but they are taken by thousands of readers as revelations of final authority¹ – exactly as is the case with Science! Informed and intelligent students keep this in mind, hence are not disturbed by discrepancies between scientific and theosophical “truths,” or between different schools of thought in either scientific or theosophical interpretations. Discrepancies must be expected. It is enough for those students to know that both Science and Theosophy seek to create “truthful” mental structures which bring our minds closer to reality; each doing it in its own specific way. What is the way Theosophy uses?

Eliminating purely interpretative “Theosophy” and taking only those teachings which are presented as statements of facts by the few classical theosophical authors, we learn of three distinct ways by which they arrived at these ideas: 1. by direct

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observation; 2. by intuitive realization; 3. by instruction from intelligent beings still further evolved than the authors themselves. The last again resolves itself into the former two (for those teaching, if not for those taught); so we have to deal only with observation and intuition. Superficially, these are exactly the same as used by scientists. Actually there is a considerable difference. First, scientists *do* use intuition, but distrust it until justified by observation— preferably by experiments. The true theosophist, on the other hand, develops intuition into a real faculty of knowledge; this being one of the pre-requisites for membership in the occult brotherhood where further progress in understanding is possible and more rapid than by any other means. The whole system of occult training is designed to that end. Hence he has good reason to use intuition increasingly, developing it into that faculty of direct spiritual insight which is found in great mystics, and which to them is as convincing and natural as seeing is to the eyes of normal man. Obviously, then, many theosophical ideas must remain mere speculations to non-intuitive minds, or to minds which always place observation above intuition, and systematically distrust the latter.

But while training the intuition as an instrument of knowledge, the occult student is not encouraged to ignore observation, but to sharpen and to refine it, and to use it not only for checking up on his intuitions and on the teaching he has received from those beyond him, but also for individual contributions to human knowledge. This process of refining one's powers of observation is naturally a gradual one varying with one's experience and industry. But as it proceeds, definite latent senses are brought into activity; senses *which extend one's range of observation far beyond that of Science with its best instruments*. It is this extended power of observation which the real occultist uses intelligently, critically, and which his fraternity has used for many thousands of years to verify the views of its members and to make *their* Theosophy a genuine *science*, the greatest and most inclusive of all, growing and evolving like all modern Science.

This critical, intelligent, trained "clairvoyance" of the true occultist must not be confused with the practically useless psychism of mediums and fortune-telling "clairvoyants" of our intellectual underworld. On the contrary, it is in full harmony with the ideals and methods of modern Science, with two important exceptions. One is the just-discussed use of finer instruments of observation—developed *in the living organism itself*—and hence the command over a far larger mass of phenomena. The other is the strict secrecy on vast parts of this occult knowledge; while modern Science boasts of its completely public nature, and is only just beginning to see the danger and doubt the wisdom of this policy. All knowledge, is a two-edged sword,¹ and we are beginning to see that only too well in our war-torn age.

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In consequence, theosophical formulations are bound to be quite frequently different from those of Science on the same subjects. For the latter is very restricted in its range of “observables,” and many of the “facts” of occult research cannot possibly be recognized as such by students of the ordinary phenomena of our “normal” sense-world. Here lies the great chasm—as well as the bridge across it—between Science and Theosophy. Both rely ultimately on *observation*, carefully checked by many impartial observers. H.P. Blavatsky speaks of “the facts which have actually occupied countless generations of initiated seers and prophets to marshal, set down and explain”; and of their “checking, testing, and verifying, in every department of Nature, the traditions of old, by the independent visions of great Adepts,” affirming that “no vision of one Adept was accepted till it was checked and confirmed by the visions—so obtained as to stand as independent evidence—of other Adepts, and by centuries of experience.”¹ But while Science is strictly limited to what can be observed with the ordinary five senses, aided or not by physical instruments, and to ordinary intellectual processes, Theosophy extends the field of observation ever further by the development of normally latent powers of perception, and supplements the functions of the intellect by a progressive development and use of the intuition. Hence, assuming that the universe is *one* realm of law and not many, Theosophy will harmonize with Science in many ways, but be ahead of it, and therefore often be in disagreement with current scientific theories in many others. Besides, the need for secrecy about a vast portion of theosophical knowledge makes it almost impossible to present theosophical ideas as coherently and convincingly as scientific ones for which we recognize no such reticence as yet. Finally, the method of teaching scientific ideas is radically different from that of teaching the more profound theosophical ones; the former seeks to convince the mind of the correctness of its statements, making it all very plain; the latter does not teach directly but helps indirectly to develop capacity by activating the mind and intuition by the exercise it gives them to dig out the precious gems and seeds of thought concealed in symbols for the sake of secrecy.

“Since, however, as before confessed, this work [*The Secret Doctrine*] *withholds far more than it gives out*, the student is invited to use his own intuitions.”²

Thus we may never expect more than a partial and sporadic agreement between these two disciplines of thought; and this is exactly what we find. While some may become enthusiastic at the discovery that there are many more agreements than they had ever heard of—enough to write books about them—the sober student will not allow this enthusiasm to blind him to the large areas of disagreement that remain. Neither will he be dismayed by the latter, since the considerations presented here show them to be inevitable.

It cannot be expected either that scientists in general will accept these considerations and acknowledge this interpretation. For the existence of extra-normal powers of perception and of a brotherhood of really intelligent occultists lies outside the

scientific “universe of discourse.” It is customary even among the greatest of western scientists to blandly ignore oriental knowledge, and to start the history of critical thought with Greece. Yet it is exactly in oriental civilizations that we find the most conclusive evidence of the existence of¹ occult powers of perception and of an occult fraternity which none but the most determined and developed truth-seekers may enter. So it remains with the actual correspondences between Science and what-little-we-know-of- Theosophy to establish such a strong case for the existence of a genuine Guptavidya (Secret Science) that honest thinkers will at last make efforts to extract the grains of gold from the ore of theosophical literature. Then indeed they will meet with many surprises, not the least of which will be the discovery that no literature is richer in suggestive ideas that will provide stimulating working hypotheses for almost every field of Science, than is that bearing the noble name of Theosophy—the knowledge of the Gods!

FROM MACROCOSM TO MICROCOSM

BY FRITZ KUNZ

THE point of view common to the writers of this Series should first be briefly identified for the philosopher, in a few of his own sentences. What follows, in the language of the layman, will then be seen in the proper background.

In brief, the principal feature of the philosophy advocated in these pages is its skilled use of the life-process to reveal the Real. This is in vivid contrast with the modern energetics-materialism of our times. We are not, all the same, vitalists. Life to us is not some added or equal entity, beside matter. On the contrary, we hold that the behaviour of matter in every particular is due to life. Whether matter itself appears because of life, it is impracticable to discuss here; but it could in proper compass be expounded with success. We are, then, no defenders of an indefensible dualism such as additive vitalism comes to be in the end. We are certainly not pluralistic atomists of the Bertrand Russell variety, on the other hand. We are nearer to H.N. Whitehead’s attitude, at bottom. In few words we may say that our position is that of a thorough-going conceptual monism.

But this living, dying, *a-borning* and reappearing Cosmos is not some cold and sterile intellectualism. It is immediate, and is² charged with most urgent applications. The laws of the living are no less overriding as to human conduct as the properties of matter are supreme in determining how matter can be used. Waking, noon, sunset, sleeping; birth, maturity, senescence, death and rebirth; dark nebula, diffuse light

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THEOSOPHY AND MODERN SCIENCE

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FROM MACROCOSM TO MICROCOSM

nebula, then spiral and finally starry system—all these, and multitudes more on their tetrahedral-time pattern are to be *used*. One life, one love is as true for conduct in man as one energy, one law is true for behaviour in matter. Indeed, those great words in small—law, life, love—are one in the Real. Matter, sentience, ecstatic conscious meaning are all needed. The true, the beautiful and the good are not Platonic, or even Greek, principles, but nature inescapable.

Nevertheless, though the cosmos is alive, from modern atomism my part in this Series has its most convenient point of departure; and the use of the outlook of modern physical science serves to show that we are not some over-fond fools about classical notions, nor yearners over oriental imaginings, still less a wishful thinking cult with that ghastly product for distribution, “a line of thought” —though these may very naturally be suspected of a philosophy with a capital-letter name, even if that name is as old as Ammonias Saccas, and the outlook it implies even more ancient.

Let us therefore start with the rocks!

A piece, say of rock-salt (taken for its simple familiarity), appears a solid, homogeneous, shiny cube (fig. 1). But of course this is only appearance. What is the reality? Chemically it is sodium and chlorine, in equal parts, freely self-formed. But still we must ask what it is in terms of philosophy — time, space, experience.

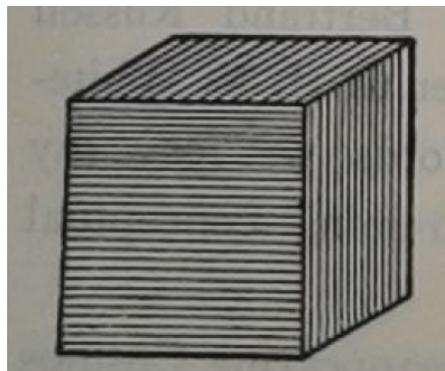


FIG.1.

Upon applying the methods of modern crystallography as in the hands of the Braggs and others, this hard object is seen in its proper light (X-ray) to be a tenuous body, inconceivably more space than matter. Enlarged prodigiously, to the dimensions of the solar system, such a cube would surprisingly appear to have astronomical proportions (fig. 2). The sodium and chlorine molecules are spaced out from one another in relation to their diameters as planets are spaced from the sun. The distribution is regular, based on one of the only fourteen space-lattices in which crystals live, move and have their being. The surface molecules are in musical intervals,

analogous to Bode's law for the planets, called, in crystals, complication by the discoverer of the principle, Victor Goldschmidt. A cosmos in small!

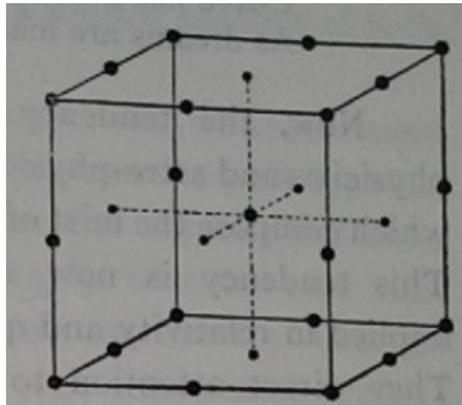


FIG.2.

The reasons for the regularity may be pursued later. What concerns us is the space. For this is the stupendous fact of reality. What is this space which out volumes the matter millions to one, even at this molecular level? More, when each molecule of sodium or of chlorine is expanded in turn to solar proportions, it also proves to be a system, again of harmonic properties made up of light-giving electrons which shine out into overwhelming space from around their central sun, the nucleus. Once more we must face the fact of space as against stuff.

Is there any guarantee that electrons and protons are simple and rudimentary? Not in the least! On *this* Shankara and Shakespeare and Schrödinger are one.

... The great globe itself,
Yea, all which it inherit, shall dissolve,
And,¹ like this insubstantial pageant faded,
Leave not a wreck behind. We are such stuff
As dreams are made of ...

Now, the tendency of western thought, dominated by physicists and astrophysicists, has been to look into the particles which compose the mist of matter for the causes of its behaviour. This tendency is now not so strong, but the new attitude implied in relativity and quantum ideas is not fully appreciated. They direct attention to the field – that is, the space. The properties and behaviour of the particles arise from the wave-nature of the space. The truth is in the wave-particles, the wavicles, or events.

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We accept this, but we assert a fact novel to physics, somewhat indicated by parapsychology, as I indicate further on. The wave-particles of molecular (sodium and chlorine) and of atomic (electronic) orders are not all. There are particle-waves of vitality, emotion, intellect and still higher orders distributed, imperceptible to physics, in the space—organized in and around molecules and electrons in the living, drifting through in the inorganic. Here we find Whitehead with us in effect. He points out in *The Concept of Nature* (p. 21):

“... if matter is looked upon as substance in space, the space in which it finds itself has very little to do with the space of our experience ... What we find in space are the red of the rose and the smell of the jasmine and the noise of the cannon. We have all told our dentists where our toothache is ... Space is not a relation between substances but between attributes.”

He proceeds to demolish the phalanx that would reduce us to physical scientific philosophy, and ignore life, by a jump to mind, that modern philosophical grab-bag. He says explicitly “what scientific philosophers do when they are driven into a corner and convicted of incoherence. They at once drag in the mind and talk of entities in the mind or out of the mind as the case may be” (p. 29). This distracts us from the job of giving a unified account of both the particles and the sensory effects.

The theosophical concept is novel, and we recommend it to Mr Whitehead as simpler than his own—a philosophical least-action! It is that the space in the crystal, molecule, atom is impregnated with increasingly tenuous and vital matter (some states of which constitute mind); that all these states of matter are atomic, even the mental grades; that this accounts for the mind-matter tendency which steals back into thought all the time; and finally that all the atoms without exception are reducible to simple (monad) entities which are the privation of reality, but whose behaviour reveals in part the properties of the Real in which they swim. The waves, in short, are the harmonic and the particles the chaotic aspect of the same Real. Since the physical aggregates contain relatively more of the primitive particles, they are comparatively unwieldy and unsubmitive to the waves. So, physically it is principally in the living that forms respond to the harmonic aspect and show symmetry, sensitiveness, and the like. At a stage between physical appearance and the Real there is (among others) a stage where waves dominate particles. Here are the Forms of Plato, idealism triumphant.

This concept of several stages besides molar, molecular, atomic, subatomic, combined with the notion of matter as finally the negation of reality, gives us the unified explanation we all seek.

Is this notion that mind, emotion and vitality are composed of atoms too, in more tenuous aggregates, fantastic? There are some singular facts wanting explanation, arising from parapsychology. We may not like to admit tea or any other tables

saturated with vitality and moving about, as described¹ by Sir Oliver Lodge in *Phantom Walls*, and elsewhere—but, of course, the only issue is, what are the facts? The work going on at Duke University in parapsychology and prompting much elsewhere will prove final for the affirmative, no doubt. Assume the possibility in advance, as we have known of telepathy long in advance of Rhine's *Extra Sensory Perception*, what then? Well, we notice that tables do not trot about just by themselves. They must be saturated by human thought and teleplasm. The interstices of a table's atoms are not normally organized with thought and feeling structures. Equally clearly, some partible people can exude into these interstices atomic particles of the psychic order of density which do make the link between the less living (late pine tree!) table and the living dead. The graphic representation is something like this, in diagram (fig. 3).

The medium, in short, by exudation of linkage materials enables the less material deceased to direct fumblingly the movements of the inert table. Hypnosis also becomes explicable as exchange of intangible or at least imponderable matter.

All this, however, is but incidental. What we would maintain is the main thesis that matter is distributed in space by harmonic process, and is increasingly sensitive as it grows finer, as well as increasingly responsive to control of the predetermined harmony, as Leibnitz perceived. Looking lifeward toward reality from our physical here, this increasing order is in clear stages interlocked—physical, psychic or radiant, soul or ideal, and finally, on the verge of reality, spiritual, formless, primitive, monads.

On this rests the microcosm theory, especially important to explain man. Redescending this series, out in space we see island universes *in toto*, then the individual galaxy, the solar system, the planet, as the four stages. In the living

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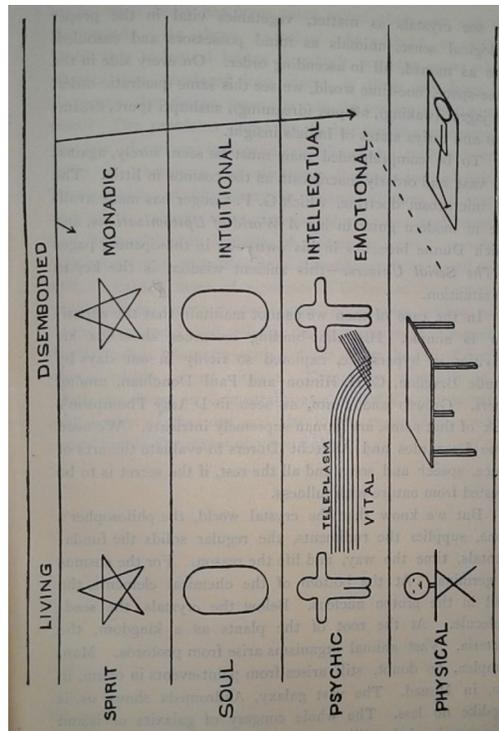


FIG. 3

A graphic representation of a psychic phenomenon.

we see crystals as matter, vegetables vital in the proper biological sense, animals as mind possessors and ensouled, man as monad, all in ascending order. On every side in the three-space, one-time world, we see this same quadratic order, the jagrat (waking), svapna (dreaming), sushupti (pure, dreamless) and turiya states of India's insight.

To be comprehended man must be seen, surely, against the vast and orderly macrocosm as the cosmos in little. The old microcosm doctrine, which G.P. Conger has made available in modern guise in his *A World of Epitomizations*, and which Dunne broaches in his own way in the opening pages of *The Serial Universe*—this ancient wisdom is the key to the situation.

In the case of man we cannot maintain that the exposition is simple. His time-binding resources show us his activities in hyperspace, explored so richly in our days by Claude Bragdon, C.H. Hinton and Paul Donchian, among others. Growth and Form, as seen in D'Arcy Thompson's book of that name, are in man supremely intricate. We need some Leonardos and Albrecht Dürers to evaluate the arts of dance, speech and song, and all the rest, if the secret is to be wrested from nature with fullness.

But we know that the crystal world, the philosopher's stone, supplies the rudiments, the regular solids the fundamentals, time the way, and life the reason. For the cosmos is germinal. At the bottom of the chemical elements, the seed in the proton

nucleus. Below the crystals, the seed-molecule. At the root of the plants as a kingdom, the bacteria. Vast animal organisms arise from protozoa. Man, complex, no doubt, still arises from point-events in ovum, in ego, in Monad. The vast galaxy, Andromeda shows us, is egg-like no less. The whole congerie of galaxies or island universes in their millions are supposed by European thinkers to be¹ what India has long since called them—an egg, the Brahmanda. As above, so below. As without, so within. Until this biological bridge is rebuilt into the scene which physics has sundered into atoms, is there any hope for European thought to penetrate into the origins of nature and man? The problems posed by Bode's law in astronomy, by the law of rational indices in crystallography, by Mendeléeff's table in chemistry, of electronic increase for valency in microphysics, of phyllotaxy in botany, of form and species and all the related issues of metal substitutions in chlorophyll and hæmoglobin in biology, of closure in gestalt (ganzheit) psychology and mandalas in the depth-psychology—all these and thousands more of elements of Order are the very same problems in sensory perception by octaves within man. Harmonic sound and colour, the vast spectrum of sensation from touch to telepathy—this order is under the veil of earthly things within us, as without. Theosophy, especially in its Hermetic form, experimentally as a way of life, is a scientific philosophy of the arts and the living, needed by a modern world lost in the mazes of mere matter.

MAN AND THE UNIVERSE

THE SELF AND THE NOT-SELF

BY GASTON POLAK

It seems very easy to distinguish the Self, that is to say, our real being, ourselves, from what is not ourselves; to distinguish our inner consciousness from what does not belong to it; but a less superficial examination of the matter shows us that it is not as easy as it looks.

If the idea of our Ego were so simple, there would not have been written on the fronton of the Delphic temple the sentence, "Know thyself." Even the existence of the Self has been questioned by certain schools of philosophy, and it is curious to note how the two great religions which were born in India have, in this respect, adopted two exactly opposite standpoints.

For Hinduism, especially in the philosophy of the Upanishads and in the Vedanta, which inspires it, the Self, the "Atman," is everything; it may even be identified with "Brahman," the world-soul. In one of the oldest Upanishads, the

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Chandogya Upanishad, in the sixth chapter, there is a very characteristic dialogue between Uddalaka and his son Svetaketu, in which all the examples conclude with the famous sentence,¹ *tat tvam asi*, “thou art That,” that is to say, thy soul is one with the All.

In the *Brihadaranyaka Upanishad*, there is a speech made by Yajnavalkya to his wife Maitreyi, according to which, if one loves one’s wife, one’s husband, one’s sons, or riches, or even the gods, it is not for the sake of these beings or things, but only for the sake of the Self, of the Atman, since the Self is everything.

In Buddhist philosophy, on the contrary, we find the opposite attitude. The belief in the existence of the “Self,” of the Ego, the *satkayadrsti*, or *atmadrsti*, is condemned almost as strongly as the real heresy, materialism. This condemnation, however, is not universal, and, in this respect, there are two schools in Buddhism: the Pudgalavadins, who admit the existence of a *pudgala*, a permanent Self, and the Skandhavadin, or phenomenalist, who deny this. For the Skandhavadin, what we call the “I,” the Ego, is only a bundle of attributes, of *skandhas*, which disintegrate on the death of the body. There are, it is true, other schools, which restore to the Ego its relative reality, in the negation of all reality – the Self is an illusion in a whole set of illusions: – which is the theory expressed under diverse forms, by the Sautrantikas or “instantaneists,” or by the idealists and the nihilists of the “Great Vehicle,” the Madhyamikas. You probably know the parable which illustrates this negative attitude:

There was once a man, a monk in fact, troubled by that type of opthalmia called “timira”: he saw in his alms-bowl, hair and flies; in vain did he endeavour to take them out. A passer-by, whose eyesight was normal, examined the bowl, and saw nothing in it, it was empty.

“What are you doing?” he asked.

“I am taking out hair and flies,” said the monk.

“But there are neither flies nor hair in your bowl,” answered the other.

The seer, exempt from the vision or the non-vision of hair, represents the Lord Buddha, endowed with the real truth, since the true nature of things is not to exist, not to be “produced.” The man with bad sight, but who has been taught by the seer, is the wise man of the Great Vehicle. The doctrine of the vacuum, the Sunyata, is the crowning point of that line of Buddhist thought.

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As a matter of fact, it seems that the Buddha agreed neither with those who maintained nor with those who denied the reality of the Self, but reserved his reply; that is to say, this was one of the numerous questions to which the Buddha refused to answer, because they were outside the problem of salvation, the problem of the chain of misery, and of the breaking of the chain.

From our point of view, we think it is difficult to deny the reality of the Self, but are of the opinion that it is a notion which is extremely relative, because there is no Self conceivable without a not-Self as a contrast and background; relative, because this duality of the Self and the not-Self varies with the evolutionary level of the individual. For the savage, the primitive man, the Self is his body, his senses, his arms and legs, the whole physical support of his joys and his appetites; the not-Self is all that is not his body. For the man who has learned to think a little, and who no longer identifies himself completely with his physical body, the Self becomes his psychic being, his desires and his aversions, his joys and his sorrows, his loves and his hates: his body does not belong to the Self, but enters the realm of the not-Self; on the other hand, this man extends the range of his Self much further than the former man, for, through love he learns to be united with other beings, through appreciation of beauty¹ he learns to respond aesthetically to scenes which would leave indifferent and untouched the man whose interests were solely centred in his body.

Then comes a further stage: this is the one described by Descartes in his famous sentence *Cogito, ergo sum*, that is, "I think, therefore I am." For Pascal: also, as we know, man is a "thinking reed." Man has learned to identify himself with his thinking principle: he has learned to dominate, by means of the mind, his body and his emotions, which are no more the kernel of his Self; and, moreover, he extends infinitely further the sphere of his actions. Through his mental self he becomes in tune with all the thinkers he understands, whether they belong to the present or to the past.

But there exists a still higher faculty. It rises within us, in our too rare moments of deep self-recollection, or of a great wave of enthusiasm; but it is constantly present with some of the pioneers of humanity, the great sages, the great mystics, etc. This faculty, which has sometimes been called "intuition," dominates reason and mind, just as mind dominates the emotions. At this level, the mind itself belongs to the "not-Self," but thanks to this higher faculty, by impersonal love, and by a wonderful attunement of his vibrations, man enters in direct communion, from within, with a much larger portion of humanity than it was possible for him to contact through the mind.

As we see, there exists an endless ascension of Selves, and not-Selves, in succession. Each time, the I, the Self, becomes a deeper and more interior reality, but, at

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the same time, the realm of the not-Self, with which the Self comes into contact, becomes larger and richer. In the light of this ascension, one understands better this passage of the *Chandogya Upanishad*:

This Self within the heart is smaller than a grain of rice, smaller than a corn of barley, smaller than a mustard-seed, smaller than a canary-seed or the kernel of a canary-seed. This Self within the heart is greater than the earth, greater than the sky, greater than heaven, greater than all these worlds.¹

A similar passage is found in the *Brihadaranyaka Upanishad*:

This Purusha (this Self) under the form of mind, being light indeed, is within the heart, small like a grain of rice or barley. He is the ruler of all, the lord of all, he rules all this, whatsoever exists.²

Today, in order to express the uttermost smallness, we should use another image than the canary-seed; we should rather say that the Self is smaller than the atom, smaller than the kernel of the atom, smaller than an electron, but nevertheless greater than the universe. And this last similitude would be invested with quite another meaning than the one it could have taken in the time of the Upanishads.

Since the universe represents the extreme term of the range of not-Selves, it may be of interest to know how modern mathematical astronomy describes this universe. Since these notions are not as yet very currently understood, it may not be superfluous to try to give here a short abstract of them.

The actual aspect of the universe is at the same time larger and smaller than formerly: larger, since the distances we speak of are incomparably greater than in the past; smaller, because formerly the universe was supposed to be infinite, by means of the imagination, the boundaries of the world could be indefinitely expanded, whereas, according to the astronomy of today, the universe is not infinite.

It is the study of the far-off spiral nebulae, a study rendered possible by means of the powerful instruments of Mount Wilson,¹ⁿ which has mostly contributed to modify our ideas concerning the world.

Each of these nebulae, when seen through the telescope (either directly, or, more generally, by means of a photographic plate) resolves itself into an immense system of stars; each one is a partial universe as, for example, the Milky Way in which our sun is situated. They are therefore called "galaxy" after the Greek word *galaxias*, milky.

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According to Eddington, the probable number of these galaxies is a hundred thousand million, and each of them contains, on an average, a hundred thousand million stars, so that the number of stars in our universe should be represented by 10 followed by 22 zeros.

How distant are these galaxies from us? If we take as a unit the light-year, that is, the distance which light, at a speed of 300,000 km. per second, travels in a year, we conclude that the nebulae we have been able to discern, are at a distance varying from 1 to 150 million light-years.

The calculation of these distances has been simple for some of the nearest galaxies. It has been found that some stars, with a periodically varying light, like the Cepheid Variables for instance, have a standard light-power, constant for a given period. If a galaxy contain a star of this type, it is then easy to calculate the distance of the star, and thereafter that of the galaxy containing it, by comparing its known light-power with its apparent brightness.

For greater distances, however, less satisfactory methods have needs been employed, and the distances assigned to the remoter galaxies are, of course, only approximate.

Stars were formerly considered as fixed heavenly bodies. We shall see that recent discoveries have greatly modified our former views in this respect.

Astrophysics, thanks to the spectral analysis of the stars, has allowed us to reckon fairly exactly the *radial* velocity of the nebulae and of the stars, that is to say, the speed at which the galaxies are moving towards or away from us in the line of vision.

For this purpose, the Doppler-Fizeau effect, of which a very simple example can give us an idea, has been employed. If an engine, a locomotive, is whistling while it comes towards us, the sound of the whistle will not only appear louder, it will also be higher in pitch. On the contrary, if the engine is receding from us, the whistling will be deeper in pitch, and this modification of the sound from the deeper to the higher pitch, enables us to calculate the velocity with which the engine is travelling away from us or towards us. A similar process exists in the case of light, but here, instead of a higher pitch, there is a modification of the colour towards violet, and in the case of a deeper tone, a modification towards red.

If therefore, the rays of a known element, in the spectrum of a star, are shifted towards the red, this fact proves that the star is travelling away from us. It is travelling towards us if the rays are shifted towards the violet.

Now, two elements, hydrogen and potassium, are found everywhere. Their spectral rays, easy to detect, are perfectly well known.

Very accurate measurements have shown that, with the apparent exception of two or three galaxies located in our almost immediate neighbourhood, all the other galaxies, all the spiral nebulae, are travelling away from us.

The astronomer Hubble has found that this speed of regression or flight of the galaxies increases proportionally to their remoteness from us. This velocity of regression is approximately 550 km. per second, for a distance of 3, 5 light-years.

If we¹ apply this law of proportion to the nebula which is situated in the constellation of Gemini, we find that this nebula is travelling away from us at a rate of 25,000 km. per second, that is, almost with the same speed as the α -particles of radium.

We need not conclude from this curious statement that the galaxies are fleeing from us, or avoiding our Milky Way as though it were an especially undesirable region. As a matter of fact, the galaxies are not fleeing from our galaxy, but from one another just as much as from us. There is a very simple explanation of this. Suppose that, without our moving from our chairs, our lecture-room were to expand to twice or thrice its present size. The seats would all be separate one from another in the same proportion, and each one of us could quite easily believe that our neighbour was moving away from ourself.

Or, observe the smoke rising slowly from the pipe of a placid smoker. When, in the air, this smoke expands, each particle of it will necessarily move away from its neighbouring particle.

And this suggests a very simple interpretation: suppose that, for some mysterious and unknown reason, the space containing these myriads of spiral nebulae, were expanding like the smoke alluded to; then each of the nebulae, like the particles of smoke, would automatically move away from the other nebulae. Does this not remind us of Gitche Manito, the God of the Redskins, the Great Spirit, so well described by Longfellow, who ruled the world smoking his peace-pipe?

And the smoke rose slowly, slowly,
Through the tranquil air of morning,
First a single line of darkness,
Then a denser, bluer vapour,
Then a snow-white cloud unfolding,

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Likethe tree-tops of the Forest,
Ever rising, rising, rising,
Till it touched the top of heaven,
Till it broke against the heaven,
And rolled outward all around it.

And so the whole universe would expand, as a gas expands. This expansion of the universe doubles the distances of the nebulae from us, according to Eddington, every 1,300 million years, and according to the French astronomer Mineur, every 2,000 million years.

It would be impossible, without a rather arduous mathematical apparatus, to explain here how astronomers account for this expansion, but we can say that the theory of relativity has to some extent foreseen this interesting fact.

The astronomy of our youth knew only Newton's law of gravitation, according to which the worlds attract each other with a force proportional to their mass, and inversely proportional to the square of their distances. But the theory of relativity provides for the existence of another force, which could be called *cosmic repulsion*, which is proportional to the mutual distances. This repulsion is entirely neutralized, or rather hidden, by the Newtonian attraction, for the distances which we generally consider, for instance, inside our solar system or inside a galaxy. But in the case of distances which reach millions or hundreds of millions of light-years, this repelling force becomes so great that the Newtonian attraction becomes practically non-existent.

The comparison of the universe to an expanding gas, or smoke, is indeed a charming similitude, but it meets with certain difficulties. The farthest galaxies we know today are 150 million light-years distant from us; however, there are no theoretical reasons for not admitting much greater distances still; and, in this case, the increasing speed of¹ regression could finally reach or even surpass the speed of light.

In order to avoid this scandal (scientifically speaking), a boundary must be put to the universe, and this can best be done if we consider the universe as a closed world, a gigantic sphere. I have given here only one of the reasons for such a solution, but of course it is not the only one.

The universe is, therefore, a sphere; but not the sort of sphere that we know. The space in which our universe is moving has at least four dimensions instead of the three (length, width and height) we know, and even this number of dimensions must be increased if we admit the continuum called space-time.

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It is useless to strain our imagination in order to try to visualize a space with four or six dimensions; it is enough to reason from analogy, and to use the words “*N*-dimensional space” as a handy notation.

Let us imagine first the sphere to which we are accustomed, for instance, a terrestrial globe. The distance, let us say, between London and Glasgow, will be represented by a very short line, and a very small surface would be sufficient to represent Great Britain. But if the radius of the sphere were doubled, the surface would become four times greater than before, and London would become much more distant from Glasgow.

For the astronomers of today, our whole universe is similarly the three-dimensional (but that is unimportant) surface of an enormous sphere, a sphere with more than three dimensions, (but, again, that is of no matter). The apparent regression of the nebulae is the result of the expansion of the space in which they are situated, and this expansion of space, in turn, depends upon the lengthening of the radius of the world-sphere. At this point, another image, even more expressive than that of the smoke, comes naturally to our mind: an iridescent soap-bubble, blown by a child at play, which floating in the air slowly grows in size until it bursts. Our universe is like a soap-bubble, the radius of which has doubled in 1,500 million years.

The radius of this bubble is today approximately 3,000 million light-years long. Of course, with the means actually at our disposal, we have not been able to explore the whole (three-dimensional) surface of this sphere. The surface known at the present time, compared with the total surface, is like the surface of France compared with the surface of the earth.

How and when has this dispersion of the galaxies begun? Here, opinions differ. For some people, it is by the spontaneous expansion of our universe. For others, (for instance, Lemaître), this expansion has been provoked by an external cause. At all events, it seems that in the initial state of things, the two opposing forces, Newtonian attraction and cosmic repulsion, were equally balanced, and that this rather unstable equilibrium was at some time thrown out of gear.

For certain astronomers, Eddington for instance, the system will go on expanding for ever. The radius of our universe will continue to grow till the bubble bursts, although one does not see quite clearly to what such a bursting corresponds, in the case of a universe. For other scientists, such as the Dutch astronomer De Sitter, our universe is an “oscillating” one. Our universe-sphere having started with a comparatively small radius, has gradually expanded, and this expansion will continue some thousands of millions of years still, and then, an opposite process will intervene,

and the universe will begin and go on contracting, and this alternation or succession of expansions and contractions will continue for immeasurable ages.

In the¹ treatise of Henri Mineur, *L'Univers en Expansion*, we find an interesting diagram, showing the various possibilities of growth and contraction, according to De Sitter.

* * * * *

Is it not strange to note that these quite recent conceptions concerning our universe are not so far distant from the most ancient and apparently most naive ones, describing our world in the form of an egg? We read in the *Laws of Manu*:

When the Lord Svayambhu, (self-existing) decided, in His mind, to emanate from His substance the various creatures, He produced first the waters, in which He laid a germ. This germ became an egg, shining like gold, and in which the Supreme Being was Himself born in the form of Brahma, the father of all beings.

In *The Secret Doctrine* of H.P. Blavatsky, (vol. I, part II), Section VI is entitled "The Mundane Egg." According to H.P. Blavatsky,

In the Egyptian *Ritual*, Seb, the God of Time, is spoken of as having laid an Egg, or the Universe ... The Mundane Egg was placed in Khoom, the Water of Space, or the feminine *abstract* Principle:... Ra, the Mighty One remains in his Egg, during the struggle between the "Children of the Rebellion" and Shoo, the Solar Energy and the Dragon of Darkness.

We see the egg also intervening in the Orphic and the Dionysiac mysteries: ... Porphyry also shows it to be a "representation of the world".

"This first-born of the World," was Dionysus, with some Greeks, the God who sprang from the Mundane Egg. Plato, in his *Timæus*, tells us that the universe is a sphere.

The importance given, in religion and symbology, to certain birds, is due to the fact that they lay eggs. Such is the case for Kalahansa, the Swan of Eternity, in India, or for the Ibis, in Egypt. Even Christians have to this day their sacred birds; for instance, the Dove, the symbol of the Holy Ghost.

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In the *Orphic Hymns*, Eros-Phanes evolves from the Divine Egg The Egg was sacred to Isis: Isis is almost always represented holding a Lotus in one hand, and in the other, a Circle and a Cross.

In the Scandinavian Cosmogony, the Mundane Egg is again discovered in the Phantom-Germ of the Universe, which is represented as lying in the Ginnungagap, the Cup of Illusion, Maya, the Boundless and Void Abyss.

In some of the Stanzas of Dzyan, the world-egg is mentioned. In Stanza III, 3, we read:

Darkness radiates Light, and Light drops one solitary Ray into the Waters, into the Mother-Deep. The Ray shoots through the Virgin-Egg, the Ray causes the Eternal Egg to thrill, and drop the non-eternal Germ, which condenses into the World-Egg.

The commentary to the stanza tells us:

The "solitary Ray," dropping into the "Mother-Deep," may be taken to mean Divine Thought, or Intelligence, impregnating Chaos.... The symbol of an egg expresses the fact taught in Occultism, that the primordial form of everything manifested, from atom to globe, from man to angel, is spheroidal, the sphere being with all nations the emblem of eternity and infinity.

Let us also quote paragraphs 10 and 11 of the same stanza:

Father-Mother spin a Web, whose upper end is fastened to Spirit ... and the lower one to its shadowy end, Matter. And this Web is the Universe, spun out of the Two Substances made in One, which is Svabhavat (self-existing).

This Web expands when the Breath of Fire is upon it: it contracts when the Breath of the Mother touches it.

And in the commentary we find:

The expanding and contracting of the "Web," —*i.e.*, the world stuff, or atoms, express here the pulsatory movement: for it is the regular contraction and expansion of the infinite and shoreless Ocean, of that which we may call the noumenon of Matter, which causes the universal vibrations of atoms.

* * * * *

This immense universe only apparently removes us from man, for it was the mind of man which actually formulated it. It has built it after its own image. Is not

man himself a universe, is he not a space in which billions of cells, *i.e.*, ofworld¹s, are evolving? And if this is true of his physical being, is it not still more true of his other vehicles of consciousness? Many poets have felt this to be so, and have identified heaven with the soul of man. Shelley says in his "Ode to Heaven," apostrophizing heaven:

Thou art but the mind's first chamber
Round which its young fancies clamber.

And a French poet, who bears an almost English name, Francis Jammes, has said:

Lorsque je serai mort, fermez-moi bien les yeux
Pour qu'au dedans je voie, enfin, briller les cieux:

which could approximately be translated:

And when ye shall have found me dead
Close ye well mine eyes:
That, from within, my Soul may see
The Splendour of the Skies.

In the Gospels, many parables are devoted to the kingdom of heaven, and this heaven is not only the paradise of the devout people, it is also the divine Self in man. And it is in this sense that the parables find their most profound significance.

The kingdom of heaven is at the same time that which is smallest and that which is greatest, and Jesus uses in this connection an image very similar to the *Chandogya Upanishad*:

The kingdom of heaven is like to a grain of mustard-seed, which a man took and sowed in his field ... which is indeed the least of all seeds: but when it is grown, it is the greatest among herbs, and becometh a tree, so that the birds of the air come, and lodge in the branches thereof.

The kingdom of heaven is a precious jewel: it is like to a pearl, for the acquisition of which a merchant sold all that he had. [Note here the symbol of the pearl, again a sphere.]

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Like to the Self, the kingdom of heaven penetrates and vivifies all things, *i.e.*, it is like unto leaven, which a woman took and hid in three measures of meal, till the whole was leavened.

Jesus even gives us a “technique,” or method, for the conquest of the Self, or of the kingdom of heaven:

The kingdom of heaven is like unto a net that was cast into the sea, and gathered fish of every kind;... which, when it was full, they drew to shore, and gathered the good, but cast the bad away.

Man is indeed an eternal fisher: constantly we cast, in the ocean of life, the net of our deeds, of our desires, and of our thoughts. Most of these material or immaterial activities are vain, and the net we draw ashore is almost empty, or filled with a useless booty. However, from time to time, we fish a feeling of devotion, a thought of understanding, an act of sacrifice, a sentiment of love, and at each such time we come a little nearer to the kingdom of heaven, to the divine Self in us.

This kingdom, this deepest Self, can only be approached by dint of simplification, of purification, and that is why, in order to enter the kingdom of heaven, we must become as little children, and lose all the complications of our actual inner life.

But above all, to become as little children—this means, having passed through a new birth, a birth into the spiritual life; and this spiritual life is nothing else than the *living* understanding of the Unity that binds us to all men and to the rest of the world. This Unity may be intellectually perceived as a universal law, a supreme synthesis of ever and ever greater laws. This road is being trodden by the man of science, and especially by the physicist. Mie, one of the commentators of Einstein, says:

The recent developments of physics lead us to recognize everywhere in nature a principle of profound unity.

But this Unity can also be felt: it is no more the mind which reasons, but love which is aglow. It is this sense of Unity which¹ made St. Francis of Assisi sing his so-called “Hymn to the Sun”:

Praise to Thee, my Lord, for our Brother the Sun, for our Sister the Moon, and the Stars ... for our Brother the Wind, and for the Air and the Clouds:... for our Sister the Water ... for our Brother the Fire ... for our Mother the Earth ... for our Sister the corporeal Death.

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Whatsoever be the chosen path, the path of the scientist or that of the mystic, man will only have accomplished his mission on earth when he has found his real Self, when the great lesson of universal Unity has been thoroughly learned, when he is able to say with the philosopher Fouillée:

In my heart shall beat thy heart and all hearts:
My throbbing shall be the throbbing of the whole universe.

GEOLOGY AND THE SECRET DOCTRINE COMPARED

BY A.F. KNUDSEN

INTRODUCTION

How old the earth really is, how long has man walked this earth "erect" and truly biped, are questions that long have troubled the minds of men.

This monograph is an effort to bring together in small compass the tradition side and the modern scientific conclusions. The traditions as to the earth's age are many and are listed here. The age of the earth as given in *The Secret Doctrine* is corroborated by the Hindu and Telugu calendars and also by modern astronomy and astrophysics.

AGE OF THE EARTH

(in 1887)

(a) According to <i>The Secret Doctrine</i> (1888):	1,985,888,607 years.
(b) According to Swami Dayanand Saraswati:	1,972,948,982 years.
(c) According to Hindu Puranas:	1,972,947,077 years.
(d) According to Telugu Calendar:	1,972,948,987 years.
(e) According to Sir James Jeans (1929):	2,000,000,000 years.

The following¹ article brings together in small space a comparison of the geologic Eras and the traditional Rounds, and shows an agreement so close as to be corroboration each of the other. *The Secret Doctrine* of Madame Blavatsky was a challenge to all intellectual men to find agreement, or disprove her claims. At least part of the agreement is shown here, and invites to a closer study. Let the reader note that the life in mineral, vegetable, animal and man, is the same, the Immortal Life, therefore

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spoken of as “man” in whatever *form* it is made manifest. It culminates in the form called man. It may clarify the idea to say, the spirit is man, the form is human.

PART I

The re-statement of the ancient traditions, as maintained both orally and through books by the Occult Hierarchy of this planet, has been promulgated through The Theosophical Society, and the principal book of that re-statement is *The Secret Doctrine* by H.P. Blavatsky, 1888. That date is very important. But the teaching began in 1875 and she had been up in Tibet.

The life of the planet is traced in *The Secret Doctrine* as a great life-wave going around a Chain of seven planets seven times, and shows that the present stage of this planet is the middle of the fourth Round with three more Rounds ahead of us. Between these Rounds there is a period of quiescence of equal duration. During these, life was not extinct but at a very low ebb, thus maintaining a root-stock that would evolve rapidly in the new Round into new types. *The Secret doctrine* tells us specifically what this sort of life was at each stage on the journey.

The science of Geology growing out of a marvellously careful study of the rocks, the chemistry, the physics, the zoology of this planet and its solar system, gives us a remarkably accurate picture of the previous life of the planet. We find the life divided into four Eras, and as we place these records side by side there is a remarkable correspondence. These parallel columns are shown in the table on pages 56 and 57.

The period that geology calls Archaic is also known as Azoic, “without life,” but towards the end of it life might have existed, and that period is called Archeozoic. This is an exact parallel with the first Round. The second Era is named by science the Proterozoic; in it the world began to cool off, life began to show, and at the end of it there are some definite fossils showing fairly solid shells of various types of molluscs, primitive plant life shows as algæ, etc. But even at the end of this Round the earth was very hot. Science puts the close of this Era at a very remarkable upheaval of the earth’s crust. That comes in the Cambrian Period and separates now the Upper Cambrian or Precambrian; this ends the Proterozoic Era and can be accepted as the end of the second Round. The next group of Eras are the Paleozoic and Mesozoic; taking them together they correspond closely with the third Round. The rock revolution here called the Alpine or, in America, Laramide Revolution coincides perfectly in every way with the description of the fourth Round. From that time to this present time, we have the Cainozoic Era which obviously is not finished. This is our fourth Round and we are in the middle of it. There is some argument though as to how much of this Era remains to us.

Let us turn now to the chronology. *The Secret Doctrine* gave the age of this planet as very close to 2,000 million years, and in this we are corroborated by Sir James Jeans, who says, in *The Universe around Us* (pp. 148-152), that "if we wish to fix our thoughts on a round number, probably

Table¹ showing (a) Cycles in Geological History, (*not drawn to scale*) and (c) Occult

< insertimage¹ a.Table.jpg >

(b) Approximate Duration of Eras and Rounds Statements and Scientific Description.

< insertimage b.Table.jpg >

2,000 million years is the best to select." This gives us corroboration also from Professor Holmes and others. So the Proterozoic Era and the second Round began about 1,200 million, the Paleozoic Era and the third Round began 640 million, and the Cainozoic Era and the fourth Round began 50 million years ago.

Although in not exact agreement, these Rounds and Eras coincide far too nearly to be mere accident. Occult and scientific authorities agree as to the age of the earth through the same² series of cycles and rhythmic changes; and the durations of the Rounds correspond fairly well with the definite geologic Eras. The difference seems to be due to science trying to follow time-calculations while occultism follows the drastic changes in the types of the living forms. A great many points such as the relation of the moon to this planet coincide closely, though perhaps occultists would differ from the scientists as to how the earth was separated from the sun "in a nebulous state." As to the great heat in the Proterozoic Era or second Round which began about 1,200 million B.C., the earth cooled off rapidly. Metals (for instance, copper) became liquid, then solid, silicon burning at a great heat produced granite, and thus in every way rocks were formed and the earth became habitable. H.G. Wells says, "Passing from the Proterozoic to the Cambrian is like passing in human history from a time of shadowy legend to one of well-preserved written record." In other words, the rocks from that time to this have been tilted, raised up into mountains and eroded, but remain the consecutive pages of a book, and in these the fossils are as written words.

The third great life-span includes the Paleozoic and Mesozoic Eras and covers about 550 million years. In this the animal form evolved from the molluscs to the worm, from the worm to the vertebrate, as fish; then, when the plants of the coal

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measures took the carbon out of the air, the first land animals appeared, even lung-fish appeared, and we still have saurians that can live in the air or under water at a moment's notice, the newt.

Through the Upper Carboniferous, the Permian and especially in the Triassic and Jurassic Periods, the fossils show some ten thousand species of plant and animal. An enormous change from the Paleozoic types comes with the Permian Period. The Triassic forms are quite different from the previous fauna. Gigantic saurians abound; marsupial mammals are very numerous. Birds improve in form and lightness, but are as hideous as dragons.

Towards the end of this Round, the last third of the Mesozoic Era, we find the Cretaceous Period, an enormous series of sedimentary rocks, all containing lime or even pure chalk. It took animals to get the chalk out of the water. The tiny creatures evidently cleared both fresh water and the oceans of these immense quantities of chalk. But even some larger shells, the nummulites, form enormous beds of nummulitic limestone of this period from the Alps to the end of the Himalayas. The fossils of these cretaceous rocks show that an enormous fauna, of creatures large and small, diminished rapidly and died out at the end of the Mesozoic. With that came the rock revolution that raised the Rocky Mountains and the Alps. This is one of the periods when the life-wave passed from this planet to another globe of the Chain for a considerable period and returned; with that return we have a new era. The time as stated above was from 43 million to 60 million B.C. (calculated by Professor Schuchert).

The agreement between the facts is complete, the disagreement is in calculating the time, so without doubt Science and Theosophy can come together on this point. The records are there, it is merely a matter of agreeing on their interpretations. The table as given tells the whole story. Science and Theosophy both believe in cycles of evolution and in the gradual evolution of form into more and more complex creatures from Protozoa to Man. We also recognize the phenomena of the present human race, from the naked savage, as in New Guinea, to the genius of music or mathematics, art or science.

The next¹ question is, how does intelligence evolve? We will leave that for others to present.

There is one point in the study of evolution that we must touch upon here. Scientists are prone to think that one start is enough. But there are seven temperaments, and each had its form in matter right from the start. We will discuss this fully, later on.

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An important phase is the closing of the Mesozoic Era. Its third and last period is rightly called Cretaceous, for lime is the characteristic of the rocks. Lime is taken out of the water and the air and put safely away in solid form. This period is in great evidence all over the world, but reaches its greatest thickness of strata on the Pacific coast. In Northern California, in the Chico Period, these strata, four or five miles in thickness, extend from the Pacific coast almost to the Rocky Mountains and run some eight hundred miles north over the State of Oregon as well as California. These strata are, like the strata of the Permian Period, almost completely devoid of fossils. Again, we have the phenomenon of approximately ten thousand species dwindling to three or four hundred. This period is closed by an enormous revolution known in America as the Laramide (indicating the rise of the Rocky Mountains) and in Europe as the Alpine which really can be traced from France across Southern Europe, Asia, into and through the length of the Himalayas. This crumpling of the earth's surface can probably be traced to the Malayan Peninsula and the large islands, southward to Australia. H.G. Wells speaks of this in his *Short History of the World*, and he says, "Truly there is a veil here still, over even the outline of the history of life." The scientists are all at a loss as to the reason for the vanishing of the age of reptiles. The Dinosaurs, Pleisiosaurs and Ichthyosaurs and Pterodactyls have vanished. Some say, "The cold has killed them." The occultists knowing there is an Inner Government of the world see another *Pralaya*, "withdrawal of life." The latter end of this Cretaceous Period running along until, without doubt, it is the Eocene Period, is a very difficult record to unravel both for the geologist and the palæontologist.

There seem to have been a large number of separate oases, where life went on gradually to its end and making very disconnected records. These are scattered all over America, Europe and Asia, and are too numerous to mention here.

But suddenly we come, as in the Triassic, into a new world, the Eocene, the first period of the Cainozoic Era. First of all entirely new shell-fish, new plants, new fishes, the vanishing of all the old types and the appearance of new. The animals are all marsupials, but the true mammal comes rapidly into the scene.

There are four more periods, the Oligocene, the Miocene, the Pliocene and the Pleistocene in which we are now. First, the mammals in great quantities; and then suddenly man, putting all other interests into the background. I think we all agree that 50 million years is about right for this part of the Cainozoic. The occult record says that we are half way through the fourth Round. So in 50 million more years man will have learned to think and begun to understand.

The average man today, as far as the intelligence goes, is probably the middle class of China, but every nation has its quota for the lowest as well as the highest.

Except for a few high mountain-peaks and a large area in Labrador, the surface of the earth is covered with stratified rock.¹ We have an unbroken sequence from the earliest, the Algonkian Period of Canada, right down to the present day where the great rivers are depositing mud into all the known oceans. These deposits in the China Sea, the Gulf of Mexico, the Baltic etc., when they come to the surface and can be studied, will be read by the geologist of the future who will carry on where we leave off. The total thickness of this stratified rock, if now piled one on the other like leaves in a book, total something like fifty-two miles. But some are very thin in one place and very thick in another. The Miocene strata, for instance, near the Tehachapi Pass in California, where some of the three-toed horses have been dug out, are only eight or nine feet thick; in other places they are several thousand feet. But everywhere the line of communication and sequence of formation are unbroken.

The highest mountains are about six miles high, practically the same as the deepest depths of the sea. So we know very little about the eight thousand miles of rock that forms the planet. Is it solid? Probably there are great cavities. Could it be hot enough to be liquid? Evidently volcanoes are very superficial. It is probably 600 million years since any land mass of any size, to say nothing of a continent, could float solid on a liquid core. That any existing continents have moved any appreciable distance, since Proterozoic days, seems impossible. The geology of the Andes alone refutes it. Imagination is a very valuable faculty. It helps us to see ourselves as others see us. But the occult tradition speaks of land rising and falling,¹ speaks of the waters of the ocean crowding up to the equator and smothering the land *when the rotation of the earth on its axis was rapid*, and it speaks of the waters going back to the poles when the rotation slows down. But the ancient tradition also speaks of the earth changing the direction of its axis and the poles moving round. This is corroborated by fossils in Greenland showing a tropical climate, and glacial moraines in South India and Madagascar doubtless indicating a South Pole somewhere between Madagascar and West Australia. Then we have the sinking of Lemuria, the continent of the Miocene Period, and then quite recently the sinking of Atlantis. These sunken continents are being merely held in reserve for a future time when man can live amicably with man; and wisely so. If they were to come to the surface today there would be a great fight for their possession. [See "Archæology," pp. 78-79. — ED.]

Was the sinking of Atlantis a catastrophe? No, it brought the catastrophe of man putting greed above reason to an end. It is all in a great Plan.

PART II

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THE SEVEN RAYS AND THE EVOLUTION OF THE SPINE

Occultism has found, by experiment, a rhythm of sevens running through all manifestation of life and form. Therefore it claims that life started out in seven sub-streams from the source of life which is Light and which is also the source of matter. All religions tell of these seven sources. They are "the Seven Spirits before the Throne," or the seven Archangels. They are called the seven Rays, making not racial but temperamental differences of capacity, quality and characteristics among¹ men. These are shown in every plane of nature and in every form of matter. They are generally known as the ruling Ray, the teaching Ray, the philosophic Ray, the art Ray, the scientific Ray, the devotional Ray and the ceremonial Ray; the last is also the Ray of organization or method.

The Rays are identified among crystals, as cubic, tetragonal, orthorhombic, monoclinic, anorthic, hexagonal, rhombohedral. The temperamental quality is claimed, however, by an expert, in jewels as: 1-diamond, or rock crystal; 2- sapphire, or lapis lazuli and turquoise; 3-emerald, or jade, aquamarine, etc.; 4-jasper, or chalcedony, agate, etc.; 5-topaz, or citrine, etc.; 6-ruby, or tourmaline, garnet, etc.; 7-amethyst, or porphyry, etc.¹ This explains the powerful charm of the gems, and their differences in effect on the wearer.

The identification of the Rays in the vegetable kingdom has never been made, and preparation for such a task would be a task in itself, requiring the science of a botanist and of a herbalist, as well as a keen intuition.

Among the mammalia, Professor Ernest Wood has done some work, and Mr Leadbeater gives a list, with the crystals, as above mentioned. These are, the horse, the elephant, the dog, the cat, the ape; no authority so far has mentioned more than these five, yet the Belgian hare is spoken of as very near to human self-consciousness. On achieving the full human individuality, the Ego impresses all his successive bodies with his individual uniqueness, in any race.

If we adopt approximately 50 million years for this fourth Round, we have, say 43 million years for the change that has taken place in this era. It is also natural to assume that man began quite early in this era; but what sort of a thing shall we look for? The races of men that we have today make no specific difference in form, or in any way that science can consider as indicating a different species. Scientifically all men are one. The one Genus is the one Species; *homo sapiens*. All the evident differences are mere variations. But in all the animal genera there are a great many species, as for instance the European horse, the Arab, the Zebra, the Quagga, the Ass. But the horses are all

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one, whether of Asia or Europe, the speedy race-horse of England, the huge 2,100 lb. draft-horse of Flanders, or the 300 lb. Shetland pony.

But between the fairest Scandinavian and the blackest Negro, the tallest Mongolian and the shortest Negrito, there is nothing to indicate a real difference. There are differences of course. You can tell them apart. But, let me emphasize that the differences are spiritual differences—differences of intelligence, of understanding, of cultural values, and of discrimination.

Let us now see what can be found to indicate the possibility that there are seven distinct types in each kingdom of nature.

What is the “inheritance” of man? Science, through its spokesmen, has assumed that all that lives came from but one single stock. The ancient tradition used a great variety of beginnings, and claims that the number seven is a key to the understanding of evolution. This predicates seven varieties of life-vibration, the Rays, producing seven varieties of cells at the very beginning. These naturally divided in complexity until finally each developed its vertebrate form, then the reptilian form, and finally now the mammal.

The evolution of the bone-frame is one of the most interesting subjects of study—first, just a shell-fish, a bony protection; then, proper means of locomotion and the protection of the vital organs. Look at the human skeleton, and you will find that there is a basket of bones protecting the organs¹ of intelligence. The skull protecting the brain, the glands, the organs of perception—the eyes, the ears, the nose, etc. The spine is just a conduit protecting the line of communication. But the chest is a huge basket of bones very carefully worked out, very carefully attached to the spine without interfering with its continuity. But there we have the organs of individual life: the heart and the lungs, the liver, the spleen, the stomach, any number of glands, etc., but the spine runs on downward and ends in the third basket, the pelvis, very much as it begins at the skull. The pelvis is very much simpler, harder, stronger. It protects many vital functions, but it is also the framework for locomotion and carries all the weight of the body; within it nutrition takes place, and also the great miracle providing for the continuity of the race, the life of the form—the birth of the young. Yet all that seeming trouble of parturition and lactation really saves the parents a great deal of trouble. The longevity of the race too is a very large factor; among men five generations can overlap; among animals seldom more than three; among insects, the parents are generally dead before the eggs have hatched out; and among some, like the mosquito, the first act is to lay an egg, so as to be sure that the breed is propagated.

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Now the germ of the mammal, or the egg of the insect, is just a cell, and primitive creatures are just mere cells. Why then insist that we all started from one and the same cell when life started on this planet? I do not know how many varieties of cell-life the microscopists have discovered up till now. My latest information is that there are something over six hundred varieties of cells. Other questions arise: are those cells going to stay in that condition endlessly, and are they all descended from father to son for 900 million years?

We have not seen any cells so far hatched out of "nothing," but there was an Archeozoic time when the same force that changed mineral from a disorganized condition to the organized condition of the crystal, began to organize matter as a cell. The tradition that organic life started in seven different places, in seven different types, is no more fantastic than the theory that all started from one, though started somehow.

However, let us trace out the origin of the spine. In the Paleozoic Era already we find the complete bony structure in the Carboniferous Period, skull, neck, chest, pelvis, arms and legs, and a very long tail. Previous to that we find fish of all kinds with bones—hard bones; previous to that, soft bones—cartilage. Even today the sharks have no hard bones. Then we find soft creatures preceding all those, and yet indicating a series of rings held together—muscular rings. Their proper type is distinguished today in the genus *Annulata* or earth-worms—a very simple structure: a head and a mouth, and the beginning of a nervous system at one end; a long stomach or intestine, a few small organs, organs of elimination, and that is all. And yet there we have very clearly the muscular beginning of that which is the soft bone of the shark. May we say "the soft bones hardened" when finally we have the very hard bones of the present day? Now let us study the remnant of those having muscular rings as known to the zoologists at the present moment. Is it impossible to believe that new cells began a new type, at least for the mammalia, on this planet, at the dawn of the Eocene Period, and has produced Man, in the last 5 million of 43 million years? Without doubt the segments of the bony system in the backbone of all quadrupeds must be traced back in evolution to the worm-form with the segmentation of the muscular system. This worm-form is probably the earliest type that can be distinguished in form, previous to that it would be too primitive to identify as¹ the forerunner of the vertebrate form, and it is right here that the ancient tradition calling for seven forms claims attention, because the seven varieties of temperament seen in all forms and in all consciousnesses must have started from the very first as seven independent beginnings. I will not call this point a point of creation. The creation of the seven varieties or Rays of temperament, which run through the whole of the life of this planet, begins on the plane of abstract or causal mentality. It is here that Goethe found his "Urbild," and there we find it today, that

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archetypal fundamental plan that allows the possibility of almost endless variation. But each one of these Rays had its own appearance as a first cell. Now to return to our worm-forms, the Annulata; we find now quite a number of zoologists studying these in the now-living species, and I must acknowledge my indebtedness to Mr H.H. Wilder for most of my information hereon.

There are a number of claimants. First, we have the family of Nemertians. Geologists see there the possibility of development into the bony structure. Then we have the earth-worms, or the Annelids, which again have a very full claim. Perhaps the best claim of all is in the genus *Amphioxus*, but there is another good family, the Selachians. The large family of Tunicates also has very good claims, because of the evidence presented in the young forms that are true worms. But there are other and perhaps more complex worms that also throw some light on the question of who the ancestors were of those who have bones. The best of these I put as No. 6, the *Balanoglossus*. For No. 7 I suggest the genus *Harrimania*, though these two are said to be allied. These are all separate genera, but though they are already so primitive, their ancestors must have been something else that looks quite different.

It is true that in the present Round, the fourth, we have traced an unbroken line of skeletal evidence back, period by period, to the Eocene times. The horse was then a little creature no bigger than a rabbit, and some Shetland ponies are today no bigger than a mastiff dog. But the Eocene type of horse had five toes, and it only uses one today.

What I mean to ask is this, must we trace the vermian forms back to the Cambrian Period? May we ask, did not the Eocene horse, or Man, start from an Eocene cell? At what stage between cell and mammal does a genus begin?

The struggle to prove the assumption that all forms began from one source is quite an unnecessary one, and it is strange that more scientists have not abandoned it. If one origin, why not several? We have ninety-two varieties of chemical elements. We have, as I said above, something over 600 varieties of cells. Any one of these may be the forerunner of a new genus in future ages.

In order to find time for our first worms to develop, it is more reasonable to assume a number of origins—at least seven, rather than one. The criticism may be made that if more than one, then why stop at seven? That is all right. We have more than seven planets, I admit. But, like Goethe and many others, I see the Archetype, and for fundamental variation seven seems to be the number for this planet, just as five seems to be the number of digits in hands or feet. Of course, there are exceptions; we have the octopus with the twice four, but are they all legs? There are aberrations for which we cannot perhaps give a reason, but five is a very well proven number. Then seven for the Rays, culminating in the seven great temperaments of men, which have

been given as the ruling type, the educator, the philosopher, the artist, the scientist, the devotee or worshipper, the methodist or systematizer. We find all these men necessary for any real large organization of¹ men. Anyway, the ancient tradition sees seven types, and therefore calls for seven origins.¹

WHENCE INTELLIGENCE?

The above paragraphs deal with the evolution of the animal form. Hand in hand with that evolution of form, from simple to complex, must follow the evolution of intelligence requiring a greater and greater brain, and we find that is true. Even the most gigantic creatures of the Mesozoic Era had, in comparison, a very small brain, and the enormous saurians of today have a very small brain compared to a dog or a cat; while the human brain has a very much larger proportion of the total weight of the man, and an even still greater proportion of the space that man occupies, comparison by weight being somewhat misleading because of the light weight of the brain compared to the cavity it occupies.

How intelligence comes up from the mineral to the highest animal, science does not show. The mammal integrates all the forms of the past; all the intelligence too. Each organ is a tree rooted in the blood-stream, with its own fibre, sap, colour, use, duty and place. The claim that there is a direct blood-relationship of every animal type of the past with every animal type of today is a very difficult thing to believe and impossible to prove. Are those mere waste, scrapped altogether, purposeless? In fact, most of our scientists are back again to the one-origin idea. Thus, on page 37 of *The History of the Human Body*, by Professor H.H. Wilder, we find the type called "Pantotheria" given as the immediate ancestor of the marsupials as well as all the mammals of today, thus giving to all the various types called Prototheria no progeny at all—and imagining all the various types of Eutheria, the most marvellous deviation and variation from the one root.

The fact that some groups, like that called "Edentata," are confined to one continent (as these have always been exclusively American) would rather help the idea that some forms originated in one part of the world and some forms in another. But I am not inventing a new scheme. I am merely laying two histories of evolution side by side. And yet we have one more rather startling theory to present, the "descent of man."

Of course, most of our friends who read this monograph are acquainted with the Biblical story as given in Genesis, and interpreted in the last two thousand years and translated into many languages, as an independent and correct theory. What I am

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presenting as the ancient tradition comes from an entirely different source (at least different in the last two thousand years, as far as the Bible is concerned). This tradition finds a very close parallel in the Puranas of India and in the scriptures of both southern and northern Buddhism. We will leave these traditions on one side and proceed with our story.

Up to the highest evolution of the animal form the ancient tradition holds with science even in every minute detail. It is based on an absolutely complete study of all the evidences and denies none of the evidences that science has produced. But it does differ from most of the scientists in their interpretation of what signifies, and that difference lies in the assurance that there is body and soul, and not merely body alone, concerned in the evolution of material form. It just depends on the power of the observer to observe. One sees matter only. The other sees spirit at work manipulating matter. So, while the materialist sees only the evolution of form, the spiritual man, the religionist, insists on the hand-in-hand evolution¹ of life and form, life organizing matter and producing form, and finally producing a form that can present intelligence through form, that is, *a form whose actions show intelligence*. Intelligence became first visible in the plant, and then by rapid stages of progress through the animal to man.

But, while the materialist says, "Man is only a thinking animal," the ancient tradition predicates an entirely new creation for the forms we now call the human form, man. Every great man comes to the threshold of that belief. England's great philosopher, Herbert Spencer, began organic chemistry with the crystal, but Charles Darwin and the rest of them would not accept that. Darwin saw in man the evidences of the forms of the previous eras, and the last sentence of his famous book *The Descent of Man* is, "Man still bears in his bodily frame the indelible stamp of his lowly origin." No, it is the stamp of his Divine Archetype. Yet later on his equal, Huxley, said something that reads like this, "Perhaps man is a part of the consciousness that made the universe." In other words, he began to see what the ancient tradition always claims, that is, that the intelligence of God is by means of His own inner power and immanence in matter, forcing matter to take a shape and play a part that eventually, not now but later, when humanity is made up of perfect men, will bring "the Kingdom of Heaven" upon earth, and "God's will be done on earth as it is in heaven." Of course, this is a new interpretation of the idea of "redemption," but a logical one. Evolution will achieve it, Darwin is its prophet.

To return to our story of the origin of man, the animal produces the intelligence that becomes man; but the form is helpless – not only speech but many other activities are impossible. The animal kingdom will not be ready to build and live in a human body till the end of this era. The human souls are those that were perfected to the

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human stage before the Eocene Period began. A new form was demanded. Those of an advanced stage were able to produce and materialize a human body very close to the archetype. How many of those workmen there were, we do not know. They were Supermen, and only took part for a short time, geologically, in the founding of the human race. In other words, there were many Adams.

The form being pretty well established, it became necessary and economical to pass the building power along, for the future – thus the separation of the sexes.

It is said that the human body at that time was very plastic, huge in size, *i.e.*, about twenty-seven feet tall, and so they became male and female. Man is an entirely new line of evolution from a new and unique source. Why? Because the human mind has the power of causation, which the other has not yet.

THE PRALAYA

Another very interesting assertion of the ancient tradition is that the Life Force occupies this planet, or any material planet, in a succession of waves that fill the planet with living forms and then recedes; the Life, the active principle, thus taking a rest on the mental plane for a long period – equal to its period of manifestation in form. As we have had four of these, we have come through three of the periods of cessation of life and a new beginning.

This ancient tradition adds one more item that must not be left out: the theory of the relationship between intelligence and the physical body. Without this, the theory of evolution fails to show how our intelligence is passed on and on, from era to era, from race to race, from generation to generation; and that is the theory of reincarnation. Let us look at it squarely,¹ honestly, without prejudice. It answers most of the philosopher's problems as to heredity, adaptability to environment, and improvement in every way. It is essential for any theory of development for intelligence. For the individual man it takes away all the questions of hardship, of injustice, shows a law for good and for evil, for high and low, for genius and idiot, and it has, besides, the evidence of a great number of authentic cases of people remembering what they were in their past life or in many past lives.

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ARCHÆOLOGY

BY G. NEVIN DRINKWATER

INTRODUCTION

MAN is very old; science has long been prepared to think of his antiquity in terms of a million years or more, and if certain flint implements from France are of Miocene Age as some authorities are prepared to accept, modern estimates of man's age will be some ten millions of years or even more, thus approaching the same order of magnitude as that of the occultists.¹

Though both authorities, eastern and western, may be said to exhibit some measure of agreement as to man's age, it is quite otherwise with regard to the age of civilized man. The occultist speaks of the Golden Age of Atlantis one million years ago,² but western archæology would be reluctant to concede that there was any civilization worthy of the name even 11,500 years ago,³ yet this, according to the occultist, but represents the closing stages of the civilization of¹ Atlantis, the final remnant of which, Poseidonis, is stated to have sunk beneath the waves in 9,564 B.C., just over 11,500 years ago.¹

There are several reasons for this discrepancy. Western archæology is obliged to accept the existence of only those civilizations for which there is direct evidence such as ruins or reliable literary sources. Without some objective evidence there would be no limit to the hypothetical civilizations which could be invented, thus violating the golden rule of science that causes are not to be multiplied beyond mental necessity. It is highly probable too that remains of civilizations of exceedingly high antiquity would in most cases leave little or no trace today. Metals if known would have rusted away, and

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buildings would have disappeared. Pottery, we know from Neolithic and pre-dynastic Egyptian remains, can remain intact for at least 7,000 years, but it is a moot point if it would remain intact for 70,000 years, still less for 700,000 years, even in the exceptionally dry and otherwise favourable conditions in Egypt.

Furthermore, though occult researches suggest that during the period from 70,000 to 11,500 years ago, Atlantis, Central Asia and India² have been among the principal cultural centres, comparatively little is known of these areas by archaeologists. Atlantis is obviously no longer accessible, and much of Old World archaeology has been concerned with Europe and the Near East, Central Asia and even India being little known archaeologically as yet, so far as really ancient times are concerned.

At the same time, as we shall see, archaeology and its hand-maiden geology are not entirely silent on the data supplied by occult research, and clairvoyant research into the past cannot be dismissed as a mere will-o'-the-wisp. There are grounds for believing that in the next half-century sufficient confirmation will be forthcoming to require the serious consideration of the scientific world, and that eventually the use of trained clairvoyance will be generally recognized as a powerful means of investigating the past.

The writer has already attempted a brief survey and comparison of the occult and scientific approaches to the study of pre-history in *Corroborations of Occult Archaeology*. In what follows it is proposed to bring forward new evidence of the sinking of Poseidonis approximately 11,500 years ago and to review some of the more important points raised in *Corroborations of Occult Archaeology*. The scientific proof for the existence of the prehistoric Gobi Sea mentioned by occultists will be studied; also the evidence for the remarkable and ancient Sumero-Iranian civilization, whose peoples had originally migrated from the shores of the Gobi Sea to Mesopotamia and Iran, and further that for the prehistoric Arab civilization in East Africa. It should be emphasized that the scientific evidence was forthcoming many years after the occult investigations were published. The evidence for Poseidonis and the Gobi Sea is of a geological rather than of a strictly archaeological character, but the clairvoyant investigations make such frequent mention of Poseidonis and the Gobi Sea that it is necessary to examine the evidence for their existence if any serious attempt is to be made to assess the value of occult archaeology.

Poseidonis and the Gobi Sea, as they were 75,000 years ago, are well shown on the accompanying map, fig. 1. The map is a reduced copy of the original published in 1896 by W. Scott-Elliot from data supplied by C.W. Leadbeater from occult sources.¹ It represents the world 75,000 years ago and¹ the approximate configuration until the sinking of Poseidonis in 9,564 B.C.

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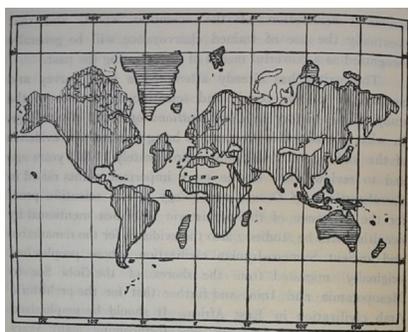


FIG. 1

Map drawn by C.W. Leadbeater based on clairvoyant investigations. Showing the world 75,000 years ago but giving the approximate configuration until the submergence of Poseidonis in 9,564 B.C. Published in 1896 by W. Scott-Elliot in *The Story of Atlantis*. (Reduced.)

THE SINKING OF POSEIDONIS IN 9,564 B.C.

Before proceeding to discuss the date of the sinking of Poseidonis it would be well to review briefly the views held by geologists and others as to the possibility of sunken continents.

During the third quarter of the last century most geologists, following the lead of Dana, Hopkins and Lyell, believed that the earth was solid to great depths and that, apart from minor changes, the oceanic basins and continental masses had occupied their present positions from the earliest times.

In the last quarter of the century a change became apparent. The older view was still held by many but such authorities as Sclater, who coined the name "Lemuria" for the continent in the Indian Ocean,¹ Blandford, Suess, and the famous naturalist Alfred Russell Wallace, at one time a member of The Theosophical Society, had through prolonged study of the distribution of living and extinct forms of life become convinced of the existence of lost continents. Though, on the whole, attention was drawn principally to Lemuria rather than to Atlantis.

Since 1910 a revolutionary view has been put forward by Alfred Wegener and others. On theoretical grounds it is believed that the solid crust is not so thick as had been formerly supposed, and that the continental masses actually float on the liquid or viscous core. Wegener suggested that the geological kinship of the Old World and the New was not due to former land bridges, but that they had originally been joined together and had then floated apart and formed the Atlantic Ocean. Though this hypothesis has received some distinguished support, many geologists assert that it is

based on insufficient and discordant data, whilst mathematicians assert that the forces available make large horizontal movements of the continental masses quite impossible.

Of those who do not accept Wegener's view some prefer to await the accumulation of further data before coming to a decision, while others such as Schuchert and the late Von Ihering have definitely committed themselves to the existence of Atlantean and other land bridges. Schuchert supposes that¹ the land bridges were relatively small, thinking as he said that it would be "easier to sink smaller continental-like masses than larger ones." Von Ihering on the other hand, in harmony with the occultists, demands the existence of large continental masses in both the Atlantic and the Pacific.¹

Opinions vary as to the geological age of Atlantis, but Termier, Scharff, Simroth and Hull believe that it may have persisted as late as the Ice Age.² This brings it into the range of the period represented by the map. The map is dated 75,000 years ago, but geologists can say with confidence that the Ice Age ended considerably later than that, about 25,000 to 30,000 years ago.³

It should be pointed out that though there are authorities who support the Atlantean hypothesis, this is only a partial approach to the occult statements, because it is not believed that any prehistoric civilization is old enough to have been influenced by Atlantis even though the latter should once have existed. It is very doubtful if any archæologist would believe that 11,500 years ago man had already built boats capable of crossing the Atlantic, even with the help of Poseidonis as a half-way house. Here, it must be recorded impartially, is a point at which Theosophy and Science do not yet meet.

Science might concede that granting the presence of land bridges, primitive men may have used them long before there was any kind of civilization, but this, at the present stage of scientific knowledge, is *terra incognita*.

Having thus prepared the ground, let us now turn to the evidence for the sinking of Poseidonis.

All over the world ancient sea-beaches above present sea-level may be seen. In some cases a series of these one above the other may be observed representing successive movements of land or sea. The study and co-ordination of these beaches is an exceedingly complex subject. It has engaged the attention of many geologists and is yet far from complete. For instance, the elevation of the land or the lowering of the sea

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would at first sight produce the same results—the emergence of a beach, but nevertheless it is possible in some cases to distinguish between them.

The subject has been treated in masterly fashion by Professor R.H. Daly, of Harvard University, in his recent book *The Changing World of the Ice Age*. He points out that following a suggestion first made by him in 1919, it now seems established that during post-Glacial times, that is during the last 25,000 years, there was a sudden lowering of the oceans by about six metres.¹

Professor Daly discusses various hypotheses to explain this lowering but admits that they lack full support.² (Older changes of sea-level due to the expansion and contraction of the ice caps during the Ice Age, alternately locking up and liberating vast quantities of water, do not concern us here.)

The sudden sinking of Poseidonis in 9,564 B.C. affords a simple explanation. As it sank, the enormous volume of water which rushed in to take its place must have produced an immediate world-wide lowering of sea-level. It is possible to calculate approximately how much this would be, and it is found that the calculated lowering of sea-level through the catastrophe of 9,564 B.C. is of the same order of magnitude as the observed one. The details of the calculations will be found in the Appendix. Observe that if the occult statements¹ are correct then such a lowering of sea-level *must* have taken place in post-Glacial time, and that it *must* have been of the order of magnitude noted.

It will be seen that geologists are not able to date this lowering of sea-level more closely than to say that it took place in post-Glacial times, *i.e.*, during the last 25,000 years. Daly is of the opinion that it was about midway in post-Glacial time, which would bring it into general agreement with the occult date.¹

There is, however, evidence of a different kind which supplies a closer approximation to the sinking of Poseidonis.

On theoretical grounds there are reasons to suppose that if a portion of the earth's crust were depressed, the land surrounding the area of depression would be *elevated* to some extent.² This is a local effect and is quite distinct from the world-wide lowering of sea-level just discussed. It follows that if a large mass such as Poseidonis sank in the Atlantic about 11,500 years ago, there is a probability that some of the lands near the area of disturbance will have arisen at that time. It has been shown in recent

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years that this is the case in Scandinavia, but it is not yet possible to date similar phenomena elsewhere with the same precision.

The accompanying curve, fig. 2, illustrates the emergence admirably. It has been reproduced after the original by Nansen¹ and was first published in 1928.² So far as the writer is aware the general conclusions have not been

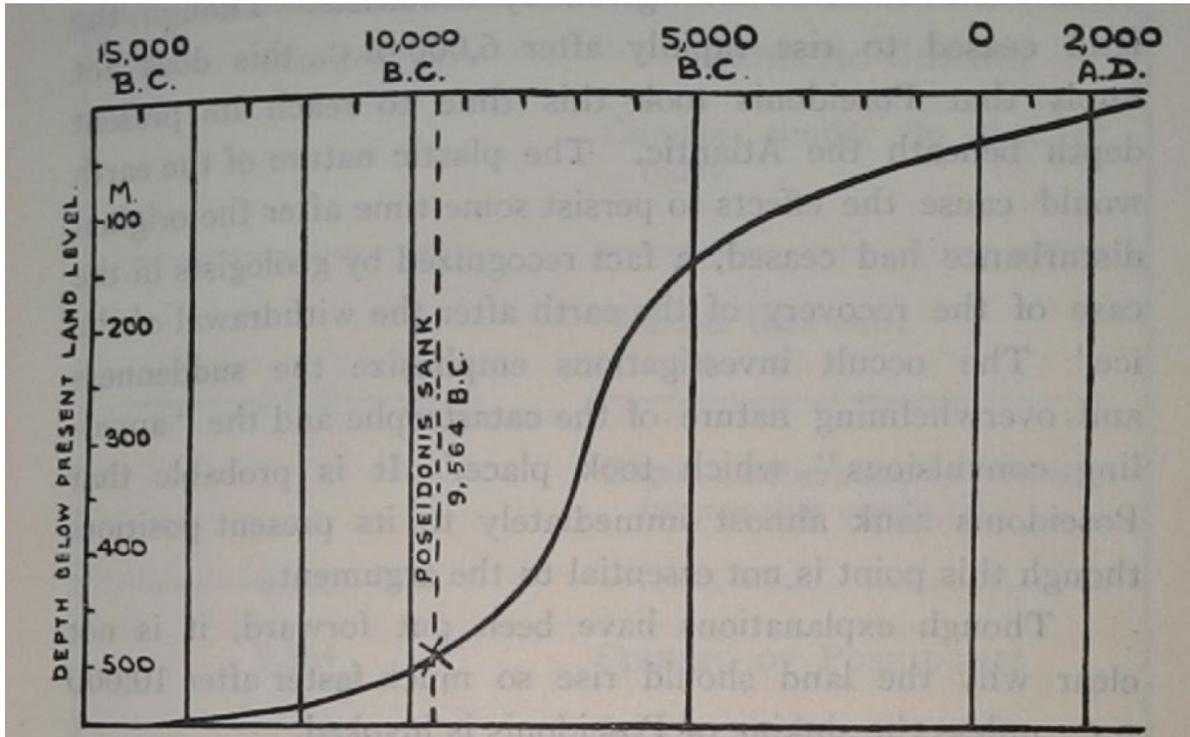


FIG. 2
The rising of Central Scandinavia since 15,000 B.C. (After Nansen).

challenged, though estimates vary as to the actual amount of the uplift. This however does not affect the present argument.

The curve illustrates the rising of the central Scandinavian region since 16,000 B.C. A similar curve with the same implications has been drawn for Oslo. It will be seen that the land was rising slowly to its present level until shortly after 10,000 B.C., when the land suddenly began to rise much more rapidly. It continued to rise rapidly until about 6,000 B.C. and then continued more slowly to the present day, (at a much earlier period this region was higher than now as shown in fig. 1, a point also recognized by science). The phenomenon implies¹ that Poseidonis sank between 10,000 and 9,000 B.C., which is as close as one can expect from such a curve to the actual date of

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9,564 B.C. given by occultists. Though the land ceased to rise rapidly after 6,000 B.C., this does not imply that Poseidonis took this time to reach its present depth beneath the Atlantic. The plastic nature of the earth would cause the effects to persist some time after the original disturbance had ceased, a fact recognized by geologists in the case of the recovery of the earth after the withdrawal of the ice.¹ The occult investigations emphasize the suddenness and overwhelming nature of the catastrophe and the “appalling convulsions” which took place.² It is probable that Poseidonis sank almost immediately to its present position, though this point is not essential to the argument.

Though explanations have been put forward, it is not clear why the land should rise so much faster after 10,000 B.C., unless the sinking of Poseidonis is invoked.

The cause of the Ice Age is still uncertain, and many theories have been advanced. It has also been frequently suggested that land barriers in various parts of the Atlantic may have deflected the Gulf Stream and thus assisted the formation of ice in Europe. As these theories are highly controversial they will not be discussed here,³ but it is worth pointing out that, if a chart showing the Atlantic currents is compared with fig. 1, it is evident that Poseidonis must have deflected most if not all of the Gulf Stream from Europe. It follows that when Poseidonis sank there must have been an improvement in European climate.

The following table, fig. 3, after Daly,⁴ shows that such an improvement of European climate took place. The approximate accuracy of the scientific dates can be accepted with confidence.¹ A point which also holds good for fig. 2.

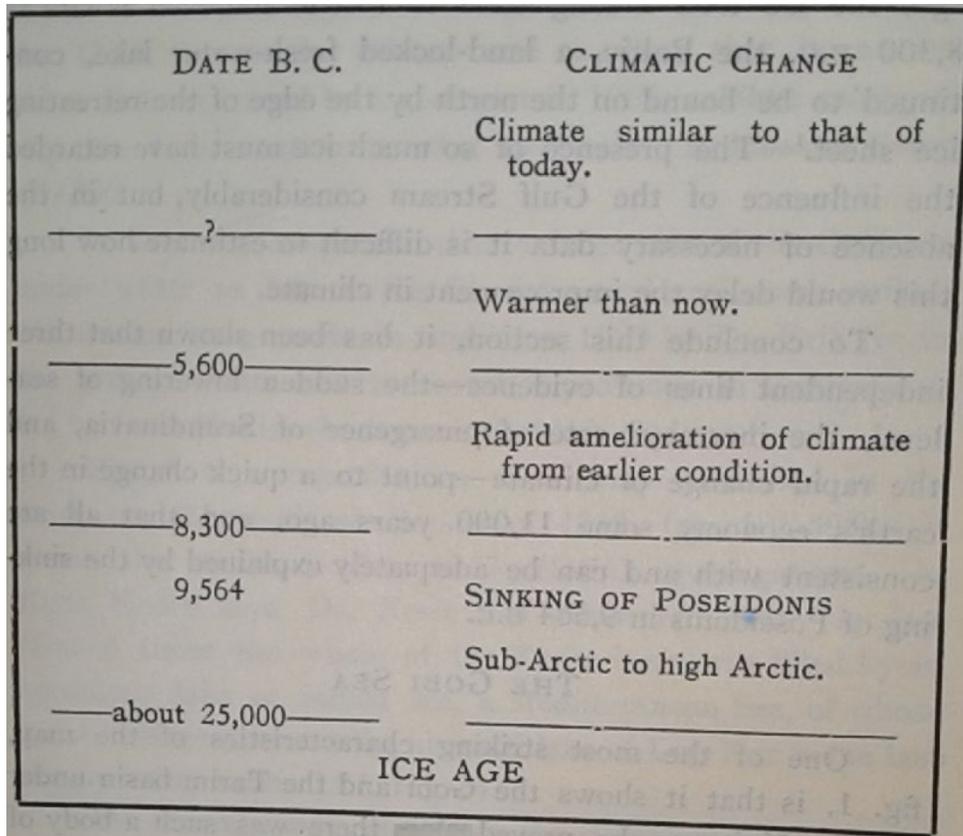


FIG. 3

Table of climatic changes in Europe since the close of the Ice Age, showing that the sinking of Poseidonis was followed by a sudden climatic improvement. (After Daly.)

It will be seen that the climate suddenly became warmer about 1,300 years after the sinking of Poseidonis. Some delay before the Gulf Stream could make its effect noticeable is to be expected. As the specific heat of water is very high, it would take a long time before the enormous quantities of cold¹ water in the north Atlantic would be affected. It should be noted that while the Ice Age ended about 25,000 years ago, the ice took a long time to recede and even as late as 8,300 B.C. the Baltic, a land-locked fresh-water lake, continued to be bound on the north by the edge of the retreating ice sheet.¹ The presence of so much ice must have retarded the influence of the Gulf Stream considerably, but in the absence of necessary data it is difficult to estimate how long this would delay the improvement in climate.

To conclude this section, it has been shown that three independent lines of evidence—the sudden lowering of sea-level, the increased rate of emergence of

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Scandinavia, and the rapid change of climate—point to a quick change in the earth's economy some 11,000 years ago, and that all are consistent with and can be adequately explained by the sinking of Poseidonis in 9,564 B.C.

THE GOBI SEA

One of the most striking characteristics of the map, fig. 1, is that it shows the Gobi and the Tarim basin under water. If it can be proved that there was such a body of water, it would be valuable support for occult researches, particularly those of Annie Besant and C.W. Leadbeater, who in 1913 described in great detail a prehistoric civilization on its southern shores.² According to these investigators this civilization was established about 70,000 years ago and from it various types eventually developed, migrating to form the ancestors of the Hindus, Arabs, Iranians and Europeans of today. It is stated that the inland sea ceased to exist after the sinking of Poseidonis and the civilization came to an end. No doubt increasing aridity caused it to perish.

The available evidence for such a civilization has been brought together in *Corroborations of Occult Archaeology*. Here it is proposed to confine ourselves to prove that the Gobi Sea really existed and to show that its ancient shore line, as traced by a geologist in 1929, *exhibits substantially the same contour as that of C.W. Leadbeater's map of 1896*.

It was not suspected that a large part of the Gobi was under water as late as the Glacial period until some striking discoveries were made in and after 1929 by Dr Erik Norin, the geologist attached to recent expeditions in Central Asia led by Sven Hedin, the famous Swedish explorer.¹

Fig. 4 is a reproduction of a map published in the *American Geographical Review* of 1932, (pp. 591-598). It shows the results to date of Dr Norin's investigations. As Sven Hedin says, Dr Norin has discovered that "in late Glacial times the whole of the Tarim basin was filled by an enormous lake or inland sea, a Mediterranean Sea, of whose great volume of water the historical lake of Lop Nor is the last disappearing survival."² (Fig. 6)

Dr Norin's map illustrates the maximum extent of this body of water as shown by the raised beaches left as it dried. Fig. 5 shows the Gobi area according to the Scott-Elliot map of 1896 to the original scale.

Allowing for difference of scale, the resemblance is remarkable and much too close to be a coincidence. It will be noted that the western portion, more than half of the sea as depicted by occultists, has not been discovered by Dr Norin. It should be realized that the area he has already investigated

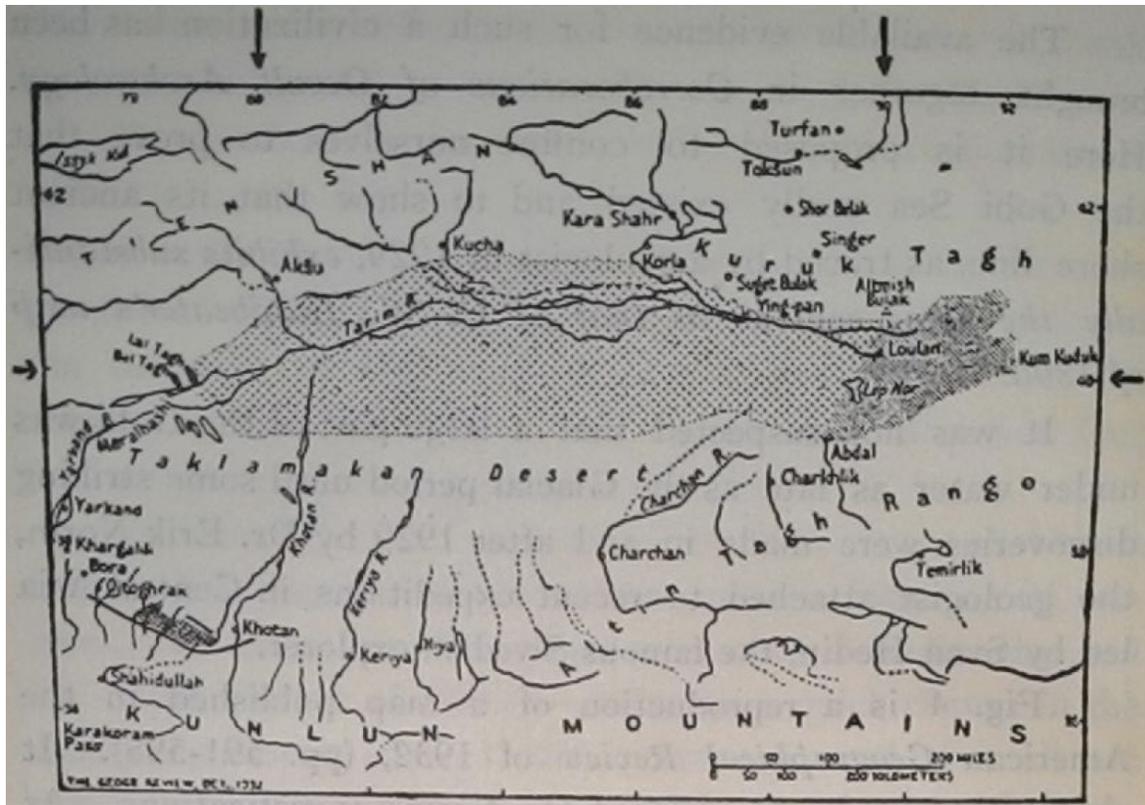


FIG. 4

Map published in 1932 by Dr Norin, Geologist to Sven Hedin's expedition to Central Asia, showing the deposits left by the prehistoric Gobi lake as discovered by him in and after 1929.

(Courtesy of the "Geographical Review" published by the American Geographical Society of New York).

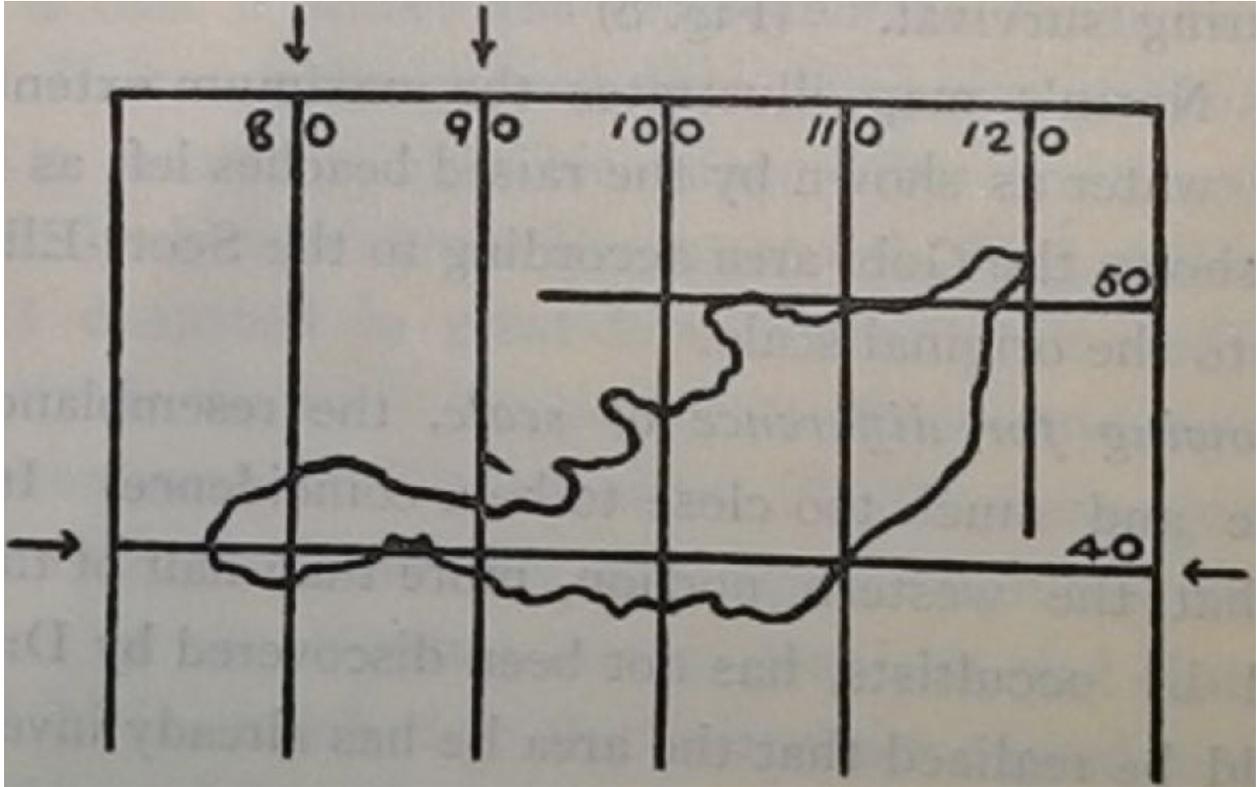


FIG. 5

The Gobi in prehistoric times according to clairvoyant research. Drawn to the same scale as the original map of 1896. See fig.1. The tongue of water on the left should be carefully compared with fig. 4 above, *allowing for the difference of scale*. The arrows indicate corresponding degrees of latitude and longitude.



FIG. 6

The bed of the ancient Gobi Sea or Lake. Part of the salt encrusted portion around the present lake Lop Nor, shown in heavy shading in figure 4.

(By kind permission of Sir Aurel Stein, Messrs. Macmillan, and the High Commissioner for India, London.)

is¹ equal to that of England, and his work is a remarkable achievement for only a few seasons' activity. One awaits with the greatest interest any further discoveries. It may be mentioned here that when Scott-Elliot's map was published in 1896, the information available on the geology of the Tarim was of the scantiest. Even the geography of this region was imperfectly known until the expeditions of Sir Aurel Stein, Sven Hedin and others in this century were accomplished.¹

At the present time (1937) Sven Hedin is engaged on a commission given him by the Chinese Government to survey the best route for a road from China to Kashgar.

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This will pass through the Tarim basin and will eventually make this area easily accessible to the archæologist. We can hope for further discoveries in this region before many years elapse. In the meantime it may be noted that reference to a good relief map will show that even today there is a depression in Central Asia corresponding approximately to fig. 5.

It will be noticed that allowing for scale the corroborated portion of the occult map is a little larger than the scientific one. This slight inaccuracy is, to say the least, excusable when it is realized that the original maps were seen psychically and then had to be reproduced from memory. The investigators were careful to state that they did not claim that this and other maps published with it were accurate to a degree of latitude and longitude.²

The darker patch to the right of Norin's map does not represent the original lake, but a later stage when it was fast disappearing. There was a long period during which the Tarim lake was fed with water from glaciers a hundred miles or more away in the mountain valleys along the edge of the Tarim basin. During this time the lake was *fresh*. Later, possibly in post-Glacial times according to Norin, the bed of the lake was tilted so that the waters came to occupy the position shown by the dark patch already mentioned.

In this new position the lake began to dry up and become salty, and eventually in historical times it nearly disappeared.

The tilting of the lake-bed through some geological disturbance, and its drying up, possibly in post-Glacial time, fits in admirably with the occult statements that after the catastrophe of 9,564 B.C., which was attended by great earthquakes, the Gobi became dry land.¹

An important point to note is that Norin's work indicates that the water was originally fresh. The occult investigators called it the "Gobi Sea," evidently thinking it to be salt. Doubtless they were led to believe this by the Scott-Elliot maps of earlier periods (not shown here), which show the Gobi connected by one or more narrow channels with the Arctic Sea. Even during these earlier times the Gobi may have been fresh or brackish. The narrowness of the channels combined with the many rivers which must have emptied themselves into the Gobi from much of Central Asia, would suffice to keep this land-locked body of water fresh or nearly so, especially as it was stated to be shallow.² Hence it is quite possible that by the period traced by Norin the water was fresh.

Changes of this character are not unknown to science. It is well known to geologists that at the end of the Ice Age the Baltic Sea became land-locked and went

through a fresh-water phase.³ Even today owing to the drainage of rivers into the Baltic, it is markedly less salty in certain parts than the open sea.

Another¹ important point is that both a recent American expedition¹ and that of Sven Hedin's report that during the Ice Age the Tarim basin and the Gobi proper were not covered by an ice cap, though glaciers formed in the great mountain ranges surrounding. It follows that even 70,000 years ago (when a great civilization was, according to occultists, established on its shores) the climate would readily permit of man living there.

As Sir Francis Younghusband remarked when reviewing Sven Hedin's book in *The Observer*, "What a lovely sea it must have been to sail upon with snowy mountains on three sides of more than Alpine altitude."

THE GREAT SUMERO-IRANIAN PREHISTORIC CIVILIZATION

We have seen that the occult investigators, Annie Besant and C.W. Leadbeater, have stated that various peoples, sometimes known as "Caucasians," originated on the shores of the Gobi Sea; the various types which evolved there, conveniently called sub-races by the investigators, eventually migrated to different parts of the Old World. An outline of these prehistoric migrations is given in *Man: Whence, How and Whither*. Among these the history of the third sub-race, the Iranians, deserves particular attention.

The investigators state that it was about 30,000 B.C. that the Iranians set out from their original home in Central Asia. In a few centuries they dominated the whole of Western Asia, including Mesopotamia, from the Mediterranean to the Pamirs and from the Persian Gulf to the Sea of Aral. See fig. 7. The people incorporated in their nation the scattered population of Arab stock which existed in the country when they entered it. They were therefore Iranian (third sub-race) with some admixture of Arab (second sub-race).

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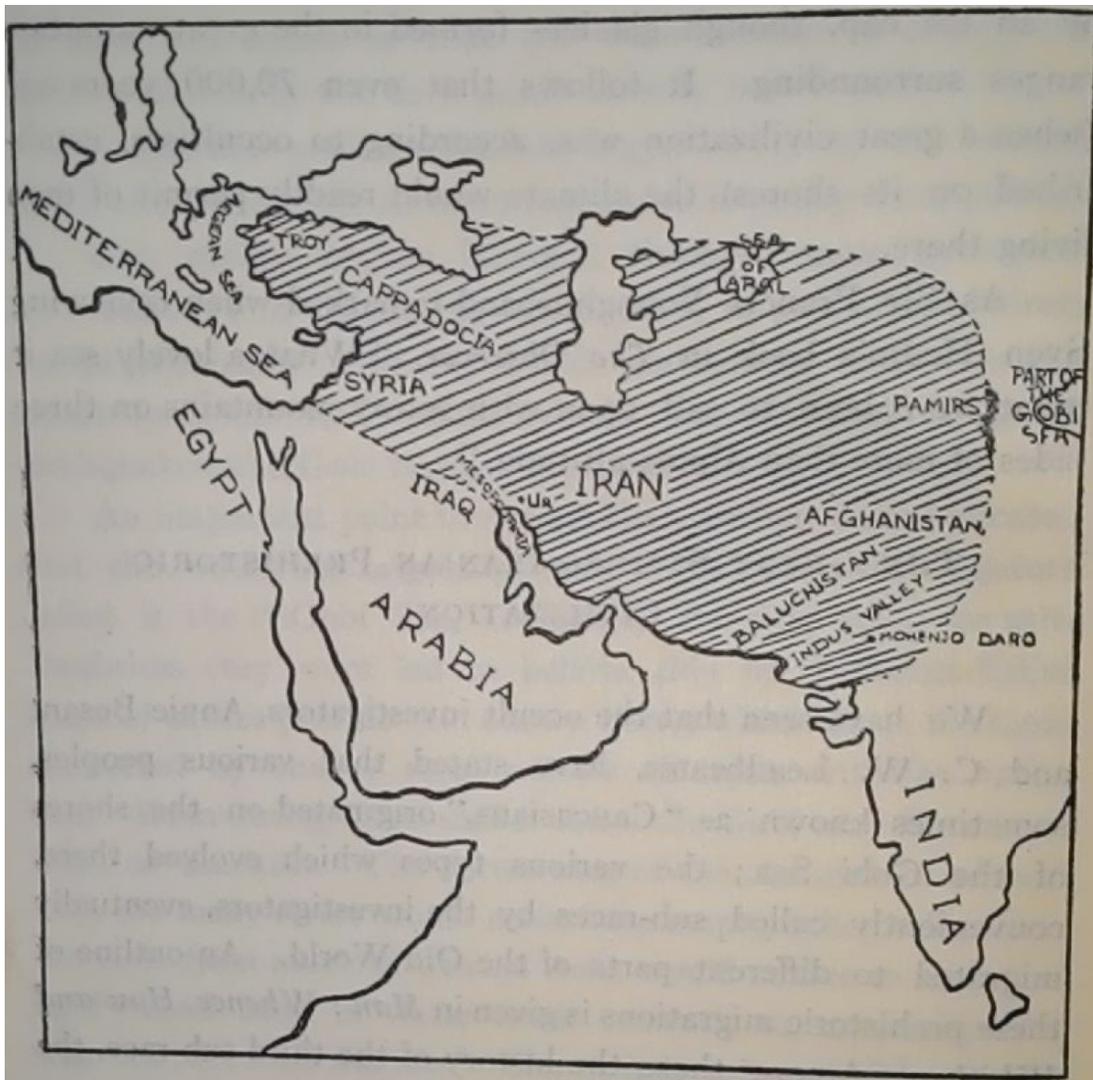


FIG. 7

Map of the prehistoric Sumero-Iranian Civilization (c. 30,000-2,200 B.C.) with approximate boundaries, as described by Annie Besant and C.W. Leadbeater through clairvoyant research.

During the 28,000 years of their Empire there were many fluctuations; most of the time Persia and Mesopotamia were under separate rulers and sometimes the two countries were split up into smaller states. Once at least they conquered Syria, and twice embroiled themselves with Egypt against which¹ they could do little. At one time they made temporary settlements in several countries bordering the Mediterranean, including Asia Minor. They kept up a high level of civilization and many relics of their

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mighty architecture lie buried under desert sands. They were great traders, merchants and manufacturers.

The present inhabitants of Persia have still much of their blood in them though largely commingled with their Arab conquerors. The Kurds, Afghans and Baluchis are also mainly descended from them, though with various admixtures.

With certain changes this great Empire lasted until about 2,200 B.C.¹

Not much information was given by the occult investigators as to the customs and artifacts of this civilization, but an army in 30,000 B.C. was observed to fight in phalanx formation with bows and arrows and with long and short spears.

It is not an exaggeration to state that until recently there was practically no scientific evidence in support of the above statements. The most that could be said was that about 2,200 B.C. the Sumerians, as yet a people of unknown origin, in Mesopotamia were overcome by the Elamites² (still of unknown origin) and that the Sumerians might therefore be the last surviving relics of the third sub-race Empire.

Even in 1916 Professor Breasted had to confess that "we are unable to connect the Sumerians with any of the great racial groups known to us."³

They were only known by inscriptions, and skulls were not yet available.

The excavations of recent years at Ur and elsewhere in Mesopotamia and Persia enable us to support nearly every one of the occult statements above by evidence of a very striking character.

From skeletons found at Ur during the excavations Sir Arthur Keith reports that

The Mesopotamian peoples both past and present represent a transition between Iranian and Semitic types,¹ but they have retained more of the Iranian than the Semite...The southern Mesopotamians at the beginning of the fourth millennium B.C. had big, long and narrow heads, their affinities were with the peoples of the Caucasian or European type—they were akin to the pre-dynastic people of Egypt described by Dr Foquet,² but different from all other pre-dynastic and dynastic Egyptians...One can still trace the ancient Sumerian face eastwards among the inhabitants of Afghanistan and Baluchistan until the valley of the Indus is reached—some 1,500 miles distant from Mesopotamia.³

Note that this distribution agrees with the occult statements. See fig. 7.

There is also good evidence to show that long before the earliest Sumerian dynasties, people of the Arab type were present,⁴ thus supporting the occult statement that Mesopotamia was inhabited by Arab peoples before the Iranians arrived.

These conclusions are based on excavations made between 1919 and 1925 by various museums at Kish and at Ur. The excavations have fully demonstrated the remarkable architectural skill of these Sumerians or third sub-race people, and have brought to light jewelry, utensils and weapons of gold, and other materials that would do full credit to a modern craftsman.⁵

They¹ had a highly developed system of laws and of book-keeping. The fact that they were great traders, merchants and manufacturers, their elaborate system of national and foreign trade¹ and the extent of their influence, is amply confirmed by the discovery of Sumerian manufactures in ancient Egypt, and at Mohenjo-daro near the borders of Baluchistan.² They also established a settlement at Ganes in Cappadocia, Asia Minor.³ Indeed, Sumerian metal types have been found in south Persia, Troy, Central Europe and Zagros on the Ægean.⁴ Note again that this distribution agrees with the occult data incorporated in fig. 7.

It is of interest that, just as the occultists describe, the Sumerians fought in phalanxes and included bows and arrows and spears⁵ among their weapons.

Commenting on the discoveries at Mohenjo-daro, Woolley says:

Recent excavations in the Indus Valley have brought to light extensive remains of a very early civilization, remarkably developed, which has a good deal in common with that of Sumer: particularly striking are rectangular stamp seals found in the two countries which are identical in form, in the subjects and style of their engraving and in the inscriptions which they bear, while there are similarities hardly less marked in terra-cotta figures in the methods of building-construction and in ground-plans. To say that these resemblances prove identity of race or even political unity would be to exaggerate the weight of evidence; to account for them by mere trade connection would be, in my opinion, to underrate it no less rashly: it is safest for the time being to regard the two civilizations as offshoots from a common source which presumably lies somewhere between the Indus and the Euphrates.⁶

Professor Langdon also writes:

I incline to the belief that a great prehistoric civilization spread from Central Asia to the plateau of Iran and to Syria and Egypt long before 11,000 B.C. and that the

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Sumerian people, who are a later branch of this Central Asian people, entered Mesopotamia before 5,000 B.C.¹

An opinion, which it is hardly necessary to point out, is in striking agreement with the occult observations. More recent work has brought ample support for the existence of this prehistoric Iranian civilization.

During the last ten years, Sir Aurel Stein has led no less than three expeditions into Baluchistan and the eastern borders of this region. He has reported his discoveries in his epoch-making Huxley Lecture to the London Anthropological Congress of 1934.² Everywhere he found dried up and almost deserted lands, but also unmistakable evidence that in prehistoric times these lands had been the homes of long-established civilization. Mounds, often one hundred feet or more high and a mile in circumference, marked the sites of prehistoric towns. In most of these mounds he found pottery of a similar kind, indicating a uniform culture. The presence of many disused dams demonstrated the existence of a widespread irrigation system just as described by the occult investigators. The evidence indicated that this civilization ended about 2,000 B.C. (the occult investigators state 2,200 B.C.), but its beginnings are lost in the mists of antiquity.

At the same Congress, Mr M.E.L. Mallowan read a paper on the antiquity of the very ancient pottery that has been found in Syria, Iraq, Iran and Baluchistan. (Compare with fig. 7). He concluded that the prehistoric potters used "a common fund of design, which persisted for a great span of time over widely separated areas" as early as the fourth millenium¹ B.C. Commenting on the pottery and other finds made by Sir Aurel Stein, Professor Gordon Childe says that this survey of Baluchistan does in fact help to prove that the region must once have formed part of a cultural continuum extending from the Tigris to the Indus.¹

It is clear that the later phases, if not the earlier, of the Iranian civilization described by the occult investigators, have been unearthed by these post-War discoveries.

It remains to consider the antiquity of the Sumerians. Certain King-lists have been recovered giving the names and length of the reign of Sumerian Kings. From this and other evidence, the Third Dynasty of Kish began about 3,000 B.C.² On the other hand the remains of still earlier dynasties are plentiful, but these cannot be dated accurately because the King-lists ascribe obviously fabulous dates to these earlier rulers, giving each reign hundreds or thousands of years. They are of value, however, as

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indicating that the early Sumerians themselves believed that their civilization was already of high antiquity.

Under these earlier deposits of unknown antiquity, but certainly earlier than 3,000 B.C., Woolley found 8 feet of water-laid clay, thus proving the existence of "the flood" mentioned near the beginning of the King-lists. Beneath the clay further relics were found, supporting the statement of the King-lists that there were Kings before "the flood." This flood may have been caused by a protracted overflow of the Euphrates. It is tempting to suppose, as Miss E.W. Preston suggests,³ that the overflow was caused by the "appalling convulsions" which attended the last sinking of Poseidonis in 9,564 B.C.

This may well be true, but since the latest discoveries indicate that there was more than one flood in Mesopotamia, each apparently differing in extent,¹ it seems best to leave the matter until a later date when more information is available.

If we adopt the very conservative date of 3,000 B.C. for the flood deposits discovered by Woolley, though he himself believes them to be more than 6,000 B.C., the fact that no less than 60 feet of man-made deposits have been excavated under those left by the flood, suggests that the earliest Sumerian deposits are of very high antiquity.

The thickness of a deposit is notoriously unreliable for estimates of age, but a 60-foot deposit must be of considerable age. It seems justifiable, therefore, even on conservative grounds to hold that the minimum date for the earliest Sumerian remains so far excavated is 5,000 B.C., and that they may be much older.

It only remains to show that this civilization existed as far back as 30,000 B.C. and that in its earlier stages both Star and Fire worship were practised in Iran as described in *Man: Whence, How and Whither* (Chap. XVIII). Since so much has been verified in the last twenty years, who knows but that the next twenty years will verify this point also and thus give a complete verification of this phase of occult investigations.

SUMMARY

Occult Statements,
1913

Scientific Discoveries,
post-War

Great prehistoric Iranian and Mesopotamian civilization of Iranian (Caucasian) peoples with Arab admixture.

Great Mesopotamian civilization, with considerable evidence that it extended across Iran, of Iranian (Caucasian) peoples with Arab admixture.

Approximate ¹ extent as shown on fig. 7.	Approximate extent as shown on fig. 7.
Great traders and merchants.	Great traders and merchants.
Fought in phalanxes.	Fought in phalanxes.
Mighty architecture. Many irrigation works in Iran.	Mighty architecture. Many prehistoric dams in eastern Iran.
Began 30,000 B.C., ended 2,200 B.C.	Unknown beginnings, ended c. 2,000 B.C.

THE PREHISTORIC ARAB CIVILIZATION IN EAST AFRICA

Occult Statements

The Arabic or second Aryan sub-race, which is best represented today by the Bedawin of northern Arabia, left Central Asia about 40,000 B.C. and colonized Arabia, Iran and Chaldea.¹ By 38,000 B.C. they had pushed their way down the east coast of Africa to the Cape of Good Hope itself, and had founded a kingdom which included all Matabeland and Transvaal and the Lorenzo Marques district.² Eventually, except for a strip on the west coast, Arabia and Egypt practically divided between them the continent of Africa.³ See fig. 8.

In Iran and Chaldea, however, the people were rather unsettled and turbulent, so much so that by 30,000 B.C. these districts were almost depopulated by constant warfare. There was thus little opposition when the Iranian peoples came

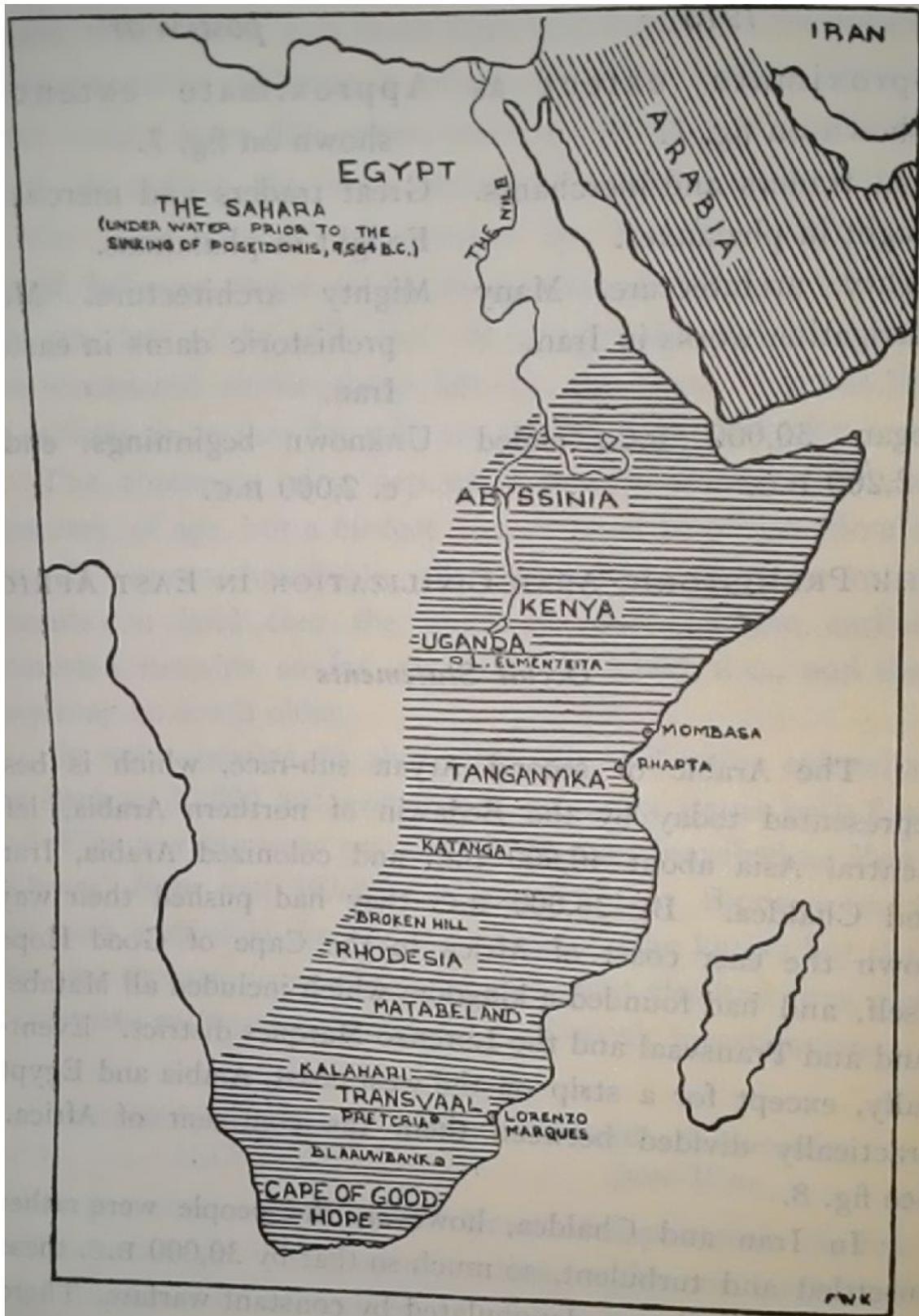


FIG. 8

Map showing approximate distribution of the East African Arab civilization, c. 38,000-2,000 B.C., described by the clairvoyant investigations of Annie Besant and C.W. Leadbeater. Sites of corroborative discoveries are also included.

forth in their turn from Central Asia to take possession, as described in the previous section, but in East Africa the people were more settled and they were able to maintain their civilization for many thousands of years. It was observed that much later they were responsible for the Hyksos invasion of Egypt. Since both occult and scientific research indicate the presence of the Hyksos in Egypt about 2,000 B.C.,¹ the East African civilization must have persisted until that date and it may have lasted later, though just how much later the investigators have not stated. It will be seen that for most of the time it was contemporary with the Sumero-Iranian civilization.

The people were tall and handsome and almost white in colour. Some intermarried with Negroes but on the whole they did not mix. They used swords and spears, occasionally javelins and bows and arrows. They were great hunters and kept large numbers of cattle. Some were agriculturists and others merchants. In South Africa the country was not so barren as now, it was park-like and there were vast herds of wild beasts. There were some large cities and imposing temples. No mortar was used but large well-cut stones were laid upon one another. The temples were oriented and the religion was a form of sun-worship.

Formerly this sub-race had constructed great terraces along the mountain valley which was their original home in Central Asia.² When they reached Arabia they laid out a valley in imitation of the one at home.³ With the establishment of the East African Empire the people "introduced into their new country all the arts of their civilization much as had¹ been done in Arabia before."¹ From this it is clear that the occult investigators mean to imply that terracing was introduced to the mountainous parts of East Africa.

Scientific Corroborations

There is considerable evidence now available to show that there has been a civilization of advanced type in prehistoric times throughout eastern and southern Africa. Thus Dr L.S.B. Leakey made the surprising discovery in 1928 of fragments of pottery *underneath* certain deposits of palæolithic type² in Gamble's cave, near Lake Elmenteita, East Africa. These deposits contained implements similar to certain cultures found in Europe. If they were manufactured at approximately the same time as those of similar type in Europe, the pottery must have had an antiquity of many thousands of years; on a conservative estimate 20,000 years or more.³

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In *Man* (the anthropological journal of that name) for November 1932, Captain G.E.H. Wilson discusses the evidence for the existence of a forgotten civilization in East Africa, to which he first drew attention in 1928. The existence of ancient works, *terracing on a large scale*, graded roads and irrigation works, canals and drainage, is now established in Tanganyika, Abyssinia, Uganda, Kenya and Northern Rhodesia. The roads clearly, not elephant tracks, point to a high state of civilization. The points at present located suggest a system of communication running north and south on the eastern side of the great lakes, pointing to outlets by way of the Nile to the north, and by Rhapta in the south, with possibly an intermediate route via Mombasa, the origin of which, in his opinion, may be very ancient. See fig. 8.

In some districts there are river diversions which may be artificial. There are legends of an alien race dominating the local peoples in both North and South Tanganyika. They are referred to as "tall," "bearded," "strangers," or "enemies." It should be noted that while the Arabs are bearded, Negroes tend to be beardless. Captain Wilson suggests that this ancient civilization originated from the north, that it may be of very high antiquity, and that it existed very probably before 1,500 B.C. This date, however, is but a tentative one.

In South Africa striking evidence for alien intrusion is provided by Bushman rock-paintings. Though many of these paintings have been illustrated in the past, their full archaeological significance was not appreciated until Brother Otto, a Trappist monk of Natal who had himself carefully copied many of the paintings, drew the attention of Professor Raymond A. Dart, the well-known South African authority, to some of their peculiarities.

In 1925 Professor Dart published his conclusions from his studies of the Bushman drawings.¹ He pointed out that while some of the pictures are obviously of the Bushmen themselves, others show intruders usually bearded, armed with bows and arrows, swords, javelins and other weapons, whereas the Bushman in these old pictures is generally armed only with a stone or stick or is unarmed. He thinks it probable that the Bushman learned the use of the bow from such visitors.

The intruders are often shown taller than the Bushmen. Their faces are usually shown in white pigment, whereas Bushmen generally represent themselves and other natives with black or scarlet pigment. A striking feature of some of the drawings is the different styles of headgear worn by the¹ foreigners. The headdresses variously suggest eastern Mediterranean, Egyptian, Babylonian and even Chinese influences. There may also be an Arabic influence but unfortunately we do not yet know anything of the styles

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worn in ancient Arabia. For all we know Babylon may have derived its fashions in hats from Arabia.

How far the drawings represent occasional visitors and how far permanent settlers is a problem for further investigation, so also is the approximate dates of the drawings, but additional evidence seems to make it clear that there were widespread Arab settlements in early days in South Africa. Professor Dart has collected hundreds of place-names with Arab roots of which many, as he says, are undoubtedly pre-Koranic and hence may well go back at least two thousand years. A few of the roots, it is interesting to note, appear to be of Indian origin. Professor Dart goes on to say:

That Rhodesia was brought into contact directly with Arabian and Indian products is shown by the fact that vines, lemons, figs and cotton, though not indigenous to South-east Africa, are found on the terraced hills of Inyanga in Rhodesia...

Rhodesia is pervaded by extensive monumental remains in the form of monoliths, stone circles, and stone buildings together with vast areas of terraced cultivation. In many instances the buildings reveal a nicety of architecture and a regard for sanitation such as are not characteristic of Southern African natives.

Some of these stone buildings are made without mortar. While many of them have long been known to travellers, their date is still controversial. Some authorities would say they are all mediæval, but others maintain that some are much earlier than this and go back to prehistoric times.

Some further discoveries enabled Professor Dart to write some years later:

The existence of a Bronze Age in South Africa has been established by incontrovertible evidence. Such a phase has not hitherto been recognized by antiquarians.¹

He is of the opinion that this African Bronze Age probably synchronized with those of Egypt and Sumeria, in which case it must go back to at least 3,000 B.C. which, as we have indicated in the Introduction, is an early date for present-day archaeological research.

It has been discovered that in ancient times large scale mining operations took place covering the enormous area from Katanga and Broken Hill to Pretoria, and from Kalahari to the eastern coast, the whole forming a single cultural unit. See fig. 8.

The great age of at least one of the mines was demonstrated by the existence of a stalagmite 15 feet high and 8 feet thick in its narrowest part, in such a position as to render practically certain its formation since the occupation by the miners.

At Blauwbank no fewer than thirty furnaces used by the ancient bronze-makers of Africa have been discovered. As Professor Dart points out:

The Bantu people when first discovered did not belong to a "Bronze" but to an "Iron" culture, and there is no evidence to show that they evolved through a Bronze phase to an Iron phase. We are forced to conclude that the highly intricate metallurgical processes of bronze-making, demonstrated by the deposits at Blauwbank, betray the actual presence there at a remote age of skilled and intelligent craftsmen from a superior cultural area. Seeing that the deposits are half-way across the continent, some estimate may be arrived at concerning the lengthy period of South Africa's exploitation by that superior race utilizing bronze.

To the physical anthropologist who has lived in South Africa and has had the opportunity of seeing practically every tribe in the south-eastern end of the continent, there is concrete evidence in the thousands of negroid inhabitants with straight, aquiline¹ and hooked noses, elevated nasal bridges, reduced lip fullness, and lack of prognathism, to demonstrate beyond cavil the flood of Semitic and other Caucasian blood which flows in the veins of the Bantu people.

Though it is not yet quite certain that the two vast areas dealt with by Captain Wilson and Professor Dart formed one cultural unit under Arab influence in prehistoric times, it is evident that, so far, these discoveries are a striking support for the occult observations; though they suggest the further possibility that during these thousands of years there have been intrusions of Indian and other peoples subsidiary to the Arab civilization, and either contemporary with it or later.

SUMMARY

Occult Statements

Arab civilization in East and South Africa characterized by terracing, 38,000-c. 2,000 B.C.

Scientific Corroborations

Extensive roads and terracing in East Africa. Bronze Age in South Africa. Dates unknown but probably ancient. Pre-Koranic Arab place-names. (Some Indian). Terraces in Rhodesia with non-indigenous plants belonging to Arabia and India.

Tall people, men presumably bearded since they were Arabs.

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Occult Statements

Armed with bows and arrows, javelins and swords.

Stone buildings without mortar.

Intermarried to some extent with Negroes.

Scientific Corroborations

Bushman drawings of foreigners with bows and arrows, swords and javelins. Headgear suggests eastern Mediterranean, Babylonian and possible Arabian influences.

Stone buildings without mortar, date uncertain.

Semitic blood in many South African natives.

CONCLUSIONS

Clairvoyance is a fact. As Professor Charles Richet has pointed out in his classic work, *Thirty Years of Psychical Research*, it has far better attestation than the majority of alleged historical facts, for it has been demonstrated many times experimentally. Now it begins to appear that clairvoyance has possibilities as a means for research.

It would not be fair to reject this claim merely because of its remarkable and even startling nature. There are many modern facts and theories which would have appeared as startling to the scientists of the nineties as clairvoyant research appears to us. One has only to think of television, the transmutation of matter, and curved space. It should not be forgotten that there are eminent authorities still living who were once convinced that Hertzian waves could not be sent across the Atlantic, that men would never fly, and that many another almost commonplace miracle of today was impossible. Truly the will not to believe can be as strong as the will to believe!

Modern¹ science has amply demonstrated that not only are there more things in heaven and earth, but that there are queerer things, than we have ever dreamed of in our philosophies. A few more miracles in a world already shown to contain miracles on every side should not excite undue scepticism.

It is true that very few have developed clairvoyant powers today sufficiently to be used for research, but the investigators themselves have assured us that it can be done, though at the cost of a great deal of hard work. Much the same condition applies to scientific study and research. In theory, anyone can find out for themselves the

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precise means by which astronomers calculate the moon's orbit. In practice only a very few have the ability, time and inclination to undergo the necessary training in mathematical astronomy. Indeed, one can go further than this and maintain that all the really fundamental scientific advances have been made by less than a hundred individuals. All honour to these pioneers, humanity owes them much! All honour, too, to those in the second rank who, if they have not actually erected the building, have helped to embellish it.

The work of these comparatively few individuals has transformed human society, in the course of a few centuries, because it dealt with fundamentals in Nature. It is obvious that if extended powers of clairvoyance available for research are developed by even a few students, this too in the course of time will have a profound effect on human society and will open up stupendous possibilities. No doubt, as clairvoyant research is justified of her children, an increasing number of suitable students will be prepared to undergo the arduous training required. Clearly, an indispensable qualification is a high order of altruism, if the development of these powers is to prove a blessing and not a curse to humanity.

One may venture to suggest that, in future investigations, attention should be paid to certain points of value to the archaeologist. While ample descriptions are given of the more important prehistoric civilizations from a literary point of view, it would be of value to give attention to the form and decoration of the more common metal types and objects of pottery. Metal and pottery will often survive for the archaeologist to discover, long after other things have disappeared. Attempts should also be made to locate more precisely the principal cities of a country, as these are the most likely sites to be uncovered. This would eventually permit a more complete assessment to be made of the accuracy of clairvoyant observations.

It should be remembered that the investigators did not claim any special knowledge of archaeology, their interest was primarily in the direction of studying the history of mankind in broad outline and to follow the relationships of a group of people through a series of incarnations.

This brings us to a very important characteristic of the investigations. The investigators frequently describe themselves as moving in the scenes of the past. In this case it is not so much clairvoyance in the ordinary sense as actual memory of past lives which they are using. If archaeology can confirm the accuracy of their descriptions it will obviously furnish strong evidence for the truth of reincarnation.

The best proof of reincarnation for the individual is memory of his own lives, but while that is proof for him it does not always satisfy others. Corroborations of occult archaeology will supply a proof which every one can appreciate. Accepted by millions in the East and long known to its seers, acceptance of the doctrine of reincarnation in

the West would form a new bond between East and West, the full effects of which would be incalculable. It should at least make more racial,¹ cultural and religious contacts between India and Britain possible; the Indo-British Commonwealth would not only be a political union but a spiritual one, and one of Dr Besant's most magnificent dreams would be a reality.

It may not be out of place to consider briefly some of the philosophical implications of the presence of clairvoyant powers in man, powers which recent work strongly suggests are latent in every one.¹

Some scientific thinkers of today are being forced by the logic of their discoveries to consider the world-process, in some sense, as a Mind at work. Such a view has had the support of a distinguished line of western philosophers from Plato to the modern Idealists. It forms the basis of much of Indian philosophy and is one of the principal teachings of Theosophy.

On this view the universe is at once an expression and an incarnation of the Universal Mind, while man is seen to be not only of the same substance as the universe in the physical sense, but also in the metaphysical sense. He is an expression of that Mind, and as he evolves he expresses more and more of its transcendental attributes within the limitations of time and space. Clairvoyance is a reflection of omniscience, it is the expression in man, under the limitations of time and space, of the transcendental omniscience of Universal Mind. All powers of consciousness are powers of Universal Mind under greater or lesser limitation; hence as man grows he inevitably expresses more and more of these powers, including clairvoyance, until every conceivable attribute of consciousness is his. Truly, man's future is a thing the splendour and glory of which knows no limit.

The great significance of the extraordinary achievements of modern science is apt to be overlooked because they have become so familiar as to appear almost commonplace. Physically, man is a minute portion of an insignificant sphere of matter, yet this organized atom we call man can analyse the stars and plumb the immensities of space. Surely the consciousness of man must be of the same essence as that from which the universe has sprung.

Man can know the universe because it is one aspect of the greater Self of which he forms a part. Clairvoyance is but another indication of this great truth.

APPENDIX

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THE LOWERING OF SEA-LEVEL THROUGH THE CATASTROPHE OF 9,564 B.C.

Though the map, fig. 1, shows conditions 75,000 years ago, Scott-Elliot believed it to represent conditions approximately to 9,564 B.C.¹ For the following rough estimate it will be sufficient, therefore, to take it as representing the world just before the catastrophe. In order to ensure greater accuracy, the original large map published by Scott-Elliot in *The Story of Atlantis*, was used.

Using this map it is estimated that Poseidonis had an area of about 1,500,000 sq. km. Reference to a physical atlas shows that the average depth of water over the site of Poseidonis is about 2.5 km. Hence Poseidonis was replaced by a volume of water of about 3,750,000 cu.km. The large unnamed island in the south Atlantic is also now at a depth of about 2.5 km. Its estimated area is 1,240,000 sq. km. Hence it was replaced by a volume of water of about 3,100,000 cu.km. Adding this to the volume for Poseidonis itself we have:

Total volume of water ... 6,850,000 cu.km. *A*

It has been estimated² that if 42,000,000 cu.km. of water were to be extracted from the oceans, this would lower sea-level by 105 metres. From this and *A* it follows by simple proportion that the lowering of sea-level through the catastrophe was about 16 metres.

This¹ estimate is on the low side because part of the ocean-bed surrounding these areas will have sunk also. It is difficult to estimate the effect of this, but probably the true value is:

Lowering of sea-level through sinking
of Poseidonis, etc. ... 16 to 20 metres *B*

The remainder of the Atlantic bed must have been little disturbed as the continental margins, with the exception of a small portion of South America, were practically unchanged.

After the Ice Age was over the polar ice caps diminished in size, thus returning water to the ocean and gradually raising sea-level. It follows that the 6-metre drop, at *present* sea-level, noted by Daly to have occurred in post-Glacial time, and which it is suggested was due to the sinking of Poseidonis, has been partly obscured by the oceans rising again as the ice melted. It has been estimated that, from about 8,300 years ago (the beginning of the Bothnian sub-stage) to the present time, sufficient ice has melted

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to raise the sea-level about 15 metres.¹ This estimate is the nearest available one to the actual date of the catastrophe. It is sufficient for the purpose of this necessarily crude calculation. Adding this to the observed drop of 6 metres² we have:

Estimated lowering of sea-level from geological data	...21 metres. C
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It will be seen that *B* and *C* are of the same order of magnitude.

We shall now proceed to justify, omitting consideration of the other areas shown on the map which sank below the water or rose above it. It should be realized that Poseidonis and the south Atlantic island are now at the bottom of the Atlantic at an average depth of no less than 2.5 km. It follows that the effects due to the sinking of these masses will be much greater than those due to emergence from shallow water or submergence to a small depth. It will also be realized that if one area went down while another came up, they will tend to neutralize each other so far as their effect on sea-level is concerned.

The area in northern Canada which sank would have had very little effect, as water depths there today are small. We do not know how deeply the area in northern Russia was submerged, but it also must have been small. There is no geological evidence for this area or any other along continental margins having emerged from great depths in geologically recent times. Furthermore, as we have seen, the emergence in north Russia will have counterbalanced the submergence in north Canada.

The Sahara Sea raises a different problem. Its area is about the same as the combined areas of Poseidonis and the south Atlantic island, but on the other hand there is good evidence that it was quite shallow. If the Sahara today were submerged about 600 feet it would be flooded by a very shallow sea of about the shape shown in fig. 1. We conclude that the drying up of the Sahara will have raised sea-level to small extent. It will have been countered by the sinking of the portion of South America indicated on the map. This area though of moderate size is now at a considerable average depth. The only other point which requires discussion is the Gobi Sea. The map shows it 75,000 years ago, but it diminished in size and eventually dried up at the time of the catastrophe, hence it has no effect on our calculations.¹

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THE MEANING OF SYMBOLS

A PSYCHOLOGICAL AND PHILOSOPHICAL SURVEY

BY MARGUERITE MERTENS-STIENON

As far back as Tradition takes us we see symbols being used for the teaching of Sacred Science. However, we read in *The Secret Doctrine* that

there was a time also when the Wisdom-Religion was not symbolical, for it became Esoteric only gradually, the change being necessitated by misuse and by the Sorcery of the Atlanteans.¹

This refers to at least one million years ago. The theosophical teaching concerning the presence of man on earth, places this event far back in the ages, contrary to the views of Science, whose statements are based on purely material and therefore incomplete investigations, so many cataclysms and sinking of continents having taken place. More than once, because of new factors coming to its knowledge, Science has been obliged to add milleniums to the span of time during which it had declared that man had lived on earth. And so has orthodox religion, which could not maintain its earliest teachings in face of scientific evidence, except by confining itself to dogmas to be believed blindly. The fact is that Science calls *Primitive* men those that Theosophy considers to be degenerated types of once highly civilized races. It is the ignorance of the cyclic law which causes the errors of Science. Science believes in a straight-line evolution, while Theosophy teaches that evolution proceeds through cycles which always present a

phase of growing and a phase of decline. Every cycle is in advance on the previous one, so that instead of a straight line it is a spiral which symbolizes the evolutionary process. A Race is such a cycle, as also is a sub-race or even a human life.¹

For many, tradition and myth are only fables, although some great scientific minds do not share that opinion. To quote Jean Sylvain Bailly,² "I make great case of ancient traditions preserved through a long series of generations." Voltaire, the great sceptic of his day, according to *The Secret Doctrine*, "had like Bailly, the conviction that Hesiod's *Theogony* is based upon historical facts."³ Says Pococke, "Myths are now proved to be *fables*, just in proportion as *we misunderstand* them; *truths*, in proportion as *they were once understood*."⁴ Augustin Thierry admits that in legend alone rests real history; for he says, "Legend is living tradition and three times out of four it is truer than what we call History."⁵

Theosophical teachings rest on Tradition, especially that of India, because India is the cradle of our fifth Race, the Aryan, which started one million years ago.

The traditions of the South of India uniformly ascribe its civilization... and the settlement of civilized Hindus [the fifth Race] to the conquest of Lanka by Rama [*Vishnu Purana*, III, 318]—the victory of the Sons of Gods over the Atlantean sorcerers.⁶

The fourth Race, the Atlantean, still had then a brilliant civilization, although for some time it had been degenerating spiritually.

Some of the symbols and myths forming the spiritual teachings of our fifth Race, have their origin in, or are related to, those far-off ages of the Atlantean days, and even those of the middle of the third Race. It is likely that some symbols of a phallic character in the cults of Osiris and Mithra, and in those of old India, date from the time when hermaphrodite humanity was separated into two sexes, about 18,000,000 years ago,

an event which, physiologically, has now become the Mystery of Mysteries among the world problems.... It is in this that lies buried the key to the symbolism of old, the true focus of national thought and the strange dual-sexed images of nearly every God and Goddess in both pagan and monotheistic Pantheons.¹

In relation to this, H.P.B. quotes Sir William Drummond, who says in *Cedipus Judaicus*, "The truths of Science were the arcana of the priests because these truths were the foundation of Religion." We can understand that, at the origin, the generative organs were considered sacred. It was at the time of the separation of the sexes that the reasoning mental Principle developed in man, uniting in him the spiritual nature to his lower Principles.

Mankind having reached... that turning point where its spiritual nature had to make room for mere physical organization, had to *fall into matter* and generation.²

Man then became *conscious* of his creative faculties, mental as well as physical, and, consequently, one can conceive the sacred character of that newly evolved creative function. Now that humanity has lost its original purity, we are shocked by those symbols and we accuse those races of being degraded. It is true that, even in ancient days, there have been cyclical periods of decadence and materiality. All religions have their origin in spirituality and end in materiality, and that is why there is, periodically, a need for a new spiritual dispensation. The beautiful symbols of Paganism, like many others, have been grossly disfigured and materialized even before our modern times.

The Ancient Wisdom, Theosophy, as is shown in *The Secret Doctrine*, finds in the old symbolism profound teachings concerning cosmic and human origins, these teachings having been given by wise Teachers, far in advance of the current stage of evolution of the time considered. They were founders and leaders of races, who always guided humanity and taught it according to its level of development, just as a mother guides the first steps of her child. The child evidently falls when first left to itself, but, in order to grow, it must rely on its own forces and abilities. This is the case with humanity. In our fifth Race these teachings were always given under symbolical form, we shall later see why.

For men like the Chaldeans, who were living an out-of-door life, and who had an opportunity, under favourable climes, to gaze into the depths of the heavens, the movements of the planets and constellations, as seen from the earth, were used as symbols. Those stars and constellations were given the names of characters taking part in mythological dramas, and represented graphically with the attributes connected with the nature of the spiritual Power they represented. There still exist celestial spheres where we see, for example, a man struggling with a serpent; a warrior holding in his hand the head of a monster that he has just cut off; a princess with broken chains still fastened to her wrists; a winged horse, and so on. Some of these old spheres have been preserved by the Greeks who gave Greek names to the constellations, as the Arabs gave them Arabic names; they have been tampered with a good deal, especially by the Greeks. The Zodiac of Denderah, whose reproduction is at the Musée du Louvre in Paris, is another specimen. Those symbolical constellations were 36 in number, plus the 12 Signs of the Zodiac, which makes 48. Three constellations were related to each Sign. If to the number 48 we add the synthetic oneness of the sphere which contains them all, we obtain 49 (7 times 7), a number well known in cosmic as in human symbolism, being the fundamental septenary basis of the solar system, and of the constitution of man complete, (physical, psychic and spiritual). The origin of those symbolical constellations is said to be "lost in the night of time"; and when Dupuis, a great scientist and astronomer, member of the Institut de France at the time of the French Revolution, proves in a very elaborate work¹ that all mythological fables of all peoples are related to

those constellations (decans) and to the 12 Signs of the Zodiac, and have consequently an *astronomical key*, he nevertheless fails to explain the symbolical figures connected with the constellations. With the knowledge of Theosophy those fables are seen to express cosmic universal laws, true at all times, or events in the evolutionary path of the world or of humanity, and one becomes convinced that great spiritual Teachers invented those stories—a wonderful system it is—so as to keep those eternal truths indelibly written in the heavens.

The symbols of the 36 constellations were combined with the action of the seven great Planetary Powers, Intelligences who rule over the seven sacred Planets. When we speak of Planetary Intelligences we must not think of personal Gods. A Planetary Intelligence—Saturn, Jupiter, or any other—is a Host, a whole hierarchy of forces, whose numberless agencies act on all planes of existence, from the most spiritual to the most material. They work in us, are part of us, our very essence; they form our seven Principles, and *The Secret Doctrine* gives us the correspondences between our seven Principles and the “Planets.” Beyond them were the twelve primordial Hierarchies pictured in the twelve Signs, twelve Creative Orders personified in all mythologies. And the Sun, at all times, symbolized the One Great Power, Head of our Solar System, whom we call the Logos, the “Word” of Christianity. The Moon, which reflects its light, was the feminine and motherly aspect of Nature, The Sun, seen from the earth moving through the twelve Signs, marked in each of those twelve stations, stages in the manifestation of the World, which were, in Greece, represented by the twelve metamorphoses of Zeus or Jupiter.¹ Everybody has heard of the Chaldean Astrologers, but one is generally acquainted with the degenerated aspect of their sacred Astrology.

That science was, of course, of much deeper import than the mere casting of horoscopes and the prediction of petty happenings to the individual or the community. It was a most profound research into cosmogony and celestial correspondence, *uniting the evolution of man with that of the universe of which he is a part*, and penetrating the veil of many facts in nature which are still mysteries for the modern world.²

Of course, as in Egypt, the knowledge of that deep science of Astrology was reserved to the initiated priests, and the fables given to the masses were addressed to the physical senses and to the emotions, because the consciousness of that race (part of the Iranian stock) was focussed at that level. As proved in the work just quoted, the consciousness of man evolves, and as it grows, the horizon of his perceptions enlarges, and this not only in the course of the life of a separate individual, but also when humanity as a whole is considered. The learned philosophical and metaphysical interpretations of those fables have come later in races which were essentially mental.

Each great Race is on a different rung on the ladder of spiritual evolution, each of its seven sub-races repeats the same ascending scale, as do the Races, within the zone of the consciousness of the Race. And the same septenary process is repeated within the

sub-race, through the seven minor cycles of nations forming that sub-race, (cycles within cycles). Consequently, each Race evolves more especially one Principle, and the seven Races follow in their evolutionary unfoldment the same order as does a single individual during his life, this order being: Perception, Action, Emotion, Analytical Mentality, Synthetic Mentality and Social Sense, Intuition and Cosmic Sense, Will and Spiritual Self-Realization. We could not do more here than sketch in these few words this interesting theory, but we shall touch on some of its applications to symbolism. In order to understand it well the student should read and study *The Next Step in Evolution* that we have just mentioned and quoted.

If, following the teachings of Theosophy concerning the division of humanity into seven Races—a division based more on the development of consciousness than on ethnical, physical types—we examine the fifth Root-Race, called the Aryan, we see that, as a whole and fundamentally, it has to evolve the synthetic mind and the Social-sense. However, each of its seven sub-races colours this fundamental characteristic with a sub-influence. This will be rendered clear by the following table borrowed from *The Next Step in Evolution*, p. 9.

ARYAN RACE: *Social Mind Consciousness.*

1st sub-race,	Indian (Hindu)	Social-Mind	focussed	in
			PERCEPTION ¹	
2nd sub-race,	Egyptian (Arabian)	Social-Mind	focussed	in
			ACTION	
3rd sub-race,	Chaldean (Iranian)	Social-Mind	focussed	in
			EMOTION	
4th sub-race,	Mediterranean or Keltic	Social-Mind	focussed	in
			ANALYTICAL MIND	
5th sub-race,	Nordic (Teutonic)	Social-Mind	focussed in	
			SOCIAL MIND	
6th sub-race,	Now appearing	Social-Mind	enlightened	by
			INTUITION	
7th sub-race,	Future	Social-Mind	directed by the	
			WILL	

Now, it is a fact that the mode of symbolism changes through the ages according to the stage of development of the consciousness of the Race. We can only give a few hints on that part of our subject.

In those cycles when consciousness was fixed in the fourth Principle which man has received from the animal, in its instinctual nature,² the Gods, while human in consciousness, have animal forms. It is the case for the Chinese, a fourth offshoot of the fourth Root-Race (the Atlantean); also for the Egyptians who received their symbolism from the Atlanteans. In the fourth sub-and sub-sub cycles of the Keltic sub-race (the

fourth of the Aryan Race) we see the animal symbolism recurring. (Æsop in Greece; La Fontaine in France).

We have seen that the symbolism of the Chaldeans (third sub-race) appealed to the emotions (third Principle). We might say the same, to a certain extent, of that of Ancient Greece, which marked the emotional stage in the Keltic (Analytical-mind sub-race). Its mythological fables are certainly of an emotional character, and beauty had a great place in its cults. However, we find, in Greece, the analytical Keltic fundamental influence. Pythagoras uses the geometrical symbolism; and also music under its mathematical aspect, sound being based on numbers. He elaborated a system called the "Music of the Spheres." The distances between the planets and their distances from the earth, determined their proper note, and he thus established an harmonic progression of tones and half-tones. "According to that progression was distributed, in the different parts of the world, the divine Force called 'Fire Æther,' which was preserving harmony between the worlds. That progression had 36 terms," (the number of the symbolical constellations, and of the Tattvas¹ of Theosophy). "The first term was 384, representative of the central unit; and the sum of the terms was 114,695."²

Out of Pythagoras' theories, Plato evolved an abstract philosophical symbolism. Both Plato and Pythagoras discard the earlier myths as being primitive, unworthy of a cultured people, although they emphasize the unity of the truths conveyed by the different systems of symbology. We also find, in Greece, very learned philosophical commentaries and minute analyses of Homer's and other mythological fables, by Proclus, Porphyry, Plotinus and others.

During the "mind" period of our Middle Ages, we find the alchemical symbolism, intellectual in its presentation, highly spiritual in its inner aspect. The truths are here symbolically veiled under the material appearance of chemical experiments. It is interesting to find that, in the tables of theosophical correspondences between the Principles and the Planets, Mercury, whose metal is quicksilver, corresponds to spiritual intuition (Buddhi), and that in alchemy it is through mercury that Saturn (lead), corresponding to the lower mind, has to be transmuted into gold. Gold is the metal of the Sun, and in the tables of correspondences the Sun corresponds to the spiritual will (Atma). I am told, and this is still more interesting, that, in the tables of radioactivity elaborated by modern science, (chart of Professor Soddy), it is quicksilver, the metal of Mercury according to all traditions, which is expected to produce gold through radioactivity.¹

In the eighteenth century, during a new cycle marked in France by the French Revolution, a time when the Social-sense had to begin developing in an "analytical-mind" nation, we have the symbolism of Masonry, based on human brotherhood. Masonry was a renovation of a most ancient form of Mystery-symbolism.² Its deep spiritual significance has been revived in some modern forms of Masonry.

If the Founder of Christianity draws the symbol of the Eucharist out of the Mystery-teaching to express the Social consciousness of the Race he wishes to found, it is because that symbol belongs to the Social-sense—to the Social-mind sub-race of the Social-mind Race. That symbol had been part of the Mystery-teaching before; it served there to educate in an analytical-mind Race the *still subjective* Social-sense, in those who were in advance of the Race.³

This élite were the occultists of the time, who had to help in the advent of the coming sub-race, and begin to foster in the world its new consciousness. Edward Carpenter tells us that “Eucharistic rite was held in commemoration of Mithra, and of the Phrygian God Attis.”¹ It existed in a crude form in the rites of other ancient peoples. Gerald Massey tells us that “there is, or was, a fresco in the Church Bocca della Verita at Rome, in which the Goddess Ceres was portrayed shelling *corn*, with Bacchus squeezing *grapes*, to provide the elements of the Eucharist for a table below.”²

The Christian Eucharist is the symbol of the unity of the Divine Life being divided among the multiplicity of human beings; it is made *one* again through the brotherly love of the disciples. It is really a Social-sense symbol, and, for the starting fifth sub-race it was “an outer expression of that which pressed for manifestation and self-realization within.”³

A somewhat similar idea is expressed in the symbolism of Osiris torn by Typhon into 14 fragments; those fragments are dispersed and searched for by Isis who succeeds in gathering them together, and thus prepares the resurrection of Osiris. Here the fable has rather a cosmic meaning. We see in it the symbol of the Oneness of the Divine Life manifesting Itself in the multiplicity of all the forms that exist in the world. The number 14 is easy to understand when we think of the seven Planes of existence, under their dual aspect of life and form. Typhon is the Power connected with Matter, that matter within which Life is divided. Isis is the feminine Principle of spiritual intuition, (Buddhi-Light) through which *alone* the Oneness of all things can be realized, under the great diversity of forms.

With the Orphics, it is Dionysus or Bacchus-Zagreus who is torn into pieces by the Titans, his fragments being burned and again dispersed. His heart (Life and Love) is saved and preserved by Minerva (the Wisdom of Buddhi, or spiritual intuition) until the God is restored to his pristine life and integrity. From the burning ashes of the Titans at whom Jupiter had hurled his thunder, *mankind were produced*. We should add that the Titans *had eaten the flesh* of Dionysus. And Proclus says, “The Titans and Giants produce the demiurgic powers into multitude, divisibly administer the affairs of the Universe, and are the proximate fathers of material natures.”¹

In India, the dismemberment of Prajapati has the same meaning. Similar symbols thus express the same essential truths in the different traditions of all peoples. I say similar symbols, not *identical*, because each Race, each evolutionary period, has its own presentation which varies in its details. The Gods bear other names in different countries, and even in different parts of Greece or Egypt, but the meaning of the story is the same, for all these legends are but veils under which can be found the truths of a great, unique, primordial Tradition.

Before we analyse more closely what a symbol really is, it is essential to differentiate two different forms of symbols. Modern Psychology has gone far in its explorations of the sub-conscious mind; it has discovered that the symbolism of dreams, when analysed, is expressive of hidden "complexes," which are the result of repression. They have organized themselves into some kind of tumours in the psychic organism. And it has been proved that the sub-conscious mind always expresses itself through symbols, in dream-consciousness. All the facts which, through repression, have disappeared from the field lit by the concentration of the clear waking consciousness, reappear as symbols, when that concentration ceases, as during sleep. Now, it is necessary to emphasize a very common error against which Professor G.E. Monod-Herzen warns us.¹ One often thinks that *all* symbols have their origin in the sub-conscious, and one ignores a higher kind of symbols which originate in the *super-conscious*, sometimes called the *Unconscious*. It is the field which is still subjective at any stage of evolutionary development, and constitutes the store-house of the *future* conscious knowledge of mankind. This field forms an undifferentiated oneness, an absolute, and it is *there* that all really spiritual symbols originate, affecting in their symbolical objectivation a whole range of more or less refined expressions. This explains the relative realization of that great symbol called God, a conception which varies with the level of consciousness, from the God of the savage to that of the philosopher. Is it not a fact that man has always created God *in his own image*? Here again, as for the sub-conscious, the only way subjective notions can be expressed is through symbolical form. In both cases those symbols express notions which are not clearly perceived by the waking consciousness. There is however this difference, that the sub-conscious notions are part of the objective field, though they have been, for psychological reasons, pushed back by the individual in the crepuscular regions of the sub-conscious, where human consciousness becomes diffused within the *collective* sub-conscious. In the case of the super-conscious, the symbols represent notions which belong to a greater light, though it is *still* darkness for the waking consciousness at its particular stage of evolution. One never should bring down sacred symbols to the level of the collective sub-conscious. The symbolical dreams caused by the sub-conscious have a personal character, while the symbols of the super-conscious field are spiritual and universal. In this monograph we only deal with the latter.

Always, at the outset of a Race or sub-race, we see, towering over the humanity of their time, great spiritual Teachers; we can witness them, through the ages, in India,

in Egypt, in Greece, in China, in Asia Minor, and their teachings are still alive. Have we not the Vedic, the Hermetic, the Orphic, the Homeric, the Judaic and the Christian Traditions, without counting those of Lao-Tse, of Zoroaster, of Buddha, of Muhammad and others? If we study them somewhat, we shall recognize in their symbolical teachings the same truths under different aspects, and link the biblical Tree of Life to Yggdrasill of the Norse legend, and to the Ashvatta of India; the liquor of the Grail to the Soma of India and the Homa of Persia, and so on.

Every great Teacher is, in advance, the perfect type of the Race he founds, and in his consciousness the Race is going to grow in the course of its evolution. But his consciousness being still subjective in the masses, in order to be understood, even so imperfectly, he has to give his teachings under a symbolical form. The symbols chosen are always adequate to the level of consciousness of the Race to which they are given. Those Teachers thus help in the masses the objectivation of notions which must gradually become fully objectified. It is a slow process. Shall we say that the Christian race has yet perfectly developed the Social-sense and the brotherly love that Jesus taught? We can, however, follow the development of that Social-sense in the world today, in spite of past debts which have to be paid and which weigh heavily on the world.

We have now tried to explain, according to the theosophical teachings, the origin of the great myths, sacred fables and parables which rendered possible to human consciousness the assimilation of abstract truths.

All sacred symbols seem to be related to the science of Theosophy, and because of the law of correspondences that it expounds, symbols can find an interpretation at different levels of manifestation and on different planes of consciousness. There is a plurality of meaning to every symbol, and we understand therefore what Madame Blavatsky means when she speaks of seven keys to symbols. (See Appendix A.) Dupuis, mentioned before, found how to use the astronomical key and thought he had discovered the whole truth. He did not realize that astronomical phenomena are themselves symbolical of a higher range of spiritual happenings. In the same way most of the mythologists see in myths only natural phenomena: clouds, waves, rain, thunder, the dawn, storms, etc., etc. They also fail to see that physical nature is but the mask of the Divine, and is consequently a vast symbol in all its manifestations. Surely the causes are not to be found in physical nature, at least not the primordial causes. All the different meanings which can be given to symbols do not exclude each other; on the contrary, they harmoniously express the applications of the same principle at different levels or in objects of different orders, and they all find their abode in a fundamental Synthesis. That is why a symbol contains such a richness of meaning, and why one can progressively discover more and more in it, as the mind grows and the spiritual powers increase.

Symbolism is, according to *The Secret Doctrine*, the Mystery-language of the Initiates. And, as we allude to the law of correspondences, we must stress this important fact that exact correspondences exist between the solar system and man himself, whether he is considered as consciousness, or under his physical aspect. The same symbol can consequently be applied to the Cosmos, to evolving Races of men, and to an individual.¹

True symbolism has not been artificially invented; it is a fact in Nature, and to use a symbol is not merely to compare things of a somewhat similar nature, but to establish fundamental relationships between those things and a Universal Principle, thus linking together the material, the psychic and the spiritual worlds. A real symbol is universal, and, in a relative sense, that which is universal applies to all cycles. (See Appendix B. as to a plurality of meaning in symbols.)

As we have seen, religious symbolism evolves with human consciousness, but it is essential to realize that at all times esoteric symbolism is in advance of the Race, and prepares the new age which is coming. The orthodoxies of the past, having usually clung to the letter of the once living teaching, have gradually built round the latter a rigid shell, and they always struggle dogmatically against the new spirit. The esotericism of one age becomes partly public property in following ages, and then the initial teachings degenerate and become distorted and reviled; they lose their universality, for the sap of the Tree of Life ceases to flow in that special branch which, in course of time, withers and decays. Dogmas always kill life, whether they are scientific or religious. This explains how symbols expressing facts related to cosmic manifestation, have been, through the vision of orthodox religion and orthodox history, interpreted as having their genesis and their finality in a material world *only*. They have been erroneously fixed in time and space, and prejudiced knowledge has thus belittled great truths. One has ignored that

all civilizations in their mythologies ever used the configuration and peculiarities of their countries to symbolize Cosmogonical events, while their legends enact the History of the Universe. The Egyptians made of their Nile and its Delta a Cosmogonical symbol. The Hindus did the same with the Sacred Lake of the Himalayan Mountains from which flow the Four Sacred Rivers. For the Greeks, Hellas was always a symbol of the higher spiritual Worlds, and the War of the Gods is described as having taken place there. The symbol of the North Pole, and that of the Christian Jerusalem, to take at random, are too well known to be stressed, and we might multiply such instances.¹

All religions have their source in the Universal Tradition, of which each of them was once a *relative* expression, veiled so as to suit the need of the time.

From what we have said, a symbol might be defined as being a concrete representation of an abstract reality, thus presented because the consciousness of man

could not yet receive it in another way. Or, we might say that symbols are germs of truth out of which evolution will build stable forms of manifested knowledge. Professor Marcault once called them "the Akasha of the Mind."² The mind, evolving gradually, builds knowledge out of those akashic seeds.

It is but slowly that the consciousness of man has risen on the ladder of his embryonic faculties, and *now* for the first time, in the sixth sub-race just coming into existence, it reaches the fringe of the level of intuition (Buddhi). The intuition will little by little shine through the intellect. In the sixth Root-Race which will be formed, according to our teaching, in the course of the present sixth sub-race, *pure* Intuition will use the Intellect as its instrument.³

At the level it has now reached the consciousness of man knows itself to be energy, the dynamism of life, whereas formerly it remained identified with the faculties that it used: emotion or mind. Life becoming thus conscious of itself in the thought of man, the latter begins to perceive life in all forms, and as a consequence, an imperious wish is born in him to know more about that life outside himself, and to liberate the spiritual energy imprisoned in forms. We see the proof of this change in all the branches of modern science. Zoology and botany belong to the past; they were the study of forms, of the outer physical characters of the species. They are now replaced by biology, the study of the reactions of life within the forms to outside stimuli. Chemistry has reached the limit of its analytical investigations in physical matter, and it has merged into physics, the study of life forces. In psychology Bergson has discovered that consciousness *is life*. And do we not see the modern physicist pursuing life in its last physical entrenchment, in order to discover and use the power that the atom ensouls? That is why there is in our time a revival in the study of symbols, in order to detect the life hidden within them, and to know the secret of the Eternal Sphinx.

Symbols have a peculiar characteristic on which we have already insisted. In spite of the fact that the Races to which they were given could only decipher them partially, the fundamental Truth they contain was whole, complete from the start, and probably the great Teachers who gave them knew that veil after veil would be lifted, and that the time would come when man could without danger assimilate the complete Truth. When we speak of a *complete truth*, we do not mean an absolute and final truth, but the truth that is meant to be known by the man of this earth, during this cycle of seven Races. The law of relativity applies here; each cycle has a "*relative absolute*" to reach, the Absolute being, in the terms of *The Secret Doctrine*, "the highest term in an *indefinite series*."¹

We have said that symbols and myths have deteriorated in the course of the ages. How are we then to interpret them rightly? The answer is: by using the theosophical key. We have in Theosophy an occult doctrine which remains secret only because it is not studied except by the few. It has all through the ages maintained the spiritual truths undefiled, for it is not a new science but this pure Tradition, source of all passing

creeds that it always transcended. Theosophy is the spirit, the essence, of all religions, and in that essence truth is present. It is in their dogmas, in their form-side that religions or mythologies become deteriorated. In Theosophy we have then the key to Sacred Symbolism. Of course there is the right way to use it; but the same danger exists for Theosophy as for Religions, if it becomes dogmatic in its assertions through its exponents. By using the key wisely we shall in course of time discover new facts. It will not come before the time, but it is essential that we should *use* our nascent faculty of intuition. That it is *the function which creates the organ*, is a scientific axiom, and without using our intuitive creative mind it will never develop. Nothing comes without exertion and concentration, and therefore Intuition should not be confused with passive psychism. Man is the Thinker whose thought, illumined by spiritual intuition, can gain an insight into the inner reality of things. That true vision can only be the result of the development of the spiritual nature. Only then can Intuition come in a flash.

To come back to symbolism, it is most interesting, at a time like ours, to remember how Madame Blavatsky wrote prophetically about “that day when all the Seven Keys shall be delivered unto Science or rather the *men of learning and research* in the department of symbology.”¹ Surely the sixth sub-race, that of the intuitive mind, will discover more in symbols than even the learned men of previous races. And symbols will always reveal more than words, for words, which as a matter of fact are themselves symbols, are addressed principally to the emotions as in poetry and prayers, or to the mind as in scientific expositions, while symbols are of a spiritual nature, and awaken an answer in the spiritual nature of man.

To sum up this part of our work, the study of symbols proves that at all times the same essential cosmic truths were taught which form the basis of Theosophy as we now have it. However, it is good to remember what we have been told: that what we have in the way of occult teachings is only a fraction of what the infinite Wisdom keeps in store, and which will be given to man as his consciousness grows. This study also proves this axiom of Theosophy: that even in the far removed past the Elder Brethren have always watched over humanity, and by appropriate teachings wisely guided its steps along its evolutionary path. Finally, it is for us a conviction that the study of symbols in the light of the highest intelligence must help man to establish a synthesis of all his powers and faculties, and thus to perceive the relation of human life to cosmic life and realize their oneness.

It would be interesting to relate symbolism to modern science. One wonders, when thinking of the above-mentioned words of Madame Blavatsky if, when writing them, she was foreseeing the recent developments of science. Is it not true that modern science now works more on symbols than on tangible facts? Mathematical formulas are symbols. To quote Sir James Jeans, “The conceptions which for us at present are fundamental to our understanding of nature seem to me to be constructions of pure

thought impossible to be realized in a way that would properly be called material." And further, "We could hardly consider the undulatory waves as being localized in space and time; they are but visual representations of a mathematical formula having an absolutely abstract undulatory character." And again, "It seems now to be beyond doubt that nature is in a way more closely related to the concepts of pure mathematics than to those of biology."

The old symbolism of space is most interesting to study in ancient traditions and in connection with the theories of modern science.¹

APPENDIX A

CONCERNING THE SEVEN KEYS

Note 1

I quote from *The Secret Doctrine* of H.P. Blavatsky, 3rd edition. (Italics mine.—M.M.S.)

Vol. I, p. 389: Speaking of religious philosophies and their dogmas and symbols: "They can be only *approximately* interpreted, even if one discovers *three* out of these *seven* systems, namely, (1) the *anthropological*, (2) the *psychic*, and (3) the *astronomical*. The two chief interpretations, the highest and the lowest, the *spiritual* and the *physiological*, were preserved in the greatest secrecy, until the latter fell into the dominion of the profane....*The other two* were those which dealt with the Creative Gods or (4) *Theogony* and with (5) *creative man*; that is to say, with the ideal and the practical Mysteries."

Here above, the seven keys are enumerated: (1) *The Anthropological* is to be considered as referring to man, not only in his dense physical nature, but as to the powers concealed in his etheric double; and also to the evolution of man's consciousness through the races in which he reincarnates. Many myths refer to Races, especially to the third (Cyclops, Giants, Divine Kings, etc.) and to the fourth, the Atlantean, in which black magic was used.

2. The *Psychic* Key includes colours, especially those in relation to the different Principles, as indicated in the aura, and the "Wheels, or Chakras" in the etheric double.

3. The *Astronomical* of course is part of the *Astrological*.

4. In *Theogony* the gods stand for Cosmic Forces of all grades, "what science down here would call a hierarchy of forces." "Heat, electricity, magnetism, are *gods* in the esoteric science." (H.P.B.).

5. “*Creative man*” has to be understood as referring to the true creative power in man, called *Kriyashakti*. “It is the mysterious power of thought which enables it to produce external, perceptible, phenomenal results by its own inherent energy. The ancients held that any idea will manifest itself *externally* if one’s attention is deeply concentrated upon it. Similarly an intense volition will be followed by the “desired result.” (H.P. Blavatsky’s comments on T. Subba Row’s Adyar Pamphlet (No. 31) “The Twelve Signs of the Zodiac,” p. 10.

Some myths are related to this power.

Note 2

There is no *Magic Key*. Magic results from bringing down spiritual forces to the physical plane and it can be related to “Creative Man.” Magic can be thus produced through Sound (*Mantrams*); through action combined with sound and colours (Ritual); through science, (spiritual words, alchemy). H.P. Blavatsky refers sometimes to the “Metrological Key of the Symbolism of the Hebrews, which reveals *numerically* the *geometrical* relations of the Circle (all Deity) to the square, cube, triangle, etc...”, and in other places she mentions Keys, which are evidently secondary, namely, psycho-metaphysical, astro-chemical and alchemical. They must be included in one of the above mentioned seven. Perhaps the *Anthropological* and the *Physiological* keys might be joined, and the Metrological could then take place among the seven.

We thus should have: 1. The *Spiritual* Key; 2. The *Theogonic* and *Cosmological*; 3. The *Astronomical* and *Astrological*; 4 The *Psychic*; 5. The *Metrological* and *Geometrical*; 6. That related to *Creative Man* (Magic-Spiritual Alchemy); 7. The *Anthropological* and *Physiological*.

APPENDIX B

NOTE AS TO A PLURALITY OF MEANING IN SYMBOLS

Perhaps the Zodiac is the best example to be taken in that respect. According to esoteric tradition, its signs stand for Twelve Cosmic Creative Hierarchies of Forces. And being hierarchical those Powers express themselves on all planes of manifestation.

Subba Row, a learned Indian scholar, gives us in his article “The Twelve Signs of the Zodiac” the meanings of those Signs, basing them on the numerical values of the names of the Signs, or their synonyms, for what regards the so called “Primary Creation” of Hinduism—the self-generation and elaboration of the Divine Cosmic Powers themselves.

The Zodiac can be interpreted in terms of all cycles, and referring to our Earth Scheme, it is found to symbolize when the seventh Creation (that of man) is concerned, the Spiritual, Intellectual and Physical Pedigree of the human entity, in the course of the long pilgrimage of his Monad, as depicted in the theosophical teachings.

The Secret Doctrine tells us that the seven Races are pictured in the Zodiac, and that their cycles of duration are based on it. As to the nature of the Principle that each of those Races particularly evolves, it is fairly easy to relate it to the Zodiac. It is the correspondences existing between Signs and Planets on the one hand and the Principles which constitute man on the other that give a sound basis to horoscopy, a science which has much deteriorated because of the personal and material character which it has taken, and because its fundamental Cosmic and Theogonic nature is no longer known. The horoscope analyses the minor cycle of one individual life on earth; it shows the powers, faculties, and also the weaknesses brought by the human entity in this life, and which are the results of his past existences. It also shows the possibilities and opportunities which will help the entity concerned to bring the future into the present, that is to say, to objectify that which is still subjective, undifferentiated in his consciousness. A whole book would be necessary to demonstrate the universality of the symbolism of the Zodiac. This work will be done.

The Zodiac might be compared to a vast clock on which move at various speeds many hands marking different times: Cosmic, Solar, Planetary, Racial and Human. The organizing life, in all cycles, passes through twelve stages, always the same, and this explains the various interpretations which can be given to the Zodiac.

The twelve Signs are divided into three quaternaries, the four signs of which are representative of the four elements, Fire, Earth, Air and Water. The first quaternary is spiritual, the second psychic, the third material, the meaning of those words being relative. Fire is the creative power, Earth the substance in which it creates; Air is the spiritual result of this interaction, Water the material result. Again all those terms are relative to the cycle considered.

As a simpler example, let us take the symbol of the Ark:

At the end of every cycle there is a period of disintegration, when life abandons the form or forms it ensouled and used for a while, in order to evolve through them. This period is symbolized by a *deluge*, when the cycle of a universe, a world, or a race is concerned. We find this symbolical deluge in all mythologies, and in all those deluges there is an Ark. I cannot treat here the subject fully, but suffice it to say that the Ark stands for the preserving power which sees to it that nothing is ever lost of that which is necessary to perpetuate life and its further evolution. The harvest of one cycle, whatever cycle it is, becomes the seed for the next, and it is through innumerable cycles that evolution proceeds. The Puranas describe the Maha-Pralaya, and give a very vivid

picture of the deluge which preceded it.¹ And it is said there: “*That of which all things are made, the Lord by whom all things exist, He who is inconceivable....reposes, sleeping upon Shesha (the Serpent of Infinity) in the midst of the Deep.*”

“The Creator sleeps upon the Ocean (of Space) in the form of Brahma....”

This pictures the end of a Universe, and here Brahma Himself represents the Ark floating on the waters. Before going to sleep, Brahma has gathered in Himself the harvest of His universe, the essence of all experiences it has gone through. During the whole of the “Night,” He will keep those powers safe in His repository, His sleeping consciousness. They will again become active causes in the next manifestation, when comes the Dawn of the New Day. Then we see Brahma emanating those powers out of His very substance, and produce His mind-born Sons. Those will themselves give birth to their progeny, all those forces becoming agents in the world of effects, they themselves being the causes.

In the Mahabharata Deluge, Vaivasvata Manu is seen in the Ark with the Seven Rishis, and “all the different seeds which were enumerated by regenerate Brahmanas in days of yore.” This deluge is interpreted by H.P. Blavatsky as being the end of the fourth Race and the sinking of Atlantis, as is also Noah’s Deluge. The Ark is again symbolical of that which had to be saved of the Atlantean civilization in order to be used by the fifth Race.

In the first version we had a *Cosmic* Deluge; in the second a *racial* one, as also in the Chaldean and biblical deluges. However, this preserving power represented by the Ark can receive many other interpretations. For example, after a human death there follows the disintegration of the different vehicles that the human Ego had ensouled during life; the dense physical body, the etheric double, the astral or emotional body, and the lower mental vehicle. Here also the disintegration rises from plane to plane of existence. The Ark in this instance is the Causal Body, on the higher-mental plane in which the egoic consciousness preserves the results, the essence of the experiences of that existence. All that is useful to the evolution of the spiritual Ego – this Ego evolving through the many personalities in whom it incarnates – is gathered there, and becomes the seeds for future lives.

Physiologically, the Ark is the womb which preserves the ovum, promise of future life, as is the seed for a plant or a tree. Cosmically it is space, which is the universal matrix, containing and preserving all the germs of life. Space is the Virgin Mother that the Spirit fecundates.

And thus, many interpretations can be given to the symbol of the Ark which, like all other symbols, can be explained with the help of several Keys, according to the

knowledge and intuition of the interpreter. Some of those Keys cannot be given from outside, we must fashion them from within through our inner spiritual development.

Another example is that of *Saturn as limiting power*.

The myth shows us Saturn-Cronos as a god, mutilating his father Ouranos, who is unbound space, eternity, infinity. Saturn-Cronos is Time, and when emasculating Ouranos he mutilates the Absolute and appropriates its creative power. Thus shutting a portion of the whole within a cycle of finite time, he uses that power in order to produce generation on the manifested planes, that is, in Time and Space. This cosmic symbol, again, can receive many interpretations. On the plane of spiritual consciousness, Saturn acts as the Law of Karma (he is called "Fate") which selects in the whole of the consciousness of the causal body, the special causes to be used in one special incarnation of the Ego. Saturn thus limits the field of consciousness of the Ego, taking only a fraction of its contents. In the physical body, the influence of Saturn slows down circulation; emotionally it limits the affective powers and the number of friends, those various limitations being karmic. Mentally, it helps concentration, and by the very fact of that concentration, it temporarily limits the field of thought to that of a chosen object.

As Saturn in the scale of our seven Principles is the lower analytical mind, it also limits the action of consciousness, keeping it on the level of concrete thought. Another power is needed to balance or overcome that of Saturn, and render the latter helpful through its steadiness and determination, instead of harmful through its sloth and lack of vision.

In Alchemy, Saturn is lead (lower mind) and it can only be transmuted into gold – the metal of the Sun (Atma) – through the agency of Mercury (Buddhi).

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SCIENTIFIC CORROBORATIONS OF THEOSOPHY

THE following is a list of some corroborations by Science of statements made, many years ago, in the classical literature of Theosophy; they prove Science to be a great ally of Theosophy, for they demonstrate, in an ever-increasing measure, the stability of the foundations of the Theosophical Structure. These corroborations are given here only as a means to an end and not as an end in themselves.¹—Ed.

MIND IN NATURE

Theosophy

“The Universe is the expression of Life, Thought, Consciousness. These are the energizing, guiding Principle in all Cosmic Processes, whilst that which appears under the guise of Matter is the objective correlative of this primary activity of the One Life, or Be-ness.”—(W. Kingsland, *The Physics of The Secret Doctrine*,² p. 37.)

“Occultism sees in all these Forces and manifestations a ladder, the lower rungs of which belong to exoteric Physics, and the higher are traced to a living, intelligent, invisible

Science

The reduction of material things in terms of mind is now the theme of scientists as it has been that of philosophers:

“From the intrinsic evidence of his creation, the Great Architect of the Universe now begins to appear as a pure mathematician.”

“The universe can be best pictured as consisting of pure thought.”

“If the universe is a universe of thought, then its creation must have been an act of thought.”

“The universe shows evidence of a designing or controlling power that has something in common with our own individual minds.”—(Sir James Jeans, *The Mysterious Universe*, 1934, pp. 124-37.)

“The cruder kind of materialism which sought to reduce everything in the universe, inorganic and organic, to a mechanism of fly-wheels or vortices or similar devices

Power, which is, as a rule, the unconcerned, but, exceptionally, the conscious, Cause of the sense-born phenomena designated as this or that natural law." — (S.D., I, 605.)

[All references to *The Secret Doctrine* are from the 3rd Edition.]

"... and between this time (1888, the year of publication of *The Secret Doctrine*) and 1897 there will be a large rent made in the Veil of Nature, and materialistic Science will receive a death-blow." — (S.D., I, 671).

"Mahat—Universal Intelligence, ... is no other than the Logos.... He is, in short, the 'Creator,' or the Divine Mind in creative operation, 'the Cause of all things.' " — (S.D., I, 277.)

has disappeared altogether." — (Sir Arthur Eddington, *New Pathways in Science*, 1935, p. 323.)

"To put the conclusion crudely, the stuff of the world is the mind stuff." — (Sir Arthur Eddington, *The Nature of the Physical World*.)

"The units they (the physicists) have discovered will constitute not only a world of physics but, in the end and at far removes, also a world of life and spirit....

"These units, particularly the electron and quantum, have an almost meta-physical aspect: they are physics infected with thought....

"Thus it comes that the ultimate units are not purely physical or material but point to an undifferentiated primitive world-matrix which includes both the physical and thought-characters of the world." — (The Rt. Hon. General Smuts at a discussion on "The Evolution of the Universe," Brit. Assoc. 1931, quoted by E.L. Gardner, in *The Web of the Universe*, p. 38.)

UNITY OF NATURE

“Everything originated in the One, and, proceeding from the One, must finally return to the One.” – (S.D., I, 620).

“The radical unity of the ultimate essence of each constituent part of compounds in Nature—from star to mineral atom, from the highest Dhyan Chohan to the smallest infusorium, in the fullest acceptance of the term, and whether applied to the spiritual, intellectual, or physical worlds—this unity is the one fundamental law in Occult Science.” – (S.D., I, 145.)

“The belief—that all things are made of a single substance—is old as thought itself; but ours is the generation which, first of all in history, is able to receive the unity of Nature not as a baseless dogma or a hopeless aspiration but a principle of science based on proof as sharp and clear as anything which is known.” – (Karl K. Darrow, *The Renaissance of Physics*, 1936, p. 301.)

EVOLUTION

“Evolution according to Theosophy is that process of change whereby something that is latent and sleeping is brought into manifestation and activity. To understand this we must postulate two factors—a spirit or soul which is seeking expression, and a form or body wherein the spirit or soul expresses itself.” – (H.T. Edge, *The Theosophical Path*, June 1932.)

“What I find in evolution is *one great scheme from bottom to top, from first to last*. What I also believe is that this advance throughout nature is a revelation of Divine Agency. And since mind at its best is the highest term in the course of evolutionary ascent it may well be said that the evolution of mind reveals the agency of Mind”. – (Prof. Lloyd Morgan in *The Great Design*, edited by Mason, 1934, p. 132.)

“Now we are becoming convinced that by starting from the parts we shall never be able to explain organic and mental life, and that there is something like design in organic nature.” – (Hans Driesch in *The Great Design*, edited by Mason, 1934, p. 286.)

AN EVOLVING UNIVERSE¹

“How different all Nature appears when we come to know that even the ‘dead’ substances which compose our world are evolving ... each element and its combinations are drawn upwards slowly, to become more perfect lenses of the Divinity dwelling

“There are authorities who maintain that already the evidence of inorganic evolution is convincing enough. The heavier atoms would appear to behave as though they were evolved from the lighter.” – (J. Arthur Thomson, *Outline of Science*, Art.”

within them.” – (C. Jinarajadasa, *First Foundations of the Universe*,” 1922.)
Principles of Theosophy, 4th ed., p. 180.)

“*Light*—the first mentioned in *Genesis* ... is the first begotten, and the first emanation of the Supreme, and Light is Life, says the evangelist. Both are electricity ... From its swelling, electric bosom, springs *matter* and *spirit*. Within its beams lie the beginnings of all physical and chemical action, and of all cosmic and spiritual phenomena.” – (H.P. Blavatsky, *Isis Unveiled*, 1877, I, 258.)

“Among many other objections to the doctrine of an endless evolution and involution, or reabsorption of the Cosmos, a process which, according to the Brahmanical and Esoteric Doctrine, is without beginning or end, the Occultist is told that it cannot be, since ‘by all the admissions of modern scientific philosophy it is a necessity of nature to run down’ ... To this we reply that nature runs down and disappears from the objective plane, only to re-emerge after a time of rest out of the subjective, and to re-ascend once more.” – S.D., I, 172-73.)

The Cosmic Rays of Millikan “may be evidences of the actual birth of atoms of matter out of the fundamental particles of electricity in the outer reaches of our universe.” – (Bazzoni, *Kernels of the Universe*, p. 177.)

It is more than probable that the transformation of Matter into radiant energy “is also going on somewhere in the opposite sense, and that radiant energy is condensing back into mass.” – (Millikan, Director of the California Institute of Technology, *Evolution*, p. 17.)

“The ancient philosophers, who saw in the Earth a huge ‘animal,’ were wiser in their generation than our modern geologists are in theirs ... This only shows how admirably Occult Philosophy fits every thing in Nature, and how much more logical are its tenets than the lifeless hypothetical speculations of Physical Science.” – (S.D., I, 178.)

“It is difficult for the modern mind to imagine our Solar System as a living organism. Yet that is what it is.” – (First Principles of Theosophy, p. 228.)

“From whatever aspect we view and question matter, the world-old philosophy that it was vivified and fructified by the eternal idea, or imagination—the abstract outlining and preparing the model for the concrete form—is unavoidable. If we reject this doctrine, the theory of a cosmos evolving gradually out of its chaotic disorder becomes an absurdity; for it is highly unphilosophical to imagine inert matter, solely moved by blind force, undirected by intelligence, forming itself spontaneously into a universe of such admirable harmony.” – (Isis Unveiled, I, 396.)

Radioactivity has changed the world “overnight in its fundamental elements from a fixed, changeless, static, dead thing to changing, evolving, dynamic, living organism.” – (Millikan, *Evolution*, p. 15.)

“We appear to be led to the assumption that the genetic or evolutionary processes, both cosmic and biological, when considered in certain aspects, constitute a simple orderly development that yields results not merely contingent, but resembling those which in human action we recognize as purpose.” – (Henderson, Professor of Biological Chemistry, Harvard University, *The Fitness of the Environment*.)

The many unique chemical properties of the elements of our environment, all so remarkably adapted to sustain life, and “almost infinitely improbable as the result of contingency, can only be regarded ... as a preparation for the evolutionary process.” – (Henderson, *The Order of Nature*, p. 190.)

PHYSICS (LIGHT, ETC.)

“Matter is crystallized Light.” – (S.D., I, 522.)

“The mineral—which is light itself crystallized and

“Matter being nothing but a sort of congealed radiation.” – (Sir James Jeans, *The Mysterious Universe*, 1930, p. 77.)

immetallized." — (S.D., II, 179.)

"Electricity is 'immaterial' in the sense that its *molecules* are not subject to perception and experiment: yet it may be—and Occultism says it is—atomic; therefore it is matter." — (S.D., I, 136.)

"... the life impulse passed on from planet to planet in *rushes or gushes; not by an even continuous flow.*" — (A.P. Sinnett, *Esoteric Buddhism*, 1884, p. 172.)

"To Occult Science, *force* and *matter* are only two sides of the same substance." — (S.D., I, 683.)

"For the Occultists it (light) is both Spirit and Matter. Behind the 'mode of motion,' now regarded as 'the property of matter' and nothing more, they perceive the radiant Noumenon." — (S.D., I, 521).

"These beings (Angels) are the 'Sons of Light,' because they emanate from, and are self-generated in, that infinite Ocean of Light, whose one pole is pure *Spirit* lost in the absoluteness of Non-Being, and the other Pole, the *Matter* in which it

Modern Science says: Electricity, Light and all radiations are atomic.

It is now established that every atom is built up of protons and electrons which are electrically charged.

Planck devised a *Quantum Theory* (*Annalen der Physik*, Vol. IV, p. 553, 1901) according to which radiation (light, electricity, etc.) is not continuous but, like matter, can be dealt with only in individual units or atoms. Light, according to this theory, "seems to consist of a stream of minute *gushes* of energy which may almost be regarded as atoms of light." [Italics ours. — Ed.]

Light behaves sometimes like waves and sometimes like corpuscles. (Undulatory and Corpuscular Theories of Light.) Electrons and protons have been found to behave in the same dual capacity.

What then is matter? ... [it is] radiation—radiation imprisoned in electrical bonds ... What is radiation? ... Radiation is the fundamental stuff of which the universe is made. It is pure energy, so concentrated that it can act as a particle, and yet energy associated with vibrations or waves. It is the unity underlying the apparent diversity of the universe.

("Radiation" — *The Great Design*, 1934, edited by Frances Mason, pp. 59-60.)

condenses, *crystallizing* into a more and more gross type as it descends into manifestation." – (S.D., I, 522.)

"To know what light is, and whether it is an actual substance or a mere undulation of the 'etherial medium,' Science has first to learn what Matter, Atom, Ether, Force, are in reality." – (S.D., I, 523.)

"Light and heat are the ghost or shadow of Matter in motion." – (S.D., I, 561.)

"The *matter* of science may be for all objective purposes a 'dead and utterly-passive matter'; to the Occultist not an atom of it can be dead—'Life is ever present in it'." – (S.D., III, 399).

Up to 1927 the physicists had found that the material forces of Nature were determinate and could be predicted. But now a particle behaves as if it were a living thing. It has a choice of its own which cannot be predicted. Electrons leap from one orbit to another as if they have a will of their own. No one can tell what an individual electron may be doing at any given moment.

Heisenberg's "Uncertainty Principle" or the "Principle of Indeterminacy" indicates that there is an uncertainty in the nature of things. Scientific determinism does not hold in ultimate analysis, for both the velocity or momentum of a particle and its position cannot be determined with equal accuracy.

"The physical Plane is a Plane of *effects*, not of causes; it is in fact a Plane many times removed from the Plane of Primal Cause, and the effects or phenomena discernible thereon are not primary, nor even secondary effects, but effects many times removed from the ultimate Cause or Noumenon." – (*The Physics of The*

"The noumena immediately behind the physical phenomena may themselves be phenomena to noumena on a still higher plane, and so on up the scale. The physical plane is but the end-product of a long scale of differentiation, descending by degrees." – (Lowson, *Science and Reality*, 1936).

Secret Doctrine, p. 11).

“The relation of any Plane to the one next below it is a *force* relation; the higher Plane literally *ensouls* the lower.”—(*The Physics of The Secret Doctrine*, p. 25.)

CHEMISTRY

“As the faculties of humanity are multiplied, so will the characteristics of matter be multiplied also.... the new characteristic (of matter),.... let us call it ‘Permeability,’ will correspond to the next sense of man, which we may call ‘Normal Clairvoyance.’” —(S.D., I, 272.)

Modern science is familiar with the penetrating power of Radioactive substances, for example, radium, uranium, etc.

DISCOVERY OF NEW ELEMENTS

Meta-Neon, At. Wt. 22 (Isotopes were first recorded in 1907.) (Besant and Leadbeater, *Occult Chemistry*, pp. 16-20.)

Occultum, At. Wt. 3 (Besant and Leadbeater, *Occult Chemistry*, 1908.)

Meta-Neon, At. Wt. 22 (F.W. Aston, 1913). (Isotopes were discovered by Science in 1913).

Discovery of a New Element, with At. Wt. 3, by Prof. Rutherford. Announcement to the Royal Society, 3-6-1920.

THE CHEMICAL ELEMENTS¹

"It is a dogma of science ... that the allegation that the Hermetists discovered the elixir of life, and that certain of them, by partaking of it, prolonged their existence far beyond the usual term, is a superstitious absurdity. And the claim that the baser metals have been transmuted into gold, and that the universal solvent was discovered, excites only contemptuous derision in a century which has crowned the edifice of philosophy with a coping-stone of protoplasm." —(*Isis Unveiled*, 1877, I, 501.)

"One of the truest things ever said by a man of science is the remark made by Professor Cooke in his *New Chemistry*: 'The barren premonitions of science have been barren because these seeds of truth fell upon unfruitful soil; and, as soon as the fullness of the time has come, the seed has taken root and the fruit has ripened.'

"The revolution through which chemistry has recently passed, is well calculated to concentrate the attention of chemists upon this fact; and it would not be strange, if, in less time than it has required to effect it, the claims of the alchemists would be examined with impartiality and studied from a rational point of

"If these hypotheses (concerning the possibility of causing the atoms of ordinary elements to absorb energy) are just, then the transmutation of the elements no longer appears an idle dream. The philosopher's stone will have been discovered, and it is not beyond the bounds of possibility that it may lead to that other goal of the philosophers of the dark ages—the *elixir vitae!*" — (Sir William Ramsay, *Harper's Magazine*, 1904.)

"Artificial transmutation of the elements was first accomplished by Cockcroft and Walton in 1932 ... Some years earlier Rutherford had produced transmutations semi-artificially by using the high-speed particles emitted from radioactive substances." — (Sir Arthur Eddington, *New Pathways in Science*, 1935, p. 160.)

"... Modern ideas as to the genesis of the elements seem to reflect in an altered form, the speculative views of the Ancients." — (Sir William Tilden, *The Elements: Speculations as to Their Nature and Origin*.)

"What would the Alchemists of the Middle Ages say if they could return to their old habitation today and learn that actual transmutations do take place in nature?" — (Gibson, *Scientific Ideas of Today*, 1920.)

"The atoms of matter are vibrating or gyrating with extraordinary vigour. The piece of cold iron you hold in your hand, the bit of brick you pick up, or the penny you take from your pocket is a colossal reservoir of energy, since it

view.” — (*Isis Unveiled*, I, 163.)

“... Every year also, chemistry, beyond all the other sciences, approaches nearer and nearer the realm of the Occult in Nature. It is assimilating the very truths taught by the Occult Sciences for ages, but hitherto bitterly derided.” — (S.D., 1888, I, 595.)

“Occultism says that in all cases Matter is the most active, when it appears inert. A wooden or a stone block is motionless and impenetrable to all intents and purposes. Nevertheless, and *de facto*, its particles are in ceaseless eternal vibration which is so rapid that to the physical eye the body seems absolutely devoid of motion; and the spatial distance between those particles in their vibratory motion is — considered from another plane of being and perception — as great as that which separates snow flakes or drops of rain. But to Physical Science this will be an absurdity.” — (S.D., I, 553.)

“In the annexed plate three gases are shown in the gaseous and four etheric states; it will be observed that the structure of the ultimate physical atom is the same for all, and that the variety of the ‘elements’ is due to the variety of ways in which these ultimate physical atoms combine.” — (Annie Besant, *The Ancient Wisdom*, 1897, 1918 reprint, p. 46.)

(ED. NOTE: The “ultimate physical atom” in Theosophical terminology is not the “atom” of physical science, but the final subdivision of the atom, and is

consists of trillions of moving atoms.... Each molecule of the air, which seems so still in the house on a summer’s day is really travelling faster than a rifle bullet does at the beginning of its journey ... Electrons are to be found everywhere, forming part of every atom.... These amazing particles may travel with the enormous velocity of from 10,000 to more than 100,000 miles a second ... Even in the atoms of hydrogen at a temperature which we could produce in an electric furnace the electrons spin round at a rate of nearly a hundred trillion revolutions a second!.... In a little bubble of hydrogen gas no larger than that letter (“O”) there are *trillions* of atoms; and they are not packed together, but are circulating as freely as dancers in a ball-room.” — (J. Arthur Thomson, Professor of Natural History, University of Aberdeen, *Outline of Science*, art. “Foundations of the Universe,” 1922.)

“Up to the point we have reached, then, we see what the new view of Matter is. Every atom of matter, of whatever kind throughout the whole universe, is built up of electrons in conjunction with a nucleus. From the smallest atom of all — the atom of hydrogen — which consists of one electron, rotating round a positively charged nucleus, to a heavy complicated atom, such as the atom of gold, constituted of many electrons and a complex nucleus, *we have only to do with positive and negative units of electricity.*” — (Thomson, *ibid.*)

analogous to the electron.)

PHYSIOLOGY

“Occultism ... traces some of the most anthropoid species to the Third Race man of the early Atlantean Period.” – (S.D., II, 195).

Researches on “blood-groupings”:

Results obtained from the study of animals indicate that anthropoids alone show the human blood factors.

MEDICINE

The physical body of man undergoes a complete change of structure every seven years, and its destruction and preservation are due to the alternate functions of the Fiery Lives, as Destroyers and Builders.” – (S.D., I, 283.)

Modern science of medicine recognizes these:

1. Builders – Phagocytes
2. Destroyers – Leucocytes.

GEOLOGY

(*The Age of Man*)

“This Era (the Cenozoic Era) corresponds to the period of Activity on the Earth in the Fourth Round and, as we have seen, *The Secret Doctrine* gives 43 million years for the average duration of this one world-period.”

“It is interesting to note that the five Geologic periods included in the Cenozoic Era, correspond roughly to the periods of dominance of the five Root-Races spoken of in *The Secret Doctrine*.” – (E.W. Preston, *The Earth and Its Cycles*, pp. 47-48.)

N.B. – The Cenozoic Era of the Scientists corresponds to the Fourth Round of *The Secret Doctrine*.

“The beginning of the new volume of the book of life, that in which we find man as we know him, took place about 50 million years ago, if we are to accept the average value given by various scientific authorities.”

“The most important characteristic of the Cenozoic Era, as a whole, may be said to be the coming of the mammals and the development of the brain, culminating in man.” – (E.W. Preston, *The Earth and Its Cycles*, pp. 47-48.)

THE AGE OF THE EARTH

“Time from the beginning of Cosmic Evolution upto 1887, ... 1,955,884,687 years.” – (S.D., II, 72.) [Roughly 2,000 million years.]

“If we wish to fix our thoughts on a round number, probably 2,000 million years – is the best to select.” – (Sir James Jeans, *The Universe around Us*, pp. 148-152.)

Note. – The Age of the Earth,

“All the evidence is

according to *The Secret Doctrine*, given on p. 53 of this book, is an error; it should read as above. — Ed.

consistently in harmony with the conclusion of the last chapter that the Age of the Earth is between 1,600 and 3,000 million years." — (Prof. Arthur Holmes, *The Age of the Earth*, p. 77.)

ANTHROPOLOGY

(Peru)

Theosophy

Peruvian's power of handling great masses of stone, their love of colour and their capacity to produce brilliant pigments by unknown means ... Their civilization grew out of an impulse given in 19,400 B.C. from a still older one. It was still flourishing in 12,000 B.C. — (Besant and Leadbeater, *Man: Whence, How and Whither; The Lives of Alcyone*.)

Science

Archæologists brought the Peruvian civilization to light.

A. Hyatt Verill says: "The Astronomical observations of Prof. Rudolph Muller would seem to prove conclusively that the ruins of Tihnanaco are over 13,000 years of age." ... The great stone blocks of the well-known cyclopean ruins of Tihnanaco were brought from many miles away and are of unknown origin.... Pottery, beautifully modelled and of unique colouring, has been found.

Brilliant greens, blues, yellows and reds have been applied with unknown pigments and methods of firing. (Art. "Peru," *Enc. Brit.*, 1929.)

(For other examples see monograph on "Archæology.")

SYMBOLISM

"From the very beginning of æons ... the mysteries of Nature ... were recorded by the pupils of those same, now invisible, "Heavenly Men," (Adepts) in geometrical figures and symbols. The keys thereto passed from one generation of 'Wise Men' to another." — (S.D., I, 671.)

"We did not consciously set out to construct a geometrical theory of the world, we were seeking physical reality by approved methods and this is what has happened. As the geometry became more complex, the physics became simpler; until finally it almost appears that the physics has been absorbed into the geometry." — (Eddington, *Space, Time and Gravitation*, XII.)

“Modern Science is every day drawn more into the maelstrom of Occultism; unconsciously, no doubt, still very sensibly.” – (S.D., I, 149.)

“ – the external world described in physics (E. & O.E.) really exists.”

“One thing can perhaps usefully be added. I do not think that with any legitimate usage of the word it can be said that the external world of physics is the *only* world that really exists.” – (Eddington, *New Pathways in Science*, 1935, p. 26.)

“The most interesting moral to be drawn from Dr Dingle’s article has nothing to do with his detailed criticisms of the theories of the ‘Aristotelians’; but raises the matter of the curious relationship which at present subsists between metaphysics and science.” – (*Nature*, 12-6-37, Prof. C.G. Darwin, F.R.S.)

(See also “Physical Science and Philosophy,” *Nature*, 12-6-37, p. 1000 to 1012).

MYTHOLOGY

“This proves once more that, in order to be dealt with, with at least an approximate degree of justice, the so-called ‘myths’ have to be closely examined from all their aspects. In truth, every one of the seven keys has to be used in its right place and never mixed with the others – if we would unveil the entire cycle of mysteries”. – (S.D., II, 544.)

“With the material now to our hand it is important that we fully employ every possible rational method of interpretation. The folly of adopting one key to open all mythological doors has been illustrated by the fate of such systems as attempted to interpret the nature of the Gods by theories of a ‘disease of language’ ... Let no method, linguistic, solar, anthropological, dominate our conclusions but let none be absent from our counsels.” – (Lewis Spence, *Introduction to Mythology*, 1921, p. 115.)

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WHERE THEOSOPHY AND SCIENCE MEET

WHERE THEOSOPHY AND SCIENCE MEET

A STIMULUS TO MODERN THOUGHT

A COLLECTIVE WORK

EDITED BY

D.D. KANGA, I.E.S. (RETIRED)

*Managing Editor, Physical Science Section,
"Journal of the University of Bombay"*

PART II: MAN
FROM ATOM TO MAN

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PREFACE

IDEAS rule the world. What we think, feel and desire, and how we behave depend upon our outlook on the nature of ourselves and the Universe. The wider and deeper our outlook, the more correct our perspective and evaluation of life's events, and consequently the more rational our living; the deeper our understanding of the mainsprings of our thoughts, moods, emotions and actions, the fuller, richer and nobler our life. The aim of the book is to give that deeper knowledge and understanding of the constitution of man and the Universe, both outer and inner, visible and invisible, and to show the relationship between the two.

In this connection the editor wishes to draw the attention of the scientific world to the fine, solid work The Theosophical Research Centre, London, and the Research Seminars of The Theosophical Society, New York, are doing. The editor further wishes to draw the attention of the reader to the June 1938 number of THE THEOSOPHIST where he will find a series of learned articles by members of the science group of the London Research Centre on different scientific subjects, a perusal of which will give him a good insight into the relationship that exists between Theosophy and Science and show him how far and where they meet.

The editor gratefully acknowledges, on behalf of himself and the writers of different monographs, the help received from all the authors and publishers for the quotations used from their books and journals. He is also grateful to Mr C. Jinarajadasa and The Theosophical Publishing Houses, Adyar and London, for diagrams in "Chemistry" (Fig. 5). The editor sincerely thanks Mr M. Harihara Iyer, of Adyar, for his kind willing help in preparing a number of diagrams for this part.

The Theosophical Society,
Adyar, Madras, India,
31st August 1938.

D.D.K.

THE SCHEME OF THE BOOK

PART I. NATURE

FROM MACROCOSM TO MICROCOSM

From Macrocosm to Microcosm
Man and the Universe
Geology and The Secret Doctrine Compared
Archæology
The Meaning of Symbols: a Psychological and Philosophical Survey

PART II. MAN

FROM ATOM TO MAN

Matter and the Atom
Chemistry
Physics (Light, Sound, etc.)
Relativity
Modern Mathematical Thought
Evolutionary Biology: the Evolution of Form
From Mineral to Man

PART III. GOD

FROM HUMANITY TO DIVINITY

Physiology
Western Scientific Research and the Etheric Double
Mythology
Anthropology
Philosophy and Theosophy
Psychology
Yoga

PART IV:

SOME PRACTICAL APPLICATIONS

Methods of Research
Psychic Research
Medicine

Astrology

Law

The Practical Application to Politics and Government

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And What of Art?

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LIST OF CONTRIBUTORS

1. **Mr A. Rangaswamy Aiyar, B.A., B.L.**, Advocate, Madura, India.
2. **Miss Margaret A. Anderson**, Member of the Theosophical Research Centre, London. Writer.
3. **Dr G.S. Arundale, M.A., LL B., F.R. Hist. S., D. Litt.**, President of The Theosophical Society. Educationist, Lecturer, Author, Internationalist.
4. **Dr B.L. Atreya, M.A., D. Litt.**, Professor of Philosophy and Psychology, Benares Hindu University, India.

5. **Dr M. Beddow Bayly, M.R.C.S. (England), L.R.C.P. (London)**, holds many offices in medical and animal welfare societies.
6. **Dr L.J. Bendit, M.A. (Cantab.), M.R.C.S. (Eng.), L.R.C.P. (Lond.), D.P.M.**, Medical Psychologist, Lecturer, Author. Member of the Medical Group, the Theosophical Research Centre, London.
7. **Mr Claude Bragdon, New York**, Architect, Author of works on art, architecture and occultism. Co-translator with Nicholas Bessarackoff of Ouspensky's *Tertium Organum*.
8. **Dr (Miss) Thérèse Brosse, M.D. (Paris)**, on the staff of the Paris Hospital, expert in Cardiology. In 1935-36 toured India with a commission from the French Government to investigate physical reactions to states of consciousness in Yogis.
9. **Prof. Shyama Charan, M.A., M.Sc., (Lond.)**, Head of the Department of Mathematics, Agra College, Agra, India.
10. **Mr G. Nevin Drinkwater, B.Sc. (Lond.)**, Diplômé of the Museums Association, England. Author of *Corroborations of Occult Archæology*. Member of the Theosophical Research Centre, London.
11. **Mr Peter Freeman**, Member of the House of Commons (Labour), 1929-31. General Secretary of The Theosophical Society in Wales since 1922.
12. **Mr Iwan A. Hawliczek, B.Sc. (Mathematics)**, Member of the Theosophical Research Centre, London. Joint Author with Prof. Marcault of *The Next Step in Evolution*. Travelling Lecturer. Librarian, The Theosophical Society, England.
13. **Mr C. Jinarajadasa, M.A. (Cantab.)**, formerly Vice-President of The Theosophical Society. World Traveller, Internationalist, Lecturer and Author.
14. **Prof. D.D. Kanga, M.A., A.I.C., A.I.I.Sc., I.E.S. (Retd.)**, Member of the Chemistry Editorial Board, and Managing Editor of the Physical Science Section of the *Journal of the University of Bombay*. Editor, WHERE THEOSOPHY AND SCIENCE MEET.
15. **Mr R.D. Kanga, M.A.**, Assistant Secretary, the Bombay Electric Supply and Tramways Co. Ltd., Bombay.
16. **Shri Vishwanath Keskar**, Teacher of religion and philosophy, Lecturer and Author.
17. **Mr A.F. Knudsen**, Civil Engineer; has made seven world tours. Presidential Agent, The Theosophical Society, East Asia (Headquarters, Shanghai).
18. **Mr Fritz Kunz, B.A.**, National Lecturer, U.S.A. Director of Research Seminars and Originator of Visual Education Service. Author of *The Men beyond Mankind*, etc.
19. **Mr Charles E. Luntz**, Author; specializes in occult interpretation of the Bible and Esoteric Astrology; 12 years Lecturer on Theosophy in Central, Eastern and Southern States, U.S.A.
20. **Prof. J. Emile Marcault, M.A., LL.B.**, Scholar, Psychologist, Educationist, Professor of Psychology and French Literature, University of Claremont (1909-17), University of Pisa (Psychology) 1917-24. General Secretary of The Theosophical Society in France.
21. **Madame Marguerite Mertens-Stienon**, Theosophical Lecturer in England and abroad. Author of *Symbology*. Convener, Symbology Group, the Theosophical Research Centre, London.

22. **Prof. G.E. Monod-Herzen, D.Sc.**, Professor of Physics, Faculty of Medicine, Kabul University, Afghanistan.
23. **Capt. A.G. Pape**, Author of *Is There a New Race Type?* Founding Fellow of the Anthropological Society of Scotland.
24. **Miss Edith F. Pinchin, M.R.S.T.**, Montessori Diplomée; on the staff of the Besant Memorial School, Adyar. Member of the Theosophical Research Centre, London. Member of the Folk-Lore Society. Author of *The Bridge of the Gods, A Study in Gaelic Mythology*. Chief Knight for England of The Round Table for many years.
25. **Mr Gaston Polak**, Civil Mining Engineer. General Secretary, The Theosophical Society, Belgium.
26. **Dr D.H. Prins**, Editor and Writer. The Hague, Holland.
27. **Dr Pieter K. Roest, Ph.D. (Chicago)**, National Lecturer for The Theosophical Society in the United States of America since 1934.
28. **Miss Julia K. Sommer, B.Sc. (Chicago), M.A. (Columbia)**, Chairman, American Section of the Theosophical World University Movement, and of its Research Department. Editor, *Child-Training in the Light of Theosophy*. Lecturer and writer for the spread of ideas of progressive education.
29. **Dr (Miss) Corona G. Trew, B.Sc., Ph.D. (London)**, Member of the Theosophical Research Centre, London, Joint Author of *Studies in Evolutionary Psychology*. Lecturer in Chemistry, Bedford College, London.

INTRODUCTION

Man, Centre of Study and Research.

ONE important point brought out in the Introduction as well as in the Preface to Part I¹ of this book was that *man* has now become the centre of study and research, and that he should be studied not by the scientific method alone but also by the occult method, and what the occult method is, is shown by Theosophy. Our intention, in this Introduction to Part II, is to elaborate this point so that the rationale for our advocacy of the occult method *over and above the scientific method* for the study of man may become clear.

How Is Man to Be studied?

Survey of Events.

We shall take a rapid survey of the events which have brought to the forefront the study of man.

Overproduction a Curse.

1. Sir William Crookes sounded a note of warning in the address he gave, as President of the British Association for the Advancement of Science at Bristol in 1898, by saying that considering the rate at which the existing sources of manures were depleted there would be a wheat famine in the near future if they were not supplemented by synthetic manures. Little did he dream then that not under-production but over-

production of wheat would loom large in the minds of people and would be considered a cause of depression in trade and a curse.²

A man who could make two blades of grass grow where one grew before was supposed to be a benefactor of the human race. Science and engineering have advanced so much now that they have been able to make not only two but half a dozen or a dozen blades of grass grow where one grew before; in other words, they have solved the question of production and also of transportation, and yet we find millions starving and not getting even one full meal a day, and millions again going without sufficient clothing to cover their bodies.

Poverty in the Midst of Plenty.

Taylor in concluding his article on "Food Supply of the World," in the latest edition of *The Encyclopædia Britannica*, says: "The food resources of the world have never been more ample for the population than at present. This is the result of developments in agriculture, perfection of transportation, improvements in distribution, reduction in wastes and efficiencies in finance and commerce." And yet we have the sad spectacle of "Poverty in the midst of Plenty."

Human Nature at Fault.

Science has no doubt the power not only to produce but also to transport and distribute, but there is *no desire* and *will* to distribute. There is, again, something radically wrong with the human nature which can permit foods to be destroyed by consuming in fire, sinking in the sea or throwing in the drains rather than transport them to places where they are most needed.

The Individual Problem Is the World Problem.

These considerations brought to the forefront the problem of the individual. "It is the individual who must change; this change must come from within; his inner attitude must change; no amount of external change will bring us nearer to the solution of the present-day world-problems. Solve the problem of the individual and the world-problems will automatically solve themselves."¹

Achievements of Science.

2. The achievements of science have been many and varied. We read in the papers only a short time back (July 1938) of an U.S.A. airman going round the world in 91 hours. The radio, the wireless, the cinema, the telegraph and the telephone, the aeroplane and the oil ship have brought the different countries much nearer one another. There is a material linking of the different parts of the world, but there is not yet a friendly union, a union in cultural and spiritual friendship. In spite of man having conquered time and space one man does not understand another man, simply because he does not understand himself. Once more the problem turns round the individual.

No Cultural Union.

Fear, Mistrust, and Suspicion Everywhere.

3. We are living in an anxious and tragic world. The knotty international problems of poverty, unemployment and war are facing us. There is fear, suspicion and mistrust everywhere, and consequently there is going on a mad race in the building of armaments. England is spending one million pounds a day to equip herself thoroughly against aggression; so does every other big power in the world.

Cut-Throat Competition.

Every country is again trying to be self-sufficient whether it is fitted by nature for that purpose or not. Every country is again producing more than the requirements of its own people and then trying to find outlets in foreign countries for the excess of goods produced or manufactured, with the result that there is cut-throat competition and wars.

International Morality.

“International morality, at present, does not exist. Murder within the family, the tribe, and the nation is marked as a crime.... But multiple murder outside the nation—War—is not regarded as criminal, nor is theft ‘wrong,’ when committed by a strong nation on a weak one.”¹

Different Schemes and Institutions.

Different schemes and institutions, both economic and political, have been and are being tried in different countries at the present day, but none of them has brought us nearer the solution of these great problems.

New Types of Men Wanted.

The idea then dawns upon us that it is the individual again who must be tackled, for what is wanted is not new institutions but new types of men who will use new ways of solving these problems. Once more the question reduces itself to the study of man.

Abuse of Nature’s Forces.

4. During wars we hear of abuse of the forces of nature which science has placed in the hands of man. In case of a great European war the destruction of life, property and art-treasures would be terrible, and with the greater weapons of destruction, which have been invented since the last Great War of 1914-18, the great and glorious western civilization which it has taken so many centuries to build will receive a heavy set-back.

Danger to Civilization.

5. This state of affairs has brought out memorable and thought-provoking statements from different leaders of thought and science, particularly the Presidents of the British Association for the Advancement of Science, during recent years.

A Note of Warning.

The late Sir James Alfred Ewing (1932) sounded a note of warning by challenging man when he said: "Is man ethically fit for the bounties of science? ... Control over nature's forces has been placed in the hands of man before he is able to control himself."

Sir Josiah Stamp.

Sir Josiah Stamp (1936) in his masterly address, discussing the statements of his predecessors in the chair, came to very important conclusions and put them very emphatically before the scientific world –

(a) that hitherto too much attention was paid to researches on the sciences of matter and too little on the science of man;

(b) that the material and physical sciences have far outstripped the social sciences and the gap between the scientific discoveries and their sociological applications is tending to increase;

(c) that progress in man's moral and spiritual nature has not kept pace with his intellectual progress;

(d) that man has conquered the external world and obtained control over nature's forces, but he has still to conquer the inner world and gain control over the forces of his inner nature.

Man, know Thyself.

Look at this question from whatever angle we may, we are again and again driven to the same conclusion, namely, that the problem of all problems that requires to be solved is the problem of the individual. It is the same age-old problem of "Man, Know Thyself"; and if the problem is to be tackled successfully the same age-old method, namely the *occult method*, advocated by the sages and seers of the past, will have to be used. Let us explain.

Advocacy of the Occult Method.

The line of argument followed here in advocating the occult method over and above the scientific method for the study of man, is simple and straightforward. There is no appeal to blind faith, nor is there any attempt made to claim consideration for what is said by any appeal to dogmatic authority. Summarizing the arguments given in the Introduction to Part I, we say that a large number of *scientific* statements are found in the classic *theosophical* literature. They were made several years ago. They are now being *corroborated by modern science* in increasing numbers year after year.¹ These scientific statements made in theosophical literature and the ancient wisdom were not the result of investigation by the orthodox scientific method. They were arrived at by another method called the *occult method*.² This shows that the orthodox scientific

method is not the only method for the discovery of Truth. There may be other methods of investigation and the occult method is one of them.

Scientific Corroborations of Theosophy.

Other Methods of Investigation.

Methods of Research Compared.

Now the occult method is not in any way contradictory to the scientific method; it is truly an extension of the scientific method and supplementary to it. We also say that it is superior to the scientific method from several points of view. In the first place, the occult method of research is more comprehensive than the orthodox scientific method, because it has “a wider range of data from which to draw inferences, for in addition to scientific data it includes also data obtained by clairvoyant research—and clairvoyance is now recognized as a fact in nature;³ secondly, it collects its data by actually seeing the inner working of the phenomena [in their *normal* condition] and not by the observation of their external behaviour [under *strained* conditions of experiment] as is done by science; and thirdly, it can survey a long stretch of time extending over tens of thousands of years, clairvoyant observations of which have been made by a very large number of seers and sages of the past.”¹ Fourthly, the occult method is helpful in the investigation of subtler forces and subtler worlds, whereas the orthodox scientific method fails here simply because these subtler forces and subtler worlds do not respond to the apparatus of the orthodox scientist, however complicated, powerful or delicate it may be.²

Limitations of Scientific Method.

It is gratifying to note that modern science, too, now recognizes “the limitations of science as a method of acquiring knowledge about reality.”³ The scientific method has its limitations:

Science cannot, owing to the very nature of things, unveil the mystery of the Universe around us. Science can, it is true, collect, classify, and generalize upon phenomena.... the daring explorer, who would probe the inmost secrets of Nature *must transcend the narrow limitations of sense*, and transfer his consciousness into the region of Noumena and the sphere of Primal Causes. To effect this, he must develop faculties which.... are.... dormant.⁴ [The italics are mine. — D.D.K.]

Latent Faculties in Man.

This means that the orthodox scientist has to recognize in the first place that there are latent faculties in man over and above the five senses of man, that there are other and subtler worlds besides the physical,⁵ and that in the investigation of these latent faculties and subtler worlds the employment of subtler senses is required. The following statement coming from a scientist is worth noting here:

Science deals with but a partial aspect of reality, and there is no faintest reason for supposing that everything science ignores is less real than what it accepts.⁶

Existence of Subtler Worlds.

In this connection a glance at the diagrams given in the monographs "Matter and the Atom" and "Chemistry" is requested. This will help to make many things clear. These diagrams show that the denser physical world and the other subtler worlds which are mentioned in theosophical literature exist side by side, here and now,¹ the subtler penetrating the denser.² They also show that *the planes of consciousness and of matter are always linked together*, and that the constitution of man is analogous to that of the solar system.

Training and Discipline.

We say that these latent faculties which are dormant in the case of the majority of people could be "developed by suitable training and discipline; these are just as necessary for occult research as is the hard training which a scientist has to undergo for scientific research."³ What these training and discipline are, is shown in theosophical literature.⁴

Change of Heart.

Now the most characteristic feature of the occult method, and because of which it is superior to the scientific method, is that the training which it gives and the discipline which it involves bring about *a change of heart, the inner change in man* which is so very necessary to solve the many complicated problems facing society at the present day as we saw in the first part of our subject. The scientific method of training has *failed* to bring about this change so far and whether it will bring about that change in the future is doubtful; whilst in the occult method, where no external apparatus is used for research but where the man transforms *himself* into an instrument of research, the change of heart and purification of mind are certain, for it is only when he is thoroughly purified in his emotions, self-controlled in thought, and when his thoughts, emotions and actions are harmonized and all working under the direction of the will for a definite glorious object benefiting humanity, that he develops himself slowly into an occult researcher.

Mind-Control Alone, Not Enough.

Intuitional Research.

But there are stages in occult research. Long before one becomes proficient in occult research and makes use of his clairvoyant faculties *objectively* there comes a stage where a person receives flashes of intuition, very rarely in the beginning, and they come only when the mind is in a state of rest.¹ As one gets a clear-cut image of a mountain in a lake only when its waters are pure and when there are no ripples there, so does one

get the sun of truth reflected in oneself when one is pure, well balanced and harmonized. The brilliant thoughts which scientists get and which culminate in great, epoch-making researches come from the intuitional level of consciousness,² and this level of consciousness is beyond the mental. The immediate next step for the scientist of the present day is the development of this intuitive faculty, (see diagrams 1 and 7 in "Chemistry"). For the field of future scientific research, see diagram 5 in "Matter and the Atom," diagram 7 in "Chemistry," and all the monographs in this Part II.

It may be pointed out at this stage that what was said above about the occult method with reference to man as scientist applies as well in the case of man as such, for every man is a potential occultist and *it is impossible to separate the scientist from man*.

³"Chemistry," Diagrams 1 and 7.

The Value of Occult Discipline.

And so we come to the last part of our argument in our advocacy of the use of the occult method in the study of man. The result is unexpected but most gratifying and encouraging. We urged the use of the occult method where the orthodox scientific method failed on account of its limitations and where we find that the same occult method has shown itself capable of indirectly solving some of the most difficult problems facing society. The occult discipline has the beauty to change a man from a selfish, fighting, exploiting *animal* that he is to an unselfish, loving, co-operating *human being*, willing to share his all with others, as he begins to have a faint glimpse of the Scheme and gets a gradually increasing understanding of the same. The aim of this Series is to give that knowledge and understanding, and every monograph is written with that end in view.

Research and Social Order.

As the occult method has the power of changing the man from within, the question of abuse of power and the consequent threat to civilization does not arise. The problem of relationship between science and society and between research and social order will now be seen in its proper perspective. That a scientist is also a member of society and a citizen of the state, and as such has his duties and responsibilities to them both, will now be recognized. The unwisdom of divorcing the science of man (spirit, consciousness, life) from the sciences of matter (form) will now be seen in its true condition. It is this divorce which has led to the lop-sided development of human nature, resulting in the present chaos by the disturbance of social balance. Constituted as man really is, these two sciences cannot be separated. Theosophy recognizes the use and value of *both* these sciences. The proposals to form a "Chamber of Science" by Sir Gowland Hopkins, a "Scientific League of Nations" by Ritchie Calder, and the passing of the following resolution, which recognizes the principle of Universal Brotherhood, by the American Association for the Advancement of Science at the Indianapolis meeting on 30 December 1937, that –

Scientific League of Nations.

Science is wholly independent of national boundaries and races and creeds and can flourish permanently only where there is peace and intellectual freedom,

– all these will now be seen as moves in the right direction, inasmuch as they all help us to become universal, to look to the totality of things and to experience a feeling of wholeness.

The Inner and Upward Urge.

The beauty of the theosophical presentation of the whole scheme of evolution is that it supplies “the *motive power* and gives a rationale for the *inner and upward urge* in life by showing the origin of man, his purpose in life, his relation to the universe, and his continuous evolution and glorious destiny.”¹ If the theosophical Plan shows that man is more than his body and mind, assigns “to man his rightful place in the scheme of the Universe,”² and points out the part he has to play in that scheme and its rationale, and if the occult method shows *in a practical way* how to bring about the change of heart in the inner man and thus help him to become a conscious co-operator in the Plan, then what steps should be taken by us to bring about this desirable change? We are of the opinion that the establishment of a Chair in Occultism in the principal Universities of the world will go a long way to carry out the desired object, for it will go to the root of the whole question of the study of man, tackle the problems of the inner urge and change of heart very successfully, and thus indirectly help to solve some of the grave problems facing society – and at the same time act as a check and give a timely warning against the dangers of pseudo-occultism¹ which has become so rampant at the present day.

Chair in Occultism.

Complete Diagnosis.

The world is sick, suffering from a malady, for the correct and thorough diagnosis of which an expert physician is needed. The physician should be completely acquainted with the constitution of Man and the Universe; if he ignores any important factors then his diagnosis will not be thorough and so the remedy which he might suggest for the cure of the malady will not be adequate. For a complete diagnosis of the case, it is necessary for him to examine his patient both from within and without, from within by the occult method, from without by the orthodox scientific method. By the latter method he examines the visible outer man and nature, and by the former method the hidden side of man and nature. The use of either of these two methods *alone* is not enough. Both are necessary. A synthesis of both these methods is needed.

A faint glimmering of this approaching synthesis was foreshadowed in the illuminating discussion published in *Nature* over the question of the relationship that

should subsist between metaphysics and science.² It has also been hinted at by Sullivan in the words with which he concludes his chapter on *The Limitations of Science*:

We conclude, therefore, that the truly significant change in modern science is not to be found in its increased powers to aid man's progress, but *in the change in its metaphysical foundations*.¹ [The italics are mine. — D.D.K.]

Synthesis.

It is the synthesis of these two methods which we are advocating. This will lead to unexpected results beyond one's imagination. And the world will take a definite step forward and lay the foundation of a new civilization. This civilization will not be built over the ashes of the old—for we believe that by the adoption of the policy we are advocating the present danger to our civilization will be averted—but over the structure raised by it one more beautiful story will be added. Let us all work for it. What a privilege is ours! How inspiring! To have a glimpse of the divine Plan and then to become a conscious active co-operator with the will of God to carry out His Scheme of Evolution. What a transformation a vision of the Plan could bring in us is shown beautifully in the following words:

To see that Plan is to have the Beatific Vision; to work for that Plan is to change one's mortal nature to that of a deathless immortal. Deathlessness in life, Eternity in time, Divinity in humanity, are his who, understanding the Plan, works for it unceasingly.²

D.D. KANGA

MATTER AND THE ATOM

BY G. MONOD-HERZEN

INTRODUCTION

THIS Series of monographs is intended to indicate the points where Theosophy and Science meet. Properly speaking they should meet everywhere, for both are disinterested inquiries after Truth. But neither of them is yet complete: they are alive and so possess one concomitant factor of progress—an infinite succession of ignorances.

But as the objects and methods of these two schools of inquiry are different, it follows that Theosophy is acquainted with many things of which Science as yet knows little or nothing and vice versa.

The department in which this disparity is most obvious is probably that which deals with the physical world and with matter. This is a pity, because this department

is necessarily the one to be first investigated by those who wish to base their studies on objective knowledge. However spiritual a theory may be, it must necessarily admit the existence of a physical world, and in some measure explain it.

Theosophical knowledge has not failed in this respect, but it has touched upon it only incidentally. For Theosophy, matter is primarily the field of human evolution. That explains the comparatively small amount of information on the subject found in theosophical classic literature. On the other hand, western Science has spent twenty-five centuries on the study of matter, while it has concerned itself with human evolution only during the last two hundred years. Obviously then, we shall find few points of contact between Science and Theosophy in this department of knowledge.

This monograph deals with Matter and the Atom from the theosophical and scientific points of view. No definite conclusion is possible; for only one is useful—an outline of the unknown territories which it is urgent to explore. I will not fail to give this.

MATTER AND THE ATOM

The evolution of Science is seen reflected in the progressive idea scholars have had of the Atom, changing from the indestructible atom of the Greek philosophers to the modern vortex of waves, keeping nevertheless a definite structure.

We now wish to place side by side the theosophical and scientific conceptions of Matter, in order to show where they coincide and where they differ.

Science considers Matter as a datum of actual observation. The atoms of which this matter consists have been taken as endowed with such characteristics as were required to account for the physical and chemical phenomena in which they took part. Only lately, since the discovery of radioactivity and the study of the evolution of the stars, has the question of the evolution of matter and of a derivative relation between the atoms been posited.

But Theosophy considers Matter as essentially not only subject to, but also as a means of, evolution. It posits many different types of matter, of which only a small part is accessible to our senses and as such studied by Science. It is only recently that theosophists have concerned themselves with the study (by their own methods) of the states of matter known to Science. Their methods are observational ones, that is, these theosophists claim to know by direct observation the form and structure of the fabric of the atom. We have thus quite another field from that of the scientist, for the latter does not perceive in any way the atoms themselves, but strives to imagine their shape and structure so as to explain their characteristics, which characteristics alone are within his perception.

Starting from such different points of view, it is not astonishing that Science and Theosophy should finally reach conceptions differing equally in aspect. We shall now try to summarize these conceptions, stressing their essential features.

THE THEOSOPHICAL FIELD

Father-Mother spin a Web, whose upper end is fastened to Spirit, the Light of the One Darkness, and the lower one to its shadowy end, Matter; and this Web is the Universe, spun out of the Two Substances made in One, which is Svabhāvat.¹

The idea of evolution dominates the whole of theosophical teaching. In this teaching matter is considered on the one hand as the result of an evolution suitable to it, and on the other hand as the medium in which other lines of evolution manifest. In order therefore to understand the nature of matter, it is advisable to try to reach as far as possible towards the "origin" of matter.

Now matter itself is eternal, but in any given part of the universe its manifestation has a beginning. We shall deal with that part of the universe containing our solar system, with which alone most of the theosophical observations deal.

Before this solar system arose, there existed Primordial Matter, described as being composed of innumerable Bubbles, empty and homogeneous (called in several theosophical works Koilon) and existing in the Womb of Space.

All matter is composed of groups of these bubbles. Matter is thus a kind of foam, depending for its existence on the Creative Power, which shapes and sustains these primordial bubbles – actual units of creative energy.

The Creative Power which functions at the genesis of the solar system thus finds this Primordial Matter available and organizes it; that is, it submits this Matter to the play of various kinds of Energy and this brings about definite groupings of bubbles of varying structure, which serve as types of "bricks" to be used in the building of the solar system.

There are seven main types of such matter, each having seven sub-types, or forty-nine types in all.

In order to refer to them, we shall use Mr Jinarajadasa's notation. Each main type will have a number according to its order, and to show the sub-type we shall affix to this a number as index. Thus 1_1 represents the [first sub-type of the first type of matter; 7_4 represents the fourth sub-type of matter of the seventh type, and so on.

The totality of a type of matter is called a Plane (or World) and the totality of matter in a sub-type is called a Sub-Plane. The seven planes and their sub-planes can be represented thus:

		Planes						
		1 ₁	2 ₁	3 ₁	4 ₁	5 ₁	6 ₁	7 ₁
Sub-Planes	1 ₂	1 ₂	2 ₂	3 ₂	4 ₂	5 ₂	6 ₂	7 ₂
	1 ₃	1 ₃	2 ₃	3 ₃	4 ₃	5 ₃	6 ₃	7 ₃
	1 ₄	1 ₄	2 ₄	3 ₄	4 ₄	5 ₄	6 ₄	7 ₄
	1 ₅	1 ₅	2 ₅	3 ₅	4 ₅	5 ₅	6 ₅	7 ₅
	1 ₆	1 ₆	2 ₆	3 ₆	4 ₆	5 ₆	6 ₆	7 ₆
	1 ₇	1 ₇	2 ₇	3 ₇	4 ₇	5 ₇	6 ₇	7 ₇

FIG. 1
Types of Matter.

Two hypotheses have been brought forward as to the way in which this matter has been formed. They have the following idea in common. These different types of matter are due to two successive actions of the same Creative Agency (the Third Aspect of the Divine Power).

The first action brings about the groupings of bubbles of six different types, which, with a certain number of the original bubbles, left free and unchanged, will make the seven fundamental types of matter, one for each plane. The second action brings about in each of the planes a modification analogous to the one which has already taken place, and these two actions bring about the required result.

The two hypotheses differ as to the mechanism of these modifications.

First Hypothesis.—We shall state this hypothesis first, although it is the most recent, because of its simplicity. It has been set out by Mr Jinarajadasa in his *First Principles of Theosophy*.

According to him, the Divine Power in its first phase of activity produces the atoms of the first sub-plane of all the

		Planes						
Sub-Planes	1 ₁	1 ₁	2 ₁	3 ₁	4 ₁	5 ₁	6 ₁	7 ₁
	2 ₁	1 ₁	2 ₁	3 ₁	4 ₁	5 ₁	6 ₁	7 ₁
	3 ₁	1 ₁	2 ₁	3 ₁	4 ₁	5 ₁	6 ₁	7 ₁
	4 ₁	1 ₁	2 ₁	3 ₁	4 ₁	5 ₁	6 ₁	7 ₁
	5 ₁	1 ₁	2 ₁	3 ₁	4 ₁	5 ₁	6 ₁	7 ₁
	6 ₁	1 ₁	2 ₁	3 ₁	4 ₁	5 ₁	6 ₁	7 ₁
	7 ₁	1 ₁	2 ₁	3 ₁	4 ₁	5 ₁	6 ₁	7 ₁
	8 ₁	1 ₁	2 ₁	3 ₁	4 ₁	5 ₁	6 ₁	7 ₁

Result of first phase of Divine Activity.

planes. At this stage the whole space to be occupied by the solar system is filled with a mixture of these seven types of atoms. In the second phase of its activity, the Creative Power forms the other sub-plane atoms by modifying these seven primitive types. We are not told anything of the mechanism of this change.

Second Hypothesis.—According to this hypothesis the first types of the atoms of the seven sub-planes are not those of the first sub-plane, but those of the sub-plane corresponding in number to the number of the plane, *i.e.*, 1₁, 2₂, 3₃, 4₄, 5₅, 6₆, 7₇, what we may call the fundamental types.

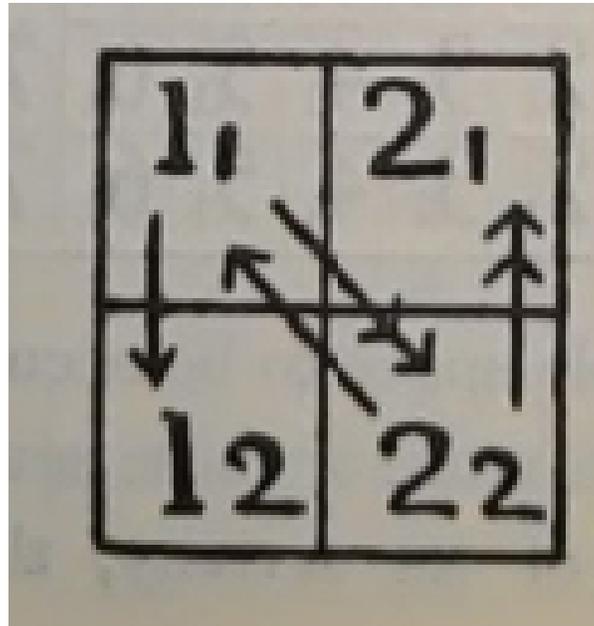
		Planes						
Sub-planes	1 ₁	1 ₁						
	2 ₂		2 ₂					
	3 ₃			3 ₃				
	4 ₄				4 ₄			
	5 ₅					5 ₅		
	6 ₆						6 ₆	
	7 ₇							7 ₇
	8 ₈							

Fundamental Types.

And the atoms of the other sub-planes will be formed by the interaction of these fundamental atoms amongst themselves.

A sketch of this hypothesis is to be found in *The Evolution of Life and Form* by Annie Besant. This hypothesis is based on the Hindu theory of Tanmātras.

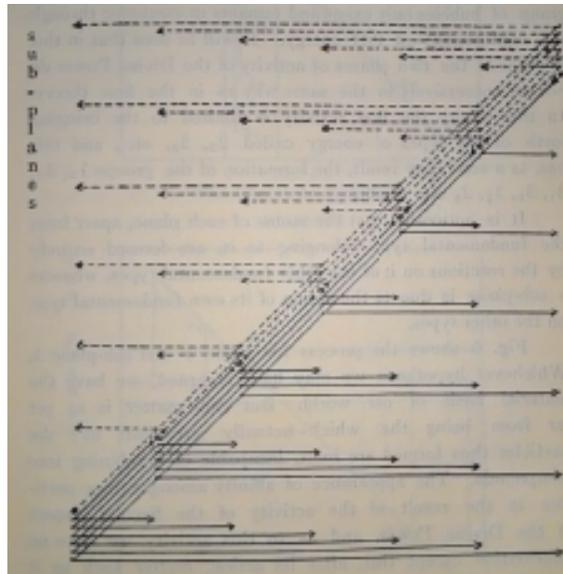
At the beginning, the space to be later occupied by the solar system (represented by the square of the diagram) only contains bubbles, that is, matter of type 1_1 .



Action of the second fundamental type and reaction of the first fundamental type on the former.

The Creative Energy then causes Matter of type 2_2 to appear by radiating out on that space a new kind of Energy which we may call 2. The action of this energy on matter 1_1 will be twofold: (a) it will form atoms of matter of type 2_2 ; (b) it will form atoms of the type of 1_2 . But by a reaction equal and opposite to this action, the energy of type 1 will disintegrate some of the 2_2 atoms and thus create 2_1 atoms.

PLANES



Formation of the seven planes and their seven sub-planes.

It is obvious that this process repeated seven times will bring about the existence of the forty-nine types of matter (see fig. 5). It will be seen that the characteristic atoms of each plane, *i.e.* $1_1, 2_2, 3_3, 4_4, 5_5, 6_6, 7_7$, are in this theory considered as direct expressions of a definite type of Energy, this Energy having as its essential nature the power to group the bubbles in a definite way. Every particle of Matter is indissolubly connected with the kind of Energy to which it corresponds. And this is necessarily so, for each group of bubbles only exists and remains in existence through the continuance of that energy. It will be seen that in this hypothesis the two phases of activity of the Divine Power do not act successively in the same way as in the first theory: In this theory the first activity is limited to the bringing forth of the types of energy called $2_2, 3_3$, etc., and this has, as a secondary result, the formation of the groups $1_2, 2_1, 3_1, 3_2, 1_3, 2_3$ etc. (fig 6).

It is noticeable that the atoms of each plane, apart from the fundamental type belonging to it, are formed entirely by the reactions on it of the other fundamental types, whereas a sub-plane is due to the action of its own fundamental type on the other types.

Fig. 6 shows the process for plane 3 and sub-plane 3. Whichever hypothesis we may have accepted, we have the material basis of our world. But this matter is as yet far from being that which actually surrounds us; the particles thus formed are inert, incapable of combining into compounds. The appearance of affinity amongst these particles is the result of the activity of the Second Aspect of the Divine Power, and as to this activity we have no information except that, after its action, matter such as it actually exists with its physical and chemical laws is completely formed.

PLANES

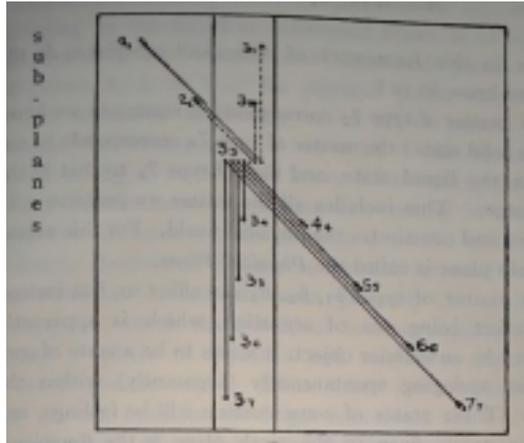


FIG. 6 A
Formation of the third plane.

PLANES

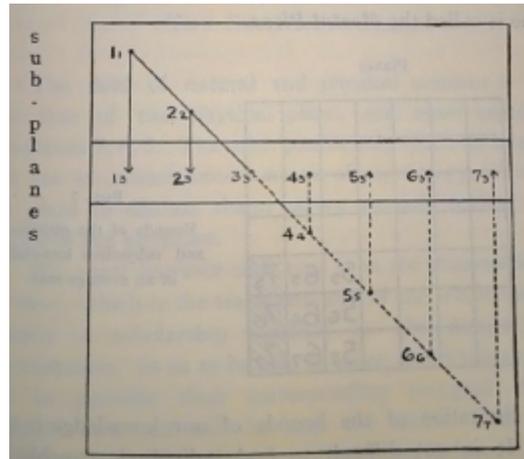


FIG. 6 B
Formation of the third sub-plane.

MEANING OF THE PLANES

How in this framework of planes and sub-planes do the objects we know fit in?

The matter of type 7_7 corresponds to matter as we know it in the solid state; the matter of type 7_6 corresponds to our matter in the liquid state, and that of type 7_5 to that in the gaseous state. This includes all the matter we perceive with our senses, and

constitutes the physical world. For this reason the seventh plane is called the *Physical Plane*.

The matter of types 6₇, 6₆, 6₅ can affect us, but instead of this effect being one of sensation, which is apparently determined by an exterior object, it seems to be a state of consciousness, springing spontaneously (apparently) within the observer. These states of consciousness will be feelings, and hence the name given to the sixth plane is the *Emotional Plane*. In an analogous manner the matter of type 5₇, 5₆, 5₅ is manifested to us by the appearance of thoughts, and this fifth plane is called the *Mental Plane*.

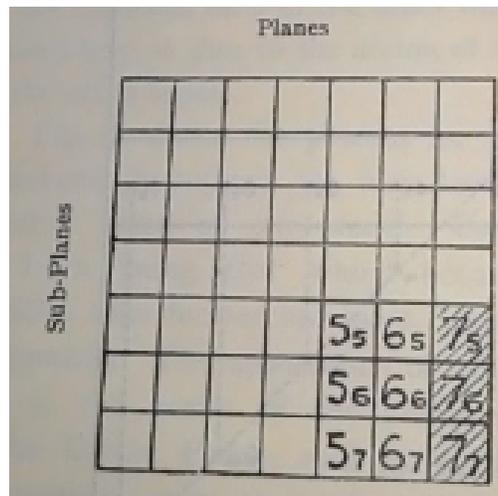


FIG. 7

Bounds of the objective and subjective knowledge of an average man.

This limitation of the bounds of our knowledge is not absolute. It is not difficult to find individuals capable of consciousness resulting from the action of the type of matter belonging to the fourth or *Intuitional Plane*, or to the fourth sub-planes of the mental and emotional planes. As to sub-planes 4, 3, 2, 1 of the physical plane, they are more or less accessible objectively to us all in certain circumstances. In consequence, if we wish to be accurate, we should in fig. 7 replace the heavy lines limiting the spheres of our consciousness by a thin line taking in about one more row of squares both above and to the left of the area enclosed. Individual differences scarcely account for more. But there are exceptional cases, generally the result of long training, in which the individual becomes capable of experiencing a sphere of objective and subjective consciousness of much greater extent. These cases are very rare indeed and we can consider the larger unenclosed space of fig. 7 as symbolical of all our latent possibilities of consciousness and of development which will constitute our future evolution.

THE SCIENTIFIC FIELD

The field of natural and physical sciences is essentially that of the physical plane, and more especially of sub-planes 7, 6, 5. The other planes only touch us subjectively

and are in consequence a matter of psychology. This is not the place to discuss them, as we are only dealing with the Matter of the physicist.

We must however state that from the theosophical point of view, which is the traditional one of the whole Orient, the essence of scholarship consists in the development of consciousness, so as to be able to know other types of matter and to perceive their corresponding energies. Thus the scholar's own self will be both the matter with which he works and also the instrument of his observations. To reach this goal, he must submit to a discipline – his consciousness must be indissolubly bound to an ethical system.

The scientific point of view is quite different. It is a static one as far as the field of consciousness is concerned. This field, especially the objective field, is considered as fixed, and even as unchangeable. Even so, it is an advantage to the scholar to possess delicate and well-trained senses, but this is not essential, for the physical plane will furnish him with instruments, extending greatly the limited powers of his senses. The consciousness which he obtains in this way will be deeply *within* the physical plane, and not as that of the oriental along the surface of the other planes. It is clear that facts about the same object gathered by these different methods may differ. This is why a comparison between them is so valuable.

Whereas theosophical science has only a little information on the regions beyond the solar system, scientific knowledge in this direction far exceeds it. It knows that in boundless space Island-Universes float, nebulous, in the form of spirals, moving with speeds of the order of thousands of kilometres per second. Immense distances separate them, since light takes at least a million years at the rate of ten billion kilometres per year to pass from one universe to another, whereas it takes on an average only about 50,000 years to pass from one extremity to another of such a universe.

Amongst the two million or so of such universes, one is ours. Unusually large, it has the usual shape – a disc ten times less thick than wide, shaped as a spiral. It includes about 50,000 million stars of which our sun is one. When we lift up our eyes on a clear night, we see, in the long ribbon of the Milky Way, the multitude of stars belonging to our nebula.

The rank of our Solar System is of the humblest. But analysis of the light which reaches us from the stars has brought to our knowledge a material fact – the unity of Matter. After a few doubts during the last twenty years, it can now be stated that we know of no chemical element present in the stars which is not also present on the earth. The converse is not true. We know of many elements present on the earth which do not appear in the stars.

This gives us the hope of obtaining some facts as to the genesis of the elements. We have no certain knowledge on this subject. But we have some valuable facts as to the evolution of the stars. In fact we have so many that, like a traveller in a forest, we can see at one and the same time individuals of all ages. The problem is to know how to place these individuals in the right order and to know in which direction evolution has travelled along them. As far as the stars are concerned, the first part of the problem is solved, and to the second part we have a satisfactory answer.

Obviously we know neither the beginning nor the end of the process. A star is only visible to us when its temperature is at least 2,700 degrees, and the youngest as well as the oldest stars are cold. In their youth they are gaseous, very large—their diameter being sometimes one hundred times that of the sun—and of very low density. This huge globe evolves by contracting, which increases its density and raises its temperature; the latter may rise to 30,000 degrees.

Now all energy, more especially all light, has mass, and the radiation of the stars makes them diminish in mass, and although their density does not alter much, their temperature decreases, and in time the star becomes invisible.

To this increase and decrease of temperature correspond changes in chemical composition. Their light changes colour and this shows us the appearance and disappearance of certain chemical elements. It is only in the larger stars, the younger ones, that molecules, that is, chemical compounds, are found.

As soon as the temperature rises to 4,000 degrees, only elements are found, metals predominate, but hydrogen is already present. As the temperature rises, the metals progressively lose their importance and hydrogen attains the first rank. Then the heavier metals disappear, the lighter ones follow, and at the highest temperature only hydrogen and helium, the two lightest elements, remain. As the temperature decreases, the elements reappear in the inverse order and finally carbon, the basis of living matter, is present.

One is tempted to deduce from these facts that heat, as its temperature increases, disintegrates the heavier elements into the lighter ones, and then as its temperature decreases allows them to reunite. Thus at every temperature (and at every pressure) matter would be composed of a definite number of different atoms. This hypothesis is all the more attractive because the masses of the atoms are very approximately integral multiples of the mass of the hydrogen atom.

From this it would not be a great step to conclude that this light atom, which is almost the only one in the hottest stars, is the element which by combining with itself produces all the other atoms.

But to admit this would be to believe that an element does not exist when we do not see it in a star. This is far from being always the case. An atom, when it is surrounded by a rising temperature, begins to emit light at a certain temperature and continues to do so, with definite changes of colour, as the temperature rises; it ceases to give out any light at all when the temperature has been so much raised as to make the atom undergo certain modifications. We can then choose between two hypotheses.

First Hypothesis.—The chemical elements present in a young star are destroyed in the course of the evolution which raises its temperature. This destruction consists in the heavy elements breaking up into the lighter elements, hydrogen and helium. When the heated star cools, the chemical elements are re-formed from the elements hydrogen and helium.

Second Hypothesis.—The chemical elements present in a young star remain intact throughout its evolution; during such period their atoms undergo modifications which do not alter their specific character.

We are not in any way obliged to choose one of these hypotheses to the exclusion of the other as they are not incompatible. It is quite possible that both of them are applicable at the same time. One set of atoms in a young star might be disintegrated into hydrogen, while another set remained almost unaltered.

In order to understand the reason of such uncertainty, we must remember that the state of matter in the interior of the stars is not only unknown to us but unknowable, because we cannot reproduce the conditions in our laboratories. Indeed the characteristics of this interior are the *pressure*, due to the universal forces of gravity acting on all the atoms of the star, and the *temperature*, due to the contraction of the star, through this same agency of gravity.

The admirable work of Eddington has made known to us both the pressures and the temperatures at the centre of the stars. The former are of the order of millions of kilograms per square centimetre and the latter are some millions of degrees. Now the highest pressures and temperatures we can obtain in our laboratories are a hundred times lower. Our knowledge of the formation of atoms is thus very uncertain, but we know more about their disintegration.

First of all, nature has furnished us with elements that disintegrate spontaneously—the radioactive bodies. The products of such disintegrations are lighter than the original bodies. The breaking up of the atom is never by halves or thirds. There is always, on the one hand, a large fragment which will be a new atom, often itself radioactive, and on the other hand electric charges, and sometimes very light atoms—atoms of helium. In addition an emission of light—a radiation invisible to the eye—nearly always accompanies this transformation.

The history of a “family” of radioactive elements is fairly easy to describe. It begins with a very heavy “ancestor” of which the unstable atom undergoes a first change. This change may be only electrical—the expulsion of an electron—without a change of mass, or there may be a breaking up—the expulsion of an atom of helium. If the remaining atom is stable, the process ceases, but if it is unstable, the process repeats itself, the mass of the atom progressively diminishes until at last the atom acquires a stable structure.

We must note that we are completely ignorant as to what it is that causes an unstable atom to break up at any given moment. This phenomenon is not caused by any physical energy available to us.

In face of these facts it was natural to think that the electrons and atoms of helium were part of the constituents of the heaviest elements. This was the position until we were able to obtain in our laboratories new elements, many of them radioactive. The method of this process was fairly simple. Some known atom was taken as a target and streams of atoms of hydrogen or helium were directed against it. When the process succeeded, the target and one of the projected atoms coalesced forming a new atom. If this latter was stable, the matter ended. But sometimes it happened that the new atom was unstable and then a new kind of radioactivity was observed. These artificial radioactivities have revealed to us new constituents of the atoms such as:

(a) corpuscles electrically neutral, weighing the same as a hydrogen atom, and called neutrons;

(b) hydrogen atoms;

(c) positive electrons.

Finally, quite recently, a specially light atom has been disintegrated by merely lighting it up with a suitably coloured light.

THE “SHAPE” OF ATOMS

In order to draw from these facts some conclusions as to the evolution of the atoms, we must indicate what idea we have of the atoms.

We do not know the shape of the atoms, we cannot make any diagram of them which would have the slightest chance of being accurate. Too much stress cannot be laid on this fact—our idea of the atom is a mere symbol. Every time a model of the atom has been constructed, it has had to be admitted that such an atom would not obey some physical law or other. And these models have only been retained because they were of practical use to the theorists.

Without having a detailed idea, we can however describe the main outline of the structure of the atom. All the atoms are in fact built on the same plan. They are approximately spherical, and their mass is concentrated at their centre as a nucleus charged with positive electricity, and very small compared with the total volume of the atom. On all sides this nucleus is surrounded by an electrical field. This field is formed of negative electrons in such a way that the net result of the nucleus and its surrounding field is always electrically neutral. We can make the electrons in this field vibrate by playing on the atom a light of a suitable wave-length. This action results in an absorption and an emission of lights of characteristic wave-lengths, resulting in a definite spectrum for that atom.

If the light playing on the atom is suitably chosen as to its wave-length, it may even expel an electron far from its atom. The latter, deprived of one of its negative charges, becomes positively charged and is indeed a *positive ion*. The electrons of this ion are in their turn capable of vibrating under the influence of light of a suitable wave-length, but the spectrum of the ion is totally different from that of the atom which gave rise to it.

It is possible in this way, by a succession of such actions, to take away, one by one, each of the negative electrons of an atom and to leave it with only its positive nucleus. Any matter formed by a majority of such ions of such naked nuclei would have very different properties from matter built up from neutral atoms, such as we know it. We can see matter of this type in special cases, such as in the neon tubes used to light up certain buildings, and more easily by looking at the sun the matter of which is just in this condition.

Now the sun is a star, and we glimpse what recent research has confirmed – that the matter of the stars is not in the same condition as the matter on our earth. The former is in a state of ions. It is the bombardment of these atoms, bombardment of which the energy is characteristic of the temperature of the star, which sets their electrons in motion—an emission of light takes place which brings about the transformation of a large number of its atoms into ions.

Can this ionization attack the nuclei themselves? We have stated above that this phenomenon has been once produced in a laboratory. We do not know whether it takes place in the interior of the stars. Neither do we know whether the tremendous pressures (which would increase the frequency of the atomic bombardment) or the enormous temperatures (which would increase the energy of the bombardment), which exist in the interiors of the stars, are sufficient to integrate the light atoms into heavy ones. But both these phenomena are possible.

If such phenomena are accepted, then the first phase of the evolution of the stars would no longer be considered as the beginning but as the end—a disintegration,

complete or partial, of a star, in which its matter is gradually brought to the condition of its elementary particles. According to the highest temperature of which the star was capable (and this temperature depends only on its initial mass), the atoms would be more or less completely ionized or disintegrated into lighter nuclei.

The maximum temperature would correspond with the critical point of this evolution, at the genesis of the formation of a new world. The temperature, which causes ionization and therefore disintegration, then diminishes, but the pressure continues and combinations of atoms result (by aggregation) of not only the hydrogen nuclei, but of other kinds of light elements. All the atomic nuclei thus formed by chance bombardments are not stable; some, like those formed artificially in the radioactive experiments in our laboratories, disintegrate at once; others more stable, give rise to radioactive "families" which slowly die out; yet others are stable and will form the permanent matter of the new star.

The latter soon passes out of our ken, and from that moment our ignorance is complete. What happens to the dark stars? Is there a way, by which they may one day be brought back to the condition of a giant star? What part do the nebulae play in this evolution? The answers to these questions lie in the future.

FURTHER THEOSOPHICAL VIEWPOINT

It is difficult to compare the two viewpoints which we have just summarized, on account of the double evolution outlined in theosophical teaching. First of all the formation of different types of matter by the emanation of creative energy on the Primordial Substance, then the vitalization of these types of matter by the emanation within them of the Second Aspect of the Divine Power.

Now it is very difficult to conceive this matter as amorphous and inert before its vitalization. The physical properties such as crystalline structure and the chemical properties of an atom are not separable from its structure, since the latter has just been devised to include and explain its properties. But we can try to give their scientific names to the sub-planes of the physical plane of the theosophist.

One theory has been that the first sub-plane, 7₁, is the plane containing matter in the state of isolated atoms, and sub-plane 7₇ contains the most complicated compounds found in living creatures. This is an ingenious idea, but is contradicted by what we have stated above – that sub-plane 7₇ existed before matter had any chemical affinity.

Nothing compels us to reject this statement, and it is thus easier to think that sub-planes 7₇, 7₆, 7₅ represent respectively the three states of matter which we call solid, liquid and gaseous, and that the three "elements" of the ancients – "earth," "water," "air" – correspond to matter in these sub-planes. The easiest way of passing from one

to another of these sub-planes is by using heat, for a rise of temperature brings about the transformation.

Now if a gas were sufficiently heated, it would become ionized and, as we have seen, have different properties. To this ionized state, which was then barely known, Crookes gave the name of "radiant" state, and this would correspond to sub-plane 7⁴. It is worth noting that this sub-plane corresponds to the element of "fire," and that gases present in flames are in a strongly ionized condition.

We may state that scientific knowledge as to the presence of ionized matter in the stars is only twelve years old. Now in October 1882, the Master K.H., writing to Mr Hume on the subject of the coronal line (that is, the line in the spectrum of the sun's corona which was adjacent to, but not identical with, one of the lines of the iron spectrum), said:

The coronal line may not *seem* identical through the best "grating spectroscope," nevertheless, the *corona* contains iron as well as other vapours. To tell you of what it does consist is idle, since I am unable to translate the words we use for it, and that *no such matter exists (not in our planetary system, at any rate) — but in the sun.* [The italics are ours, and show the rigorous truth of these last lines—a truth which at that time no western scientist was in a position to state.]

We have spoken above of the case when the atomic nuclei might be deprived of all their electrons, and have indicated that the properties of such matter would be surprising. Not only would such matter probably give out no light, even at high temperatures, but its density would be enormous, comparable in fact with that of the dark companion of Sirius, a litre of which matter has a mass of more than sixty tons.

One is tempted to consider this as a fifth state of matter. But this does not seem to us justifiable. The atomic nuclei including that of hydrogen, or proton, are ionized atoms. On the other hand, neutrons are not in this class. They are the only neutral element in the atomic nuclei. Having no chemical affinity, neutrons pass very easily through the nuclei bringing about transmutations among them. If brought together in large numbers, they would form matter of an incredible density, as one cubic centimetre might have a mass of 10^8 tons. And yet such matter would be a gas of which the particles would be without any action one on the other except the repulsions due to their mutual collisions. Moreover, it would be impossible to keep such a gas in any container; the neutrons having no electric charge would pass through matter without any difficulty. They are only checked when meeting nuclei, a rare event, as in a dense solid like gold, the nuclei only occupy 10^{-15} of the volume of the atom. For neutrons all matter is pervious, in the same way as a thin fog might be. This being so, it seems to us that the neutron might be taken as representing matter of the third sub-plane of the physical plane. We have yet to find a home for the electrons, both positive and

negative. They are mere electric charges and quite different from any matter so far discussed. They might be placed as belonging to the second sub-plane, 7_2 . Some authors have considered them as 7_1 , but if so, we should have to consider the ionized state as belonging to 7_2 and 7_3 .

The above ascriptions are only suggested as hypotheses for future work by theosophical observers.

THE ATOMS OF THE PHYSICIST AND CHEMIST

It has been stated above that we cannot draw the atom. But we can measure the properties of atoms, classify them and decide to which part of the atom any property is due. Thus all spectroscopic and chemical properties of the atom are due to its atmosphere of electrons. As to the number of electrons and their arrangement, these depend on the electric charge of the nucleus. On its *charge* and *not on its mass*; and so we can have two atoms with the same electric charge, and therefore atoms of the same chemical element, but with different masses. Such atoms are *isotopes*. The mass of an atom and its stability depend directly and solely on its nucleus.

If one places the atoms in order of the increasing electric charge of the nucleus (which is nearly the same order as that of the increasing mass), one notices a very clear periodicity in nearly all the chemical and physical properties of the atoms. In considering more especially the chemical properties, one arrives at the celebrated Periodic Law of the Elements. Each atom is therein defined by the properties of its outer electrons and by their total number.

The atoms having similar chemical properties will appear in the diagram of this Law in the same vertical column, and one can express this fact by imagining that the structures of their electrons form structures of the same type. The latter statement is not an experimental fact, but a simple and useful hypothesis to indicate similarities of properties which are known facts.

In each atom the following are measurable:

- (a) the number of electrons;
- (b) the varying amounts of energy required to dissociate these electrons;
- (c) the mass of the nucleus.

If we limit ourselves to the stable and non-radioactive atoms, then a knowledge of (a) and (c) above is sufficient to determine the atom completely. That is why any attempt to explain the theosophical observations of atoms will have to explain these results in terms of these two fundamental numbers of an atom.

THE ATOMS OF THE CLAIRVOYANT

Annie Besant and C.W. Leadbeater began their observations of atoms in 1895, then, after a break, continued them in 1905, and finished them in 1909. A few isolated researches, such as the structure of molecules and of solid bodies, have appeared since as articles in the pages of *The Theosophist*. We will not refer to these.

The two observers were neither chemists nor physicists. They limited themselves to describing and drawing what they observed. Then they tried to give to each drawing the name of the chemical element to which it corresponded.

At the time when the greater part of this research work was done—1905—the general scientific opinion was that each chemical element was defined by a single atomic weight (the existence of isotopes not being known) which was very approximately an integral multiple of the atomic weight of hydrogen.

Consequently, the first object of the observers was to see if the atoms were built up of hydrogen atoms. This was found not to be so. Neither directly nor indirectly were the atoms which they examined built of atoms or nuclei of hydrogen. Moreover, the structures they observed contained nothing which could be compared to the nuclei of physical atoms or to their electrons. Under these conditions it might be considered rash to try and find the atomic weights of these bodies. This however is just what was done.

All the atoms observed were made up of tiny bodies of two types, symmetrical to one another, which the observers called *ultimate physical atoms*, and stated them to be matter of the first sub-plane, 7_1 . As the hydrogen atom contained eighteen of these ultimate atoms, the observers proceeded by counting the number of these ultimate atoms in each atom to be identified, then divided the total number by eighteen, and then the number thus obtained was compared with the chemical atomic weight of the atom. The agreement was good and remarkable, although not perfect. We must at once state that this method pre-supposes that the ultimate physical atoms had mass, that they all had the same mass, and that this mass did not vary when they were united to form complex bodies.

The observers had then two methods of classification available:

- (a) the numbers obtained as indicated above, which were the numerical weights of the atoms;
- (b) the whole shape of the atoms.

Except for a certain number of important and light atoms (hydrogen, helium, nitrogen, oxygen, fluorine) the shapes of which were unique, the observers were able to distinguish seven types of shapes: stars, points, dumb-bells, tetrahedra, cubes,

most likely that the atoms analogous to xenon are isotopes of ytterbium.

Theosophical observers thus revealed the existence of isotopes before the physicists did so. If the matter was not pursued further, it was because of an insufficient number of competent observers.

A HYPOTHESIS

We have said that in the drawing representing the theosophical observations, there was nothing to indicate the nucleus and its surrounding electrons. Now we know that both of these exist in the atom. They exist, but they are of very different dimensions. The atomic nucleus has a diameter a thousand times smaller than the distance which separates it from its nearest electron. Thus we may suggest that the bodies seen by the theosophical observers were the atomic nuclei and not the complete atoms themselves.

PRACTICAL CONCLUSION

Every one after reading this comparison of the scientific and theosophical results of studying the atom will draw his own conclusions. We wish simply to stress the great importance of making clairvoyant observations of the following:

- (a) The scientific names of the sub-planes; the structure of the solid state, of the liquid state and of the molecules.
- (b) The difference between the atom of hydrogen and the proton.
- (c) The appearance of the electron.
- (d) The study of the atoms belonging to "rare earths."
- (e) The study of the atoms which have no isotopes.

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CHEMISTRY

BY D.D. KANGA

There is but one science that can henceforth direct modern research into the one path which will lead to the discovery of the whole, hitherto Occult, truth, and it is the youngest of all—Chemistry, as it now stands re-formed. There is no other, not excluding Astronomy, that can so unerringly guide scientific intuition, as can Chemistry.¹

Chemistry and Physiology are the two great magicians of the future, which are destined to open the eyes of mankind to great physical truths.²

THESE general statements about the value and importance of chemistry have been amply verified, for it is from this branch of science that has come the new view of the nature of matter.

Aim.

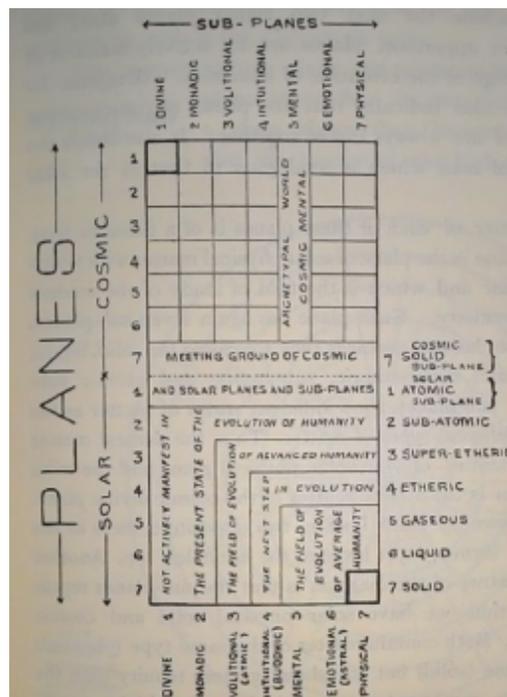
As the title of this Series indicates, the objective kept in view in writing this monograph is to show where and how far Theosophy and Chemistry meet.

Scope of Chemistry.

Chemistry is the science which deals with *all* forms and kinds of matter and their transformations one into another. The air we breathe, the water we drink, the different kinds of food we eat, the clothes with which we cover our bodies, the houses in which we live, the soil on which we tread, all the kingdoms of nature, mineral, vegetable, animal and human—in a word, every substance that we can think of, from star to atom—each forms a proper object of study in the science of chemistry. The whole universe is built up of one or another type of matter, and when we consider that there is nothing on earth or in the heavens which has not a material basis, we are struck by the almost infinite scope of chemistry and its innumerable ramifications affecting all branches of science and philosophy. Though this view regarding the scope of Chemistry appears to be extensive and far-reaching, yet it sinks into insignificance when we compare it with the view of the nature of matter taken by Theosophy. Both deal with the foundation-stones of the universe, but how differently! In order to understand the full significance of this statement, we will first give the viewpoint of Theosophy as regards matter and then point out where and how far the two meet.

Theosophical View of the Origin and Creation of Matter.¹

Theosophy tells us that the universe is based on a septenary system. The rationale of this will be explained later. Diagram 1 shows cosmic and solar planes of matter. There are seven planes of matter shown in vertical columns. Beginning from right to left they are called the physical, emotional, mental, intuitional, volitional, monadic and divine planes. The names of the planes are very significant for they show the sequence of the phases of consciousness which are possible to man; they also show the psychological phases of human evolution. This being the case it is impossible, in our discussion, to separate Man from the Atom or Universe. On three of these planes,



This diagram shows cosmic and solar planes of matter. There are seven planes in each, namely, physical, emotional, mental, intuitional, volitional, monadic and divine. Each plane has again seven sub-planes, namely, solid, liquid, gaseous, etheric, super-etheric, sub-atomic and atomic.

This diagram, again, shows that the seven planes of our solar system form, when taken together, the lowest of the great Cosmic Planes. It also shows that the seven atomic planes of the solar system form the seven sub-planes of the Cosmic Physical Plane.

Every plane has its atomic and molecular states of matter which have a sympathetic vibratory rate, not only with other atoms and molecules, but with the great planes of like number. Examples:

1. When the vibratory rate of solid physical matter (7) is struck there are overtones of harmonic response not only from (7) molecular of every solar plane but also the whole solar physical plane (7).

2. Or, if one can sound the solar mental atom which is Cosmic Gaseous Physical Molecule (5) one can awaken the corresponding sub-state of matter in the Cosmic or Archetypal Mental World (5).

See also diagram 7 in this connection.

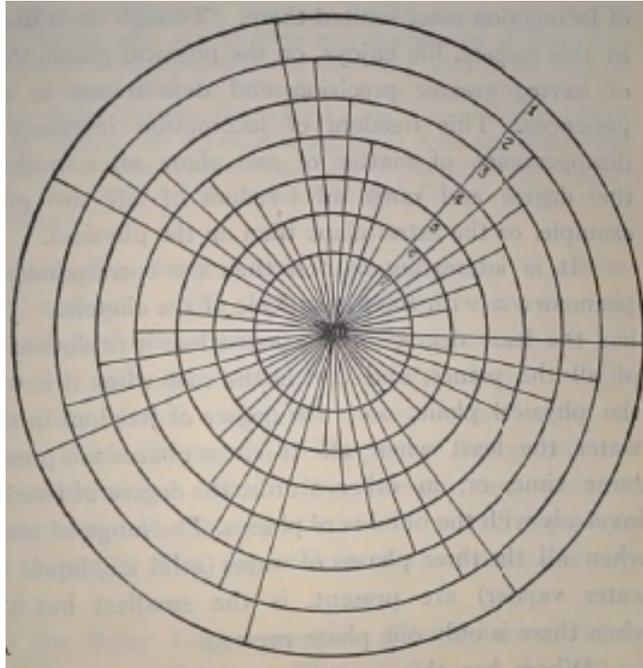
emotional and mental, is proceeding the normal evolution of average humanity; the field of evolution of advanced humanity would include the next two higher planes also; the remaining two uppermost planes are not actively manifest in the present stage of the evolution of humanity. (Diagram 1.) The diagram also indicates that the planes of consciousness and of matter are always linked together. It also shows the constitution of man which is analogous to that of the solar system.

The matter of each of these planes is of a different type. The lowest plane is the plane of solar physical matter with which we are familiar and which is the field of study of the modern science of chemistry. Each plane has again seven sub-planes. Beginning from bottom upwards they are called the solid, liquid, gaseous, etheric, super-etheric, sub-atomic and atomic sub-planes. The sub-planes show different *states* of matter as the planes show different *types* of matter. Thus the densest matter is the solid matter of the solar physical plane and the most tenuous matter is the atomic matter of the cosmic divine plane. They are shown in thick lines in two opposite corners in the diagram, the former right bottom, the latter left top. Another interesting feature of the diagram is that the sub-planes repeat themselves; thus we have solar physical solid and cosmic physical solid. Both contain matter of the same type (physical) and same state (solid) but one showing more tenuity than the other like the same notes in music but of a higher pitch. The matter of each plane and sub-plane becomes more and more tenuous as we rise from one to the next higher, so tenuous that it would not be called matter in the ordinary sense of the word, but it is matter all the same, matter in the super-sensuous state.

It is important to note that the planes are *interpenetrating*. We shall use the words "higher" or "lower" plane, but they have no reference to space, for all planes are here; they only mean a difference in the type of the matter of the plane. These words are merely used for the sake of convenience to explain the diagram on paper.

Penetrating Power of Matter.

The matter of one plane can penetrate the matter of a plane lower than its own, but not that of a plane higher than its own. This means that the matter of the highest or atomic



1. DIVINE
2. MONADIC
3. VOLITIONAL
4. INTUITIONAL
5. MENTAL
6. EMOTIONAL
7. PHYSICAL

This diagram shows the penetrating power of matter. It shows the seven planes of matter from the physical (seventh) to the divine (first). The matter of the first (divine) plane being the finest is shown penetrating the coarser matter of all the lower planes. The matter of the seventh (physical) plane being the densest is shown as being penetrated by the finer matter of all the higher planes.

plane can penetrate the matter of all planes. The matter of the lowest physical plane cannot penetrate the matter of any one of the higher planes. (Diagram 2.)

In connection with the penetrating power of matter through matter, it is interesting to note that this property of matter was not known to modern science till Henri Becquerel's discovery of radioactivity in the year 1896.

Diagram 2 shows that life on the physical plane is most involved in matter and has, for the same reason, its freedom of locomotion most limited there. Though at a disadvantage in this respect, life enjoys, on the physical plane, the privilege of having greater precision and definiteness in all its experiences. This freedom of locomotion increases with the disappearance of matter of one plane after another, that is, the degree and range of freedom of life are greater, for example, on the astral plane than on the physical.

It is interesting to note the close correspondence of this phenomenon with the Phase Rule of the chemist. Just as life has the least degree of freedom when it is clothed in matter of all the planes, and that is the case when it is working on the physical plane, so is the degree of freedom in the case of water the least when all its three phases are present at the same time, or, in other words, the degree of freedom varies inversely with the number of phases. The range of temperature, when all the three phases of water (solid ice, liquid water and water vapour) are present, is the smallest but it is largest when there is only one phase present.

Origin of Matter.

Where has this matter come from and why are there seven types of matter?

Theosophy, which is an embodiment of the Ancient Wisdom, tells us that the whole cosmos is the expression of a Conscious Intelligent Life. It is ever a Unity, "One without a second." This great Reality is also expressed as the "Boundless Space of the Divine Plenum." When manifestation takes place, there is a differentiation and Spirit-Matter or Life-Form appears *simultaneously*. We may imagine the Cosmic Logos emerging from the "Boundless Space of the Divine Plenum" as ice separating from water, or as a bubble appearing under water.

Associated with the work in the Universe of the Cosmic Logos are seven Embodiments of His Nature, called the Seven Cosmic Planetary Logoi. All the stars in the universe, which are centres of great evolutionary systems, belong to one or other of these great Seven, and are in some way expressions of Their life, as They in turn are expressions of the One Life of the Cosmic Logos.... In all this vast splendour of universal life, exists the Lord of our Solar System, the Solar Logos. As a Star, the Lord of a System among the myriads of stars, He lives and moves and has His Being in His Father-Star, one of the great Seven; yet He mirrors directly the Life and Light and Glory of the "One without a second."¹

The field of activity of our Solar Logos is "a sphere, whose radius begins with the sun and ends with the last satellite of the farthest planet yet to be discovered."

Associated with the work of the Solar Logos are the seven Planetary Logoi, who are seven embodiments of His Nature. (*Vide* diagram 3.) Diagram 3 brings out the intimate constitutional relationship between man and the external universe. It also illustrates the occult law, "As above, so below." The physical is the reflection of the spiritual.

When the Solar Logos energizes His Universe, He always manifests as a Trinity. The rationale of this will be explained later. As in Life, so in Form; as in Spirit, so in Matter, there is this triplicity of manifestation. There are correspondences in universal Matter with the aspects of the universal Self, and so we find Matter manifesting the three qualities of Inertia, Rhythm and Mobility, and Spirit its three fundamental expressions of Will, Wisdom and Activity. It should be noted that neither spirit nor matter can exist alone. Both appear and disappear simultaneously. They are inseparable parts of a unity, manifesting as a duality in space and time.

The Formation of the Atom.

The function of the Third Logos (the third aspect of the Logos) is the creation of atoms on all planes; that of the Second Logos is to shape the atoms into forms; that of the First Logos is to ensoul the forms. Metaphorically speaking, the formation of bricks, the foundation-stones of the universe, may be represented as the work of the Third Logos; building a house with the bricks, as the work of the Second Logos; inhabiting the house by a living being as the work of the First Logos. (Diagram 4.)

This does not mean that at any time one aspect of the Logos is working and the other two are inactive. All the time the Solar Logos, as a whole, is active, but according to the nature of the function one of His aspects is more emphasized than the other.

The Third Logos has a triple function which He uses in the formation of the atom. First, He fixes the limit within which His life shall vibrate in the atom. This determines the wave-length of the vibration which is technically called "the divine measure." This gives to the atoms of a plane their distinctive characteristic. Secondly, He determines the fundamental axes of growth and their angular relations with each other, which determine the form of the atom. Finally, He determines the size and form of the surface or wall of the atom. Thus, in every atom we find the measure of its ensouling life, its axes of growth and its enclosing wall. (Diagram 4.)

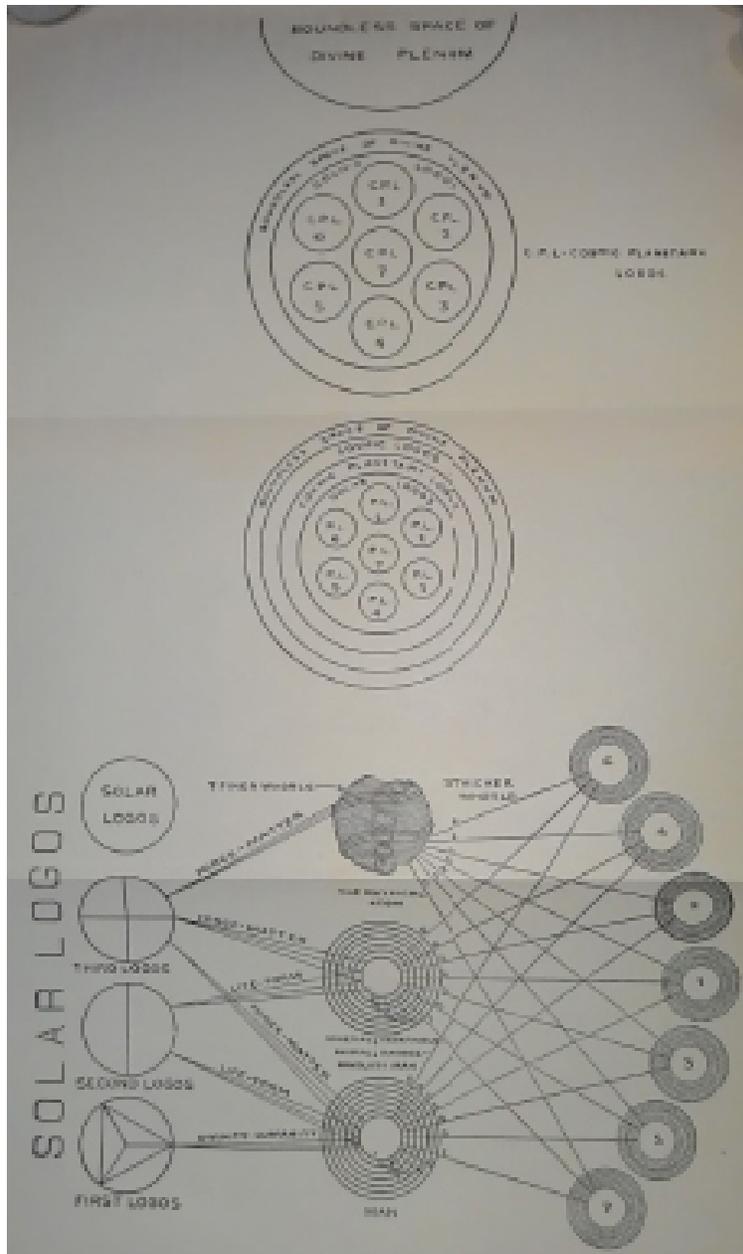


Diagram 3 shows the emergence of the Solar Logos from the "Boundless Space of the Divine Plenum" through the Cosmic Logos and one of the seven Cosmic Planetary Logoi.

Diagram 4 shows the functions of the three aspects of the Solar Logos and of the seven Planetary Logoi in the creation of the atom, the mineral, vegetable and animal kingdoms, the savage, "mindless" man, and man. It also shows their structure and constitution. It, again, brings out the intimate relationship between man and the external universe.

According to the plan He has thought out for the purpose of evolving a universe, as we have seen above,¹ the Logos draws round Himself the necessary matter from space and ensouls it with His own life. For each system the matter of space around it is its root-matter. The life of the Logos within this matter is the spirit in every particle. It cannot be better expressed than in the words of H.P. Blavatsky who says, "Fohat digs holes in space."

Fohat is the energy of the Logos. The space is not emptiness, but plenum. "There is not one finger's breadth of void Space in the whole Boundless (Universe)."² The substance filling the so-called "empty space" "in which the Solar Logos is working is called "Koilon." "Nature abhors a vacuum" seems to be true in this sense. The bubble found in the Koilon is not like a bubble floating in the air, but like a bubble arising in water before it reaches the surface. Just as the wall of the latter is the water, which is pushed back by the contained air, so is the wall of the former, the Koilon, pushed back by the energy of the Logos. This is the primordial atom of our solar system. Fourteen thousand millions of them go to form one ultimate physical atom. The ultimate physical atoms are of two types, one positive and the other negative (diagram 5). A glance at the diagram will show that they are alike in every respect except the direction of the whorls and of the force pouring through them. The whorls are ten in number; they do not touch each other, but coil themselves into parallel series, the three thicker ones forming a caduceus-like form (diagram 5) with the seven finer ones. Ultimately it is the different kinds of energy of the Logos which whirls them into the different spiral formations.

The three thicker spiral formations result from the direct activity of the Logos, and the seven finer ones indirectly through His seven embodiments, the seven Planetary Logoi. Electricity is the expression of the force of the Third Logos on the physical plane. (Diagram 4.)

Thus, we see that our physical atom is a most wonderful thing we can conceive of; it is the seat of so many forces and the meeting-place of matter of all the planes (diagrams 2 and 4).

So far we have spoken about the activity of the Third Logos only. We will now turn our attention to the work of the Second Logos. He ensouls the matter of all the seven planes, shapes it into forms and endows them with the mysterious quality of life; the forms persist so long as the life of the Second Logos is there. Under His influence and guidance the mineral, vegetable and animal kingdoms, and the savage, mindless man come into being in succession—all the kingdoms, except the human. (Diagram 4.)

The chemical elements combine under His action into innumerable compounds and produce the matter of the physical world as we see it today. The beautiful and symmetrical minerals and crystals are the result of His work. Here, in the mineral

kingdom we see the truth of the two statements so often quoted, viz., "God geometrizes," and God "dead and buried," crucified on a cross of matter. We have already seen the truth of the first statement in the mathematical precision with which matter crystallizes and makes beautiful forms of seven different types, the seven crystalline systems. In the mineral kingdom again we see His life descending into the densest matter, for there is no matter denser than the physical solid. The degree of freedom of the life ensouling the mineral form is the least. Here it is most involved in matter. This is also its turning-point, for as it passes from the mineral into the vegetable and then into the animal kingdom, life gradually begins to ascend, evolution follows involution, and its degree of freedom becomes more. We see the expression of this law everywhere. The chemical elements are endowed, by His life, with the power of building up protoplasm, the physical basis of life in plants and animals. Phenomena of birth, growth, decay and death appear for the first time. The Second Logos has a triple function and builds up what are known as "permanent atoms," germ-cells and body cells.¹ Vitality is the expression of the force of the Second Logos on the physical plane. (Diagram 4.)

And finally, when the animal is sufficiently evolved to become individualized, then the First Logos begins to function. He puts forth a "Fragment of Himself, a monad," and then man made "in the image of God" makes his appearance. In him for the first time we see the Solar Logos, Lord of our system, with all His Three Aspects working. The First Logos again has a triple function and endows man with the qualities of Will, Wisdom and Activity. The expression of the force of the First Logos on the physical plane is Kundalini, the "Serpent Fire," which "leads to immortality." (Diagram 4.)

We cannot conclude this section better than by sharing with the reader the beautiful ideas given in the following passage:

To see that Plan is to have the Beatific Vision; to work for that Plan is to change one's mortal nature to that of a deathless immortal. Deathlessness in life, Eternity in time, Divinity in humanity, are his who, understanding the Plan, works for it unceasingly.²

The Scientist and the Materialist Philosopher are groping after the Plan, the Poet and the Artist intuit it, the Occultist sees it, the Adept *knows* it.

Scientific View of the Genesis of Elements.

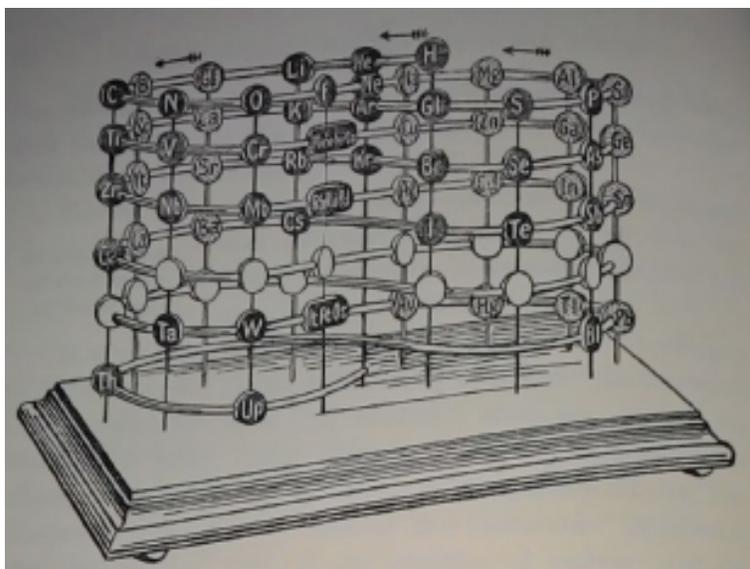
Having given the theosophical conception of the origin and evolution of matter, let us now see what the modern science of Chemistry has to say on the same subject.

If there was ever a scientist who approached very close to the occult view of the evolution of matter and the formation of the physical atom and chemical elements, it

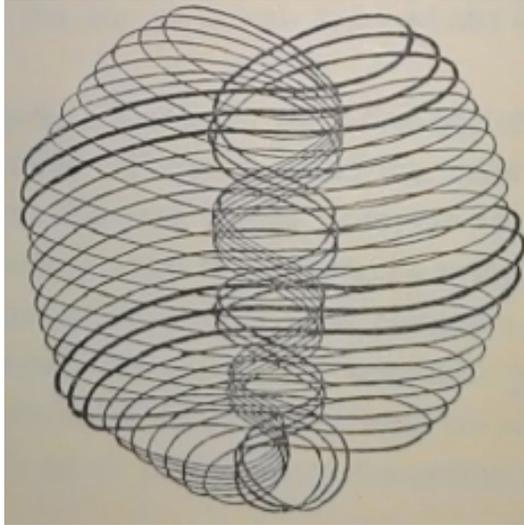
was Sir William Crookes. His address on the “Genesis of the Elements” was epoch-making. A comparison of the two diagrams, one of “the Rod of the Caduceus” illustrating the theosophical view of the creation of matter¹ and the other of Crookes’ – (figure of 8) – diagram of the Periodic Law showing the scientific view of the genesis of the elements,² is very illuminating and shows how very close Crookes came to the occult view (diagram 5). His reflections on his own diagram are worth noting here:

The more I ponder over the arrangement of this zigzag curve, the more I become convinced that he who fully grasps its meaning holds the key to unlock some of the deepest mysteries of creation.

Crookes gives a picture of the “Genesis of the Elements” out of a primordial substance which he calls “protyle,” and shows how three different forces (compare the triple function of the Logos) acting upon this substance bring forth the chemical elements one after another, how elements showing similar physical, chemical, electrical and magnetic properties fall in their natural positions in the table, one below the other, etc., etc. He wants us to picture first the action of two forces on



Sir William Crookes's diagram of the Periodic Law of the Elements. (Proceedings of the Royal Society, 1-6-1898.)

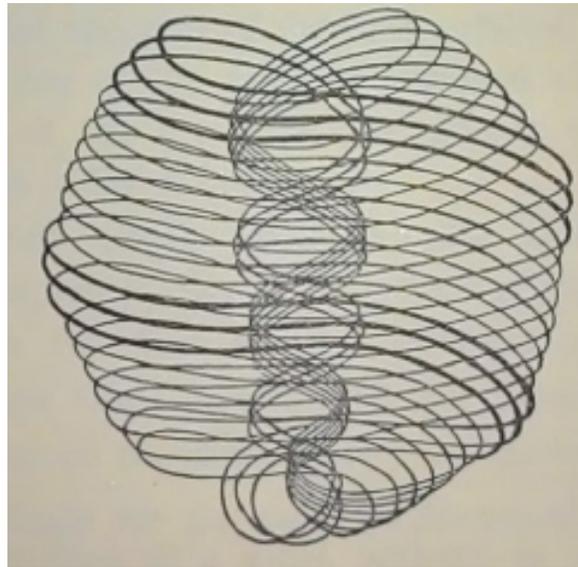


Positive Physical Atom
DIAGRAM 5



These figures show the great similarity in the theosophical and scientific viewpoint of the creation of matter. The caduceus-like form brings out very clearly the close resemblance in form to the Rod of the Caduceus as seen in the structure of the ultimate physical atom and Crookes's representation of the Periodic Law of the Elements.

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Negative Physical Atom
DIAGRAM 5

the original protyle—one being time, accompanied by a lowering of temperature; the other swinging to and fro like a mighty pendulum, having periodic cycles of ebb and flow, rest and activity, being intimately connected with electricity. He introduces space as the third factor, for nature, he says, does not act on a flat plane, but demands space for her cosmogonic operations, and he considers a lemniscate or a figure of eight (8) best to meet all the conditions involved. This figure would be the result of three simultaneous motions, one east-west, another at right angles to it, *i.e.*, north-south, and the third again at right angles to these two (suppose downwards). Where these forces meet and cross, there protyle is affected and an element is generated.

When Fohat is said to produce Seven Laya Centres, it means that, for formative or creative purposes, the *Great Law*—Theists may call it God—stays, or rather modifies, its perpetual motion on seven invisible points within the area of the Manifested Universe.¹

The seven Laya Centres are the seven zero-points, using the term zero in the same sense that Chemists do. It indicates, in Esotericism, a point at which the reckoning of differentiation begins.²

The above two quotations will perhaps give an insight into the *modus operandi* of the forces referred to by Crookes in the formation of the different chemical elements, particularly those of the zero and eight groups which occupy a unique position in the diagram.

What figure closely resembling the figure of eight (8) could more graphically depict the picture of the genesis of the elements than the Rod of the Caduceus symbolizing the evolution of the Gods and atoms? *The Secret Doctrine* gives some more hints on the same subject for research. It says:

A lemniscate for the evolution downward, from Spirit into Matter; another form of a spiral, perhaps, in its reinvolutionary path onward, from Matter into Spirit; and the necessary, gradual and final reabsorption into the *laya* state, that which Science calls, in her own way, "the point neutral as to electricity," or the *zero* point. Such are the Occult facts and statement. They may be left with the greatest security and confidence to Science, to be justified some day.¹

Science and Materialism.

In order to thoroughly understand and appreciate the significance and importance of the valuable contributions of Crookes and other equally brilliant scientists to the scientific and philosophic thought of the day, it is necessary to know what ideas prevailed as regards life, thought, matter, etc., during the last quarter of the last century. The key-note of the thought was "materialism." That note was struck by Professor Tyndall when he, as President of the British Association at Belfast in 1874, after taking a masterly survey of the investigations done in the physical and natural sciences, made the following memorable statement:

By an intellectual necessity I cross the boundary of the experimental evidence, and *discern in that matter* which we, in our ignorance of its latent powers, and notwithstanding our professed reverence for its Creator, have hitherto covered with opprobrium, *the promise and Potency of all terrestrial life*. [The italics are mine. — D.D.K.]

Again "Man" was supposed to be a chemical machine and "life" was thought of as the consequence of organization. Some considered "life" to be a product of matter acted upon by chemical, electrical and other physical forces, while others considered it to be a series of fermentations. Similarly, intellect was supposed to be "simply the activity of nerve-cells," and "thought" was supposed by Carl Vogt to be a secretion of the brain just in the same way as bile was a secretion of the liver. "Evolution," according to Haeckel, "was the result of a fortuitous concourse of atoms." The scientists

and philosophers of the day thought it to be possible to manufacture life from dead matter, which they supposed to be “inanimate material and self-guiding Atoms.”¹

While Science speaks of its evolution through brute matter, blind force, and senseless motion, the Occultists point to *Intelligent Law* and *Sentient Life* and add that Fohat² is the guiding Spirit of all this.³

Opening of a New Cycle.

These facts show that materialism had reached its zenith during the close of the nineteenth century and science had come to a blank wall, an impassable barrier as it were. This stronghold of materialism was successfully attacked by a number of brilliant scientists, and the apparently impenetrable barrier was broken in the last decade of the nineteenth century. This period of demolition coincided with the golden period of epoch-making discoveries—a period which was marked by the discovery of X-rays by Röntgen in 1895, of a new property of matter called Radioactivity by Henri Becquerel in 1896, and of Radium by Madame Curie in 1898. It is these and the researches of Crookes on highly attenuated gases in vacuum tubes by passing electric discharges through them, which paved the way for the great discovery of the ultra-atomic corpuscles, the constituents of the atoms which may be said to have given a death-blow to materialistic science. These researches giving birth to a new concept of the atom have brought about a complete change in scientific thought, initiated the modern transformation of scientific opinion from gross materialism to a more spiritual outlook, and opened out a vast field and, without exaggeration, a new world for research.

How clearly this was foreseen by Madame Blavatsky may be seen from the following statement of hers in *The Secret Doctrine*:¹

... We are at the very close of the cycle of 5,000 years of the present Âryan Kali Yuga; and between this time² and 1897 there will be a large rent made in the Veil of Nature, and materialistic Science will receive a death-blow.”

“A large rent made in the Veil of Nature” — what a graphic description! No more appropriate words could have been chosen than these to show that the “Ring-Pass-Not” has been broken, that a new world has been opened out before mankind, a world of hope and cheer and light where before was absolute blankness and darkness.

Epoch-making Discoveries of Modern Science.

The world owes a deep debt of gratitude to the great scientists who have opened out this new world to us. Let us see what these epoch-making discoveries were which made this possible. They may be summarized thus:

(1) The discovery of a new property of matter (radioactivity) by Henri Becquerel, and of radium and other naturally occurring radioactive elements by Monsieur and

Madame Curie. These discoveries were of fundamental importance because they broke through the impenetrable barriers which guard the future. To this may be added the discovery of artificial radioactivity (1934) by Madame Joliot Curie (Madame Curie's daughter) and M. Joliot.

(2) Crookes broke entirely new ground in the discovery of a new state of matter, of ultra-gaseous particles 1,850 times smaller than the smallest atom known, namely the hydrogen atom. He called it "the Fourth State of Matter" or "Radiant Matter."

While writing on the "Fourth State of Matter" to Sinnett, the Master K.H. wrote:¹

Let him [Crookes] know ... that *Western Science has still three additional states of matter to discover ...*

The men of science have just found out "a *fourth* state of matter," whereas the occultists have penetrated ages ago beyond the *sixth* and, therefore, do not infer but KNOW of the existence of the *seventh*—the last.

This statement is worth pondering over.

(3) The discovery of particles of matter travelling with a speed, almost approaching that of light, the average speed being 100,000 miles per second.

(4) The discovery of particles of matter showing a tremendous penetrating power.

This discovery was made in 1895, but it was predicted by Madame Blavatsky in *The Secret Doctrine*, Vol. 1, p. 272, so early as 1888 when she wrote:

The characteristics of matter must clearly bear a direct relation always to the senses of man ... and the next characteristic it develops—let us call it for the moment "Permeability"—will correspond to the next sense of man, which we may call "Normal Clairvoyance."

The ultra-atomic corpuscles are the primordial constituents of the atoms of our chemical elements and of all forms of matter.

(5) That matter and energy are now inter convertible terms. Energy condenses to matter; matter is resolved into energy.

(6) The discovery of a new source of energy, called the intra-atomic energy, liberated normally from the atoms of radioactive substances when they are disintegrating, or as a matter of that, from the atoms of any matter when they are made

to disintegrate. This energy is of a different order altogether. It is about 100,000 times as much energy as is evolved from an equal weight of coal when it is burning.

In the disintegration of the atoms of elements we see the verification of the dream of the alchemists of old who believed (*a*) in the possibility of the transmutation of elements, (*b*) in the family relationship between elements, (*c*) in the evolution of elements, and (*d*) in the birth, growth, decay and death of elements.

It should be noted that the two processes, namely, the disintegration of an atom and the liberation of tremendous energy in this disintegration, take place *simultaneously*, and of course the latter process is of far greater importance and value than the former.

Dream of the Alchemists.

Now the dream of the alchemists was a search for the "Philosopher's Stone" and the "Elixir of Life." The former was supposed to have the potentiality of transmuting base metals, like mercury and copper, into silver and gold; the latter was supposed to confer eternal youth and immortality; and again, these two were not different substances, but the same substance was supposed to have both these properties. The "Philosopher's Stone" was the "Elixir of Life." One represents the material side, the other the energy side.

It does not require much effort of the imagination to see in energy the life of the physical universe, and the key to the primary fountain of the physical life of the universe today is known to be transmutation. Is then this old association of the power of transmutation with the "elixir of life" a mere coincidence? I prefer to believe it may be an echo from one of the many previous epochs in the unrecorded history of the world, of an age of men who have trod before the road we are treading today, in a past possibly so remote that even the very atoms of its civilization literally have had time to disintegrate.¹

Are we merely re-discovering today, as Professor Soddy supposes, what the ancients knew ages before? Theosophy answers this question in the affirmative, and says that a mighty civilization existed in the remote past; it reached its zenith and then had its fall according to the Law of Cycles (explained later). The legend of the Fall of Man is not a myth. Our present-day civilization which is of a *mental* type, as distinguished from its predecessor which was of an *emotional* type, has been built on the ashes of the old, has not yet surpassed it, will reach its zenith in the distant future which will be higher than that reached by its predecessor, and in its turn will make room for the next civilization whose chief characteristic will be the development of the *intuitive* faculty. Soddy writes further:

Legend of the Fall of Man.

Science has reconstructed the story of the past as one of a continuous ascent of Man to the present-day level of his powers.

Theosophy holds a different view¹ and has its own reasons to do so as will be shown further on in the explanation of the Septenary Law. The reader will find a large number of illustrations of this law in the different monographs in this Series.

On the Threshold of a New Civilization.

The energy which emanates from radium and other radioactive bodies has been doing so incessantly, day in and day out, year in and year out, for centuries past, but so far we have not been able to control it. Soddy compares this state of helplessness in which we find ourselves today to that of the primitive man when he saw the whole forest on fire but did not know how to make the fire himself. The primitive man may be said to have then stood on the threshold of our present-day civilization, which has risen to such heights only after he was able to control the energy locked up in the wood and the coal. Similarly, today we are standing on the threshold of a new civilization, at the beginning of a new era. What a revolution it will bring about in our life when man will have got complete control over this intra-atomic energy one can only faintly perceive! But whether it will be a blessing or a curse will depend on what use or misuse he will make of it. If rightly used the atomic energy may verily prove to be the "elixir of life."

The recent formation of a Society in London¹ by orthodox scientists for the Study of Alchemy and Early Chemistry, augurs well for the future, provided the mystical aspect of alchemy is given its rightful place in their deliberations.

This question has come very much in the forefront and been seriously discussed at the representative scientific gatherings in recent years. The Presidents of the British Association, in the recent annual meetings, devoted each an important part of his address to the discussion of this subject. The late Sir Alfred Ewing while expressing his grave doubts as to the fitness of man to use the gifts bestowed on him by scientists and inventors said in 1932:

Man is ethically unprepared for the great bounty. In the slow evolution of morals he is still unfit for the tremendous responsibility it entails. The command of Nature has been put into his hands before he knows how to command himself.

Social Responsibilities of Science.

In an important editorial written in a recent number of *Nature*² on "Social Responsibilities of Science," the editor points out that

Science has a spiritual message as well as its material aspect, and that it demands a supreme loyalty to truth which must override all other claims if error and delusion are

not to result. The search for truth is not fulfilled by giving bare facts, numbers or abstract theories only; there must be also some sense of values and of perspective,

and concludes by speaking of

a vision of the possibilities and benefits which the scientific spirit linked with a sense of human values might bring to mankind.

Once that is kindled, the human spirit will not long delay to break the shackles with which craven and retrograde political creeds and nationalist systems have sought to restrain its advance into an age of freedom and plenty, where man's mind and spirit, released from the cramping influence of poverty, disease and war, may achieve a stature and creative fertility hitherto unknown.

Quite true; we whole-heartedly agree that the scientific spirit must be linked with a sense of human values and of perspective, but this in our view is possible only when the constitution of man *as a whole* is known and his relation with the universe; and this subject is found nowhere so clearly and comprehensively treated as in theosophical literature.¹

Theosophy and Misuse of Occult Force.

How clearly and comprehensively Madame Blavatsky had anticipated the above ideas may be seen from what she wrote concerning the misuse of forces which may "run the risk of becoming curses more often than blessings in the hands of the selfish—of the Cains of the human race."² She adds further on:

The discovery [of this occult Force] in its completeness is by several thousand—or shall we say hundred thousand—years too premature. It will be in its appointed place and time only when the great roaring flood of starvation, misery, and underpaid labour ebbs back again ... and the pitiful cry for bread, that rings unheeded throughout the world, has died away.³

Importance of Purification and Dedications.

We are now in a position to understand the significance of the following statement: "... and one by one facts and processes in Nature's work-shops are *permitted* to find their way into exact Science, while mysterious help is given to *rare individuals* in unravelling its arcana." (Italics are mine.—D.D.K.). It is only when proper persons are found who would dedicate their lives to the service of humanity, that the knowledge of the unseen forces both within man and in nature will be released by the Great Lords of Compassion and Wisdom, who are themselves Servants of Humanity. At the same time the wisdom of the ancients in withholding knowledge of the mysteries from those who would misuse them will be evident to those who are watching the crisis through which the world is passing today.

The Significance of Withholding the knowledge.

Bridge between Materialism and Idealism.

We may conclude this section of our article by quoting the memorable statement made by Sir William Crookes as President at the annual meeting of the British Association held at Bristol in 1898, which was in vivid contrast to the equally memorable statement made by Professor Tyndall from the same chair in 1874, namely, "I discern in *that matter* ... the promise and potency of *all terrestrial life*."

I should prefer to reverse the apophthegm and to say that in *life* I see the promise and potency of all forms of *matter*. [Italics are mine. – D.D.K.]

Much water has flowed under the bridges of the world since 1898, and the views held by the leading scientific philosophers of the day are tending distinctly towards the latter pronouncement.¹ But the World Thought has been swinging alternately between materialism and idealism. Is there any meeting-ground between these two positions?

Determinism and Free Will.

The physical is the reflection of the spiritual. "As above, so below." To understand the question of materialism and idealism, or their counterparts determinism and free will, (wave-theory and particle-theory of the physicist), which is agitating the mind of the present-day scientist and philosopher, let us take a simile from Nature which will perhaps help us to understand the question better. The two arms, right and left, would serve as a good symbol to illustrate duality. They symbolically represent the two great theories of Idealism and Materialism which are as old as creation. They have been the despair of modern thought and the world thought is oscillating between these two extremes, sometimes one idea dominating and sometimes the other. Now suppose one arm is cut off; could it exist alone and do any work? The answer is perfectly clear. In order that the two arms may help the whole organism and carry it forward in its evolutionary progress, the following two conditions are necessary: (1) that the two arms should be parts of the one organism and linked to it, and (2) that they should be guided in their work by an intelligence. Exactly in the same way neither Idealism nor Materialism can stand alone; it is impossible from the very nature of things, as we have seen in the theosophical theory of creation; spirit and matter come into manifestation together like the positive and negative charges of electricity, and go out of manifestation together as the positive and negative charges merge into neutral electricity. So idealism and materialism will exist as workable theories as long as creation lasts, for both are true, and it should not be forgotten as we learn from the simile of the two arms that both of them derive their strength and inspiration from the source from which they come, namely "Boundless Space of the Divine Plenum" – The Living Intelligence – That which is indescribable – and not as the result of "a fortuitous concourse of atoms." Thus, what Sir William Bragg has said is true, namely, that one theory holds good on

Mondays, Wednesdays and Fridays, and the other theory on Tuesdays, Thursdays and Saturdays; but if this statement is amplified and stated thus, namely, that both theories hold good for all the days of the week, it would be a statement more in accordance with what we see in nature and perhaps help to bridge over the gulf between the two.

The Unity of the Universe.

Theosophy says that the Universe is a Unity. We live in the “Boundless Space of the Divine Plenum.” It is literally true that we live and move and have our being in Him. The Universe is “one complete balanced system, in which no slightest alteration can be made anywhere without a readjustment *everywhere*. No single minutes particle of matter can be moved, can be accelerated or retarded, but it necessitates a corresponding adjustment *on all the Planes of the Cosmos*.”¹ This gives us an insight into a very important law of nature: All rise together or fall together. No one individual, community, nation or race can hope to rise by crushing another individual, community, nation or race. If we do not wish our modern civilization to be destroyed, we should make an earnest effort to present *this* idea of Brotherhood—which is a fact in nature—on rational grounds to the people of the world and above all live up to that ideal.

Brotherhood Is a Fact in Nature.

The Septenary System: Its Rationale.

There is no branch of science which lends itself so beautifully to the illustration of some of the occult truths as Chemistry. In the occult view given above of the creation of matter, we observed that the whole of the manifested universe has come from One; the One became Three, and the Three became Seven. We spoke of the Unity, the Trinity and the Septenary System. We spoke of three qualities of matter, seven types of matter and seven planes of matter. We also spoke of three and seven forces acting on the atom. Are they figments of one’s imagination, or does a deep truth underlie their manifestation? Let us see.

We shall endeavour to prove that the importance attached to the number *seven* throughout all antiquity was due to no fanciful imaginings of uneducated priests, but to a profound knowledge of Natural Law.¹

In the analysis of all that exists, we arrive at the following great generalization: The “Self,” the “not-Self,” and *the relation between the two*. The Self is consciousness, the not-Self is matter, and in manifestation they are always together, they are linked one with the other, closely or remotely. Thus we have a Trinity. The interplay of consciousness and matter shows itself as the ever-changing universe.

Now let us try to understand how seven arises from three. We may illustrate it by the following examples, taken from three qualities, each of matter and consciousness.

Root-matter has three fundamental qualities, inertia mobility and rhythm, and according as one or other of these three qualities, either singly or in combination, is more strongly energized by the life of the Logos than the others, the triad produces the septenate as shown below. (The quality underlined is more energized than the one which is not.)

- (1) Inertia, Mobility, Rhythm.
- (2) Inertia, Mobility, Rhythm.
- (3) Inertia, Mobility, Rhythm.
- (4) Inertia, Mobility, Rhythm.
- (5) Inertia, Mobility, Rhythm.
- (6) Inertia, Mobility, Rhythm.
- (7) Inertia, Mobility, Rhythm.

This explains how we get seven different types of matter, the seventh being one in which the three qualities are equally active.

Similarly, the life of the Logos manifests itself in seven different streams or Rays. Out of the three aspects of consciousness, Will, Wisdom and Activity, by permutations and combinations we get seven types of consciousness, seven Rays, seven types of temperament.

As the whole manifested universe is an interplay of consciousness and matter, we find our solar system based on the septenary basis. Therefore, the number seven is spoken of as the "root-number of our system." This is a fundamental law and shows itself in all the kingdoms of nature; in atom, in man, in the universe.

Illustration of the Septenary Law.

We see the law of seven or multiple of seven illustrated in the mineral kingdom where we find minerals and their salts grouping themselves into seven Crystal Systems, namely (1) Triclinic, (2) Monoclinic, (3) Rhombic, (4) Tetragonal, (5) Trigonal, (6) Hexagonal and (7) Cubic. We see the same law manifesting itself in the Periodic Law of the Elements (Mendeléeff's and its new developments), in the Periodicity of Atomic Volumes (Lothar Meyer), and in many other properties of the elements. Just as seasons recur periodically year after year, so do the physical and chemical properties of the elements recur or accentuate periodically with increasing atomic weights. Just as notes in music repeat themselves on higher or lower octaves, so do the properties of the elements more or less resembling one another recur periodically with the increase of

atomic numbers. Just as the waters of the sea rise and fall, flow and ebb regularly, so do the atomic volumes (relationship between atomic volumes and atomic weights of the elements first brought to light by Lothar Meyer) rise and fall as shown in diagram 6. There are heights and depths, hills and valleys, not a regularly

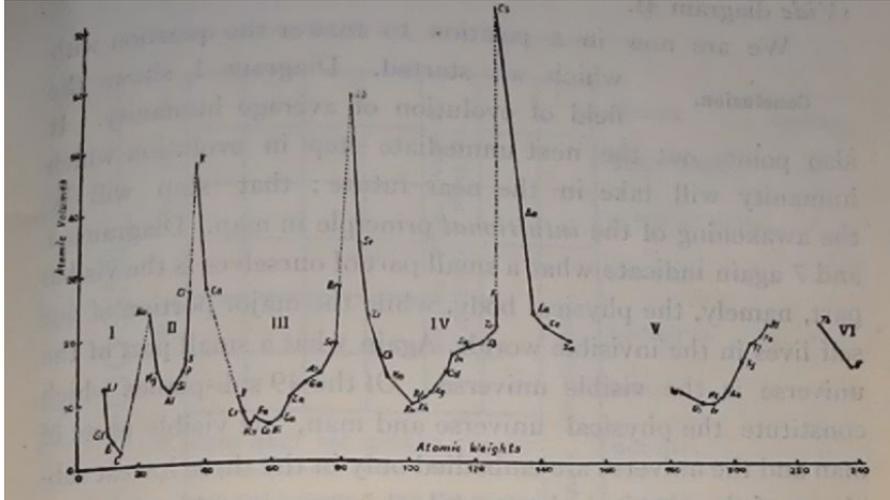


DIAGRAM 6

This diagram shows the relationship between atomic volumes and atomic weights of elements. It brings out the periodicity of atomic volumes, their rise and fall.

rising or falling line. Space does not permit us to give a large number of other examples taken from other sciences in illustration of this Law of Periodicity. They show that there is Rhythm in Nature. It may be due to the rhythmic in-breathing and out-breathing of the Logos. A disturbance in the rhythm may be the cause of many disorders, physiological and psychological, and perhaps economical too.

Growth Not Continuous But in a Spiral.

We have seen above that growth and progress in nature are not in a continuous straight line, but are marked by rises and falls. The reader will find this law illustrated in the rise and fall of cultures and civilizations,¹ races and institutions, rounds and chains, etc., in other monographs also. These laws are occult keys which, if judiciously and intelligently used, would serve as guides for research and, who knows, may prove useful in unravelling some of the mysteries of nature. (*Vide* diagram 4).

Conclusion.

We are now in a position to answer the question with which we started. Diagram 1 shows the field of evolution of average humanity. It also points out the next

immediate step in evolution which humanity will take in the near future; that step will be the awakening of the *intuitional* principle in man. Diagrams 1 and 7 again indicate what a small part of ourselves is the visible part, namely, the physical body, while the major portion of our self lives in the invisible worlds. Again what a small part of the universe is the visible universe. Of the 49 sub-planes which constitute the physical universe and man, the visible parts of man and the universe are embodied only in the three lowest sub-planes of the physical plane, while the remaining 46 sub-planes constitute the invisible part. Now modern science recognizes as her legitimate field for study and research the visible universe and the visible man (visible to senses alone or senses aided by physical instruments). It is only there that Theosophy and Science can meet. In the last century the field of work of the scientists was very limited; since the change in their concept of the atom that field has been very much extended. They have now penetrated into the region called "etheric" by Theosophy (not the æther of space of modern science) and the "fourth state" of matter by Crookes. It would be interesting to find out how far in the regions above the gaseous the discoveries of electron, proton, neutron and cosmic rays have carried our present-day scientists. The field of research for Science is the region above the gaseous on the physical plane.¹ It would be equally interesting to find out how far the modern psychologists have penetrated into the regions of the emotional, mental and intuitional planes.

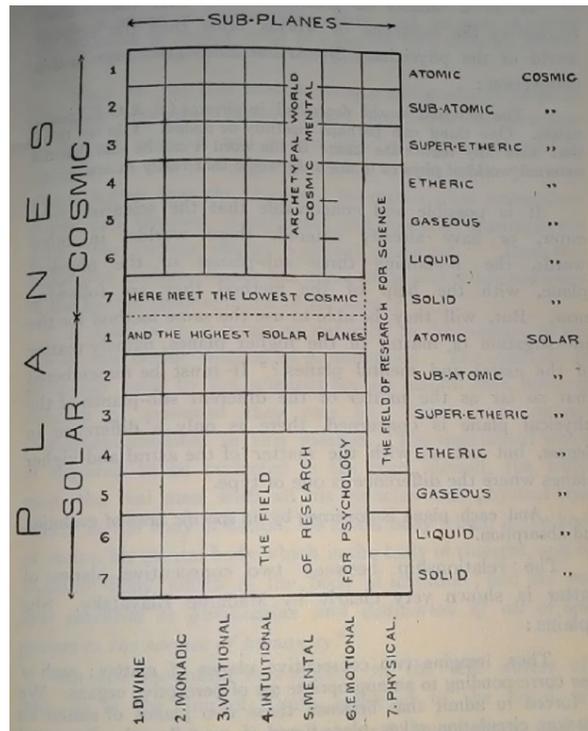


DIAGRAM 7

This diagram shows the limited fields within which modern science and psychology work. It also shows what vast fields of research will open to them if they only resort to the occult method of investigation.

These planes constitute the field of research for Modern Psychology.¹

It is a matter of gratification to note that science recognizes the existence of worlds other than the external world of the physicist. Sir Arthur Eddington says in this connection:

The external world described in physics (E. & O.E.) really exists. One thing can perhaps usefully be added. I do not think that with any legitimate usage of the word it can be said that the external world of physics is the *only* world that really exists.²

It is possible and conceivable that the scientists may enter, or have already entered, these worlds, in other words, the remaining three sub-planes of the physical plane, with the help of the method they are following now. But, will they be able to use the same method for the investigation of matter of the higher planes, namely matter of the astral and mental planes?³ It must be remembered that so far as the matter of the different sub-planes of the physical plane is concerned, there is only a difference in *degree*, but not so with the matter of the astral and higher planes where the difference is one of type.

And each plane is governed by its specific laws of evolution and absorption.⁴

The relationship between two consecutive planes of matter is shown very clearly by Madame Blavatsky. She explains:

Thus, imagine two consecutive planes of matter; each of these corresponding to an appropriate set of perceptive organs. We are forced to admit that between these two planes of matter an incessant circulation takes place; and if we follow the atoms and molecules of, say, the lower in their transformation upwards, they will come to a point where they pass altogether beyond the range of the faculties we are using on the lower plane. In fact, for us the matter of the lower plane there vanishes from our perception— or rather, it passes on to the higher plane, and the state of matter corresponding to such a point of transition must certainly possess special, and not readily discoverable, properties.¹

Shall we say that modern science will gradually come to the same viewpoint, namely, that a new line of attack, a new method of research and a new type of instrument will be necessary in the investigation of the matter of the plane or planes higher than the physical? No matter what tremendous power and however complicated and ingenious apparatus are used “the nuclear charge is always

conserved.”² Does this mean that modern science has come to the end of her resources in the further disintegration of the atom?

If that is so, it brings us naturally to the question of the use of the occult method of investigation. The instruments ordinarily used by the scientist are not helpful here, however delicate or powerful they may be. There is no outside instrument required in this method. The instrument which is required to be perfected is the man himself, the whole man, the real man with all his vehicles—his physical body which is the body of action, his astral body which is the body of desire, his mental body which is the body of thought, and his Buddhic body which is the body of intuition; and *the very first essential is purification and dedication of all of one’s powers to the service of humanity.*³

As the mountain is reflected in the still waters of a lake, so is the Sun of Truth reflected in the mind of a man who is pure, controlled and harmonized and has attained peace. If such a man could raise his consciousness to the highest level of the mental plane which is in vibratory response with the cosmic mental plane—the archetypal world—it is possible that he might get a dim vision of the Plan of Evolution as it is in the thought of the Logos Himself.¹

The vision such a man would see might be the vision of a Universe governed by Law, the vision of Evolution based on the Septenary Law, the vision of a Universe based on a magnificent Plan and directed by a mighty Intelligence. Such a vision would give a correct value and a proper perspective to life. Our knowledge then would not be a mere matter of belief, but one based on direct vision.

Though for most of us this vision is not as yet attainable, yet is there another vision of the purified intellect and of the glorified intuition which is indeed as a beacon light to guide our steps amid the dark paths of our mortal world. If Theosophy cannot at once and to all give the direct vision to the eye, it can at least give, more satisfactorily than any other philosophy, a vision of “things as they are” to the human intellect which inspires to good and adds to life’s enthusiasms. Till all can see what now only a few see, this is all that Theosophy can legitimately claim, as the vision of the invisible worlds is thus revealed to the aspiring intellects of men.²

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PHYSICS (LIGHT, SOUND, ETC.)

BY R.D. KANGA

There can be no possible conflict between the teachings of Occult and so-called exact Science, wherever the conclusions of the latter are grounded on a substratum of unassailable fact. It is only when its more ardent exponents, over-stepping the limits of observed phenomena in order to penetrate into the arcana of Being, attempt to wrench the formation of Kosmos and its *living* Forces from Spirit, and to attribute all to blind Matter, that the Occultists claim the right of disputing and calling in question their theories. Science cannot, owing to the very nature of things, unveil the mystery of the Universe around us. Science can, it is true, collect, classify, and generalize upon phenomena; but the Occultist, arguing from admitted metaphysical data, declares that the daring explorer, who would probe the inmost secrets of Nature, must transcend the narrow limitations of sense, and transfer his consciousness into the region of Noumena and the sphere of Primal Causes. To effect this, he must develop faculties which, save in a few rare and exceptional cases, are absolutely dormant, in the constitution of the

off-shoots of our present Fifth Root-Race in Europe and America. He can in no other conceivable manner collect the facts on which to base his speculations.¹

WHAT was proclaimed by Theosophy years ago regarding the laws governing the physical universe, has now been passing true at the hands of modern physicists, and our task will be to show how far the New Physics is approaching Theosophy in its exposition of these laws, incidentally indicating the development of a plan which points to Law, Rhythm and orderly progression—a glorious ideal of perfection towards which everything in nature seems to be moving. Though modern science has achieved so much, it is yet very far off from what has been achieved by the ancient wisdom. Some flashes of illumination have been caught by scientists, some glimpses of the Light beyond have been obtained, and it may not be long before a path is made which will take modern science a step nearer to the ultimate Reality.

Until now the world thought was shut up within a frame represented by time and space, which were considered as absolute realities independent of the world that was contained within them. It has now been shown that time and space are not independent of matter but depend upon matter and energy which make up the world. Time, space, matter and energy are now considered to be one united whole; matter is resolvable into energy; light, X-rays and other forms of radiation consist of energy-quanta or photons; matter is equivalent to radiation, thus giving new significance to the biblical statement, "Let there be light, and there was light"; matter and energy are different forms of one and the same thing; and matter in its ultimate analysis is that which is objective to mind—a conclusion arrived at years ago in *The Secret Doctrine*:

Matter, to the Occultist, it must be remembered, is that totality of existences in the Kosmos, which falls within any of the planes of possible perception.¹

These are some of the facts generally accepted by modern science, and we shall try to see the approach of the New Physics to Theosophy touching only a few salient points.

To begin with, it was Sir William Crookes—a Fellow of The Theosophical Society—who first put forward the question as to what would be the result if experiments connected with Electricity were made in a vacuum. The answering to this question has led to a profound discovery which has revolutionized the scientific world. The passage of electricity through gases at much reduced pressure soon led to the discovery of an emanation, a stream of something unknown proceeding from the negative pole of the current. This stream consisted of negatively electrified particles travelling at a portentous speed, which was measured and found to almost approximate the speed of light, *i.e.*, 186,000 miles a second. The size of these particles is so small that they are found to be smaller than the smallest atom known. The atom itself is so small that if millions were put in a row, they would not cover the diameter of a full-stop. But

smaller than even those atoms are these negatively charged particles shot off from the negative pole. These negative charges of electricity are called Electrons. Physicists did not however take long to discover that the atoms of matter were somehow breaking up, and they saw in these tiny particles the ultimate constituents of matter. The older conception that the chemical atoms were the ultimate constituents of the universe was abandoned. Further investigation revealed another kind of particles called Protons to be co-existent with the Electrons in a discharge tube. Protons and electrons thus came to be recognized as the two final constituents of matter, out of which the universe was built. Thus in these new particles the physicists saw matter resolved into Electricity. This is certainly a very great step taken by the New Physics towards the physics of *The Secret Doctrine* of Madame Blavatsky.

An atom is now said to resemble a solar system, with a nucleus charged with positive electricity, surrounded by a number of attendant electrons moving in concentric circles round the nucleus. This is a picture quite different from that of Newton's solid massive hard particles resembling tiny billiard balls. Between the nucleus and the surrounding electrons, it is all empty space. If, for instance, the actual protons and electrons that compose a man's body could be compressed together, they would amount to a scarcely visible speck. The solidity of matter is an optical illusion, like the māyā of the ancient Vedantic philosophy, the shadow on the wall of Plato's cave.

We have said that an atom is a miniature solar system. The nucleus of protons is the central sun, and the electrons are the planets revolving round this central sun in their orbits. But there is one notable peculiarity of this atomic astronomy, one in which it differs from celestial astronomy, which is so graphically described by Sir Oliver Lodge;¹ it is that the electrons while circling round the protons, have the power to drop from one orbit to another every now and again. It is as if Jupiter could suddenly drop to the orbit of Mars or Mars to that of Earth and begin circulating there, and it is this peculiar behaviour of the electrons that is the cause of all Radiations, whether of light, ultra-violet rays, infra-red or wireless. We have been told that the speed of electrons in an atom is approximately that of light. In such a small space as occupied by an atom which is incredibly small, the very idea that electrons are approaching a speed of 186,000 miles a second staggers our imagination.

It is a well-known fact in science that a body in motion has a greater mass than when it is at rest. Also a body when it is electrified has a greater mass than when it is not. This high-speed electron therefore gathers mass by virtue of its motion. When it is stopped, the electron jumps from one orbit to another, and while jumping this additional gathered mass is thrown off as radiation.

All radiation is therefore produced by a sudden change in the motion of electrons, and the wave-length depends upon how fast the electron was moving and how quickly it was stopped.¹

The kind of radiation they emit, depends on how far they have jumped and where they jump. This jumping of electrons from one orbit to another is not a mere accident, a mere chance. In fact there is no such thing as chance in nature. Everything takes place under certain definite laws, *e.g.*, the only circles that are possible in which the electrons are moving, are those that have the radii 4-9-16-25-36, etc., which are the series of square numbers.

We have seen that when the motion of electrons is suddenly stopped or disturbed, the extra mass or energy which they have gathered by virtue of their motion flies off and travels out in space as radiation. In accordance with the jumps these electrons take when they drop from one orbit to another, the radiation whether of light, heat, X-ray or wireless is determined. In that way some 70 octaves of radiation have been observed. How limited is our sense of sight, and as a matter of fact all our senses are, that out of the 70 octaves, our eyes respond to only one octave, that of light. As most people are aware, there is a whole band of invisible light, stretching beyond the violet end of the visible spectrum, called the ultra-violet, which shades into the very short waves called the cosmic rays, as also there is a whole band beyond the red end of the visible spectrum called the infra-red, which shades into what are called the long wireless waves. The difference between these is purely a matter of wave-length and rate of vibration. All radiations move with the speed of light, *i.e.*, 186,000 miles a second. Nature manifests the beauty of its music in the vast gamut of these octaves, one end of which is that of gamma and cosmic rays whose wave-length is many million times smaller than that of light, while at the other end we have the radio waves measuring from a few inches to several thousand yards in length. They complete the gamut of Nature's Radiation. We live as if in a universe of radiation, and whether we sunbathe or clothe ourselves, we cannot escape the deluge of multifarious rays which wrap us round with an intimacy as close as life itself. Radiation is, as it were, the language of matter and energy; and the visible light-radiation which to us seems the main and most important part of Nature's speech, is only one-seventieth of its entire language.

The beauty of this Nature's music can be better appreciated when we study it somewhat in detail. If we examine the octave of the visible light-radiation, we find that it consists of seven colours—red, orange, yellow, green, blue, indigo and violet. By observation and experiment, it has been found that these colours go in pairs; thus red and green when brought together and seen through, obliterate each other and the white light only is seen, so is the case with orange and blue, and with yellow and indigo, and violet is left solitary. Their vibratory pulsations in inches are approximately as given below in round figures:¹

Red	Orange	Yellow	Green	Blue	Indigo	Violet
$\frac{1}{30,000}$	$\frac{1}{33,000}$	$\frac{1}{36,000}$	$\frac{1}{40,000}$	$\frac{1}{44,000}$	$\frac{1}{48,000}$	$\frac{1}{55,000}$

If we now examine their wave-lengths, we shall find that each pair is related as 3: 4. Thus,

Red: Green:: 3:4
 Orange: Blue:: 3:4
 Yellow: Indigo:: 3:4

It is an interesting coincidence that all these pairs of opposites, of complementary colours which go to make white, stand in certain corresponding relation. Violet, though it appears solitary, has the wave-length of 1/35,000 of an inch. It therefore stands in relation with the three pairs in the continuing ratio of 3:4:5, it being the synthesis of all. Strange to say that such a relationship is observed in all the octaves of radiations.

Let us now take another set of vibrations, *viz.*, the octaves of sound. Our musical scale is a series of notes harmoniously rising in pitch from one octave to another. As each note is the result of vibratory pulses, obviously each note can be represented by a number which will determine its relation to any other note of the octave. This is represented as follows:¹

C	D	E	F	G	A	B	(C'8ve)
24	27	30	32	36	40	45	(48)

If we examine this octave, we find that it consists of three pairs, each pair being related as 3:4. Thus,

C: F:: 3: 4
 D: G:: 3: 4
 E: A:: 3: 4

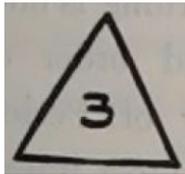
B stands in relation with these pairs in the continuing ratio of 3: 4: 5.

These are strange correspondences. It seems Nature wants to tell us something in these periodic vibratory pulses and in their corresponding relationship. One thing is obvious, that there are rhythm, harmony, law and order everywhere. The mystery involved in the Law of Periodicity and the Law of Correspondence makes a most impressive demonstration of a scheme of arrangement, of a Plan. No such scheme could be the result of mere chance, but points to law and harmony inherent in Nature and indicates orderly progression.²

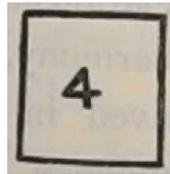
If we examine this vast gamut of radiations, we shall find that each octave consists of three pairs of opposites, each pair consisting of, say, positive and negative, or male and female, or what is usually called in occultism Life and Form aspect. A student of Theosophy is well aware that the triangle (3) is the universal symbol of Life, whilst the square (4) is the universal symbol of Form. (See diagram below.) Manifestation is due to the activity of the triangle, representing the positive or Life aspect of the One, within the mother space representing the negative or female or Form aspect.

Pythagoras represented the scheme of manifestation by numbers. The Pythagorean Three represents the Creative, Preservative and Destructive (or rather Transmuting) Principles of the One, whilst the Pythagorean Four, or Tetraktys, is the symbol of the Cosmos, as it contains within itself the point, the line, the superficies, the solid, in other words, the essentials of all forms. In the eternal music of radiations, we find the summing up of the Manifested Universe, for what is the universe but the light radiation crystallized? *The Secret Doctrine* (I, 522) says that Matter is crystallized Light – a graphic and most illuminating description of a fundamental fact.¹

LIFE



FORM



SYNTHESIS



We have further seen above that the three pairs of opposites stand in relation with their synthesis in the ratio of 3: 4: 5. In accordance with the 47th problem of Euclid, which is said to have an intensely mystical significance, the square on the hypotenuse of a right-angled triangle is equal to the sum of the squares on the sides containing the right angle, *i.e.* $3^2 + 4^2 = 5^2$. It means that Life+Form, the two being complementary, together make a unity. In masonic literature the Square is represented as the emblem of the lower nature or earthly existence of man, whilst the Compasses are as the Triangle which typifies the spiritual nature of man. When the lower nature is so subdued that the spiritual nature shines through it in all its magnificent glory, the man is said to have risen to his full stature of perfection, symbolized by a Five-pointed Star. He is now one with Life, for he has realized the Unity of Life in all the diversities of form.

Again in theosophical science, a vast scheme of evolutionary process is outlined in which the One becomes three and then seven, and the results which follow are also based on septenary systems. We find the same process going on in these radiations. From the One that is the White which is supposed to be colourless, there proceed forth three fundamental primary colours, and the three by permutation and combination become seven.

While investigating the sound-waves modern science has recently discovered waves of very high frequency, called the ultrasonic waves. The human ear cannot detect a pitch above 10,000 to 20,000 vibrations per second, but the ultrasonic waves have a frequency of over a million per second. The effects of these waves are manifold and curious. They form the so-called death-rays which kill especially the small insects and fishes through percussion. When these ultrasonic waves are passed through water, they make the water glow as if it were phosphorescent and they are also diffracted.

Ordinary sound-waves cannot be given a directional effect except in such cases as whispering galleries, etc., but these ultrasonic waves can be given directional effect without the least trouble. Light when it passes through water through which ultrasonic waves are traversing, is diffracted. These ultrasonic waves are generated through a vibrating quartz crystal.

As we have invisible colour so we have inaudible sound. Occult science says that "in the realm of hidden Forces, an *audible* sound is but a subjective colour; and a perceptible colour, but an *inaudible* sound."¹ Modern science has not yet clearly realized this fact. Though the above appears to be a paradoxical hypothesis, there are facts to prove it. In the cases of completely deaf persons, medical science has shown "that these sounds are received by, and conveyed to, the patient's organ of sight, through the mind, under the form of chromatic impressions."¹

Regarding this close relationship of sound and colour, occult science further says that "as a string vibrates and gives forth an audible note, so the nerves of the human body vibrate and thrill in correspondence with various emotions ... thus producing undulations in the psychic Aura of the person which result in chromatic effects."² The human nervous system is regarded as an Æolian Harp² which responds to the impacts of emotions and feelings, thus bringing forth the character of the person in colour phenomena, in the form of an aura seen by a clairvoyant. This is indeed a very clever and intelligent explanation of the existence of auras. We are glad to learn that research work in the study of the aura is now being done under the direction of Mr Fritz Kunz, by the Theosophical Research Seminars, New York, and some success has already been achieved. There is nothing mysterious about it. As photographs can now be taken in a room which is pitch dark by means of infra-red vibrations, so the aura, which is said to be formed of subtler matter or waves, may be photographed by means of ultra-violet vibrations under suitable conditions.

A brilliant article has appeared in *Light* of 3 December 1936, on "Making the Aura Visible," by a scientific investigator who claims to have made great developments on the old method of Dr Walter Kilner's dicyanin screens. He says that there are seen two distinct auras—the inner and the outer—and they overlap each other for the first three inches. The inner aura clearly contains particles carrying a charge, since it is attracted by a magnet at either end of it. The outer haze consists of rays of a wavelength between 400 and 300 millionths of a millimetre. "Temperature has no effect upon this haze; therefore, it is not a vapour. Dead tissue emits no aura, thus it is essentially a property of a living organism. The emission ceases at the moment the death takes place." This brings the aura definitely within the range of laboratory observation, thus confirming what had been told by the seers and occultists ages ago.

In Theosophy sound is said to have a greater occult significance. Every sound in the visible world awakens its corresponding sound in the invisible realms and arouses

to action some force or other on the occult side of Nature. Let us take music. "According to the Indian theory, particular notes have a peculiar quality or potentiality for interpreting and expressing particular emotions and moods."¹ This idea is beautifully brought out by O.C. Gangoly in his article on "The Birth of Melodies." Thus if emotions of wonder, resentment and heroism are to be expressed, the notes C and D in various combinations with other notes are most prominently used in the composition; similarly, to express terror or disgust, the note A is made predominant; the notes E and B are appropriate for emotions of sorrow; and F and G are suitable for emotions of love and humour. We are thus confronted with a fact that the musical alphabet is made to move and live in the pulsating form, creating within us all sorts of moods and emotions and thoughts. Sound, therefore, is a creative energy, bringing into life, into rhythmic form, the inert matter.¹

We thus get a faint idea of the truth of the statement of Christian cosmogenesis: "In the beginning was the Word, and the Word was with God, and the Word was God." Geoffrey Hodson puts it beautifully when he says:

The Logos chants the mighty mantram of His being, the creative energy pours forth in the primordial substance, and Cosmos is born.²

Sound has a deeper significance with the people of the East than that of the West, for every letter of the eastern alphabets is endowed with power and potency, which in various combinations and when rightly pronounced, can work wonders, that modern science, notwithstanding its present achievements, is unable to fathom and explain. Indian yogis have made a deep and special study of the science of colour and sound. They say colour and sound are inseparable. Wherever there is sound, there is colour; and wherever there is colour, there is sound, in the same way as noumenon and phenomenon, life and form, force and matter are inseparable.

Many a time it is asked, "Which came first, light or sound?" In the light of the above it can be said that both manifested simultaneously, they being the two aspects of the one Reality—colour representing life, and sound representing form.

The Sanskrit language which is supposed to be the mother of languages in the present Round is composed of 50 letters (16 vowels and 34 consonants) and is divided into seven groups, as Labials, Dentals, Gutturals, etc. Each letter is again divided into what is called "mātrās," and each "mātrā" is further divisible into 64 points. The dissection of an alphabet cannot be made more complete than it is done in Yogic science.

The beauty of this alphabet is appreciated when we find that the letters are arranged and grouped in a rhythmic flow in accordance with the elements (Tattvas) each belongs to, *e.g.*:

States of matter into which each group falls.

("Hindi passage omitted here")	Earth (pṛthvī)
("Hindi passage omitted here")	Water (apas)
("Hindi passage omitted here")	Fire (tējas)
("Hindi passage omitted here")	Gas (vāyu)
("Hindi passage omitted here")	Ether (ākāshic)

Each letter of the group again has attributes belonging to the particular elements,
e.g.:

- The first letter has Earthly attributes.
- The second letter has Watery attributes.
- The third letter has Fiery attributes.
- The fourth letter has Gaseous attributes.
- The fifth letter has Ākāshic attributes.

and so on with all the other groups.

Moreover, each group of these letters governs a particular part or parts of our bodies, *e.g.* —

- The first group governs the parts from feet to the end of the spinal column (Mūlādhār).
- The second group governs the parts from Mūlādhār to Navel.
- The third group governs the parts from Navel to Heart.
- The fourth group governs the parts from Heart to Throat.
- The fifth group governs the parts from Throat upwards.

Supposing now a person has a pain in the kidney; this is generally due to the presence of solid particles ultimately blocking the urinal passage. Now the kidneys are between Mūlādhār and navel; therefore, the letter ("Hindi passage omitted here") which is earthly (solid) governs this disease. Yogic science now says that the seventh letter after ("Hindi passage omitted here"), *i.e.*, the letter ("Hindi passage omitted here"), is the controlling letter which, when correctly pronounced, acts as an antidote and relief is obtained.

As with kidney trouble so to other diseases also the same rule applies. The Seventh controls and acts as an antidote. This is simply an elementary and most superficial outline of a mighty science which the yogis have mastered.

We may safely conclude from this that the letters in this alphabet have been arranged and classified not haphazardly as if by chance, but with a set purpose in accordance with definite rules governing the principles of sound.

As with each letter, so with the combination of letters, which when arranged in a particular way produces a certain effect. This combination of letters is called a Mantram, which at times may even convey no definite meaning but still when correctly pronounced can work wonders. The great Prophets were adepts in the science and that is why people of the East prefer to say their prayers in the language used by them.

Instances of “mantras” producing definite results are many and varied. As for instance, if a person is bitten by a scorpion and is in terrible pain, if the word (*i.e.*, combination of letters) “Gorux” (“Hindi passage omitted here”) is correctly repeated, the pain gradually subsides.¹

This may seem ridiculous to a westerner, nevertheless this is a common occurrence in India and no one looks at it with surprise. They say that any particular sound vibrates in a particular manner as any matter or a combination of matter does, whether it be an atom, a chemical compound, a plant, an elephant or a diseased liver in a man’s body. So it is only a question of a particular set of vibrations neutralizing another set of vibrations if one knows how to produce them. The yogis have developed this into a regular science and Madame Blavatsky was one of them.¹ Let Madame Blavatsky speak in her own words of her personal experience in this matter:

We say and maintain that Sound, for one thing, is a tremendous Occult power; that it is a stupendous force, of which the electricity generated by a million of Niagaras could never counteract the smallest potentiality when directed with Occult Knowledge. Sound may be produced of such a nature that the pyramid of Cheops would be raised in the air, or that a dying man, nay, one at his last breath, would be revived and filled with new energy and vigour.... *As one saved thrice from death* by that power, the writer ought to be credited with personally knowing something about it.²

Let us now come back to our electron and view it from yet another angle. When an electron jumps from one orbit to another, this is supposed to happen instantaneously. It takes no fraction of time whatever, not even the minutest, in the change. Until 1900, it was universally believed that all radiation (Light, Heat, etc.) was continuous. Radiation had all along been studied for a century in the full light of a wave-theory which implied a continuity. In certain experiments it was observed that when light was added to light darkness was produced. This phenomenon was called the interference of light and could only be accounted for by the wave-theory of light. Newton’s corpuscular theory had to be abandoned as it could not explain this. But the matter did not rest here. Enough evidence was gathered to show that the corpuscular theory could not thus easily be got rid of. Electrons were found to be emitted from substance which was exposed to light and it was expected that the intensity of light would make the electrons move faster, but that was not what was observed. It was seen that however feeble the light might be, it was the wave-length of the incident light which determined the velocity of the emitted electrons irrespective of the intensity of

light. The shorter the wave-length, the greater was the velocity. X-rays, whose wave-lengths were much smaller than those of light, would therefore emit electrons at very high speed. Now we know that X-rays, or as a matter of fact any ray, spread out in an expanding sphere round the point of impact. We would naturally expect that as the spherical wave expanded, it would get feebler and feebler as it moved on as the ripples on the surface of water would do. But what did the scientists find instead? The sphere was moving on as if with the original velocity not slackening in speed in the least. In the words of Sir William Bragg:

It is as if one dropped a plank into the sea from a height of 100 feet, and found that the spreading ripple was able, after travelling 1,000 miles and becoming infinitesimal in comparison with the original amount, to act upon a wooden ship in such a way that a plank of that ship flew out of its place to a height of 100 feet.¹

This analogy could only be explained in the light of the corpuscular theory, and scientists had perforce to accept it. Light under this theory could radiate in bullets, in bundles, in atoms, the measurements always resulting in integral multiples of $h\nu$, h standing for Planck's universal constant and ν for the frequency. There is no fractional part of $h\nu$. This bullet, this unity of light, is called a "photon," which has mass, momentum and energy like any other particle in motion. The total emission of these bullets from the sun amounts to 250 million tons of mass a minute.

In this way all the stars in the sky are sending out a constant stream of vibrations in packets and bundles, and the earth is bathed in waves ranging from the deep base of wireless signals, through the treble of visible light, to the soprano of the cosmic rays, the whole gamut of notes that make up the harmony of the universe. In short, modern science says that electricity, light and all radiations are atomic. In this connection compare *The Secret Doctrine*, Vol. I, p. 136:

Electricity is "immaterial," in the sense that its molecules are not subject to perception and experiment; yet it may be—and Occultism says it is—atomic.

Students of Theosophy will recognize that the principle of discontinuity (or quanta) is a very fundamental thing in nature. *The Secret Doctrine*, while outlining the evolutionary scheme, abounds in this. From the very beginning everything seems to have been brought about by successive steps. The Law of Periodicity originated in the impulses given by the great life-waves at different periods; the Creative Principle thereof first outpouring into the ocean of primordial substance its activity, finally changes it into the atoms we call matter on the physical plane, then the Second Outpouring arranges the atoms and builds them into forms, and when the forms are ready for individualization, there comes the Third Outpouring.

The tide of life, the wave of existence, the life impulse, passed on from planet to planet in *rushes*, or *gushes*; not by an even continuous flow.¹

So far, so good. But the puzzling and disconcerting fact remains that the wave-theory of light cannot altogether be ignored. Certain experiments can only be explained by the wave-theory and not at all by the corpuscular theory. Scientists therefore were obliged to say that light or radiation behaved in a dual way, sometimes like particles and sometimes like waves. Strange to say that matter which so far consisted of electrons and protons, behaved also in the same dual capacity. So we have particles behaving like waves and waves behaving like particles, a strange but significant phenomenon, one which leads us to believe that this duality may be the manifestation of an ultimate unity.

“To Occult Science, *force* and *matter* are only two sides of the same substance.”¹ In this dual behaviour we again find, as we found in the pairs of complementary colours, that the subjective and the objective aspects of one reality go hand in hand. “There is no objective phenomenon without its exact subjective equivalent, and no subjective action without its equivalent objective phenomenon.”²

Prof. Crowther, in his monograph on Radiation, pp. 59-60 in *The Great Design*, very graphically describes the present world-picture. He says:

What, then, is matter? We look out upon this seeming-solid globe of ours, its mountains and valleys, its pleasant fields and busy cities, its cloud-capped towers and gorgeous palaces. What are they but radiation—radiation imprisoned in electrical bonds ... What is their mass but an expression of the intense energy locked up in their minutest particles? Free them from their chains and they become photons, radiation of the smallest wave-length and hence of the greatest intrinsic energy known to science, travelling out through space at the greatest speed known in the universe.

What is radiation? Radiation is the fundamental stuff of which the universe is made. It is pure energy, so concentrated that it can act as a particle, and yet energy associated with vibrations or waves. It is the unity underlying the apparent diversity of the universe.

The picture drawn above concerning the nature of matter and light was suggested years ago by Madame Blavatsky in *The Secret Doctrine*. Though the facts were not expressed by her in modern technical terms, they indicated vividly what was in the mind of the author regarding the mysterious relationship of energy and matter. She writes:

It seems ridiculous to argue that because a thing is imponderable to Science, therefore it cannot be called matter. Electricity is “immaterial,” in the sense that its

molecules are not subject to perception and experiment; yet it may be – and Occultism says it is – atomic; therefore it is matter.¹

To know what light is, and whether it is an actual substance or a mere undulation of the “ethereal medium,” Science has first to learn what Matter, Atom, Ether, Force, are in reality.²

Light and heat are the ghost or shadow of Matter in motion.³

For the Occultists it [Light] is both Spirit and Matter. Behind the “mode of motion,” now regarded as “the property of matter” and nothing more, they perceive the radiant Noumenon.⁴

Again in Vol. II, p. 179 we come across such words as “the mineral – which is light itself, crystallized and immetallized.” Many quotations may be cited on the relationship of light (electro-magnetic radiation) and matter.

All contains and is Electricity, from the nettle which stings to the lightning which kills, from the spark in the pebble to the blood in the body.⁵

We have said above that matter and radiation, or particles and waves, were considered to have merged their duality of behaviour into a unity. When this single unity chooses to manifest itself like waves and when like particles and how it does it, science is unable to say at present. What determines the particular choice in the behaviour of the entity is not known. There come now a host of physicists with their different theories to explain this phenomenon. Louis de Broglie, Schroedinger, Heisenberg, Dirac, a band of brilliant mathematicians, began to work, each in his own way. At this stage Heisenberg enunciated a great principle called the “Uncertainty Principle or the Principle of Indeterminacy,” a principle which is supposed to be as important as that of Relativity. It was discovered that it was not possible to determine accurately both the position and velocity of the electron. Both are possible if much accuracy is not wanted. But aiming at the accuracy of one, will lead to a corresponding inaccuracy in the determination of the other. There is a positive uncertainty in the accurate determination of one of the two, and both cannot be determined equally very accurately. This principle, therefore, strikes at the root of the old ideas of determinism and causality. Probability has taken the place of determinism. This new principle of Heisenberg asserts that nothing is predetermined in the atomic world, as hitherto held by the physicists. All of them naturally began to philosophize about these facts which were presented in an entirely new aspect. Many got busy discussing determinism and free will, ideas exclusively belonging to the realm of philosophy. Up to 1927 the physicists had considered that the material forces of nature were determinate and could be predicted. But now a particle behaves as if it were a living thing. It has a choice of its own which cannot be predicted. Just as it is not possible to determine “when a dog

will wag its tail," or when a monkey take a jump, for this is an action which cannot be governed by physical forces but by Life forces only, so is the behaviour of an electron. Electrons leap from one orbit to another as if they have a will of their own. No one can tell what an individual electron may be doing at any given moment. The distinction between living and dead matter is not gone.

Professor Boycott says in *Nature* of 19 January 1929:

The vitalistic controversy in anything like the form it has taken during the last forty years is out of date, that instead of emphasizing the difference between live and dead things we should make as much as we can of their similarities and that instead of dividing the world into two distinct categories, we should regard it as being made up of one series of units with properties which differ more in degree than in kind.

This Madame Blavatsky said long ago:

The *matter* of science may be for all objective purposes a "dead and utterly-passive matter"; to the Occultist not an atom of it can be dead—"Life is ever present in it."¹

The Secret Doctrine further says:

Everything in the Universe, throughout all its kingdoms, is *conscious: i.e.,* endowed with a consciousness of its own kind and on its own plane of perception. We men must remember that, simply because *we* do not perceive any signs of consciousness which we can recognize, say, in stones, we have no right to say that *no consciousness exists there*. There is no such thing as either "dead" or "blind" matter, as there is no "blind" or "unconscious" Law.²

We are now entering into a new phase of the New Physics which has brought about a great change in our conception of the structure of the nucleus, the central sun round which the electrons revolve.

Till recently it was believed that atoms were built of the two fundamentals, *viz.,* protons and electrons. But the discovery of positrons and neutrons makes one reconsider the idea that the proton is a fundamental particle. For, in the light of this discovery, it appears that a proton is a combination of a positron and a neutron. Since the electron behaves in its dual capacity, as a particle or as a wave, it follows that it must have structure of some kind; it has also therefore ceased to be the ultimate unit of matter or electricity. Who knows, in course of time it may be discovered that these wavicles—the name suggesting that they are both waves and particles, energy and matter—may be resolved into still subtler wavicles, digging so to say into the very heart of the atom, within and yet within, right into the Primordial Substance itself, where Force and Substance are combined into one primitive Root-Principle which is termed by

the occultists Force-Substance or Substance-Principle! And note what Lowson says in *Science and Reality*:

A primitive unity manifesting itself in a duality of spirit and matter, lies at the basis of cosmogonies and philosophies; yet this is merely a first step in differentiation, and the process can be continued to any degree of complexity. The noumena immediately behind physical phenomena may themselves be phenomena to noumena on a still higher plane, and so on up the scale. The physical plane is but the end-product of a long scale of differentiation, descending by degrees.

This is exactly the teaching of Theosophy:

The physical Plane is a Plane of *effects*, not of causes; it is in fact a Plane many times removed from the Plane of Primal Cause, and the effects or phenomena discernible thereon are not primary, nor even secondary effects, but effects many times removed from the ultimate Cause or Noumenon.

The relation of any Plane to the one next below it is a *force* relation; the higher Plane literally *ensouls* the lower.¹

The Occultists, who have good reasons for it, consider all the forces of Nature as veritable, though supersensuous, states of Matter; and as possible objects of perception to beings endowed with the requisite senses.²

Indeed, door after door of undreamt-of aspects of matter and energy, so laconically expressed in the teachings of Theosophy, is being flung open to modern Science, and it is a pleasure to note that modern Science shorn of its defiant and challenging attitude is now treating occult Science with the respect and reverence it deserves.

In this connection the reader's attention is drawn to the recent discussion in *Nature*¹ regarding "a new departure in scientific method, which has grown out of the revolution of thought provoked by relativity theory."² It shows clearly that the old way of looking at things is changing and Science is slowly but surely moving towards Metaphysics. "Science cannot, owing to the very nature of things, unveil the mystery of the Universe around us."³ There would be a deadlock in Science if no new technique is applied in its investigations and we, therefore, note with pleasure that a small group of brilliant and, in the words of H.P. Blavatsky, "daring explorers"³ have transcended "the narrow limitations of sense,"³ and are investigating the problems lying on the borderland from an angle as viewed by a metaphysician. The gulf between physics and metaphysics is now gradually being bridged over.⁴

Again we have all along been talking about the behaviour of “particles” and “waves.” Are they really particles in the sense that a grain of sand is really a particle, and are they really waves in the sense that a ripple on a pond is really a wave? Sir James Jeans in *The Mysterious Universe*, p. 108, says: “We can hardly think of them as being located in space and time at all, they are mere visualizations of a mathematical formula of wholly *abstract* nature.” He further says that “the electron exists only in our minds.” The centre of gravity of physics has shifted from the realm of objectivity to that of consciousness. The reduction of material things in terms of the mind is now the theme of scientists as it has been that of philosophers. When we come across, in *The Mysterious Universe*, such passages as: “The universe can be best pictured as consisting of pure thought”; “If the universe is a universe of thought then its creation must have been an act of thought”; in *The Great Design* edited by Mason, “We are led from our own mind back and back to the Supreme Mind”; – we are reminded of the most fundamental of all theosophical doctrines that “all phenomena are modes or manifestations of Life – the operation and play of the One Life which is the Universe.”

“To put the conclusion crudely,” Professor Eddington says in *The Nature of the Physical World*, pp. 267-68,

the stuff of the world is the mind stuff. All knowledge of our environment enters in the form of messages transmitted along the nerves to the seat of consciousness. It is only our own end of fibres that we actually know.

Lowson in *Science and Reality* says:

Cosmic Mind and Cosmic Energy constitute a unity in which Cosmic Mind is the initiating, impelling and directing activity.

We read in *The Physics of The Secret Doctrine*, p. 37:

The Universe is the expression of Life, Thought, Consciousness. These are the energizing, guiding Principle in all Cosmic Processes, whilst that which appears under the guise of Matter is the objective correlative of this primary activity of the One Life, or Be-ness.

Thus the physicists have unconsciously entered into the region of metaphysics, and the ultimate definition of matter is a metaphysical one, namely, matter is that which is objective to consciousness.

Matter, to the Occultist, it must be remembered, is that totality of existences in the Kosmos, which falls within any of the planes of possible perception.¹

It is not unlikely that the next few years will see another great leap, another step forward, towards the thought given out in the Ancient Wisdom.

Occultism sees in all these Forces and manifestations a ladder, the lower rungs of which belong to exoteric Physics, and the higher are traced to a living, intelligent, invisible Power, which is, as a rule, the unconcerned, but, exceptionally, the conscious, Cause of the sense-born phenomena designated as this or that natural law.²

If we trace the historical development of Science, we find that it indicates the gradual unfoldment of a Plan,³ of a scheme of evolution, and that evolution proceeds in different stages step by step as if in spirals. From a practical worker, seeking only the results, caring not for any explanation of the observed facts, the scientist turns to alchemy and allied arts, giving vent to his emotional nature which is the predominant note of the time. He then changes his venue and makes reason his God. Inductive method and intellectual freedom bring in their train scientific revolution—presenting the world as a gigantic clock-work which plays its tune mechanically; this is followed by the development of his “social sense” (as Prof. Marcault has phrased it) by the application of science to industry and art, ultimately leading him to the spiritual sense of beauty and intuitive perception. We have seen the atomic theory develop into the electronic theory, the electronic into the quantum theory, the quantum theory into the wave theory, this last a mere abstraction arrived at by mathematical intuition. As the scientist unfolds his consciousness, he contacts more and more of Nature, rising from the plane of emotion to that of mind, from mind to that of intuition. The natural laws remain the same in all ages. It is man’s understanding of them that changes. But in each new understanding and in each unfoldment of scientific thought, a new aspect of the Truth is revealed. Let us not forget that the old theories have paved the way for the New Physics, for each theory was a necessary step in the ladder of evolution. Let the scientists and philosophers approach it in their own respective ways. To each is revealed the partial truth. But the whole Truth, Truth Absolute, evades them all. Science, Philosophy, Creative Art, Religion, Metaphysics, Occultism and Mysticism, each is a flower of individual unique beauty and splendour representing one facet of Truth. But if all these are brought together and tied with the golden thread of Theosophy or Divine Wisdom to make a bouquet, it will present a beauty and splendour which will far excel any single flower. That Beauty, that Splendour, that Truth Eternal, abides within the heart of each one of us. If we only knew how to enter the secret and sacred repository of our hearts, if we only knew how to feel and realize the God within us, we should see that Truth shining forth in the magnificent splendour of its pristine Beauty and Glory.

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RELATIVITY

BY SHYAMA CHARAN

("Hindi passage omitted here")

"BRAHMAN IS REAL, THE WORLD IS ILLUSION,
AND JÍVÂ IS BRAHMAN, AND NAUGHT ELSE."

The ideal aim of Science is to give a complete mathematical description of Phenomena in terms of the fewest principles and entities.¹

An unbiased survey of the present state of nuclear Physics reveals that we are only at the beginning of things ... I am convinced that the dual conception of matter, as particles which act on one another by means of the electro-magnetic field, cannot be final. Particles and field must form a higher unity; they must be much more intimately related to one another than is assumed in the wave-mechanics.

The riddle of matter is still unsolved, but it is reduced to the problem of the Ultimate Particles. The solution of this problem is the task of the Physics of the future.²

“GOD said, Let there be Light, and there was Light.” Ever so long the scientists, ignoring God, have been trying to fathom the mystery of Light, and have never come to anything but contradictions in its nature.

Light is a phenomenon of the *Super-World* beyond the grasp of our physical senses and everyday consciousness. No *Physical apparatus* yet devised by man has been adapted to delve into its nature.

Force—Light—Energy only remain at the end of the process of breaking up matter into smaller and smaller parts. Even these are nothing but the manifestations of Dynamic Energy (*Shakti*).

The Earth (nature) supported on Elephants (matter), the Elephants on a Tortoise (atoms—self-contained)—and then “remains the force”—*Shesha Nāga*, the eternal Serpent-Symbol of Force.

Let us see in what follows how far our views regarding the latest developments in mathematics and physics on some of the subjects such as the Theory of Relativity, the Theories of our Universe, the Expanding Universe, the Nature of Matter, the Nature of Light, the Principle of Uncertainty, etc., approach the theosophical viewpoint.

Generally speaking the outstanding advances in Physics in the twentieth century have been:

- (i) The dissection of atoms into ultimate particles of Positive and Negative Electrical Energy;
- (ii) The Theory of Relativity;
- (iii) The Theory of Quanta;
- (iv) The Theory of Wave-Mechanics;

- (v) Invasion of the domain of Physics by the Principle of Uncertainty;
- (vi) Application of the Theory of Probability; and
- (vii) Uncertainty as regards the nature of Light.

Perhaps it would be more correct to sum up that the chief event has been the surrender of the aggressive *certainty* of the nineteenth century scientists regarding the ultimate nature of things. Scientists now admit that they are still ignorant of it. They realize that their old *picturizations* of the Universe are still far from the truth.

Physicists are learning that the greater part of their observations are not observations of the events themselves, but of their effects which may be distorted by the intervening media. In his allegory of the cave, Plato warned us, more than 2,000 years ago, against fallacies of this kind.

When the scientists invent an atomic gymnasium and a system of electronic gymnastics, they know well that they are just speculating wildly. On the other hand, they know that the Mathematical Formulæ they have established, though uninterpretable (to our physical perceptions), are in *some* way representative of Reality.¹

THE THEORY OF RELATIVITY

Let us now see how science came to the Theory of Relativity.

The mass of a body appears in two distinct ways: (i) As the *Inertial Mass* of a body which appears in the Collision Experiments and (ii) as the *Gravitational Mass* which appears in the equation for attraction under Newton's famous Law of Gravitation, that each particle attracts another with a force which is directly proportional to their masses and inversely to the square of their distances from one another. Attraction between two particles of masses M and M' separated by a distance r , is given by GMM'/r^2 , where G is the constant of gravitation.

And we make the astonishing discovery that the relation between a body's Inertial and Gravitational masses is exactly the same as for any other body. This fact suggests the wild idea that the Inertial and Gravitational masses are one and the same thing. The idea is so wild that it seems to have occurred only to one man in the history of Science. As a result we have the tremendous scientific revolution called Einstein's Theory of Relativity.²

Einstein's General Principle of Relativity gives the following Postulates:

Postulate 1. It is impossible to measure or detect un-accelerated translatory motion of a system through free space or through ether-like medium which might be assumed to pervade it.

Postulate 2. The velocity of light in free space is the same for all observers, irrespective of the relative velocity of the source of light and the observer.

From the second postulate it follows that addition, subtraction, etc., leave the velocity of light unaltered. Just as when we add or subtract a finite number from an infinite number, still infinity is left.

("Hindi passage omitted here")

("Hindi passage omitted here")

"Om, that is *whole*, and this is *whole*,
The *whole* proceeds from the *whole*.
Taking *whole* from the *whole*, *whole* remains."

(*Brahdaranyaka Upanishad*)

The main consequences of the Theory of Relativity are:

- (i) The Velocity of Light in free space is *constant* and is the maximum velocity ever attainable.
- (ii) The Mass of an object depends upon the ratio of its velocity to the velocity of light.
- (iii) The Length of an object depends upon the ratio of its velocity to the velocity of light.
- (iv) Space is curved; the force of Gravity has been replaced by the geometrical curvature of space.
- (v) Light has also a mass, as the light-rays bend towards a mass when passing nearby the latter.

THEORIES OF OUR UNIVERSE

We shall now see what are the main theories regarding the nature of our Universe.

The three-dimensional space, (East-West, North-South and Up-Down) with which we are familiar, is either a property of the material world or a property of *our receptivity* of the material world. *Time* is the most formidable and difficult problem which confronts humanity.

Scientists have formed a *mathematical space* by welding together the usual three dimensions of space and *imaginary time* [i.e., $\sqrt{-1}$]. This space has peculiar properties imperceptible to our senses.

Light is propagated in this peculiar space. But what is the *wave-carrying medium* in it, we do not know. The only thing we know about this medium is that, unlike material substances, it is not subject to gravity. *How* the transmission of electromagnetic waves is effected, *we do not know*. What these *electro-magnetic waves* in the transmitting medium are like, *we do not know*.

Again, according to the new theories, the force of Gravity is not a Force, but Curvature of the peculiar Space that has been mathematically formulated by the scientists.

The Newtonian scheme says that a planet tends to move in a straight line, but the sun's gravity pulls it out of its straight course, and makes it describe a curved orbit. Einstein says that the planet tends to take the shortest route in his (Einstein's) universe which is full of *curves* and *bends*.

The Principle of Least Action¹ seems to endow even the inanimate particles with volition, so that out of the many possible paths they select and take the Least Path.

Mathematically the universe has been reduced to a symbol: $qp - pq = ih/2\pi$, where $i = \sqrt{-1}$.

The equation conveys meaning only to the *Initiates* of the Physical Sciences, and it has as many meanings as there are physicists.

THE EXPANDING UNIVERSE

The main theories about the nature of our Universe are:

- (i) Eddington's Expanding Universe, which doubles its radius every 1,500 million years.
- (ii) Jean's Oscillating Universe, expanding and contracting like a concertina.
- (iii) Lemaître's Explosion-Creation Universe: A handful (of God!) suddenly exploded and has been expanding ever since then.
- (iv) Unstable Equilibrium Universe: Some *external* disturbance suddenly overturned the Static Universe which was in unstable equilibrium—like a feather balanced on the top of the nose of a circus joker. Or it might be likened to a breathing movement into what was before unchanging.

Compare with this the view put forward in *The Secret Doctrine*:

The Eternal Parent, wrapped in her Ever-Invisible Robes, had slumbered once again for Seven Eternities.

Darkness alone filled the Boundless All, for Father, Mother and Son were once more one, and the Son had not yet awakened for the new Wheel and his Pilgrimage thereon.

The Causes of Existence had been done away with; the Visible that was, and the Invisible that is, rested in Eternal Non-Being – the One Being.

... The last Vibration of the Seventh Eternity thrills through Infinitude. The Mother swells, expanding from within without, like the Bud of the Lotus.

The Vibration sweeps along, touching with its swift Wing the whole Universe and the Germ that dwelleth in Darkness, the Darkness that breathes over the slumbering Waters of Life.²

In fact a new version of the old saying “God said, Let there be Light,” might be, “God said, Let there be *Movement* into the all-pervading Quietness.”

Ether – Space – Our Universe, Finite, Expanding and Contracting, or Oscillating! Admitted; but into what and from what?

By Space physicists do not mean mere Emptiness; they refer to a medium having a *structure* of some kind, though the nature of this structure is unknown. It may be said that the Space of the physicist is some medium that obeys certain mathematical laws. Einstein remarks in his book *The World As I See It*:

The ether of the general Theory of Relativity is a medium which is itself free from *all* mechanical and kinematic properties, but helps to determine mechanical and electromagnetic relations.

Outside *his* mathematical universe a scientist has been forced to assume something into which *his* universe is expanding or oscillating. He calls this something a *Void* to differentiate it from the known Space which satisfies certain mathematical equations developed by him.

The view put forward by Madame Blavatsky in her momentous work *The Secret Doctrine* is worth noting:

It expands and contracts [exhalation and inhalation]. When it expands, the Mother diffuses and scatters; when it contracts, the Mother draws back and ingathers. This produces the periods of Evolution and Dissolution, Manvantara and Pralaya.

The appearance and disappearance of Worlds is like a regular tidal ebb of flux and reflux.¹

Maurice Maeterlinck comes very close to the Vēdic view in his book, *The Supreme Law*, when he says:

We cannot in fact imagine the expansion of a Universe which has neither outline nor form, nor end, though we can conceive of a small Visible Universe, which recedes into the Great

All, either because it would always transcend the range of our telescopes or because it is formed of substances or essences not visible to our eyes. It is therefore not the Universe which expands, but *one of its bubbles* which swells and gets displaced.

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Does not all this represent a return to the great Vēdic Hypotheses which are about a few hundred centuries old and according to which the Universe (*perceptible*) is only a dilatation, an exhalation, an emanation or an expiration of God who perpetuates Himself for billions of millenia and after which the bubble is deflated or bursts; and there is once more an inhalation, contraction, reabsorption or return into God, who for other thousands of millenia, without destroying anything—for everything is indestructible—renders invisible that which has been visible?

.

Eternal does not mean immutable. Movement is the only life of eternity that our senses enable us to discover. How can we speak of dimensions when we are speaking of the Universe? Who says dimensions, says limits.

.

The misunderstanding are due to the imprecision of the word Universe; there are as many different universes as there are heads, ... and no one has constantly present in his mind the image or the notion—which it is of course impossible to picture to oneself—of an Absolute Universe.

.

We assume too readily that the only possible Universe is the one we see, as though our eyes were the only testimony to all that exists. We only have confidence in that sense which deceives us more often than the others.

.

Even a very slight modification of the eyes would suffice to reveal by the side of, or beyond all stars and all matter surrounding us, presences and energies as important and quite as real, of which we shall never have the faintest idea.

The physicists are on the border-line of what separates our universe of physical perceptions from *what is beyond* (the Absolute). The known laws of physics fail, our physical senses fail. Still the scientist is not yet ready to admit the existence of superphysical senses or Cosmic Consciousness to deal with the *real nature of the universe*.

The existence of many universes side by side, each being entirely unconscious of the existence of the others, is no bar to mathematical physics. The following is a very illuminating description on the independent existence of more than one universe interpenetrating one another. This view very closely approaches the theosophical viewpoint:

It is a relatively simple matter, without departing drastically from our customary methods of physical thought to see how there could exist two universes, or for that matter an infinite number of universes, absolutely independent of one another, each populated by beings who occupied the same space, but who were absolutely unconscious of all universes but their own, and of all beings who occupied universes other than their own.¹

The mathematical physicist will realize that all that is necessary for the existence of the two universes of the kind in question, is that each should be specified by a set of quantities and equations in such a way that none of the vectors or scalars occurring in one set are to be found in the other.

Such a situation would result in each of the two universes being absolutely independent as regards all phenomena occurring in them, and would carry with it, as a logical consequence, the absolute lack of consciousness of the beings in one as regards the activities which occurred in the other.

Again mathematical physicists will see how, starting with this complete independence, the scheme could be modified so as to invoke linkages between the two to any degree, by the inclusion in the equation, of quantities common to the two systems. It is even possible to provide, mathematically, for a meaning to the passage of a being from one universe to the other in such a way that in the old state he was quite unconscious of the state to come, and in the new state he is quite unconscious of the state from which he has departed.

In case the layman does not know what I am talking about, it may suffice to say that I am pointing out that mathematical physics presents no fundamental obstacle to his going to heaven.²

THE NATURE OF MATTER

How close modern science is gradually coming to the theosophical viewpoint as regards the nature of Matter will be seen from what follows:

Since according to our present-day notions the primary particles of matter are also, at bottom, nothing but condensations of the electro-magnetic field, our modern view of the universe recognizes two realities which are conceptually quite independent of each other, even though they may be causally connected, namely, the Gravitational Ether and Electro-magnetic Field, or as one might call them—Space and Matter.¹

There have been several theories about the ultimate nature of matter:

- (i) Descarte's hypothesis of continuous matter, and the consequent infinite sub-divisibility of matter.
- (ii) Popular belief in Atomic Pellets, everlasting in form and infinitely hard.
- (iii) Boscovitch's hypothesis that the atom is a centre of attractive forces at long distance, and repulsive forces at short distances.
- (iv) Elastic-Solid-Ether hypothesis.
- (v) Vortex-Ring hypothesis.
- (vi) Vortex-Sponge hypothesis.
- (vii) The Ether-Source theory of Karl Pearson—that the atoms are singular points through which ether (energy?) is pouring in from the fourth and higher dimensions.
- (viii) The Bubble theory—that the particles of matter are bubbles in ether, which is regarded as a very dense elastic solid. And finally,
- (ix) The electron hypothesis.

Modern physics is largely concerned with the structure of the atom. To the physicist the atom is a hive of activity; on the other hand, to the chemist it is a hard pellet which enters into chemical reactions as a whole unit.

The ultimate dissection of matter reveals the following constituents, all electric in their nature:

- (i) Electron—Mass almost 0, Charge -1.
- (ii) Positron—Mass almost 0, charge +1.
- (iii) Proton—Mass 1, Charge +1.
- (iv) Neutron—Mass 1, Charge 0.
- (v) Deuteron—nucleus of heavy Hydrogen.
- (vi) Neutrino—Mass smaller than the electron's and Charge 0.
- (vii) Alpha Particles—Mass 4, Charge +2.

Light has been also reduced to Photons, *i.e.*, particles of energy.

It is conjectured that the Cosmic Rays, the most penetrating and of the smallest wave-length, are generated when an electron meets a proton and the two combine together to neutralize each other and release energy. Some compare the Cosmic Rays to the Death-Rattle of matter, and others to the Birth-Cry of new atoms.

There is some doubt as to all of the above seven entities being separate. Some of them may just be combinations of the others. But *it is certain* that they are Dual Manifestations—Positive and Negative—of the same Electrical Energy. Thus the Building-Bricks of nature are the manifestations of *Ardha-nārīshvara*, *i.e.*, the Male-Female Deity, or the Positive-Negative aspects of the same.

Dirac has illustrated his theory of the positron by the idea of a Hole in an electron-packed universe. Such a Hole would have the properties of a positively charged particle. When an electron dropped into the Hole, it would combine with the positron. The particles would be annihilated, and be converted into two units of wave energy, or radiations.¹

And *The Secret Doctrine* says that “Fohat¹ digs Holes in Space.” When we have progressed so far, there is no reason to stop here:

Spirit (or Consciousness) and Matter are, however, to be regarded, not as independent realities, but as the two symbols or aspects of the Absolute, Parabrahman.²

In speaking of matter it is always necessary to remember that matter is not a substance, but a condition. Suppose for example that a man is blind. It is impossible to regard this blindness as a substance; it is the condition of the existence of a given man. Matter is some sort of blindness.

PRINCIPLE OF UNCERTAINTY—DUAL NATURE

(i) The nature of Light depends upon the type of the experiment performed. When its *Photo-electric* effects are measured, it is revealed as granular in structure—Photon Particles.

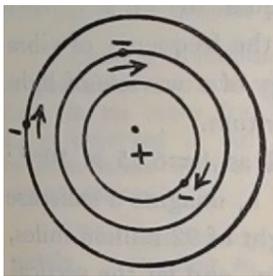
On the other hands, when *Interference* phenomena are observed, it seems to behave as a Wave. The experimental results are such that our language is not expressive enough to formulate this *dual* nature into words. So Light can be a waves as well as a particle. Eddington has coined a new name for it—Wavicle.

No exact description of a Wavicle is possible. We may, if we please, look at this Wave-Point as giving birth to the electron as a Particle; or again, if we please, look at the electron as a particle giving birth to a train of Waves.

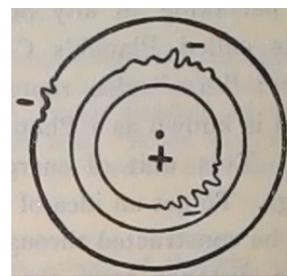
There seems to be an *entity of some sort*, but it is *unknown*, and therefore neither describable nor definable. The physicists call this elusive entity in the waves as Ψ (psi). To one physicist Ψ is a singularity, to another a wave-function, to a third a field-symbol, to a fourth a probability, to a fifth an elementary indefinable. To the mathematician Ψ is a thing of joy; to the physicist a thing of terror.¹

(ii) Electrons. — In Bohr's representation of the atom, the electrons are treated as definite particles circulating round the central positive charge in various orbits, which are mathematically determinable.

On the other hand, according to the Wave-Mechanics the electrons are represented as packets of waves moving round the central positive charge.



Bohr's representation of an Atom.



Wave-mechanics representation of a Atom.

Heisenberg in 1927 showed that theoretically we can measure either the position or the velocity of any electron in its orbit, but that we cannot at the same time measure both the position and the velocity of any electron exactly.

We cannot realize perfectly Our World and the Super-World simultaneously. "Mirror of the soul cannot reflect both the Earth and Heaven; and the one vanishes from the surface as the other is glassed upon its depths."²

(iii) The Quantum Theory of Energy. — Kinetic Energy, like mass, has Inertia, and that the Inertia of Matter is due solely to its internal energy is one of Einstein's most significant discoveries.

It has been found that Energy is not continuous, but that it has a granular structure like matter. Energy does not stream out in a continuous manner from its source, but in jumps, as if it consisted of discrete particles.

It is surmised that when an electron, out of the many circulating round a positive nucleus, leaves its orbit or jumps its orbit, and takes up another possible orbit round the same nucleus, a definite amount of energy, called a Quantum, is sent out into space. This is the least amount of energy available, or partaking in any action, and is equal to " $h \nu$ " where h is called Planck's Constant and ν the frequency of vibration; " $h \nu$ " also represents the energy of a wavicle of light, and is known as a Photon or Light-Quantum.

This unit of energy is very small as $h=6.55 \times 10^{-27}$ ergs. To get an idea of the smallness of h , imagine a staircase to be constructed through a vertical height of 92 million miles, the distance from the Earth to the Sun, and let the vertical rise of each step be $1/10^{27}$ th of this distance, *i.e.*, let there be as many steps in this staircase as the denominator of h . Then there would be roughly a hundred billion steps to the inch. We may now be able to realize the smallness of the energy quantum—it is so small that the pulsations of energy may be regarded as almost continuous.

Now the *uncertainty* arises about the electrons which "jump their orbits," to send out these quanta of energy. It cannot be determined with certainty *which electrons* out of the so many circulating round the positive centre, will jump their orbits. On the other hand, it can be calculated *statistically how many electrons* out of a given number will jump their orbits in a given time; just as it is possible to calculate *how many* persons are likely to die in a week in a certain country, but not at all possible to tell *which* persons are likely to die.

Here comes in the Principle of Uncertainty, which can be worked out only with the help of the Theory of Probability. Uncertainty has invaded modern physics to such an extent that it has been elevated to the rank of a Principle.

Until the statement of Heisenberg's Uncertainty Principle many, and perhaps the most, physicists believed that, if the position and velocity of each electron and proton in the universe were known, the position and velocity of each electron and proton at some future time could be predicted, although the mathematical processes needed to arrive at the prediction may be extremely difficult and tedious. Thus any future state of the universe was supposed to grow out of the present state of the universe.

Coming to human affairs ... all human actions are controlled by the electronic and atomic configurations in the body, so that there is no room for Freedom of Will. Such freedom of will as is observed is only apparent and not real. When one acts in accordance with a wish, the wish is itself a result of material circumstances.

The uncertainty principle has changed the situation completely. According to Eddington and his school of thought, the uncertainty principle requires that a future state of the universe is not absolutely determined by its present state and that there is an

inherent and natural uncertainty in all predictions of the future. Hence, this school argues, human actions may not be entirely determined by the electronic and atomic configurations of the body, and if this is so, there may be room for absolute freedom of will within the bounds set by the uncertainty principle.¹

On the other hand, Einstein condemns as “objectionable nonsense” the attribution of anything like free will even to the routine processes of inorganic nature. He says that the indeterminism which belongs to the modern physics is a subjective indeterminism. It simply means that the physicist is unable to follow the course of the individual atoms and forecast their activities, and not that *those activities are undetermined*.

The writer personally believes that the freedom of will of human beings is like the length of a rope with which an animal is tethered to a peg. The animal has freedom within the circle of the rope. For some the rope may be short and for others long. So human destiny seems sometimes to be bounded by Karma, and sometimes it appears that there is some Free Will also. Who knows that ultimately this dual nature of human destiny, the problem of Fate-Freewill, may not be the two aspects of the same thing. Unless we are able to transcend the limitations of our space and time, we cannot arrive at a real solution of the problem.¹

We do not know what is the nature of Light. We do not know what is the nature of Gravitation. We do not know what is the nature of Space-Time.

We now know after much scientific study and experiments, that *we know nothing*. The ignorant person knows *nonsensically* that *he knows nothing*. The learned person knows *sensibly* that *he also knows nothing*.

Maeterlinck in his book *The Supreme Law* says:

“Something is doing something we do not know what,” writes Eddington. Is not this *nescio quid*, which is the last word of our science, but (a faint and vulgar echo of the magnificent) avowal of the Sāma Vēda saying of the Supreme Deity:

“He who believes he knows it not, knows it; he who believes he knows it, knows it not at all. It is regarded as incomprehensible by those who know it most, and as perfectly known by those who are utterly ignorant of it.”

The ultimate Scientific Reduction of Nature brings us down to Positive and Negative Manifestations of Electrical Energy – of *Shakti*; but nothing is said of *Chētanā-Shakti* or the Life Principle.

In the end we must not forget what Einstein, the exponent of modern Physical Theories, says:

The man who regards his own life and that of his fellow-beings as meaningless is not merely unfortunate but almost disqualified for life.

Schopenhauer's saying, "A man can do as he will, but *not will as he will*," has been an inspiration to me since my youth up.

The true value of a human being is determined primarily by the measure and the sense in which *he has attained to liberation from self*.¹

OM TAT SAT

NOTE

The writer is grateful to the authors and publishers from whose books he has quoted in this article and the following. He has slightly summarized some quotations. The long quotations have been taken from different places in the book, but put together as they express the same ideas. There is one quotation on p. 102 from an unknown author to whom he tenders his apologies. The conclusions have been collected from different sources as the aim of the two articles is to show how far and where Theosophy and Science meet in these two subjects.

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MODERN MATHEMATICAL THOUGHT

BY SHYAMA CHARAN

What is physical is subject to the laws of Mathematics, and what is spiritual to the laws of god, and the laws of Mathematics are but the expression of the thoughts of God. — THOMAS HILL.

Without Mathematics one cannot fathom the depths of Philosophy; without Philosophy one cannot fathom the depths of Mathematics; without the two one cannot fathom anything. — BORDAS-DESMOULINS.

Behind the artisan is the chemist, behind the chemist a physicist, and behind the physicist a mathematician. — F.W. WHITE.

PURE Mathematics is a collection of hypothetical, deductive theories built upon various foundations, each consisting of a definite system of primitive, *undefined* concepts or symbols, and primitive, *unproved* but self-consistent assumptions, commonly called Axioms, together with their logical deducible consequences following by rigidly deductive processes without appeal to intuition or experiment.

Thus Mathematics, once fairly established on the foundations of a few axioms and definitions, *as upon a rock (?)* has grown from age to age, so as to become the *most solid fabric (?)* that human Imagination and Reason could boast of.

Once in his student days—walking with a great Hindu philosopher in his garden—the author was asked by the philosopher to explain to him the Theory of Relativity and the trend of modern mathematical thought. The student started off by saying that the structures built by the Philosophers without any tangible foundations

and the structures built by the Mathematicians on firm foundations have both now become sky-scrapers. In fact the flights of imagination of the Mathematical-Physicist, when constructing a working model of the universe, exceed even the sublime heights reached by philosophical thought. However, after a brief but scathing cross-examination, the student had to admit that *Mathematics too has no firm foundations but is built upon the quicksand of postulates and axioms.*

PRACTICAL APPLICATION OF MATHEMATICS

Every common mechanic has something to say in his craft about good and evil, useful and useless, but these practical considerations never enter into the purview of the Mathematician.¹

Mathematicians never trouble about the utility of their science. They simply love to immerse themselves in working out elegant and logical deductions from a few self-consistent assumptions.

It is said that someone who had begun the study of geometry with Euclid himself, when he had learned the first proposition, asked the great man, "But what shall I get by learning these things?" Whereupon Euclid called his slave and said, "Give this man a couple of coins, since he must make gain out of what he learns."

A mathematician is not concerned with physical reality at all; for no proposition whatsoever concerning the physical world can be proved by mathematical reasoning. It is the business of the mathematicians to supply the physicists with a collection of abstract schemes, from which the physicists are at liberty to take whatever fits in with their observations.

Each such abstract scheme is built upon a fundamental set of *assumptions*, called Axioms. A whole geometry could be constructed upon a few postulates, however absurd the latter might be. Granting *these postulates*, all the mathematical conclusions are logical. But the validity of the final structure is no greater and no less than *the validity of the primary assumptions.*

SYSTEMS OF GEOMETRIES

It is the glory of geometry that from so few principles fetched from without, it is able to accomplish so much.¹

The most suggestive and notable achievement of the nineteenth century is the discovery of non-Euclidean geometry.

A large number of different schemes of geometries have been constructed. Euclid based his system on the assumption that parallel straight lines do not meet however far they are produced. Modern mathematicians have evolved several different kinds of geometries – non-Euclidean – based on the assumption that the parallel lines *do meet at an infinite distance*. All these various systems of geometries are complete and equally valid. But each depends upon a fundamental set of *unproved axioms*.

Among the differences between these geometries, the sum of the angles of a triangle is exactly equal to two right angles according to Euclid, to less than two right angles according to the geometry of Lobatscheffski, and to more than two right angles according to Riemannian geometry.

It is the function of the physicist to find out which of the above systems of geometries applies to our universe.

Mathematics is not the discoverer of the *Laws*, for it is not Induction; neither is it the framer of *Theories*, for it is not hypothesis; but it is the judge over both, and it is the arbiter to which each must refer its claims: and neither Law can rule nor Theory explain without the *sanction* of Mathematics.²

In most science one generation tears down what another has built, and establishes an entirely new theory. In Mathematics alone, “which knows nothing of observation, nothing of experiment, nothing of induction, and nothing of causation,” each generation builds a new story upon the old structure.

LOGIC OF THE INFINITE

In dealing with vast astronomical distance of the remotest nebulae, the velocity of light, etc., it has been found that the logic of finite numbers fails. The velocity of light has been found to be the maximum that can ever be attained. The velocity of the observer, or that of the light-giving source, produces no alteration in the measured velocity of light. Here additions and subtractions to the original number leave it unaltered. In dealing with the velocity of light and phenomena observed in the remotest nebulae it appears that the physicists have reached the confines of our universe, where the laws and logic of our known world do not apply. New laws and hypotheses have to be evolved to fit in with the observations.

Ouspensky in his *Tertium Organum* says:

The mathematics of the *trans-infinite numbers* may serve as an example of “Real Mathematics,” violating the fundamental axioms of our mathematics and logic.

By trans-infinite numbers, as their name implies, are meant numbers beyond infinity.

Infinity as is represented by the sign ∞ is the mathematical expression with which, as such, it is possible to perform all operations: divide, multiply, raise to powers. It is possible to raise infinity to the power infinity. This magnitude is an infinite number of times greater than infinity – it will be ∞^∞ . And at the same time they are both equal, $\infty=\infty^\infty$. And this is the most remarkable property of trans-infinite numbers.

You may perform with them any operations whatsoever, they will change in a corresponding manner, remaining at the same time equal. This violates the fundamental law of mathematics accepted for *finite* numbers. After a change, the finite number cannot be equal to itself. But here we see how, *changing*, the infinite number remains equal to itself.

The logic of trans-infinite numbers is:

- (1) A magnitude cannot be equal to itself.
- (2) A part can be equal to the whole, or it can be greater than the whole.
- (3) One of two equal magnitudes can be infinitely greater than the other.
- (4) All *different* magnitudes are equal among themselves.

Om Mani Padme Hum, the Sunrise comes!
The Dewdrop slips into the shining Sea!¹

No, the shining Sea slips into the Dewdrop!

The Infinite is no more a quantity than Zero is a quantity. If Zero is a sign of vanished quantity, the Infinite is a sign of that *continuity of existence* which has been ideally divided into discrete parts in the affixing of Limits.²

Infinity is the land of mathematical hocus pocus. There Zero the magician is the King. When Zero divides any quantity, he changes it without regard to its magnitude into the infinitely great, and inversely, when divided by any number he begets the infinitely small. In this domain the circumference of the circle becomes a straight line, and then the circle can be squared. Here all ranks are abolished, for Zero reduces everything to the same level one way or another. Happy is the kingdom where Zero rules!³

Here is an example of what happens when Zero is allowed to enter into a mathematical operation:

Let $a=b$,	then	$ab=a^2$
	or	$ab-b^2=a^2-b^2$
	or	$b(a-b)=(a+b)(a-b)$

Now dividing out by the common factor $(a-b)$, we obtain – $b=a+b$
 $=2b$

Therefore, 1=2 !!!!!

This absurdity appears because we have divided both sides by Zero, *i.e.*, by $(a-b)$.

Numbers upon numbers pile,
Mountains millions high,
Time on time and world on world amass,
Then, if from the dreadful height, alas !
Dizzy-brained, I turn, Thee to behold,
All the power of number, increased thousand-fold,
Not yet may match Thy part.
Subtract what I will, wholly whole Thou art,

MODERN DEVELOPMENT IN MATHEMATICS

(1) *The Theory of Probability*

The chief developments in the domain of mathematics have been the evolution of various systems of non-Euclidean geometries of more dimensions than three. The theory of Probability, which began with considerations of the games of chance, has become the most important part of human knowledge, as it is now applied to all physical problems. There is no *certainty* in physics now. At best one can only calculate odds in favour of any event happening. The Uncertainty Principle has invaded and conquered the domain of Physical Sciences.

Dirac, one of the great exponents of Modern Physics, says:

When an observation is made on any atomic system—the result will not in general be determinate, *i.e.*, if the experiment is repeated a number of times under identical conditions, several different results may be obtained.

Instead of accuracy and precision, which up to now were ascribed to nature, we have nothing but *uncertainty and randomness*. Nature does not follow the principles of what we call Simple Mathematics. At present the physicist is much occupied with the study of the Statistics of Electron Jumps. We can foretell what will happen in the *long*

run when coins are thrown up, *i.e.*, on falling whether they will be *heads* or *tails*; and apparently physicists can quite as definitely forecast what will happen in the *long run* when they experiment with vast crowds of atoms and electrons. The Laws of Averages and Probability are entering more and more into the physics of very small (electronic) and very great (cosmic) things. The 2,000-year old theory of Causation again *seems* (?) to be in the melting pot. May it not be that the atoms and electrons which compose the crowd are not ultimates, that there are differences among them of an infinitesimal order, which cause differences in their behaviour? We have to resort to averages and probability because of our ignorance.

(2) *Wave-Mechanics*

Again, in modern physics, to reconcile the dual nature of light, the old Mechanics had to be replaced by Wave-Mechanics. All phenomena are now supposed to be due to Waves, either of energy or Uncertainty. The ancients were not far wrong when they referred to the *Music of the Spheres*. Music after all consists of harmonious waves whose various frequencies bear a certain ratio to one another.

The following table shows the range of wave-lengths from the highest to the lowest electro-magnetic manifestations of nature:

TYPE OF RADIATION; WAVE-LENGTHS IN CENTIMETRES

Wireless	2,000,000 to 10
Heat	.03 to .00,008
Visible Light	.00,008 to .00,004
Ultra-Violet Light	.00,004 to .00,000,5
X-Rays	.00,000,1 to .00,000,000,8
γ -Rays (Break-up of radioactive atoms)	.00,000,000,5 to .00,000,000,005
Cosmic Rays	.00,000,000,000,000,1 (?)

THE NATURE OF THE UNIVERSE

“So God created man in his own image.” A man’s imagination cannot imagine more than what he is accustomed to seeing all round himself. So *man created God in his own image*.

In the pastoral state of civilization, God was the heavy-handed Patriarch of the tribe. He was prone to anger, full of revengeful spirit, and was pleased with gifts and flattery. Later, as man’s *humanity* developed, He became more and more of the nature of a kind Father; and still later, He was an Abstraction of all virtues.

Then man took up the study of science, that is, the workings of nature. God at once was metamorphosed into an Engineer – a Mechanical Engineer. The scientist tried to make a mechanical working model of the universe. Still later, as man learnt to see the wonders and properties of electricity, God was assigned the honour of being a Super-Electrical Engineer.

Now, the universe has been reduced to symbols of Pure Mathematics, which convey nothing to the physical senses of man, and which are beyond our imagination in physical terms. *So God is now a Pure Mathematician who geometrizes.*

Bernard Shaw says in his book, *The Adventures of a Black Girl in Her Search for God*:

You cannot teach these people the truth about the universe. Ask that girl to divide a quantity by the *Square Root of Minus x* ($\sqrt{-x}$), and she will not have the faintest notion of what you mean. *Yet the division by the Square Root of Minus x is the key to the Universe.*

On the other hand, in the last century, Leibniz believed that he saw

the image of creation in his Binary Arithmetic in which he employed two characters only, *i.e.*, the Unity and Zero. Since God may be represented by *Unity*, and Nothing by *Zero*, he imagined that the Supreme Being might have drawn all things from nothing, just as in the Binary Arithmetic all numbers are expressed by the union of *Zero with Unity*.

Mathematics is a hard task-master. The student who wants to understand it has to undergo a rigid training extending over at least a score of years.

Once when lecturing to a class Lord Kelvin used the word "Mathematician," and then interrupting himself asked the class, "Do you know what a mathematician is?"

Then on the blackboard he wrote, $\int_{-\infty}^{+\infty} e^{-x^2} dx = \sqrt{\pi}$.

Pointing with his finger to what he had written, he turned to his class and said, "A mathematician is one to whom *That* is as obvious as that twice two make four to you."¹

And we want to understand the nature of *That* immediately, without any preparation whatsoever, without devoting any time to make our physical senses capable of grasping the nature of *THAT*, which is beyond our logic and senses.

To an Adept the Esoteric Symbolism is as obvious as is the above formula to a mathematician, as obvious as that twice two make four to anybody else.

RECENT ADVANCES IN MATHEMATICAL THOUGHT

- (1) Development of Non-Euclidean Geometries of n -dimensions.
- (2) Application of the Science of Probability to Physics.
- (3) Development of Wave-Mechanics.
- (4) Discovery of the failure of ordinary Mathematics when dealing with very small or very great quantities.

For BIBLIOGRAPHY, see the monograph on "Relativity."

EVOLUTIONARY BIOLOGY:

THE EVOLUTION OF FORM

BY MARGARET A. ANDERSON

Occultism teaches that no form can be given to anything, either by Nature or by man, whose ideal type does not already exist on the subjective plane ... *our* human forms have existed in the Eternity as astral or ethereal prototypes ... these super-sensuous moulds *contained, besides their own, the elements of all the past vegetable and future animal forms of this Globe.* Therefore, man's *outward* shell passed through every vegetable and animal body, before it assumed the human shape.¹

MODERN views of evolution differ from the early Darwinism born of a more materialistic age. Theosophy, again, has its own contributions to offer, and can throw light on more than one obscure problem. According to *The Secret Doctrine*, man came first as well as last—a paradox which needs explanation. Occult science regards man as "a state of consciousness," existing ideally in the Thought of the Eternal. He is therefore not "an offspring of the brute," but the Archetype outside of physical matter and only recently apparent in human guise. As the Archetype he contained all the potentialities which emerged in the mineral, vegetable and animal kingdoms first at mental and astral levels. (See Appendix.)

The evolutionary scheme is on a grandiose scale. In connection with our Earth it postulates seven great cycles, or "Rounds": broadly speaking, they may be identified with geological Eras. The earliest forms of "man" in the first Round (Eozoic and Archeozoic Eras) were etheric, that is, of "the most tenuous matter compatible with objectivity." The cloudy amœboid forms (of amœba-like immortality) were in direct association with the mineral kingdom, and quite impervious to the tremendous heat of the earliest period. At this stage "man" multiplied by fission. During the next Round (Proterozoic Era) his bodies became "ectoplasmic" and reproduction was through budding, or gemmation.

Science is faced with the great problem of how to account for the origin of organic life, which first appears to have arisen in the Archeozoic Era. Theosophy can here offer a reasonable hypothesis to account for the first transmission of those intangible germs of life which brought about the momentous “jump” from the inorganic to the organic. The ethereal forms of man, the Progenitors, periodically broadcast fragments of their own life-essence. It is quite likely that etheric atoms cast off by “man” in the Archeozoic Era (first Round) gave rise to a bacterial form of life, akin to the bacteriophage discovered by d’Herelle. Falling into the warm primeval waters of the Proterozoic Era, at a time when radiation and the atmospheric and chemical conditions were exactly suitable, blebs of ectoplasmic (or protoplid) substance cast off by the second Round “man” may well have formed the first true protoplasm. The bread of life cast upon the waters returned again as unicellular organisms. Theosophy can offer this solution for the mystery of the origin of organic life upon earth, when the great “jump” was taken. It is probable that the subtle bodies of man at his etheric rehearsal stage threw off vital substances in many quarters of the globe simultaneously. It is important to note that the primitive organisms proceeded to develop very swiftly in comparison to ethereal man, who did not descend into objectivity until the fourth Round. During the later pre-Cambrian (second Round), “man” occupied “vegetable forms.” During the following Round, reproduction passed from the budding to the oviparous stage—a stage which covers the Palæozoic and Mesozoic Eras, *i.e.*, from about 600 million B.C. to 50 million B.C. “man” occupied reptilian and ape-like forms; the latter were the prototype of the anthropoids, but not being fully densified these did not leave fossil traces.

The true age of Man came into being in the fourth Round, early in the Cainozoic Era, (Diagram 1), with the first of the seven races of Mankind. *The Secret Doctrine* avers that the earlier races *recapitulated* the stages passed through by ethereal man in early Rounds. Etheric particles and moist ectoplasmic (or protoplid) exudations were thus thrown off, became absorbed by plants and animals and greatly stimulated their evolution. Becoming increasingly densified, a quite recognizable human being of the gorilla-type appeared in the third Lemurian Root-Race during the Miocene period. Occultism takes the view that the anthropoid ape is the result of crossbreeding between primitive man and primitive mammal—a view with which scientists concur. Science affirms that our ancestors sprang from a stem common to the ancestry of the gorilla stock. Specialization of structure and function produced the various types. (See Appendix.)

The fourth Root-Race produced the civilization of Atlantis; the Chinese came from its sub-races. The Root-Races, each of which contains seven sub-divisions, naturally overlap. The fifth sub-race of the fifth Root-Race is now dominant in the world. Its sixth sub-race is said to be emerging in Australasia and North America; out of it will arise the sixth Root-Race some hundreds of years hence.

ERAS	PERIODS	ANIMAL RANGES TABLE					
(Tertiary) Cainozoic	Recent						
	Pleistocene						
	Pliocene						
	Miocene						
	Eocene						
Meso- zoic	Palaeocene						
	Cretaceous						
	Jurassic						
Newer Palaeo- zoic	Triassic						
	Permian						
	Carboniferous						
Older Palaeo- zoic	Devonian						
	Silurian						
	Ordovician						
Arch- eozoic	Cambrian						
	Terridonian						
Eozoic	Charnian						
	Uriconian						
Azoic	Dalradian						
	Etc.						

DIAGRAM 1¹

With the final advent of the seventh Root-Race in the far distant future, humanity will have reached its evolutionary goal for the fourth Round.

Having given a bird's eye view of the theosophical approach to the Science of Life as a whole, let us turn to the evolution of the form side. It will have been noted that occult science takes into account the inner side of evolution, where the pattern of things below is laid down, so to speak. There is constant interplay between these two sides of evolution. Thus, as Professor Emile Marcault has observed, the outer forms of the plants we see are their individual bodies: we cannot see their true being which is the *species itself*; that species exists as a unity on the astral plane and is not objective to us.

The theosophical notion, towards which many signs indicate that scientific philosophy is tending, is that life manifests at successive levels, being ever a unity at the level from which it manifests, but breaking up into duality below, that on the plane of its manifestation, there giving rise to the pair: organism – environment....

... At the next level, that of the vegetable kingdom, we find *life's unity on the astral plane*, its duality on the etheric sub-planes, being the etheric environment from which it derives and directly assimilates vitality (that of the sun).¹

... The characters which constitute the species, by which one species is distinguished from another species, express themselves in all its members alike; and they are expressed in terms of organism....

... To find the true phenomenon of evolution below the level of man, we have to seek among species, not between *individuals*. For evolution is of the life, and the structure of life which comprises as *subjective zone the whole group life*, and as objective zone the collectivity of its members, belongs to the species as a whole. One character modifies all the members alike in the only structure *they individually possess* – that of the organism.²

The simplest Protozoa (which appear to have arisen in the Archeozoic Era) are but the topmost twigs of the tree of life. Each cell is dominated by its central point, the nucleus, (Latin, a kernel) and this is the seat of life. It is connected with growth, reproduction and nutrition. It secretes the ferments, or enzymes—organic, colloidal catalysts—without which nutrition cannot take place. It may be inferred that these impalpable vital substances emanated from the same primal source as the first cell: that is to say, from ethereal “man,” the Progenitors, who cast the bread of life upon the waters in the beginning. Etheric matter and ectoplasmic exudations may be thought of as the substratum, or matrix, for protoplasm itself, which science calls the basis of life. Active protoplasm contains innumerable particles and droplets and about 70 per cent of water; the ultra-microscope revealed it to be a colloidal system, now known to carry electric charges.

The chromosomes within the nucleus are the essential vehicle for inheritance. Cell-division may be direct or indirect, the nucleus dividing first. In mitosis, or indirect division, a symmetrical spindle is formed which unites the two asters. Each chromosome divides lengthwise, sending one-half to each pole; then the nucleus divides across its equator. The nucleus has been described as the central nervous system of the cell, though for all we know the centrosome (in the aster) may be the most important part; it may well be the source or seat of motion. Professor Macbride speaks of the chromosomes, within which lie the genes, as “organized living beings.” There is a variety of reasons for holding that “they retain their individuality throughout all the phases of the nucleus.” Indeed, biological research has proved that the essential structure of the chromosomes remains unaltered and that they are actually present *in all the cells of the body*.

This is most significant. It may be the needed clue, a veritable Ariadne’s thread, which may enable occultists to understand how the karmic “skandhas” express themselves through the laws of Heredity via the etheric double.

When unicellular organisms became two-celled, the first step was taken towards cell-colonies and complex organs and bodies. Complexity soon increased in the first

Metazoa, which possess at least two sorts of cells arranged in masses, or “tissues,” in which the cells co-operate functionally. The egg starts as a rounded cell and converts itself into a ball of cells called the “blastula.” One side of this ball becomes indented, *i.e.*, “invaginates,” and is converted into a two-walled cup called the “gastrula.” The outer layer, or ectoderm gives rise to the skin; the inner lining is the endoderm which produces the lining of the alimentary canal and its outgrowths. With the later mesoderm, or middle layer, we have the three germinal layers from which all living organisms are built up.

As a general law, it may be said that inherited structure is the “crystallization” of the *habits* of past generations. All land animals in the beginning of their evolution show five fingers or toes on each foot. Here is a sign-manual of man’s relationship to the evolving forms below him plainly inscribed on the evolutionary scroll. Very early in their history newts and frogs lost the thumb; the lizards have retained it. (Lemurs and monkeys have an opposable thumb). The American fossils show all the stages in the horse, from five toes up to the present stage of the middle toe with a slender splint of bone on each side.

Simple forms of aquatic plants show a phase where detached cells are freely mobile in water; the same thing is seen in the life-cycle of all the simpler land plants. Mosses, liver-worts, ferns, club-mosses and horse-tails depend at one critical point upon external fluid (water) as a medium for that mobility. The encysted state, with cell-walls surrounding stationary protoplasts was a later development in plants. In fact, it is observed:

The flora of the land is not primary, but secondary. Its constituents have adapted themselves to the atmospheric surroundings which they adopted—the greatest of migrations in an age long past, *viz.*, the transition of plant life from Water to the Land.

In the simplest organisms, vegetable or animal, sex begins by the union of two germs to form a zygote. The importance of the function seems to lie in the union of two different nuclei containing different potentialities of life and growth. In plants the zygote gives rise to a new plant, after dividing (either directly or indirectly) to form zoöspores, each of which can grow into a plant. The zoöspores are motile cells, equipped with fine protoplasmic threads, the cilia, or flagella. Gray proved that their vibration is caused by alternate contractions of the two sides of the flagellum.

There is nothing more fascinating than trying to trace the first beginning of new forms in the story depicted in evolution. The earliest plant-remains occur in the Devonian rocks, though plant-life existed before that period. The primitive fungi are believed to be originally derived from *colourless* flagellates, related to the coloured forms which gave rise to algae.

The sponges (Porifera) represent a successful experiment in colonial expansion along a side-line which did not go very far. They do not possess mouths, sense-organs or nerves. Certain cells make a current with actively-beating flagella; this current passes through its aggregated or multicellular body, and so brings it food.

The minute stinging animals, the Coelentera, show the first true mouth and food-canal, and also the first special sense-organs. They point the way to the simpler worms, the Planarians or Turbellarians. Comb-bearing Coelentera have an incipient mesoderm, or mid-layer of cells.

Worms show the beginning of bi-lateral symmetry and head—brains and body cavity. They also show the *establishment* of the important mesoderm, which in higher animals was going to provide muscles, circulatory systems, kidneys and skeleton. The mesoderm backbone was to finally replace the notochord.

With the Nematodes (thread-worms) began a through-and-through, open food-canal. In the aquatic ribbon-worms (Nemertea) blood first appears; some of them have hæmoglobin. They had the first “closed” blood-system. Earth-worms are most remarkable creatures and well repay study. In their phyla were developed sensory nerves, able to respond to vibrations of heart, light and chemicals. Earth-worms began the habit of moving head-foremost. A few (such as *Alma* and *Dero*) have minute gills on the side of the front end of the body, indicating that they have sprung from aquatic stock. Burrows of worms are found in pre-Cambrian rocks.

Sea-worms, unlike earth-worms, have “indirect” development, *i.e.*, free-swimming larvæ are hatched out which do not resemble their parents. In one sea-worm called the sea-mouse, and also in the leech, “chromaffin cells” occur which are similar to those that secrete the adrenal hormones in vertebrates. Dr J.A. Thompson concludes:

It is not unlikely that ancestral worms in that wide sense gave rise, not only to their successors today, but to echinoderms, molluscs, bryozoa, brachiopods, arthropods, and even vertebrates.

The lancelet (*Amphioxus*) is an invaluable link in the evolutionary chain. Its name is derived from *amphi*, both, and *oxus*, sharp, because it is without a head, and is equally pointed at both ends. It easily burrows in the sandy bottom of the sea. In this limbless and simplest of all primitive vertebrates the backbone is foreshadowed by a “notochord”—a simple cellular rod which runs from one tip to the other. It has small dorsal cartilaginous rods which suggest the commencement of vertebral spines. The spinal cord which lies above the rudimentary backbone, contains a slight swelling at the anterior end of the creature. This *faintly* suggests an incipient brain; within it is a pigmented spot which may be the beginning of an eye.

The lampreys, a genus of round mouths, seem to represent an ancient race even more primitive than the earliest fishes. They did not leave traces in the fossil record because their skeletons were too gristly. But certain structures called "conodonts" in very early strata have been identified by some scientists as the teeth of lampreys. It is interesting to note that vertebrates of the lamprey genus have pineal development resembling an eye.

The earliest fishes, equipped with "skin-teeth" and eyes, first appear in the fossil records during the Silurian period of the Palaeozoic Era about 500 million years ago. These were the cartilaginous Elasmobranchs, which still persist. Among their descendants is a Japanese shark, the *Chlamydoselachus*, probably the oldest living type in the world, whose direct ancestors go back to the Devonian period. The Elasmobranchs were followed by the Ganoids, with large hard scales, bones in their skulls, and pectoral girdles. They had their "golden age" in the Carboniferous Era. The Ganoids were the ancestors of the interesting Dipnoi—a small transitional order of the Permian period. The Dipnoi had an undivided notochord; in them the swim-bladder, or air-bladder, first became able to function as a true single or double lung. This new development provided the bridge to the race of amphibians. The present type of fishes also sprang from the Ganoids.

Fishes having led on to amphibia, reptiles were able to come into being; with them began the "higher vertebrates." Their earliest remains are in Permian strata: Ichthyosaurs, Dinosaurs and Plesiosaurs. The latter (from Greek *plesios*, near to, and *sauros*, lizard) was the leading genus among the fossil sea-reptiles of the Mesozoic Era.

Huxley was the first to see the close structural affinities between reptiles and birds. The fossil remains of *Archæopteryx* show that it was an intermediate link between reptiles and birds. The jaws possess teeth; the tail is long and jointed like that of a lizard, but possesses feathers; the "fingers" instead of being fused together are quite movable, with claws at their ends. It had feathered wings to fly with.

A unique lizard exists in New Zealand, of the *Sphenodon* genus, in which the "third eye" is found. It corresponds to the pineal gland of the vertebrate. In the case of lizards it grows outwards through the skull to form a median eye.

A four-chambered heart occurs for the first time in crocodilians.

An important new type of fossil has recently been discovered in South Africa, which may be a valuable evolutionary link. It is believed to be between 170 million and 180 million years old. According to a report in *The Times* (26 July 1936), it is said to be shaped like a tortoise, has large tusks, and probably had a hard scaly skin like the early

fish. Dr Broom, of South Africa, thinks it may be an entirely new species of a group of mammals.

The duck-billed mole, or Platypus (*Oxyrhynchus paradoxus*) is indeed a living paradox. Aquatic in habit, it is found in Australian swamps, or living on the banks of rivers. This creature, two feet and six inches in length, is itself a "living fossil" (no fossils are known). As an evolutionary enigma it is unique, as the following details will show. Although it has no close connection with birds the duck-billed mole has webbed feet; the heart in its structure is like that of birds; the bones of the skull fuse and are polished, as in the case of the birds. The duck-billed mole is oviparous, like its neighbour the Spiny Ant-eater. The eggs have yolks within horny shells, and the development is essentially similar to that of hens, though they undergo segmentation as in reptiles. Development proceeds within the eggs before they are laid through nourishment absorbed from the mother. Its "duck-bill" is due to an expansion of the mandibles and is covered with a soft horny sheath. The breast-bone is like that of lizards and some other reptiles. This duck-billed mole has soft, thick, dark-brown fur, and it suckles its young with milk exuded from the pores of the skin. The Platypus is getting rather rare. It represents the lowest extant stage of mammalian evolution.

The Mesozoic Era has been called the "Age of Reptiles." Many strange-looking giant forms sprang on to the stage of life only to die out. The crest of the "Age of Mammals" surged up during the Cainozoic Era. Again, a host of gigantic forms appeared with what has been called "dramatic suddenness." A hornless rhinoceros in Asia was of such monstrous size that a tall giraffe would only just have been able to top its shoulder.

In Africa the Okapi, relative of the giraffe, represents an archaic type. Like other ungulates, or hoofed animals, it developed from the extinct Phenacodus.

Palæontology, through the enormously long geological records, affords us many proofs of the truth of the evolution of form. One example from American fossils will suffice. The evolution of the horse can be pieced together, bit by bit. The picture begins in early Eocene rocks with creatures only twelve or thirteen inches high, possessing five toes, the middle one being a little larger than the rest. Changes can be followed as they proceeded down the ages, until in the Pliocene period the hind-foot became composed of a slender splint of bone on each side of the big middle toe—the true horse had appeared on the scene.

The Lemur genus, standing at the base of the order of Primates, includes the half-ape Spectral Tarsier—a shy, gentle little creature, frequenting the forests, and of nocturnal habit. It is of special interest to anthropologists. The Tarsier is found in Malaya. Lemurs, like monkeys, have an opposable thumb. The most significant feature in the Tarsier was its eyes. (Hence its name of "Spectral Tarsier.") For the first time the

eyes had come so close together that they could focus on one spot. This condition led to improvement in brain capacity and opened the way to other kinds of development.

It is well to bear in mind the fact that although Palæontology – the record of the rocks – teaches us a great deal, it does not seem to touch the origin of the animal phyla. “The strata in which those archives were deposited have been crushed and burnt and recrystallized out of all recognition, and their secret is lost perhaps for ever, one cannot even guess at the nature of it.” Under such circumstances we have unearthed a surprising amount of knowledge.

There are certain considerations arising out of the story of the rocks which deserve attention. Leading palæontologists, such as Professor H.F. Osborn in America, say that biologists have not had time to trace species or adaptive characters from beginning to end. One has to remember that it takes an exceedingly long period for changes to arise and establish themselves; that, moreover, the records show that what is going to appear ages afterwards arises in the very beginning in the place where it will afterwards be significant. It grows larger either steadily, or by jumps, just as if it were growing towards an inevitable purpose. Such variations are described as “orthogenetic” or “determinative.” They have led Osborn to say that they seem to indicate “some quite unknown intrinsic law of life.” (They may lead theosophists to think of the Archetypal World, or the Mind of the Logos.)

Man, according to science, struck out a line of his own between one million or two million years ago. Occult science places it much farther back (see “Anthropology”). All the Primates, at the head of which stands *Homo sapiens*, came from some Tarsius, or a Lemur-like creature. Nevertheless, science has to acknowledge the inadequacy of the present position.

We have not much idea what forms man passed through on his way from Tarsier or Lemur to *Homo sapiens*.

The main anthropoid stem is believed to have diverged in the Oligocene period; this line eventuated in the gibbon, chimpanzee, ourang-outang and gorilla; it did not give rise to man. The main human stem diverged about the same time according to the findings of anthropologists, sub-dividing again during the Miocene, the main human line going to form the races of mankind with whom we are familiar; the other branch provided such species as Neanderthal, Rhodesian and Heidelberg “Man” (*Palæo-anthropus*), whose remains belong to the million years of the Pleistocene period. (See diagram 2.)

A glance down the vistas of history may help us to see how the present stage of biological knowledge has been reached. Botany and Zoology are two of the main pillars upon which the structure of Biology has risen to its present height. Ecology, founded

upon direct observation of animals' behaviour in their own habitat, has taken on the dimensions of a new science (especially in Germany).

Any historical survey has much to gain from racial psychology. It shows how a sequence of phases of consciousness, ranging from the first perception and sensation, through respective stages of activity, emotion, analytical and synthetic mind, intuition and the will, can outline a universal plan. There are individual as well as national and racial cycles of periodicity, cycle being superimposed upon cycle.

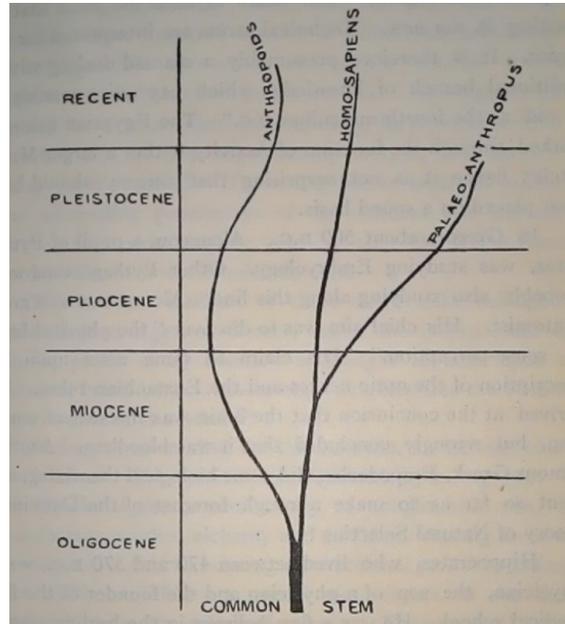


DIAGRAM 2

This synthetic approach to history is itself due to a "Synthetic Mind period."

One usually hears it said that science (including biology) is derived from ancient Greece; but the real origin goes very much farther back than that, judging from recent discoveries. Edwin Smith discovered a papyrus which proves that biology was being studied in ancient Egypt. The papyrus in question is a fragment of a surgical treatise; it shows accurate anatomical knowledge and some understanding of physiology too. "It is a work of science in the modern sense," says Professor Benjamin Farrington, "and bears in itself the proof that its teaching is not new. Technical terms are interpreted for the reader. It is therefore presumably a manual dealing with a traditional branch of knowledge which may quite possibly be as old as the fourth millenium B.C." The Egyptian sub-race worked through the function of Activity within a larger Mind-Cycle; hence it is not surprising that surgery should have been placed on a sound basis.

In Greece, about 500 B.C., Alcmaeon, a pupil of Pythagoras, was studying Embryology. Other Pythagoreans were probably also studying along this line. Alcmaeon was a great anatomist. His chief aim was to discover "the physical basis of sense-perception." His claim to fame rests upon his description of the optic nerves and the Eustachian tubes. He arrived at the conclusion that the brain was the seat of sensation, but wrongly concluded that it was bloodless. Another famous Greek, Empedocles, did some biological theorizing, and went so far as to make a rough forecast of the Darwinian theory of Natural Selection!

Hippocrates, who lived between 470 and 370 B.C., was a physician, the son of a physician and the founder of the first medical school. He was a firm believer in the healing powers of Nature. Before his time, medicine was entirely in the hands of the priests of Æsculapius, the God of Healing, and the priests had kept their knowledge secret. G.B.S. Haldane calls Hippocrates the founder, not only of scientific medicine, but of Biology also. All his teachings were based upon the behaviour of the human body in health and disease. He left behind him many treatises, including an interesting collection of his Case Histories, recording practical clinical observations.

Aristotle was profoundly influenced by Hippocrates. Aristotle set up a new and valuable method of classification of all living creatures, which endured until the time of Linnæus. Five hundred species of animals are mentioned in his writings. He appears to have been a "vitalist" and was really wonderfully modern in his outlook. Although he never attained to a clear view of evolution, he ascribed reason to animals. Out of his huge literary output, four works on Biology have survived. His writing has tremendous influence upon succeeding generations of the cultured and learned in Europe; they were eagerly read by men like Roger Bacon, Giordano Bruno and Nicholas da Cusa.

The brilliant intellect of these old Greeks belonged to " 'the Golden Age' of Greece, when the inspirational and creative power of its emotion is brought to bear upon the analytical mind-consciousness that characterizes the Mediterranean sub-race as a whole."

Biology was studied in the Alexandrian School chiefly as medicine. This period was followed by a long gap. In the Middle Ages, a small body of enlightened men, the Rosicrucians, studied alchemy and medicine. Among them was Paracelsus. As this was during the emotional period in Europe, (A.D. 1100 to 1600) one would not expect to see much development in the sphere of science. The ensuing "Lower Mind period" (1600 to 1800), naturally coincided with a revival of learning, and an age of discovery began. Thus, the first compound microscope is supposed to have been made by Jansen, a Dutchman in 1590; Galileo improved it; it was being used in England by 1619. Too imperfect to be of much use at first, it was destined to revolutionize the science of biology. Meanwhile Leonardo da Vinci and other great painters and sculptors of that

age were studying anatomy very thoroughly. Whilst in England, William Harvey discovered the circulation of the blood (without the aid of vivisection)!

In the seventeenth century the microscopists Leeuwenhoeck and Swammerdam in Holland, Malpighi in Italy, and Robert Hooke in England, were enabled to observe the detailed structure of plants, insects and animals.

During the following century, whilst a "Synthetic Mind period" was operating, lived Linnæus, the great botanist and naturalist, who held the strange view that genera, but not species, issued direct from the Godhead. He gave the world the invaluable scheme of classification which bears his name. The leading zoologist of the day, Cuvier (1769-1832), chose to oppose the evolutionary ideas of the Frenchman Lamarck, to whom we owe the adoption of the word Biology (first used by Treviranus).

Added knowledge of the great age of the earth makes Lamarck's theory more feasible. He taught that long-sustained changes in environment produced changes in the needs of animals; that change of need involves new habits; and altered function evokes changes of structure: parts more used becoming more developed-unused organs tending to disappear. He concluded that gains and losses, due to use or disuse, are *transmitted from parent to offspring*. This is a question round which controversy still continues. Lamarck laid great stress upon environment.

In 1851 Charles Darwin arrived on the scene with his first monograph. *The Origin of Species* followed in 1859. The law of evolution, so fully in harmony with theosophical teachings, could no longer be gainsaid. Although the earlier presentation has had to be modified, Natural Selection is needed to explain part of the phenomena. It is best explained in Darwin's own words:

As many more individuals of each species are born than can possibly survive: and as, consequently, there is a frequently recurring struggle for existence, it follows that any being if it vary in any manner profitable to itself, under the complex and sometimes varying conditions of life, will have a better chance of surviving, and thus be naturally selected. From the strong principle of inheritance, any selected variety will tend to propagate its new modified form.

It is worth remembering that a further step forward was taken in 1866 when Haeckel introduced the "theory of recapitulation," a theory that does not receive so much emphasis today. It was responsible, however, for a great impetus in the study of Embryology and the ancestral history of man.

An important advance came with Weismann's concept of germinal continuity, which led the way to deeper understanding of heredity. The advance was crowned by the life-work of Gregor Johann Mendel, an Austrian abbot living in retirement, who,

through growing peas with mental discernment, discovered the epoch-making laws which bear his name. Prior to his death in 1884, the world took no notice, but when the papers he wrote were rediscovered a new era in biology began. According to typical Mendelian Inheritance: If in any species a cross is to be effected between true-breeding strains differing in a well-marked unit character the offspring will take after one parent only; the character that is developed is known as a "dominant" and the one that is not developed is known as a "recessive." Mendelism is not contradictory to the abruptly-arising de Vriesian mutations; they are inherited in accordance with the laws of Mendel.

With the advent of the evolution theory we saw that genera were built up by slow unfolding; the investigations of de Vries (1901) have led to the further realization that within that sphere species can arise by sudden jumps to points of vantage. The non-variable mutations would naturally not survive. Where species are concerned, the new view is superseding that of advance by slow accumulation of minute differences. It is true that latter developments have not strictly followed the lines originally laid down by de Vries. Many new interpretations have arisen during the last thirty years. But continuous progress here has only been possible with the aid and the methods supplied by de Vries. The science of genetics has come to the fore and the biological outlook is rapidly changing; for this Mendelism and Biophysics are largely responsible. It is known that X-rays incite germinal changes; the discovery of Cosmic Radiation lends still greater interest to biological research, for the origin of species may soon be proved to be influenced by bombardment of genes by cosmic rays. The germinal factors, or genes, to which particular mutations are due, lie in longitudinal order on the chromosomes of the nuclei of the germ-cells. Dr Hamshaw Thomas, writing in *Nature* (1935), has described the unusual number of mutants among the flora of Costa Rica; he was inclined to ascribe this to "bursts" of cosmic radiation, which seem to be more frequent in warm, high latitudes.

A mutation which has been traced to a definite location in a known chromosome is labelled a "point mutation"; these gene-mutations have been discovered in many plants and animals, both wild and domesticated. They are acknowledged to be unquestionably due to slight germinal changes in the hereditary factors (the genes). Punnett is of opinion that "we must regard the mutation as the basis of evolution ... For it is the only form of variation of whose heredity we have any certain knowledge."

The "principal of Discontinuity," now so much in evidence in the realm of physics, is fundamental in the universe. When, after a million whirls round its orbit the electron flies on to another, a change probably occurs in the sub-division of the element. It is exactly the same when the gene responds to the wave-length of a cosmic ray (as may possibly be the case): a fresh species can arise in the genus. On the inner side it will coincide with differentiation within the "group-soul" of that species.

We can see the Discontinuity principle at work around us when a child is born into a family circle. In spiritual things, initiation is just such another sudden change, an expansion on the side of consciousness. Dr Arundale recently wrote:

Just as light is supposed to consist not in waves, but in puffs or particles, so Life consists not in ceaseless living, but in successive escapes from forms, whether of consciousness or of matter.

As it is above, so is it below. We have here one of the keys which opens a door *where Theosophy and Science meet.*

In 1903, Professors Starling and Bayliss discovered Hormones, the so-called "chemical messengers." They are the internal secretions of the ductless glands. All the organs of the physical body are undoubtedly regulated in their growth and function by such hormones, and are therefore affected by changes in the glands. On account of this, a good many books have appeared which attempt to prove that temperament, character and behaviour are dependent on the way these glands function. For example, the suprarenal glands secrete hormones which are correlated with emotional disturbances, such as fear and anger. Facts of this nature ought to make us more tolerant of other people's idiosyncrasies!

It is interesting to note that the activities of the endocrinal glands, according to Bolk and other authorities, depend mainly on diet. (Though the hereditary factors have also to be taken into consideration). It is better to avoid alcohol, because in some subjects it affects the pituitary body, the posterior lobe of which is connected with growth of bone (*verb. sap.*). An active anterior lobe leads to increase of vigour. Science agrees with occult science that the pituitary is the "master-gland" of the whole endocrine system.

According to Bolk, again, man differs from the anthropoids chiefly because of different action on the part of the ductless glands. But there is no need to jump to materialistic conclusions. Occult science can be of real service here. It insists upon the close connection of these glands, via the sympathetic plexuses, with the force-centres (or *chakras*) in the etheric double and still more subtle vehicles of man. Occult science teaches that the splenic force-centre plays an important part in vitalizing the body and brain. The "orange-red" ray which flows from it to the base of the spine can, by "plain living and high thinking," be deflected upwards to the brain-organs, passing along the hollow in the vertebral column. In this way man's character and behaviour may be modified.

Occult scientists have for long asserted that the pineal and pituitary bodies are rudimentary as well as vestigial forms, and that they have been taken out of the previous mode of activity in order to serve a more useful purpose in man's higher

evolution. These two organs are said to be closely connected. Dr Besant, writing in 1904 in *A Study in Consciousness*, said that the pineal gland was connected with an astral chakra. Madame H.P. Blavatsky wrote in 1888:

The Third Eye *is dead*, and acts no longer; but it has left behind a witness to its existence. This witness is now the Pineal Gland.¹

And again:

The Cyclopean eye was, and still is, in man the organ of *spiritual* sight, ... and having performed its function ... was stored and laid aside by Nature for further use in æons to come.²

Theosophy declares that the next great race, (the sixth) to appear in the world, is destined to mount from the present synthetic or higher mind stage to the cosmic or intuitional level of consciousness. Humanity will then develop and use the latent powers focussed in the "third eye" in ways that the world is at present not capable of understanding. Many of our present scientific methods will become obsolete, because "direct knowledge" will be the order of the day. The distant future will provide many new keys that will open new doors where Theosophy and Science meet.

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APPENDIX

The following additional quotations from *The Secret Doctrine* are worth noting in connection with the subject-matter of this monograph (*vide infra* pp. 121, 123). — ED.

1. The Kabalists say correctly that “Man becomes a stone, a plant, an animal, a man, a spirit, and finally God,” thus accomplishing his cycle or circuit and returning to the point from which he had started as the *Heavenly Man*. But by “Man” the Divine Monad is meant, and not the Thinking Entity, much less his Physical Body. (S.D., II, 196.)

2. Having passed through all the Kingdoms of Nature in the previous *three* Rounds, his *physical* frame ... was ready to receive the Divine Pilgrim at the first dawn of human life, *i.e.*, 18,000,000 years ago. It is only at the mid-point of the Third Root-Race that man was endowed with Manas. (S.D., II, 265-66.)

3. How is the chasm between the mind of man and animal to be bridge ... “Primæval Man” was *man* only in external form. He was *mindless* and *soulless* at the time he begot, with a female animal monster, the forefather of a series of apes. This speculation—if speculation it be—is at least logical, and fills the chasm between the mind of man and animal. (S.D., II, 199.)

4. Occultism rejects the idea that Nature developed man from the ape, or even from an ancestor common to both; but, on the contrary, traces some of the most anthropoid species to the Third Race man of the early Atlantean Period. (S.D., II, 195.)

5. Materialistic Science makes man evolve gradually to what *he is now* ... from Moneron ... through “unknown and unknowable” types up to the ape, and thence to the human being ... no “missing links” between man and the apes have ever yet been found ... Nor will they ever be met with; simply because that link which unites man with his real ancestry is searched for on the objective plane and in the material world of forms, whereas it is safely hidden from the microscope and dissecting knife *within* the animal tabernacle of man himself. (S.D., II, 199-200.)

Again, in connection with the subject-matter of this monograph, (*vide infra*, pp. 123-24), the student is recommended to read the monograph on “Anthropology” in Part III of this Series. See also the article on “Problems of Anthropology: Man’s Family Tree,” by E.W. Preston in *The Theosophist*, June 1938. Also Diagram 6 on p. 240 of the same. — ED.

FROM MINERAL TO MAN

BY CORONA G. TREW

There is but one Science, so long as facts remain the same; what is strictly scientific is theosophical, as what is truly theosophical is entirely in harmony with all the facts, and so in the highest degree scientific.¹

Evolution according to Theosophy is that process of change whereby something that is latent and sleeping is brought into manifestation and activity. To understand this we must postulate two factors—a spirit or soul which is seeking expression, and a form or body wherein the spirit or soul expresses itself.²

HISTORY has always shown two types of men, the philosopher and the practical man, the vitalist and the materialist, the idealist and the empiricist. The natural scientist by his very technique of observation and experiment tends to belong to the latter type, whose knowledge is the outcome of direct factual experience at the physical level. The theosophical approach to nature, on the other hand, has always been from the idealistic standpoint in which the world of the spirit, unseen and often elusive and intangible, must also be included. For, from this point of view, no philosophy of life is valid which does not include and stress the vast field of experience of human mind and psyche. Although in the past these two viewpoints have tended to be widely divergent and often in conflict, a significant factor of the present day is the tendency for them to come together and even to synthesize, so that, again and again, we find expression of a new point of view in which both idealism and empiricism, revelation and experiment, are synthesized into a new whole, a unitary experience. This “middle way” appears to be the path along which modern thought in its more progressive aspects is moving, and herein lies the hope of a more complete agreement between scientific and theosophical thought.

It is the purpose of this survey of the field of evolution, from mineral to man through plant and animal, to endeavour to state the broad theosophical theory of the great Plan of evolution. We may then see in how far modern thought may be in agreement, and upon what lines future progress and research may lie. The theory may be philosophical and idealistic, but taken with the observed facts and experiments of the empiricist, we may find the way to that synthetic experience which will give a world-picture satisfying both to intellect and intuition.

If we fix our attention on the world-stage, we see multitudes of forms; some comparatively simple such as the chemical units of the mineral world that are the constituents of rock, sea and air, others highly organized such as the complex bodies of the human race, while in between lie almost every type and kind of form in the plant and animal worlds. Everywhere, then, there are forms, acting, reacting, changing;

passing through cycles of birth, change, growth and decay, and it may well seem a difficult task to attempt to fit them into a single scheme. It is this that the theosophical Plan of evolution attempts. It sees behind these complex forms of the kingdoms of nature one great stream or ocean of life, the forms existing but to serve the evolving purpose of that life. A progression from mineral to man, through plant and animal, is the process by which life or spirit, call it what one will—for it is often difficult to find a completely adequate term for this great principle—attains to self-consciousness and expression of its divine powers. These powers, latent at the beginning of the process, are manifest in their fullness at the end, an end that is yet to come. Such appears to be the goal and purpose of the scheme.

Our theosophical view of evolution from mineral to man, in its broad outline, sees these two great interlocked and interweaving evolutionary trends, the evolution of life and of form, both parts of a single unitary process. Forms have developed in time by increasing organization from simple to complex: chemical atom to molecule, molecule to cell, cell to organ, and organ to body. Each possesses a greater degree of complexity than the one before and with this increase becomes more sensitively balanced, often more vulnerable to the surrounding environment, but ever fitted to express more of the powers of the interior life. Life, in its turn, imprisoned at first in form, shows a gradual release of its powers and a growing capacity to master and mould the limitations imposed on it by form. Slowly, life's potentialities become transmuted into powers; "immetallized" and imprisoned in the mineral, it dreams in the beauty of the plant, stirs in the dawning consciousness of the animal, to awaken fully to a realization of its own divinity in man. In broad outline such is the view of the science of Theosophy, and for our guidance we may summarize the principles involved, for they serve as a useful hypothesis in a study of the progress of life from mineral to man.

1. Life, or spirit, exists with infinite potentialities, but in the beginning is un-self-conscious and with these potentialities unexpressed.

2. Behind all that is manifest there is the will of life to express itself in form, and it is this will, or urge, which creates the form.

3. Life, in seeking to attain self-consciousness, manifests as life-units which pass successively through the four kingdoms of nature—mineral, plant, animal and human—creating ever more organized and complex forms in each kingdom as more of the latent powers are expressed.

4. Such a process is not a continuous one in the sense that a gradually rising straight line is continuous, but is rather a cyclic process, akin to a rising spiral form. Thus life proceeds on a cyclic path, plunging recurrently down into form and then withdrawing, a process expressed in the human kingdom as that of rebirth, or

reincarnation, which is a special illustration of this cyclic journey. Although cyclic, the process is progressive, as the powers of life unfold and need more organized forms for their expression. There are, furthermore, greater cycles. The life expresses itself through the forms of one kingdom for a period, manifesting certain qualities or faculties, and then when the cycle is completed passes on to a new one in the next kingdom where further qualities may be expressed. As successive waves of the sea break upon the shore, the kingdoms represent life-waves sweeping down into form from the ocean of life. Just as a wave on breaking ripples out into countless minor wavelets on the sand, so the life-units within the life-wave pass through successive incarnations in form.

5. Each kingdom represents an advance on the ones which come before, just as a later turn of a spiral is above the early ones. Each manifests certain clearly marked qualities not shown by its predecessor and has within its forms the faculties that have been mastered in the previous ones, a point which may become clearer in viewing each kingdom in turn.

6. It should also be noted that everywhere there is to be found overlapping between one kingdom and the next, a principle of nature, borne out both by the theosophical scientist and the natural scientist alike.

Let us now consider how far such a scheme is supported by the science of today. While the empiricists still refuse to concern themselves with any scheme that is in any sense metaphysical, there have been many among the so-called vitalistic school of biologists, such as J. Arthur Thomson, Lloyd Morgan and Hans Driesch, to mention but a few, who have sought to find a broad and what might be termed a spiritual pattern, into which to fit their experimental observations. On the more philosophic side we find great thinkers, such as Henri Bergson, General Smuts and A.N. Whitehead, enunciating philosophies in which the unseen organizing power of what we have termed life, or spirit, is recognized as the controlling factor in the evolutionary process.

Bergson in his theory of "creative evolution" was one of the earlier philosophers to put forward a theory in which the part played by life in evolution was recognized. In this theory all organisms or forms are seen as the unceasing creation of a life-principle, the "élan-vital," which spontaneously manifests itself by a continual creation of new forms. General Smuts, in the philosophy of "Holism," has a somewhat similar view in which any interpretation of evolution must include the whole of the organized life of the organism as well as the form, which merely subserves the uses of the organism as a changing and vital whole. Whitehead has also put forward a philosophy, from the viewpoint of the physicist, in which the whole universe is seen as a kind of dynamic organism possessing attributes of a kind similar to those found in the smaller organisms we know as plant and animal forms. He furthermore sees, and in this is supported by Eddington, that although the physical universe is apparently tending to run down to a

dead and lifeless end as its temperatures become such as to kill out all the higher forms of life, this is but a partial view of the picture. It must be accompanied by some understanding that as the evolution of life proceeds, there is an increasing growth in its independence from form until ultimately it may reach a point when it need no longer be conditioned by form. The universe may physically be running down, but it is spiritually ascending.

Passing to the biologists, Hans Driesch, working experimentally in the field of embryology, has come to similar conclusions. By experiment he has shown that it is impossible to predict the future behaviour of any animal or plant embryo from the laws of matter only, and has found it essential to conclude that some other factor, which he terms a "whole making" factor or "entelechy," is working behind the form and that this acts in a mind-like way, *i.e.*, according to a plan or design. He says:

And now we are becoming convinced that by starting from the parts we shall never be able to explain organic and mental life, and that there is something like design in organic nature.¹

Professor Lloyd Morgan, another biologist who spent much of his life in the study of animal life and behaviour, put forward the well-known theory of emergent evolution. Writing in *The Great Design*, he says:

Alike in the evolutionary advance of world-events since life appeared on the earth's surface, and in the development of each one of us human folk, there has been an advance of mind from sentience, with little more than awareness in living, through new products in perception towards the further novelties of the far richer life in the light of reflection.²

And finally:

What I find in evolution is *one great scheme from bottom to top, from first to last*. What I also believe is that this advance throughout nature is a revelation of Divine Agency. And since mind at its best is the highest term in the course of evolutionary ascent it may well be said that the evolution of mind reveals the agency of Mind.¹

We have then, in these extracts, and many others might be cited, ample support for the first of our principles of evolution. From a survey of even more recent biological work it has become abundantly clear in the last few years that those theories of evolution which are gaining ground are the ones which are based on a concept of "wholeness" or organization: those which view the behaviour of individual plant and animal as an exterior expression of some interior factor controlling the life of the organism as a whole.

To sum up then the attitude of modern thought, it is probably true to say that the more advanced thinkers are prepared to accept some scheme of creative evolution in which the universe is seen as the unfolding of a great Plan or design. As Driesch expresses it:

Something spiritual, then, penetrates Nature and manifests itself in the Universe.

We may now pass on to a more detailed consideration of this journey from mineral to man, and here we enter a region where scientific thought and speculation have not been applied, namely, to a consideration of the cyclic rhythm in evolution, or what in *First Principles of Theosophy* are termed the life-waves. Although cycles and rhythms are recognized as applying in the detailed history of mankind and in the vaster geological epochs and periods which have influenced the earth, Science has not yet perceived that the kingdoms of nature themselves represent successive cycles or waves of a great evolutionary spiral. The wave that carries the more advanced types of form such as constitute the human race, starting earlier in time, has already passed through its early cycles and so represents the highest point, the present crest of the process. The animal kingdom is one cycle behind, the plant one behind that, until in the mineral kingdom of today we see another life-wave passing through an early cycle of a spiral similar to that we ourselves have traversed. Looking out upon the kingdoms today we may study a process that has taken vast æons of time, and see from the qualities of each what life has gained as it traversed each in turn. There are vast differences which separate the kingdoms, one though the whole process may be, and these differences are as stages or steps in the journey as a whole.

Returning in thought to the time before any of the forms of the physical universe were created, we can realize that the first and almost overwhelming task of the evolving life must have been to achieve a stable form. The difficulties that this involves may be realized if we envisage life in its essence: vague from the physical point of view, elusive, mobile, flowing and fluidic, ever in a state of flux and change, and yet at the same time powerful, dynamic and creative. Contrast this with the forms of the mineral world, dense, material, stable, fixed, heavy and inert; the exact antithesis of all we associate with life; and we have some idea of the vastness of the initial task. How has the transformation been effected? Matter has been defined as energy bound up in systems of balanced forces, and it is this balance that is the secret of the building of the initial form, the atom, the unit-brick, of which the mineral kingdom is formed. The simplest mineral atom is achieved by a balance between two kinds of energy or electricity, a balance resulting in the production of an apparently stable inert form. The physical atom is thus created out of the active restless energy we know as electricity. Life manifests in the mineral as energy, which becoming locked into a single point acquires stability and inertia. This quality, the capacity to endure in time and space, is the predominant characteristic of this first kingdom. In it the life-units achieve the possibility of remaining fixed in one position in space; an enormous achievement in

view of their inherent nature, and of vast benefit for the evolution of self-consciousness. The attainment of location in space, separation from the ocean of life, represents the beginning of individuality, achieved in this first kingdom through the building of a stable unit of form. It is an achievement of as great a value to the life as the power of focus to the human vision, or of concentration to the human mind.

The initial step always proves the most difficult, and so here, the unit of a simple atom once produced, the subsequent combination of these to make first, the gaseous atmosphere, then water and the solid minerals of the earth's surface, is as simple as the building of a house to a builder once he has learned to make his bricks. As the variety of houses depends on the variety and arrangement of the constituent bricks, so the various atoms grouped together produce the vast number of chemical compounds of which the mineral world is formed. Life, then, in the mineral world gains form, inertia and stability, and becomes located in a comparatively single point in space; crystallized and "immetallized" it is immersed at its deepest in matter. Form is here supreme.

Passing to the plant kingdom, a new cycle begins, and life seeks to be released from the bondage of form. The mineral unit, the atom, with its inertness and fixity, enduring for long ages of time changes but slowly under the pressure of the vast forces of nature. The power to change and respond to the surrounding environment and, above all, to grow, must now be added to a stable form. In this kingdom forms become more plastic, showing greater responsiveness to the interior impetus of evolving life. The rhythmic or cyclic factor becomes more apparent in the great life-cycles of birth, growth and death. The seed unfolds and changes into plant as the life-energies flow outwards into form. A climax is reached in the perfection of the flower, and then the plant decays as life is again withdrawn, leaving another seed that the process may recur once more. It is a rhythmic alternation as life pulses in and out. Form, established in the mineral, now becomes more capable of change, more plastic and responsive both to the interior life and the pressure of the surroundings, ultimately to become the master of those surroundings. This response and power of growth could never be achieved by the mineral unit, or atom, and so out of countless atoms in complex groups a new unit is built, the cell of the plant. This with its elaborate constitution of chemical compounds carefully balanced in their correct proportions and controlled by the central nucleus, represents such a plastic unit. A delicate balanced organism, controlled by the life which streams through the nucleus, it is sensitive to the pulsing beat of the life-rhythm and to changes in external conditions. Marked changes in temperature, lack of moisture, heavy external pressures, all may kill the cell. Yet cells may grow and divide, life reproduces itself in a way not found in the mineral world. So marked is the change when life becomes even in this small degree free of its form, that many scientists still think of the living and the lifeless universe, and do not include the mineral world in a single scheme with all the living organisms of plant and animal world. It is, however, in this very problem of the differences between kingdoms, and especially the first two, that the concept of evolutionary cycles is of value in co-ordinating our knowledge.

Cells grow; a single nucleus gives rise to two by an intricate yet wonderful process of division, and thus there arises the possibility of growth, maturity, death and rebirth in endless cycle. The cell form is based on a mineral foundation, but the central controlling nucleus balances the various chemical constituents, and so a fluidic plastic unit is produced. As in the previous kingdom this unit serves as the brick, the unit-form, and from it the plant structure is built, by aggregations of cells often modified in shape and function, yet in essential nature the same. The plant form, composed of a myriad cells, is fixed at its central point, whence it strikes upwards as shoot to air and light, downwards as root towards earth and water; a fixed form dependent on the immediate surroundings for experience, yet responsive to changes in the pulsing rhythm of life. Growth and change are added to the previous qualities of stability and inertia, as life begins to free itself and flows back and forth in response to the cyclic laws of nature. So, with increased responsiveness to both interior life and external surroundings, the second stage on the upward path is reached.

Taking a vast jump, for our process is only a brief survey, we view the next, the animal world. The pattern of the Plan shows again the creation of a more complex form, since those of the previous kingdoms have become inadequate to express the newly unfolding powers of life. The animal body is evolved, a form more sensitive and delicate in its balance than any that have gone before. This new structure, built on the basis of the old, in its bony skeleton possesses a stable interior core of mineral constitution. This is surrounded by the changing and rhythmically beating circulatory and respiratory systems controlled by heart and lungs, the fluidic systems of the animal body based on the form of the plant. Always we may find, if we look, these traces of the passage through earlier cycles, often so distinct as to afford a startling correspondence, as is evident to anyone who will study pictures of the skeleton framework of animals, or anatomical diagrams of the fluidic and respiratory systems of the body. In addition to these gifts from the past, and almost appearing as though grafted on to the vegetative system of the plant form, we find in the animal the brain and nervous system. It is this which is the new basic unit of the animal form. In the brain we have a controlling organ through which the life-energy receives external impressions and transmits its commands, via the nervous system, to the various parts of the body, which in their turn express that energy in action. As a result the animal is freer still in his environment; not only does he respond to it but moves within it. He is no longer fixed at a point like the plant, with only a brief linear extension but moves freely over a two-dimensional world. Impacts of the environment, in their turn, travel through the nervous system to the brain and hence to the interior life, and are perceived in terms of feeling and sensation. Pleasure and pain are born and appropriate responses made. In the animal world, life is at last free to some extent to choose its environment and move about within it under the alternations of the sensations of pleasure and pain. Life adds sensation and feeling to its unfolded powers. It is in this kingdom of nature that the interplay between life as it manifests in form and the

pressure of the surrounding environment, sets up a friction which leads gradually to the awakening of consciousness and a realization of self as distinct from other selves. Beginning in the animal kingdom, in the more highly developed domestic animals, we find the dawning of mind. Self-consciousness is gradually born with its sense of individuality, the consciousness that "I am I, and you are you," begins here with the animals to be finally completed in the human world. This awareness is only possible through the delicate organization of the brain and nervous system, built to serve the ever-increasing needs of developing life.

Mineral, plant and animal, three kingdoms are needed before self-consciousness is born and life can be said to be at last beginning to realize itself again and so to shake off the shackles of form. So striking is the change when this occurs that it is often referred to as a new birth, an individualization, a recurrence of a major cycle, superposed on the lesser ones. Just as complete subordination of life to form at the beginning of the evolutionary journey formed a starting-point of a cycle, so this self-realization of life marks the completion of a major phase. The self-conscious individual in the human kingdom is said to have a spark of divinity not possessed by the life in the earlier ones.¹ Man is unique by virtue of his mind which gives him self-knowledge and self-consciousness.

Up to this point in tracing the evolutionary journey, we have but seen the established facts of science in the light of our theosophical hypothesis or principle of evolution. In one sense, here we reach the end of our field, passing from the realm of biology to that of psychology and the human sciences. Here we must leave our subject, with perhaps a brief reference to the future trend of this great evolutionary process.

Life, after long experiences in animal forms passing ever from the simple to the complex, finally attains to a sense of individuality as its supreme achievement and so passes on into the human kingdom, where although mankind represents the climax of the evolutionary wave, he still has much to achieve. Having been for a shorter time on earth, he is in many ways less unfolded as an evolving kingdom, or hierarchy, than the ones which came before. Mankind is still struggling to pass from the stage of animal-man to the truly human stage of man the thinker. He is still largely bound by the feelings and sensations of the animal stage and has not learned to harness these by creative thought and will. What will be the unit which will express the powers of this thinking human being? Just as previous kingdoms established their units, so there is a unit-form to express the powers of the human hierarchy: the organized instrument of personal body, emotions and mind, a threefold form, the personality of man. A real turn of the cycle begins with man, who works through a larger and more subtle unit than the three kingdoms before. If for a moment we look back over the journey from mineral to animal, we may see the gradual organization of certain qualities of vitality and emotions, or feeling, to which in the human kingdom is added the power of mind. We, as true humanity, have to build these into a whole as an expression for our interior

life, a whole in which body, emotions and mind, the three qualities of personality, are used as instruments to express something that is the life of man, working through them all. When we truly know ourselves as life, this unit will become for us a tool through which we work.

From mineral to plant, animal to man, we have shown the increasing organization of form to suit the needs of evolving life. Life once held in form returns to a sense of its own powers and yet with the quality of individuality, of self-awareness, that has been termed "the pearl of great price." Science may ask wherein lies the evidence for this interior field of increasingly organized life, and here is a field for future research. If life becomes individually self-aware, then some sense of separation from the ocean of life must be found in the life-current itself. As the evolutionary process proceeds reservoirs of experience, or "group-souls," smaller vessels within the life-current, tend to be developed and act as envelopes which carry the accumulated experience of a group or species of forms manifesting at the physical level.

This concept of organization of groups of life-units associated with specific groups of forms, was worked out by Maeterlinck to explain the social life of bees. In *The Spirit of the Hive* he shows how the only adequate explanation which will cover all the manifold activities of a single hive of bees is that there is a group-soul, or organized group-consciousness, working through the individual bees.

This theory, so well worked out in this instance, might well be extended to explain other types of animal behaviour, such as why one species tends to act in a given way, why certain instincts are transmitted in a given species and not in others. Animal instinct and memory show characteristics difficult to interpret without some such theory of a group-reservoir of life forming the common background of a number of forms of a related species. With more developed animals characterized by greater complexity, and often showing marked differences of character in individual members of a species, there are probably only a few forms linked to such an interior group-soul. In the lower types, and the idea may be extended to include plant and mineral forms, there may be many thousands of forms storing their experience in a common reservoir of life. Since such group-souls lie within the greater ocean of life, and there is, until the domestic animals are reached, little or no development of mind, the response of plant and animal to environmental stimulus will be largely instinctual. Insofar as different types and species have, by different experiences in form, created different organized group-souls, there will tend to be differences in the behaviour shown by the different types. As variety in experience tends to cause a separation in the group-soul, we get ever fewer types associated with the one reservoir until in man we find one single form with a life-reservoir of all his cumulative past experience behind him. The time may have come for an attempt to apply this theory to some of the problems of biology, such as variation and heredity and the way in which natural selection works as well as the problems of animal instinct and group behaviour. It is in the increased organization of

life that a solution will be found, and not merely in an analysis into ever more complex groups of factors at the physical level, the so-called "genes." Important though these are they cannot give the whole picture. As expressed by a recent writer in *Nature*:

It seems clear that the final systematics must be biological, based on the whole life of the animal rather than on the average structure of its adult body.

In conclusion, it is the unity of the whole scheme which we would stress. From mineral to man the interweaving currents of life and form are manifestations of a single whole. We are said to be at the dawning of a new era, when mind is to be transcended as our means of experience by the direct apprehension of the intuitional principle. Mind sees life and form as two separate interweaving currents, but what may lie beyond? A unity which transcends both life and form, space and time, and in which both co-exist as aspects of one reality. This unity, glimpsed by seer and scientist alike, has been expressed as follows by one of our leading scientists, Sir James Jeans:

When we view ourselves in space and time we are quite obviously distinct individuals, when we pass beyond space and time we may perhaps form ingredients of a continuous stream of life.

And a zoologist, M.M. Metcalf of the John Hopkins University, writes:

A star is no greater than a violet; gravitation as a force cannot transcend love, for Love seems incomparably more effective, more forceful than any physical force, lying as it does at the very root of the universe. But it is all one, beginning in the dust and reaching up into persons who can appreciate and create beauty and feel love—a constantly changing whole, alive, personal.

The world has greater need of this experience of the unity of all that lives than any number of laws and facts, for the next advance must come from a more universal realization of that life in which all things live and move and have their being.

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Where Theosophy and Science Meet, Vol. II. (Edited by D.D. Kanga, I.E.S. Published by the Theosophical Publishing House, Adyar, Madras. Price Rs.1 – 14 – 0 or 3/6 or \$ 0.85. Postage Extra.)

VOL. I, already reviewed in these pages, concerned from Macrocosm to Microcosm: now we proceed from Atom to Man. Man must realise that the proper study of mankind is man, not by pursuit of mere scientific investigations and analyses as hitherto but that he should be studied by the occult method of the theosophist. There is a belief that the evolutionary career of mankind is indissolubly linked together with the divine hierarchies who rule the several planets and many signs of the Zodiac, the passage of the Sun and the planet through the twelve signs of the Zodiac marking the progress of man in time and space. The ladder of consciousness through which our destiny lies is said to be written in the stars and a belief in re-incarnation is the bed-rock of oriental religions. Each individual is like a star radiating from himself through the form he is wearing, an influence which is either personal, being limited to his physical consciousness or individual signifying the spirit or inner character. Man may thus be said to be related to a star throughout the series of incarnations through which he passes. If the Sun is a physical and outward glory of this spiritual intelligence, radiating the life course which energise every living thing upon earth, then cosmic vital force may come to the Sun from the higher plane of being, the so-called fourth dimension of space being then transmitted to each and every world in the Solar Universe flowing through ether like blood through the human body or like *Prāṇa* along the nerves. Science has no doubt the power not only to produce but also to transport and destroy but there is no desire or will to destroy; in short, science is merely the machine of demonstration but not inspiring, intuitive, helpful or creative. Thus the services of man to utilise the results of science come into the forefront and the desire and will have got to be exerted

by man. Fear, mistrust, suspicion and cut-throat competition must give way to international morality, the brotherhood of man and the parliament of the world. Forces of nature should not be abused nor the results of science misused to destroy man and his treasures, constituting a danger to civilization. Man must know himself, must understand that he exists for the service to and for the amelioration of the suffering humanity. The limitations of science do not take us on to this outward march. The fifth sense of man is to be harnessed for this purpose, to investigate and develop and carry on to the highest plains of living, to bring about in the classical words of Gandhiji, a change of heart in man so that a glorious object of benefiting humanity may be achieved. The diagrams 3 and 4 facing page 36 bring out according to the theosophist an intimate constitutional relationship between man and the external Universe. There is a connection between mineral, vegetable and animal kingdoms according to esoteric Buddhism as well. For the development of this subject the reader may be referred to the Secret Doctrine and the Isis Unveiled. Sir James Jeans, in a way, supports some of the theories propounded by the theosophists when he says that the mind can merely visualise a mythical formula of solely abstract nature or that the Universe can best be pictured as consisting of pure thought. It looks as if all the phenomena or moods or manifestations of life are the belief of one life which is the Universe. As Prof. Eddington says the flow of the world is the mind flow. If we only knew how to enter the secret and sacred repository, how to feel and realise the God within us, we should see truth shining forth in magnificent and celestial spiritual splendour.

S.S.

Dasara in Mysore. By C. Hayavadana Rao. (Published by the Bangalore Press, Bangalore City. Price Rs. 2.)

The Dasara in Mysore is well illustrated by Mr C. Hayavadana Rao, a most distinguished student, scholar and publicist who has devoted a life-time to antiquarian researches while engaged in successful commercial pursuits on a large scale. The Dasara is celebrated amongst Hindus from time immemorial as a great national festival and in Mysore the *Navarātri* is a very

The Basic Conception of Buddhism

Adharchandra Mookerjee Lectures, 1932

THE BASIC CONCEPTION OF BUDDHISM

BY

VIDHUSHEKHARA BHATTACHARYA

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PREFACE

The following few pages were written as Adharchandra Mookerjee Lectures (in Arts) for the year 1932, in the University of Calcutta. An attempt has been made here to show the solution that the Buddha found out of the problem he had before him. The problem which is, in fact, common to all religious or philosophical systems of the country is the cessation of sufferings, which follows the extinction of desire, as declared by the sages of the Upaniṣads. The Buddha accepted the view, but differing diametrically from them as regards the means he took a very bold step and advocated the doctrine of *Anātman*. And yet he arrived at the same destination.

I am thankful to those of my friends and pupils who have helped me in one or the other way. My thanks are also due to Mr Jayantilal Acharya, B.A., one of the students who work with us in our Vidyābhavana, for preparing the Indexes.

VIDHUSHEKHARA BHATTACHARYA.

VISVABHARATI, SANTINIKETAN,
September 10, 1933.

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ABBREVIATIONS

AAA	Abhisamayālaṅkāraloka of Haribhadra ed. G. Tucci, GOS.
AK	L'Abhidharmakośa de Vasubandhu traduit et annoté par Louis de la Vallée Poussin, Paris, 1923-31.
AKV	Abhidharmakośavyākhyā of Yaśomitra ed. S. Lévi and Th. Stcherbatsky, Bib. Budh.
AN	Aṅguttara Nikāya, PTS.
AS	Advayavajrasaṅgraha ed. Hara Prasad Shastri, GOS.
AV	Atharvaveda.
BA	Bodhicaryāvatāra of Śāntideva. See BAP.
BAP	Bodhicaryāvatārapañjikā ed. Poussin, Bib. Ind.
Bib. Budh.	Bibliotheca Buddhica.
Bib. Ind.	Bibliotheca Indica.
Br. Up.	Bṛhadāraṇyaka Upaniṣad.
CH. <i>or</i> Chā UP.	Chāndogya Upaniṣad.
DN	Dīgha Nikāya, PTS.
GOS	Gaekwad Oriental Series.
IHQ	Indian Historical Quarterly.
JRAS	Journal of the Royal Asiatic Society of Great Britain and Ireland.
KP	Kāśyapaparivarta ed. Baron A. von Staël-Holstein, Shanghai, 1926.
LA	Lankāvatārasūtra ed. B. Nanjio, Kyoto, 1923.
MK	Mūlamadhyamakakārikā of Nāgārjuna. See MV.
MN	Majjhima Nikāya, PTS.
MP	Milindapañha ed. Trenckner, 1880.
Mu. Up.	Muṇḍak Upaniṣad.
MV	Madhyamakavṛtti, Candrakīrti' Commentary on MK ed. Poussin, Bib. Budh.
MVt	Mahāvvyutpatti, Bib. Budh.
PTS	Pali Text Society.
SBE	Sacred Books of the East.
SN	Saṃyutta Nikāya, PTS.
SP	Saddharmapuṇḍarīka ed. H. Kern and B. Nanjio, Bib. Budh.
SS	Sikṣāsamuccaya ed. C. Bendall, Bib. Budh.
SS	Subhāṣitasāṅgraha ed. C. Bendall.
TS	Tattvasāṅgraha, GOS. See TSP.
TSP	Tattvasāṅgrahapañjikā, GOS. See TS.
UP	Upaniṣad.
ZDMG	Zeitschrift der Deutschen Morgenländischen Gesellschaft.

THE BASIC CONCEPTION OF BUDDHISM

LECTURE I

INTRODUCTORY

Before coming to the actual points I desire to discuss in these lectures, let us take a bird's-eye view of the religious and philosophical speculations in the country that preceded the advent of the Buddha, so that we may be in a position to appreciate the message that he delivered to the world.

First of all we see in the field those who were subsequently known as *Karmins* 'the performers of (religious) actions,' or *Yājñikas* 'sacrificers.' They were ritualists advocating various sacrifices and ceremonials as the means not only of enjoyments and pleasures here and hereafter, but also of salvation or immortality. They used to sing in this strain (RV, VIII. 48.3): 'We have drunk the juice of Soma and become immortal. We have attained to effulgence and have known the gods. What can an enemy do to us? What decay can affect an immortal being?' According to the description given by the great author of the *Bhagavadgītā*, they were given to lust, and paradise was their goal,

"Where joy and pleasures and gladness
And rapture dwell, where the wish
Of the wisher finds fulfilment."

The word *karma* meant to them sacrifices, rites, and ceremonials as found in the Vedic texts. And necessarily they had to accept or find out some doctrine or law with regard to the relation between karma and its effect or reward. They had such faith in its power that there was no place whatever for God; everything being done in their system through the agency of sacrifices; though they invoked a number of deities in the course of the performance of their rites and ceremonials.

And it goes without saying that they had a belief in the existence of the Self (*Ātman*) as something quite distinct from the body, and in that Self moving from this world to the other in order to reap the fruits of one's action.

Now, there came in a change which was very remarkable. There was a new school of thinkers. We know them as *Jñānins* 'endowed with knowledge,' or 'followers of the path of knowledge' (*jñānamārga*). They are better known to us as Vedāntins. They lost their faith in those rituals and ceremonials. They regarded the sacrifices as frail rafts (*plavā hy ete adṛḍhā yajñarūpāḥ*) by which one can hardly cross the ocean of the *saṃsāra*. They said: "Fools are they who praise this (*karma*) as the highest good. They are subject again and again to old age and death. Fools dwelling in ignorance,

wise in their own conceit, and puffed up with vain knowledge, go round and round staggering to and fro, like blind men led by the blind.”¹

They thought that nothing permanent could be gained by those rites and sacrifices, and declared that as here on the earth whatever has been acquired by exertion perishes, so perishes whatever is acquired for the next world by sacrifices and other good actions performed on the earth.²

As is quite natural, they wanted something permanent on which they could peacefully rest for ever. But what was that thing and where? They felt that it was something not outside of but in themselves. It was not created or acquired, but ever existent, and as such was only to be perceived and realized. And that was nothing but one's own Self (*Ātman*).

This Self is identical with the cosmic Self that pervades the universe as does the salt in the water in which it has been dissolved, that dwells in the earth, being within the earth, whom the earth does not know, whose body is the earth, who operates in the earth, and is thus the indwelling ruler, the immortal.

And they insisted: “Know him alone as the Self, and leave off other words! He is the bridge of the immortal.”³

All their thoughts centred round the Self (Br. Up., I.4.8). “Who is dearer than a son, dearer than wealth, dearer than all else, and nearer than anything. And if one were to say to one who declares another than the Self dearer, that he will lose what is dearer to him, very likely it would be so. Let him worship the Self alone as dear, the object of his love will never perish.”

And they said that he who knows the Self overcomes grief (Ch. Up., VII. 1. 3). The Self is a bank (*setu*), a boundary, so that these worlds may not be confounded. Day and night do not pass that bank, nor old age, death and grief, neither good nor evil deeds. All evil turns back from it, for the world of Brahman is free from all evil (Ch. Up., VIII. 4. 1).

This *Ātman* was held by them as “the ruler of all, the lord of all, the king of all,”⁴ from whom there is the origination of the world, by whom it remains sustained, and in whom it disappears in the end.

Mark here also the difference between the Yājñikas and the Vedāntins with regard to the conception of the Self. While the former hold it simply to be distinct from the body, the latter though agreeing with them on this point maintains its other characteristics as shown above.

Following this train of thought these teachers, *viz.* the Vedāntins, naturally came to think that it was knowledge (*vidyā*) and the extinction of desire (*kāma-kṣaya*) through which one can attain to salvation. And they actually declared: “by knowledge one obtains immortality.”⁵ And as regards the consequence of desire we are told (Br. Up., IV. 4) that “A person consists of desires, and as is his desire, so is his will; and as is his will, so is his deed; and whatever deed he does, that he will reap.” And another verse declares: “To whatever object a man’s own mind is attached, to that he goes strenuously together with his deed; and having attained the end (*i.e.* the last results) of whatever deed he does here on the earth, he returns again from that world (which is the temporary reward of his deed) to this world of action. So much for the man who desires. But as to the man who does not desire, who not desiring, freed from desires, is satisfied in his desire, or desires the Self only, his vital spirits do not depart elsewhere, being Brahman he goes to Brahman. On this there is this verse: ‘When all desires which once entered his heart are undone, then does the mortal become immortal, then he obtains Brahman.’”⁶

And it is said (Br. Up., IV. 4. 22) further: “Knowing this, the people of old did not wish for offspring. What shall we do, they said, we who have this Self and this world. And they having risen above the desire for son, the desire for wealth, and the desire for worlds wander about as mendicants (*bhikṣācaryamcaranti*).”

Thus quite unlike the Yājñikas they would rise above all kinds of desire, renounce the world, and live in the forests, or wander about as mendicants, in pursuit of the knowledge of the Self.

There was, however, an intermediary or conciliatory school that attempted to compromise these two extreme views, that is, the views of the Yājñikas and the Vedāntists, maintaining that neither action (*karman*) which is interpreted as *avidyā* ‘not-knowledge’ nor *vidyā* ‘knowledge’ can do anything independently, but the combination of both of them is required for attaining the goal. For they say, it is action (*avidyā* ‘not-knowledge’) by which one can overcome death, but to attain immortality depends on knowledge (Iśa Up., 11).

Be that as it may, as regards the means of knowledge of the Self, it was mainly *yoga*. There are strong grounds for holding the view that it was highly developed in that age. A knowledge of the fine nerve-system which is so necessary for practising *yoga* seems to have been possessed by those teachers to some extent.

Now as these or similar accounts of the Yājñikas and Vedāntists are recorded in the Vedic texts, naturally in course of time these texts came to be regarded as the supreme authority in regard to spiritual matters, and nothing could be accepted without their sanction. This implicit faith in the authority of the Vedas has played a

great part in moulding the religious speculations in our country which we are not here concerned with directly.

Gradually, the authority of the Vedas began to lose its hold. Following in the path of the believers in knowledge the school of Sāṅkhya came into being. They declared the Vedic rites as impure being associated with the killing of animals, and as such they could not bring about one's salvation or the complete cessation of all kinds of suffering. Thus though the Sāṅkhyas discarded the Vedic rites altogether, they drew much of the materials for their system from that part of the Vedic texts which specially deals with knowledge. They accepted the theory of Ātman, though in a modified way. But there was no place for God in their system. They believed in the origination and dissolution of the world, but for that they felt no necessity for accepting the existence of God, both of the facts being explained in a different way.

Now there soon appeared in the field teachers after teachers, and thinkers after thinkers, who professed to have discovered, quite independently of the Vedic tradition, new paths of salvation and attracted people round them. The authority of the Vedas having been discarded there was nothing that could check one's freedom of thought. They had absolute liberty of their conscience. Among these teachers and thinkers there were both Brahmans and non-Brahmans. There were various sects, and sects were added to sects maintaining different views, such as: the world and the soul are eternal; they are partly eternal and partly not; or in some cases they are eternal, while in others they are not; the world is finite or infinite; the world and the soul arise without cause; the soul after death is conscious, or unconscious; there is a destruction or annihilation of a living being; as the things are momentary there cannot be any action, and so even there is no soul, much less the question of its being eternal or non-eternal; action is quite possible and so it can be held that the soul and such other things are ever existent; it is only disciplines through which one can attain salvation; knowledge brings about one's bondage, for where there is knowledge there are discussions among the disputants giving rise to dissensions which soil one's mind; on the other hand, from not-knowledge (*ajñāna*) there is no possibility of such danger; and it is impossible to ascertain what is knowledge, as the philosophers differ on this point; there is no consequence whatsoever of good or evil actions; the origination of the world is from time, or nature, or Primeval Cause (*prakṛti*), and so on;—too many even to mention. The upholders of these doctrines have all offered their grounds which, however, cannot be gone into in full here. Besides, there were various ascetics holding different religious views and practising severe forms of austerity or self-mortification, for instance, taking food just after the mode of cows, or taking no food at all, or living only on leaves of trees, or moss or on water, remaining in water, and so on, undoubtedly with a view to having the complete control over the senses.⁷

These philosophers and ascetics, recluses and Brahmans often with a large number of followers, moving from one part of the country to another, used to discuss

philosophical and religious matters in such a way that the period was, in fact, a period of Indian dialecticians after the classical period of Brahmanical speculation.

At this time when the country was seething with such religious and philosophical speculations and discussions, Gautama Buddha appeared upon the scene, and with him was Māhavīra, the last Tīrthāṅkara of the Jainas, with whom, however, we are not here concerned.

The first thing that strikes one most in the personality of the Buddha is that he was an out and out rationalist, and that seems to have been mainly due to the atmosphere in which he was born. He would not like to give anything as dogmatic truth, but always based his views on the strong ground of reason. He is reported once to have said to Kālāmas: "This I have said to you, O Kālāmas, but you may accept it not because it is a report, not because it is a tradition, not because it is so said in the past, not because it is given from (our) basket (or scripture, *piṭaka*), not for the sake of discussion, nor for the sake of a particular method, nor for the sake of careful consideration, nor for the sake of the forbearance with wrong views, nor because it appears to be suitable, nor because your preceptor is a recluse, but if, you yourselves understand that this is so meritorious and blameless, and when accepted, is for benefit and happiness, then you may accept it."⁸ The Buddha also declared to his followers:

"As the wise take gold by cutting, burning, and rubbing it (on a piece of touchstone), so, O Bhikṣus, you are to accept my words having examined them and not merely out of your regard for me."⁹

He used also to say to his disciples that in ascertaining truth "A Bodhisattva rests on reasons (*yukti-sarāṇa*)¹⁰ and not on a person (*pudgala-sarāṇa*) though things might be explained by an Elder (*sthavira*), or an experienced man, or Tathāgata, or the Order (*saṅgha*). Thus resting on reason and not on a person he does not move away from the truth, nor does he follow the faith of others."¹¹

There is another thing to be specially marked in the Buddha, which is that he was very practical. He wanted action and not mere speculations which can in no way lead one to the goal. As a physician prescribes a medicine neither more nor less than what is absolutely necessary, just so the Blessed One even when pressed hard would rather keep silent than say what could not serve the purpose of the inquirer. We may recall here his dialogues regarding the things which he did not explain though he was repeatedly asked to do so.¹² For a ready reference I may give you here a summary:

In that age there were some theories in the country which were agitating the minds of the people, *viz.* the world is eternal, the world is not eternal; the world is finite, the world is infinite; the soul is one thing and the body another; the saint¹³ exists after

death, the saint does not exist after death; the saint neither exists, nor does not exist after death.

These questions were put to the Blessed One on many occasions and by many a man, but he never elucidated them and remained silent. One Māluṅkyāputta who was leading a religious life under him was determined to have a definite reply either in the affirmative or in the negative to those questions and resolved that if the Blessed One did not give him such reply he would abandon his religious training under him.

The Blessed One said that he did not ask Māluṅkyāputta to take his training under him on the condition that he would elucidate those particular questions to him, nor did Māluṅkyāputta further that if he insisted upon it he might die before the questions could be solved. For it was just like a man wounded by an arrow thickly smeared with poison, for whom a physician was procured by his friends and relatives. Now, if the sick man said that he would not have the arrow taken out until he knew whether the man by whose arrow he was wounded belonged to the warrior caste, or to the Brahman caste, or to other castes; or the name of the person who wounded him; or whether the man who wounded him was tall, or short or of medium stature; or black, or dusky, or of yellow skin; or from this or that village, or town, or city; or whether the shaft was feathered from the wings of a vulture, or of a heron, and so on; that man would certainly die without having learnt all these details. Exactly in the same way one who insists on the solution of these questions would die before they could be answered.

The Blessed One further said that the religious life does not depend on the elucidation of these problems, for there still remain “birth, old age, death, sorrow, lamentation, misery, grief, and despair.”

Thus it is perfectly clear from the above that such discussion, the Buddha held, does not serve any practical purpose, for it does not conduce to “aversion, absence of passion, cessation, quiescence, knowledge, wisdom, and Nirvāṇa.” And so whenever he was asked to give his definite reply to those questions he kept silent. And it is related that the wandering teacher Vacchagotta, one of the inquirers, was so satisfied with the reply given by the Master, that he begged to be accepted as a disciple.

Again, the Buddha gave another reason for his silence with regard to such questions: it was this that he had sufficient ground for thinking that there was every possibility of his reply, if given, being not understood, or misunderstood by the enquirer. Moreover, consistently with his own doctrine of the Middle Path¹⁴ he could not give his reply either in the affirmative or in the negative. For, if it was in the former it would be eternalism (*śāśvatavāda*), while in the latter it would be nihilism (*ucchedavāda*).¹⁵ But he accepted neither of them, as his doctrine is free from both of them.¹⁶

There are two Middle Paths (*madhyamā pratipad*): one avoiding the two extremes, the

This attitude of the Buddha was found even at the time of his preaching his first sermon. He was unwilling to expound the truth that he had realized under the Bodhi tree, knowing that it was so subtle that men would not be able to grasp it. This is said very clearly in the *Larikāvatāra*, p. 114, where we know that the people would not understand the truth and so in order not to frighten them the Tathāgatas did not elucidate the questions.¹⁷

Attempts have been made to explain this silence of the Buddha by modern scholars and it was also a subject of keen discussion among ancient teachers. The question is: Did the Buddha himself know the answers to those questions? Was his silence due to his own ignorance, or is it that he knew the solution of the problems, but did not expound for the reasons given above? Now, can we ever rightly think that the Buddha himself did not reach any definite decision about the problems and hence he kept silent? If so, what could he gain by concealing the truth? None can imagine that such a teacher as the Buddha could conceal his ignorance, lest his disciples should lose their implicit faith in him. It is evident from his dialogue with Māluṅkyāputta, that he did not care for it. Whether one took his training under him or not was nothing to him. He definitely declared that he had elucidated what are misery, its origin, its cessation, and the way thereof and the followers were to act upon it, if they really wanted to be free from all kinds of misery.

The Blessed One is reported (DN, II, p. 100) to have said the following to Ānanda when the former was on his deathbed:

“I have preached the truth without making any distinction between exoteric and esoteric doctrine (*anantaram abāhīram katvā*), for in respect of truth, Ānanda, the Tathāgata has no such thing as the ‘closed fist of a teacher’¹⁸ who keeps something back.”

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Why then did he not elucidate the problems referred to above? Because, if he did so there would be a dilemma, and, in fact, it was presented in the *Milindapañha* (IV. 2.4) by the king saying that the silence of the Buddha might be due either to his ignorance or to his wish to conceal something. But Nāgasena who was certainly representing the views of his predecessors and contemporaries was quite competent to meet his opponent. He said that not every question deserves to be answered. For it is held that there are four kinds of questions, *viz.* (i) *ekāmsavyākaraṇīya* ‘that which can be explained with certainty or categorically,’ *e.g.* ‘Will every one who is born die?’ ‘Yes’ is the reply. (ii) *vibhajya-vyākaraṇīya* ‘that which is to be explained by making a division,’ *e.g.* ‘Is every one reborn after death?’ The reply is: ‘One free from passions (*kleśas*) is not reborn, but one who is not so is reborn.’ (iii) *pratiprcchāvyākaraṇīya* ‘that which is to be

explained by putting another question,' e.g. 'Is man superior or inferior?' It is necessary here to ask: 'In relation to what?' 'If in relation to animals, he is superior. But if in relation to gods, he is inferior.' And (iv) *sthāpanīya* 'that which is to be set aside,' e.g. 'Are the *kandhas* the same as the living being (*sattva*)?' This question is not to be answered. For, according to Buddhists, there is nothing known as a living being. And so the question is like the question: 'Is the son of a barren woman black or white?'¹⁹

And the problems alluded to above are, in fact, the problems of the last kind, i.e. those that are to be set aside. And why? Because these are things that cannot be explained by mere words. The differences in the degree of sweetness of milk, sugar, honey, and such other things can in no way be expressed even by *Sarasvatī*, the presiding deity of learning, even though thousands of years are granted to her for doing so. It is to be realized by a man by his own experience. To the Vedāntists this is not a new thing. The seers say (Kena Up., I. 2-4): "The eye does not go thither, nor speech, nor mind. We do not know, we do not understand how one can teach it. It is different from the known, it is also above the unknown, thus we have heard from those of old who taught us this."

We are further told by the same sages (Kena Up., II. 3): "It is known to him who thinks that it is not known to him, while he who thinks that he knows it does not understand it."²⁰

They say again (Taitti. Up., II. 4. 1): "Speeches turn back from it with the mind." And so it is found in a Vedic passage quoted by Śaṅkara in his commentary on the *Brahmasūtras* (III. 2. 17) that once when Bāṣkalin approached a teacher, Bādhva by name, and requested him to teach him the truth of *Ātman*, Bādhva kept silence. But when pressed by Bāṣkalin twice or thrice he said: 'Verily I tell you, but you understand not, the Self is calm (*brūmaḥ khalu tvam tu na vijānāsi upasānto'yam ātmā*).' The same idea of explaining truth by silence is described in a very beautiful way in a stanza of the *Dakṣiṇāmūrtistotra* attributed to Śaṅkara:

citraṃ vaṭataror mūle vṛddhaḥ
 śiṣyo gurur yuvā |
 guros tu maunaṃ vyākhyānaṃ
 śiṣyas tu chinnaśayaḥ ||

'Tis wonderful that there under a Banyan tree the disciple is old, while the preceptor is young. The explanation of the preceptor is silence, but the doubts of the disciple are removed!

Remember here the very well-known words of the Upaniṣad with regard to the Self: "sa *eṣa* neti nety ātmā *agrhyo* na hi *grhyate*"²¹ – 'This ātman can only be described by "no no!" He is incomprehensible, for He cannot be comprehended.' It is for this fact

that the sages declared: 'Wonderful is the man that can speak of Him, and wonderful is also the man who can understand Him.'²²

This idea of silence has its fullest expression also in the Buddhist works. We are repeatedly told that the truth revealed to the Buddha cannot be expressed by mere *akṣaras* or letters, as the following passage will show:

'How is it that the truth which has no letter (for its expression) should be taught and heard? Yet, it is through attribution that it is taught and heard.'²³

It is further said in the *Laṅkāvatāra* (p. 144) that between the day of his realization of the supreme knowledge (*bodhi*) and that of his *parinirvāṇa*, the Buddha uttered not a single word. Basing his arguments on these and similar passages Candrakīrti, the great commentator of Nāgārjuna's *Mūlamadhyamaka-kārikā* arrives at the conclusion that for the noble the highest or transcendental truth is silence.²⁴ It means, according to him, that saints remain silent about the *paramārtha*. This is clearly mentioned in the *Laṅkāvatārasūtra*, p. 16: 'Silent are the Tathāgatas, O Blessed One, and as such he did not say it.'²⁵ It is further said in the same work (p. 294) that the *paramārtha* has, in fact, no words (for its expression).²⁶ And we come across the same

view also in the *Viṣṇupurāṇa* (VI. 7. 98) when it says that the transcendental truth cannot be expressed, as it is beyond the range of speech.²⁷ This is why the truth (*tattova*) according to the Mādhyamikas is said to be free from all the four points of expression (*catuṣkoṭivinirmuktam*), viz. 'it is,' 'it is not,' 'both' and 'not both.' And thus they declare in the words of Nāgārjuna (MK, XV. 24): 'Nowhere and to nobody has ever anything been preached by the Buddha.'²⁸

Be that as it may, the Buddha was a speaker of truth (*dharmavādin*), and as such he had no quarrel with any person, though unfortunately the people had occasion for complaining against him unjustly. Thus he is reported to have said once: 'I do not quarrel, O Bhikkhus, with the people, but it is the people who quarrel with me. One, O Bhikkhus, who speaks the truth does not quarrel with any one.'²⁹

He used to teach what he had realized through his own experience.³⁰ And the truth he preached was so clear and efficacious that it was known to the people as the doctrine of *ehi-passika*, meaning thereby that it invites every man to come and see for himself.³¹ And as the consequence of following this truth was visible even in one's present life it was described by the people as 'one belonging to this life' (*sonditṭhika* = *sāmdrṣṭhika*). His doctrine was beautiful in the beginning, beautiful in the middle, and beautiful in the end.

But what did he elucidate during the last forty-nine years of his life after the realization of *samyaksambodhi*? He elucidated what was the fundamental object of the

religious and philosophical speculations of his time, *viz.* the four cardinal considerations: (i) that which is to be escaped (*heya*), (ii) the cause of that which is to be escaped (*heyahetu*), (iii) the escape (*hāna*), and (iv) the means of escape (*hānopāya*). And these are (i) misery, (ii) cause of misery, (iii) cessation of misery and (iv) the means of the cessation of misery, respectively. These are generally compared with (i) disease, (ii) the cause of disease, (iii) health (*ārogya*), and (iv) remedy (*bhaiṣajya*), respectively in the medical science.³² The Blessed One himself raised the question: ‘What have I elucidated?’ and answered as above. And why did he elucidate this? Because this brings profit, has to do with the fundamentals of religion, and leads to *nirvāṇa*.

This is very easy to understand, but when the question arises about the matter of details, one is simply bewildered at the sight of the variety and extent of the records which are supposed to contain all that he taught, as well as what is said of him or his teachings by teachers and writers after his realization of *nirvāṇa*.

Let us consider first the languages in which these accounts are written. We are told that some of the schools have their sacred texts in Sanskrit, Prakrit, Apabhraṃśa, or Paiśāci. And it is well known that we have texts in Pali. There is also a tradition to the effect that the texts were written in different countries in different languages, so much so that not less than ninety-six languages or dialects were employed in ninety-six countries.³³ This tradition may have some kernel of truth. Scholars dispute as to whether the existing texts found in different languages are in fact the originals or whether they are translations of some common texts in a certain language which remains unknown.

Consider again the fact that the available texts in various languages have no complete agreement there being in them many omissions and additions. The same is the case also with the translations of the texts in Tibetan, Chinese, Mongolian, etc. Consider also the fact that happened just after the death of the Teacher about his teaching. When the Bhikkhus were weeping and lamenting over the death of the Master, one Subhadda, a late entrant into the Order, said to other Bhikkhus: “Enough, Sirs, weep not, neither lament! We are well rid of the Great Samaṇa. We used to be annoyed by being told ‘This beseems you, this beseems you not.’ But now we shall be able to do whatever we like; and what we do not like, that we shall not have to do.”³⁴ This was an index to the mind of a section of the people, and it led to the holding of the different Buddhist councils. How the disciples of the Master, direct or indirect, differed in interpreting his teaching is evident among others from the facts of the councils and the formation of a number of schools, every one of which claimed to be the true expounder. To this is to be added the evolution of a number of *mārgas* ‘ways’ called in the system *yāna* ‘vehicle,’ such as *Devayāna*, *Brahma*°, *Śrāvaka*°, *Pratyekabuddha*°, or *Hīna*°, *Mahā*°, *Mantra*°, *Vajra*°, etc.³⁵

The Master was one, and it is quite natural to think that his teaching in regard to the cessation of misery was also one. Why then this bewildering divergence?

As says Mādhavācārya in dealing with Buddhist philosophy in his *Sarvadarśanasamgraha*,³⁶ the words of the Master were taken by his disciples in different lights. It is true that he taught them the same thing, but owing to their varied dispositions they understood it differently. It is a common experience that the same word conveys different meanings to different persons. For example, we quote Mādhavācārya again, the sentence 'the sun is set' may imply to a thief that it is time for committing theft; to a Brāhman, that it is time for saying his evening prayers; and to an amorous man, that it is time for meeting his sweetheart. But what was meant by the speaker himself? That is a problem, the answer whereof is not very easy to give. The problem is the same in the teachings of the Buddha.

Naturally in order to find out the truth we have no other course than to depend upon the patient and careful study of the works embodying the words of the Master as well as those dealing with his life and teachings, always remembering what has already been said about their condition. Strange to say, we find that even in the oldest class of works the teachers themselves are confronted with the same problem. Many facts or statements they come across, which appeared to them to be in apparent conflict with one another and they tried their best to reconcile them arriving thereby at a synthesis. It is, however, to be noted that sometimes those statements, in the form they have been presented to us, are the words of the Master himself, or of the teachers or authors. But let not discrepancies in reported speech, however authoritative, detain us, for, what we want to get down to is the central import thereof.

But what do we find? The Blessed One as a Bodhisattva was born for the welfare of all. He wanted to lead every one to the final goal, and without doing so he could not take rest. He trained the people who differed according to the difference in their dispositions. In short, there were, as at present, three classes of his disciples, *viz.* inferior, middle, and superior. He taught them all the same thing, no doubt, but in order to make it intelligible to all, he did it in different words, and it may be, in different languages, too, just as a mother does not give the same food to all her sons of different ages. Yet, in both the cases stated above the thing which is essential is given to all of them, and that thing is, in fact, the same, though the forms may differ. Exactly in the same way an expert physician does not give the same medicine to all his patients, but his medicine differs in different cases. Yet he cures all of them. Actually the Buddha is often compared to a great physician (*vaidyārāja*).³⁷ And he himself is reported to have said that physicians resort to different kinds of treatments for different patients. Yet the medical science (*śāstra*) is not self-contradictory, the difference of treatment is due to the difference in diseases. So the teachings of the Buddha do not differ, they remain always one and the same, but their application is different owing to the varied dispositions of the people.³⁸ So a particular medicine is not meant for all, nor are all medicines for one.

And even as what is medicine for one is not necessarily medicine for another, so a teaching of the Buddha meant for one is no teaching for another.³⁹ Yet the truth imparted through all the teachings is the same.⁴⁰

The principle underlying this distinction is called 'skilfulness in method' (*upāyakaṣālya*) of the Buddha, by which all discrepancies in his teachings can be explained. And so, though there are different *yānas* as mentioned above, there is, in fact, not more than one *yāna*. He himself is reported to have said that it was his skilfulness in method that he manifested the three *yānas* (referring to *Śrāvaka-*, *Pratyekabuddha-*, and *Buddha-yānas*); but there was only one *yāna*, one method, and one instruction of the Leaders (*i.e.* the Buddhas). All the highest men (*puruṣottama*) revealed a number of pure laws by means of illustrations, reasons, and arguments with their varied skilfulness of method. All of them, however, manifested but one *yāna* (referring to the *Buddha-* or *Mahā-yāna*) and introduced but one *yāna* on the earth.⁴¹ We are also told by the Buddha himself that he has 'spoken of the Devayāna, Brahmayāna, Śrāvakayāna, Pratyekayāna, and Tathāgatayāna (=Buddha-or Mahā-yāna). There is no end of *yānas* so long as the consciousness or mind (*citta*) remains in motion (*pravartate*), but when it turns back there is neither a *yāna*, nor one who goes thereby. I say difference of *yānas*, but this is only for the purpose of attracting the ignorant people.'⁴²

The above statements are made, as is clear enough, from the Yogācāra point of view. From the standpoint of the *Mādhyamikas*, Nāgārjuna says in his *Nirāupamyastava*,⁴³ that as there is no difference whatever with regard to the highest truth (*dharmadhātu=paramārtha*) there is, in reality, no difference of *yānas*. Yet, the Master has spoken of three *yānas* (*Śrāvaka-*, *Pratyekabuddha-*, and *Buddha-yāna*), but that only for leading the people to the goal (*sattāvātāra*).⁴⁴

Attempts have been made to reconcile the difference of *yānas* also in other ways. We are told that though the highest truth (*paramārtha*) is to be obtained from the Mahāyāna, and as such only this is to be resorted to, yet the Master taught also the other two *yānas*, *Śrāvaka* and *Pratyekabuddha*, for they like a staircase lead one to the Mahāyāna, and as such are meant for beginners.⁴⁵

In Buddhism or in Buddhist philosophy there are, as is well known, different views, such as *viññānavāda* and *sūnyavāda*. I am not entering into details, but I am only raising a question: How could the Teacher himself have propounded these two opposite theories? How can he be held as the author of both of them? There are texts accepted as the words of the Teacher himself purporting to say that all these three worlds are nothing but *citta* 'pure consciousness';⁴⁶ and there are again similar texts informing us that all is *sūnya* 'void.'⁴⁷ Which of these two statements is true? It cannot be said that none of them is true, for both of them are held to be the speech of the Buddha (*buddha-vacana*). If one of them is authoritative, the other is also authoritative. If you reject one, you will have to reject also the other. So a reconciliation must be

found out. We are told, evidently by the Mādhyamikas, that it cannot be denied that according to the Sage the world is nothing but *citta*, but in reality he does not mean it, that teaching being meant only to remove the terror of the ordinary or ignorant people (*bāla*) who are generally frightened to hear of the profound doctrine of 'voidness' (*śūnyatā*), being not able to understand it thoroughly.⁴⁸ It is further said: The teaching of the Master that the world of our every day experience exists is meant only for those foolish and child-like persons who are strongly attached to the existence of the world and are frightened even to hear of the profound and subtle truth. But those who have a better intellect, but are yet ill-witted, are taught that all this is only pure consciousness (*viññāna*), there being neither the perceiver nor the perceptible. And those whose minds are freed from all sorts of impurities by profound meditation for years are advised that all this is just like an imaginary town in the sky (*gandharvanagara*).⁴⁹

How this reconciliation of different views found in the canonical and most authoritative works on Buddhism has been carried further will be clearly seen if we quote here only a couplet from the *Mūlamadhyamakakārikā* of Nāgārjuna (XVIII. 6):

'The Buddhas have made known that there is the Self (*ātman*); they have taught that there is not-Self (*anātman*); they have also taught that there is neither the Self nor the not-Self.'⁵⁰

But how can it be? How can the Buddha teach these opposite things? The answer is, as has already been said, that all these teachings are not meant for one and the same class of people, but for different classes of them, *viz.* inferior, middle and superior respectively.

The great difficulty in understanding the true significance of the *Buddha-vacana*, 'the speech of the Buddha,' is clearly shown in very authoritative canonical works, such as the *Laṅkāvatāra* and the *Saddharmapuṇḍarīka*, in which the Buddha himself is reported to have taught his disciples as to how the actual meaning of a text is to be ascertained. In teaching the Buddha follows two *nayas* 'principles' or 'methods,' *viz.* *siddhāntanaya* and *deśanānaya*; the first means the method by which the conclusion can be shown, while the other is the method adopted for discoursing. The former is meant for the wise (*yogins*), and the latter for the ignorants (*bālas*).⁵¹

By the former one penetrates the truth, while by the latter one is acquainted with general instructions on conduct gradually leading to the final goal.

Besides what has been said above, is to be considered the following in regard to the nature of the scripture on which we are required to rely for our conclusion. It is clear in the canonical works themselves that the sūtras or passages or discourses thereof are not of the same value as regards their significance; for, while some of them give us explicit meanings the others do not do so, presenting senses which are not determined

or are 'intentional.' These two kinds of *sūtras* are called *nītārtha* and *neyārtha*, respectively. The word *nītārtha* literally means 'the meaning of which is determined or explicit (*vibhaktārtha*);' while *neyārtha* means 'the meaning of which is not determined (*aniścita*), but is to be determined, and as such causes various doubts.'⁵²

Confronted with the difficulty of arriving at the true sense the authors of the canonical works themselves were constrained to determine some characteristics, by which these *nītārtha* and *neyārtha* *sūtras* could be distinguished. And so it is said in the *Ārya-Akṣayamati-sūtra*⁵³ that those *sūtras* which are delivered for leading one to the way to salvation (*mārgāvātāra*) are *neyārtha*; while those which are for leading one to the final result (*phalāvātāra*) are *nītārtha*. And the people are urged to follow the *nītārtha* *sūtras* and not *neyārtha* ones.⁵⁴

But naturally there was confusion and doubt as to the distinction between these two kinds of discourses. And if we ask Candrakīrti, he would tell us in his *Madhyamakavṛtti* (p. 42) that it is for the sake of those who fall into doubt as to whether a particular discourse refers to the absolute truth or whether it conveys some intentional (*ābhiprāyika*) meaning, and also for the sake of those who, owing to their slow wit, mistake a *neyārtha* discourse for *nītārtha*, that this work (*i.e.* Nāgārjuna's *Mūlamadhyamakakārikā*) was composed by the Teacher.

In fact, the same view is expressed by the Buddhas themselves, as say the scriptures in a different way. It is said that in their teachings there is *sandhābhāṣya*⁵⁵ 'intentional speech.' And this is very difficult to understand (*durbodhya*), for in elucidating the law the Tathāgata uses various kinds of skilful means, such as different interpretations, indications, explanations, and illustrations.⁵⁶

This *sandhābhāṣya* or *sandhāvācana* has played a great part in the later development of Buddhism, such as the Vajrayāna and Sahajayāna. It has been the cause of various doubts with regard to the true significance of texts. And it has given rise to two-fold explanation, exoteric and esoteric in Buddhism. This can be traced back even to the *Laṅkāvatāra*. The five *ānantaryas* 'immediate or uninterrupted sins,' commonly translated as five 'deadly sins' are well known in Buddhism. They are matricide, parricide, arhantcide, shedding the blood of a Buddha, and causing schism in the Order. This meaning is undisputed. But it is found in the *Laṅkāvatāra* (pp. 138-140) that this meaning is exoteric (*bāhya*); and there is another meaning which is esoteric (*ādhyātmika*). According to it (p. 140) the mother is *trṣṇā* 'desire,' 'lust;' the father is *avidyā* 'ignorance,' the Buddha is *viññāna* 'consciousness,' the Arhat is the *anuśayas* 'passions,' and the Order is the *skandhas*. So by the actions of matricide, etc., referred to above one acquires merit and not demerit.

Let me here refer to two *gāthās* in the *Dhammapada* (294, 295) which run in translation as follows:

‘A true Brāhmaṇa goes painless though he may have killed father and mother and two valiant kings, and destroyed a kingdom with all its subjects,’

‘A true Brāhmaṇa goes painless, though he may have killed father and mother, and two Brāhmaṇa kings and a tiger as the fifth besides.’⁵⁷

What does this mean? In the same way as shown above mother means desire (*trṣṇā*), father egoism (*asmimāna*), two kings the two wrong views of eternalism and nihilism (*śāśvata-* and *uccheda-drṣṭi*), the kingdom with all its subjects the six organs of senses and their six corresponding objects (*dvādaśa āyatanas*), together with enjoyments (*nandirāga*); two Brāhmaṇa kings are the two wrong views as above, and the tiger is the five hindrances (*nīvaraṇas*), viz. sensuality, ill-will, sloth and torpor, worry, and wavering.⁵⁸

These identifications are due to some common qualities (*sāmānya dharma*), either real or imaginary, of things which are identified. For instance, *trṣṇā* ‘craving’ is identified with mother, because as mother gives birth to a child so does craving to miseries. For details one should be referred to the original works with the commentary where available.

The use of *sandhāvācana* or intentional speech is found also in Upaniṣadic texts, as the following passage from the *Bṛhadāraṇyaka Upaniṣad* (VI. 2.2) will show:

‘I have heard of two paths for men, one leading to the fathers, the other leading to the gods. By these two (paths) all that lives moves on, whatever there is between father and mother.’⁵⁹

We are concerned here only with the last line of the stanza quoted above. What are we to understand here by the words father and mother? They are used here not to imply father and mother in their ordinary senses, but to denote the sky and the earth (*dyāvāpṛthivī*),⁶⁰ which are conceived as the father and the mother respectively by the old sages considering some common qualities existing between the two sets. This identification is *bhaktivāda*, as Yāska would express it, meaning *guṇavāda* ‘statement meant figuratively.’

This *sandhāvācana* seems to have been indicated by the following phrase used frequently in the Brāhmaṇas and Upaniṣads: ‘The gods love what is invisible (*parokṣa*) and dislike what is visible (*pratyakṣa*).’⁶¹ And it can be traced still further back to the Riddle-poems in the Saṃhitās or Vedic texts.

Let me quote here one of them in English from the Rigveda (IV. 58.3): “Four are his horns (*śṛiṅga*), three are his feet (*pāda*), his heads (*śiras*) are two, and his hands (*hasta*) are seven. Bound with triple bond, the strong one (or the showerer of bounties) roars loudly, the great god entered into the mortals.”⁶²

Who is that great god? Commentators differ; some say, he is sacrifice (*yajña*); others say, the sun; while some others are of opinion that speech (*śabda*) is meant here. But who can tell what was meant by the sage himself to whom the mantra was revealed?

Be that as it may, there is not an iota of doubt that the employment of the *sandhāvacana* which is capable of being easily misunderstood by an untrained mind is one of the main causes that brought about a most lamentable degeneration in Buddhism in its later forms, such as the Vajrayāna and the Sahajayāna. And if you care to know what this process finally led to I may refer you to a Buddhist Tantric work named *Ekallavīracāṇḍamahāroṣanatantra*, not yet published, but described by the late Mahāmahopādhyāya Pandit Haraprasad Shastri.⁶³ There are strong grounds for believing that if the *sandhāvacana* were explained thoroughly the original form of the Vajrayāna would not appear to be so revolting, so obscene, and so immoral, as it is generally regarded to be. This is a point regarding which I fully concur with Dr Prabodh Chandra Bagchi.⁶⁴

I have placed before you the various difficulties one is to surmount in order to grasp the true teaching of the Buddha. I should also like to mention another difficulty. Consider the extent of the modern Buddhist literature that is growing daily in and outside India. It shows considerable divergency of views on various points, thus making the problem more and more complex.

As we have already seen in some manner even the ancient teachers themselves were confronted with the same problem, *viz.* What did the Buddha say? Various answers were given with strong reasons reconciling the texts which on a number of points appear to differ very widely among themselves. But the questions are: Can we accept all the answers as true answers? Are they all approved by the Buddha? It may be so, for like a good physician he instructed persons differently according to their particular needs. Or it may not be so, for we are told that he spoke of only one vehicle (*eka yāna*).⁶⁵ A synthesis may be made of all that we have before us about the Buddha and his teachings as presented by eminent teachers and scholars, ancient or modern. But all that can be said with certainty about such a synthesis is that it is the opinion more of the teachers or the scholars who make it than of the Buddha himself. For there is nothing to prove definitely that this and not that was actually meant by him.

I may give you here an example. Bādarāyaṇa is the author of the *Brahmasūtras*, and there is no doubt whatever that the doctrine that one derives from this work can be

only one; it may be *dvaita* 'duality,' or *advaita* 'non-duality' or 'monism,' or *viśiṣṭādvaita* 'modified non-duality,' or *śuddhādvaita* 'pure non-duality,' or *dvaitādvaita* 'duality and non-duality,' or something else; but in no case can it be *all* of them at the same time. Reconciliation of all of them has been or may be tried, but whatever that may be we are not concerned with it; for we want to know what the author, Bādarāyaṇa, himself said.

In the same way we do not propose to learn or deal here with the doctrines of the different vehicles, such as the Hīnayāna, Mahāyāna, etc., or theories such as *vijñānavāda*, *śūnyavāda*, etc.; but what we want to get at is the doctrine that the Buddha himself preached.

But how to proceed to ascertain it? Indeed, the way is one very difficult to tread upon. Yet we need not despair. There is a light to guide us, supplied by the Vedic sages to whom the same problem was presented with regard to the Vedic passages. They have said that the sense of the hymns is to be construed by the help of oral tradition as well as reasoning. But to a person who is not a Ṛṣi, or to one who has no profound meditation the meaning does not become manifest. And here is a short apologue:

'Verily when the Ṛṣis were passing away, men inquired of the gods, "Who shall be our Ṛṣi?" They gave them the science of reasoning as Ṛṣi (*tarkam ṛṣim*) for constructing the sense of the hymns. Therefore, what is decided by a man well-versed in the Veda becomes āṛṣa or derived from a Ṛṣi.'⁶⁶

We may recall in this connection the dialogue that took place between the Blessed One and Ānanda just before the former's passing away:

'Now the Exalted One addressed the Venerable Ānanda and said: "It may be, Ānanda, that in some of you the thought may arise, 'The word of the Master is ended, we have no teacher more!' But it is not thus, Ānanda, that you should regard it. The truths and the Rules of the Order which I have set forth and laid down for you all, let them, after I am gone, be the teacher of you."⁶⁷

These two statements, one Brahmanic and the other Buddhistic, are our guides, and with them let us proceed in search of what is the basic conception of Buddhism, a problem I propose to deal with in my next lecture.

LECTURE II

THE MAIN PROBLEM

In the first lecture I have shown, *inter alia*, that there is a great difficulty in understanding the true teaching of the Buddha, for the canonical works which are

regarded as embodying that teaching as well as many other texts based upon them, both ancient and modern, are conflicting in many respects, and often on a number of points which are vital. This, however, is not peculiar to Buddhism, but also to other religions, and the older a religion, the greater are the diversities in its explanation. Yet, the human mind must find its satisfaction by trying its best to understand what truth is. Let us therefore make an attempt to proceed with all caution in that direction.

Before proceeding I would, however, ask you to pause here for a while to recall what was said in brief in my first lecture about the religious and philosophical atmosphere of the country in the age when the Buddha appeared. It is the past that makes the present. The sprout depends for its being on the seed which is, in fact, its previous state. In the same way the Buddha was made what he was by all that preceded him.

It is quite clear that the way followed by him was made considerably easy for him by his predecessors. For instance, you may remember that we started from Vedic ritualism and saw how faith in it gradually waned and finally vanished away among such thinkers, as the Vedāntists, Sāṅkhyas, and others. We have also seen that the Vedic sacrifices, subsequently called *dravya-yajñas* 'sacrifices with material things' had already begun to be interpreted esoterically, their outward forms being altogether discarded. And thus their place was taken up by what is called *jñāna-yajña* 'the sacrifice by knowledge,' which, as the *Bhagavadgītā* would say, is far superior to *dravya-yajña*. The Buddha subscribed to this view and rejected *dravya-yajña* in unmistakable terms.

He did not, however, reject the performance of karma, but on the contrary, advocated it strongly. Like some of his predecessors¹ he was a staunch believer in it and used to say that men are the inheritors of karma (*kammadāyāda*), karma is their very own (*kammassaka*), karma is the cause of their rebirth (*kammayoni*), and karma is their refuge (*kammaṭṭisaraṇa*).²

It is, however, to be noted that while the ritualists understood by karma mainly different Vedicrites and sacrifices, the Buddha along with the Vedāntists and others took it in its ordinary sense, 'action'—action of body, mind, and speech. But with regard to spiritual advancement karma meant to him only mental action (*mānasam karma*). This view also is not his own, as it is evidently found among some of his predecessors. However, according to him karma is, in fact, nothing but *cetanā* (or *citta*)³ 'volition,' or 'mental action' (*mānasam karma*), as Vasubandhu (AK, IV, 1) would express it. 'It is volition, O monks, that I call karma,'—declared the Buddha.⁴ And it is emphatically said that there is no karma excepting thought.⁵

Therefore, even such actions as *dānapāramitā* 'perfection of giving,' etc. are, in reality, not external, but internal, and as such are only some particular *cittas*. So we are told 'If it is held that *dānapāramitā* is fulfilled by removing the poverty of the world, then

how can it be said that the former Buddhas performed it? For, the world is still poor. Therefore, when there arises the *citta* of giving up to all everything that is in one's possession, together with the reward thereof then that is called *dānapāramitā*. Therefore it is only a *citta*.⁶

The whole teaching of *karmayoga* in the *Bhagavadgītā* centres round this interpretation of karma and it declares (IV. 29) that when the mind is free from all attachment one commits no sin simply by a physical action.⁷

In the same way like one or other of his predecessors already referred to in the first lecture, the Buddha rejected the authority of any scripture and depended solely on pure reason; he did not assign any place to God in his system, nor had he any faith in the existence of the soul in its accepted sense; he felt the impermanence of the world and consequently its unworthiness as an object of enjoyment; he renounced the world remaining in that state till he lived after his enlightenment; he practised yoga and austerities, though their rigour was much lessened afterwards; he accepted that it is ignorance (*avidyā*) that causes bondage, and necessarily knowledge leads to liberation; he believed also with some of his predecessors that until desire or thirst or craving (*kāma*, *trṣṇā*) is rooted out there is no hope of peace. With the last two points which are of vital importance I desire to deal more particularly as we proceed.

But the question is: What is it on which he laid the foundation of his religion? What is it round which centered all his thoughts and teachings? Let me make here an attempt to find out the answer, if I can, according to my light.

Let me invite your attention, first of all, to a stanza in the Rigveda (X. 129. 4). It runs in translation as follows:

'In the beginning there was *Kāma* 'desire,' the earliest seed of mind, and the sages in their hearts with wisdom found out the bond of being in non-being.'⁸

And if you consult *Sāyaṇa* who has commented upon it⁹ he would tell you on an ancient authority that 'it is desire that binds the world, there is no other bond.'¹⁰ About this we have the following in the Atharvaveda (III. 29.7):

'Who hath given this to whom?
Kāma hath given to Kāma;
Kāma is giver, Kāma recipient,
Kāma entered into the Ocean.'

What does the last line of this stanza mean? Says a Vedic text itself: 'Kāma is just like an ocean, as it has no end.'¹¹ The same idea is expressed in other words in another Vedic work, *i.e.* the Atharvaveda, IX. 2. 23:

‘Superior to the ocean art thou, OKāma, fury.’¹²

And it is further said in the same Atharvaveda, IX. 2. 19-20, in which an entire hymn is found on Kāma:

‘Kāma was first born; not the gods, the fathers, nor mortals attained it. To them art thou superior and always great. To thee as such, O Kāma, do I pay homage.’

‘How great in width are heaven and earth, how far the waters flow, how far fire – to them art thou superior, always great; to thee as such, O Kāma, do I pay homage.’¹³

In a number of Vedic passages this kāma is identified with *Agni* ‘fire.’ And what this identification is due to is not far to seek. *Agni* is never satisfied with any amount of fuel, just so kāma can in no way be satisfied with any amount of its objects. No better statement of it can be made than what *Manu* (II. 94) has done, and, I am sure, it is well-known to all of you:

‘Kāma is never extinguished by the enjoyment of desired objects; it only grows stronger as does fire with clarified butter.’¹⁵

That the pursuit of kāma leads one astray entangling in unthinkable miseries and sufferings is an idea that has gained ground more and more in our country from the Vedic times downwards. And so the sage declared:

‘When the kāmās that are in his heart cease, then at once the mortal becomes immortal and obtains here (in this life) Brahman.’

‘When all the ties¹⁶ of the heart are severed here then at once the mortal becomes immortal.’¹⁷

And he concluded saying that ‘here ends the teaching (*etāvad anuśāsanam*).’

In this connection I would ask you to refer to the celebrated dialogue between Death and Naciketas in the same work. Let me quote here only a few lines from it.¹⁸

Death said to Naciketas: ‘Choose sons and grandsons who shall live a hundred years, herds of cattle, elephants, gold, and horses. Choose the wide abode of the earth, and live thyself as many harvests as thou desirest. If you can think of any boon equal to that, choose wealth and long life. Be (king), Naciketas, on the wide earth. I make thee the enjoyer of all desires (*kāmānām tvā kāmabhājam karomi*). Whatever desires are difficult to attain among mortals, ask for them according to thy wish:—these fair maidens with their chariots and musical instruments,—such are indeed not to be

obtained by men,—be waited on by them whom I give to thee, but do not ask me about dying.'

And here is the reply of Naciketas:

'These things last till to-morrow, O Death, for they wear out the vigour of all the senses. Even the whole of life is short. Keep then thy horses, keep dance and songs for thyself. No man can be happy by wealth.'¹⁹

Now let us turn to the life of the Buddha. There is irreconcilable diversity of opinion with regard to what he actually taught. But there is entire agreement on the point that he had to fight very bravely with all his power against his terrible enemy, Māra, the evil one, whom he completely defeated at the end. And it is only after this that he became *Buddha*. This conquering of Māra described so elaborately and in ornate language by writers or so nicely depicted by painters has rightly occupied a permanent place in the stories of his life. Indeed, one may ignore, if one so desires, all the other events in the life of the Buddha, but one can in no way overlook the fact of his having conquered Māra.

But who is that Māra? Nothing but the personified kāma. The word *Māra* which is derived from the root \sqrt{mr} 'to die' actually means 'death' and, in fact, there is no difference whatever in meaning between it and *mṛtyu* which is also a derivative of the same root. And if the tremendous evil that kāma causes to a man is taken into consideration there will be no two opinions on the matter that there is no word better than *māra* that can properly be applied to mean kāma.

Leaving aside all the other utterances that the Blessed One made about the evil consequences of Māra or kāma, the root cause of all sorts of suffering, I would ask you to pay attention to the passage quoted below which, according to a tradition, is said to have been his first speech after his enlightenment:

'Through birth and rebirth's endless round,
Seeking in vain, I hastened on,
To find who framed this edifice.
What misery! — birth incessantly!

O builder! I've discovered thee!
This fabric thou shalt ne'er rebuild!
Thy rafters all are broken now,
And pointed roof demolished lies!
This mind has demolition reached.
And seen the last of all desire!'²⁰

The religious systems and literature of the country is full of this idea of kāma and its extinction, though they differ sometimes very widely in the matter of details. You know how it is described throughout the text of the *Bhagavadgītā*. As the root of evils it is called there the 'great consuming' (*mahāśana*) and the 'great evil' (*mahāpāpman*), and is regarded as a 'great and constant enemy' (*mahāśatru* and *nityavairin*). And with regard to its cessation we are told there thus:

'Only he attains peace within whom all desires merge as rivers merge in the ocean, which is ever full and ever unmoved; but it can never be attained by him who cherishes desires.'

'One who having abandoned all desires goes onwards without attachment and being free from the idea that 'it is I' and 'this is mine,' attains peace.'²¹

The two great epics of the country, the *Rāmāyaṇa* and the *Mahābhārata*, clearly show the evil consequence of kāma from beginning to end. Kālidāsa has touchingly depicted in his *Kumāra-sambhava* that until Madana 'Cupid' or Kāma was reduced to ashes Pārvatī could not realize the joy of her union with Śiva, the embodiment of eternal bliss and peace. The first union of Śakuntalā with the king, in the *Abhijñānaśakuntala*, was not a happy one when both of them were attracted to each other owing to the strong impulses of kāma. But the real union of them took place in the last act of the drama when the heart of each of them was free from passion and full of pure love. Instances need not be multiplied.

Now, there is another thing to which the Buddha directed his attention, following here too the foot-steps of his predecessors. Undoubtedly, desire is the cause of sorrow. But its other causes, such as hatred and self-centredness, are also often mentioned. These are, however, associates, so to say, of desire, from which they arise. But *avidyā* 'ignorance' is held also to be a cause of sorrow. As desire comes from ignorance it is the root cause of sorrow. The Blessed One is reported to have said once:

'Just as in a peaked house (*kūṭāgāra*), O Brethren, whatever rafters there are, all converge to the roof-peak, resort equally to the roof-peak, all go to junction there, even so, whatever wrong states there are all have their root in ignorance, all may be referred to ignorance, all are fixed together in ignorance, all go to junction there.'²²

And again:

'Whatever misfortunes there are here in this world, or in the next, they all have their root in ignorance (*avijjāmūlaka*), and are given rise to by longing and desire.'²³

Avidyā means non-perception or wrong perception of truth.²⁴ The man who does not perceive or wrongly perceives the truth imagines things which are in reality not in

existence; and by doing so he thinks evil to be good. And naturally there arises desire, and once it comes forth it leads him astray bringing about his ruin; as says the *Bhagavadgītā* (II. 62-63):

‘Man musing on the objects of the senses conceives an attachment to them; from attachment arises desire; from desire anger, from anger delusion, from delusion the confusion of memory, from confusion of memory the destruction of reason (*buddhi*), and from the destruction of reason he comes to ruin.’

Now the cessation of desire follows that of ignorance. And ignorance disappears only when there is knowledge (*vidyā*) or perfect wisdom or ‘perfection of wisdom’ (*prajñāpāramitā*), as the Buddhists would express it.

On this point, up to this, there is complete agreement between the Blessed One and most of his predecessors. But after this they differed widely from each other holding diametrically opposite views with regard to the Truth, the object of their knowledge or wisdom.

According to the sages of the *Upaniṣads* the truth is *Ātman*, and, as we have already seen in the first lecture, when this *Ātman* is perfectly perceived or realized there remains absolutely nothing that can be desired, all desires being completely satisfied. We are told in an *Upaniṣad* (Ch. Up., VII. 25. 1-3):

‘The Infinite (*bhūman*) indeed is below, above, behind, before, right and left – it is indeed all this.’

‘Now follows the declaration of the Infinite as I: I am below, I am above, I am behind, before, right and left – I am all this.’

‘Next follows the declaration of the Infinite as the Self (*Ātman*): Self is below, Self is above, Self is behind, before, left and right – Self is all this.’

‘He who sees, perceives, and understands this, loves the Self, delights in the Self, revels in the Self, rejoices in the Self – he becomes a *svarāj* (self-resplendent); he is lord and master in all the worlds.’

Again it is declared by a sage (Br. Up., IV. 4. 12): ‘If a man understands himself (*ātman*) saying “This I am” (*ayam asmi*), what could he wish or desire for the sake of which he should pursue the body?’

In fact, according to these seers there is only the Self without a second. And that being so, there is nothing that could be an object of desire. Nor is there anything to be frightened of. It is a fact that when there are two there is a possibility of fear. When

there are both, a tiger and a man, the latter has the cause to be frightened. Here is a very short, yet very interesting story from an Upaniṣad (Br. Up, I. 4.1.2):

In the beginning there was only Self. He looked round and saw nothing except himself. And he was afraid. And therefore every one, when alone, is afraid. But he thought to himself 'As there is nothing but myself why should I fear.' His fear passed away, for verily it is the second only from which fear arises (*dvitīyād vai bhayaṃ bhavati*).

Thus by realizing the Self one becomes completely free not only from desire but also from various kinds of anxiety, trouble, and sorrow.

Other teachers besides the Vedāntists, who believe in the theory of Ātman, are also of opinion, that it is through the extinction of desire that one can attain to salvation. For instance, the Yājñikas or Mīmāṃsists who are mainly concerned with Vedic rites and ceremonies warn their followers in unmistakable terms against the performance of *kāmya* karmas or ceremonies done from interested motives and advise the doing only of such karma as is indispensable or obligatory and occasional (*nitya* and *naimittika*).

The followers of the *bhakti-mārga* 'the path of devotion' having absolute faith in the Supreme Being have found a very easy way of getting rid of all desire. They keep nothing for themselves having dedicated all to their Lord.

From the *Bhāgavata Purāṇa*, the best of the devotional works of the country, I should like to quote a few words of Prahlāda, the embodiment of perfect devotion. The Lord appeared before him and asked him to choose a boon which He would fulfil for He always fulfils the desires of every one. And the following is Prahlāda's prayer by way of reply:

'Ever since I was born, I have been attached to the objects of desire; don't tempt me again with those boons! I am frightened of them and feel disgusted with them. I want liberation and have taken refuge in Thee. Certainly, O Lord, it is in order to test whether I am a true servant of Thine that Thou hast tempted me, Thy devotee, by inducing me to the objects of desire, which are simply a bondage for the soul and the seed of the *samsāra*; otherwise, it would not have been possible for Thee whose heart is full of compassion. A servant who wants some desirable things from his master is not a true servant, yea, he is, in truth, a trader; nor is he a true master who offers his servant the desirables in order to keep his dominion over him. I am Thine devotee with no desire whatsoever, and Thou art my Lord without any expectations. The objects of us both are not like those of a king and his servant. Yet, if, O Thou who art the greatest giver of gifts, shouldst grant me a boon, pray, grant me, O Lord, this that no desire (*kāma*) might arise in my heart!'¹⁷

The way of cessation of desire as suggested by the followers of Tāntricism is very peculiar. According to them it is desire itself by which the wise can remove desire. They tell us: 'Just as one takes out water from the ear with the water itself, or a thorn with a thorn itself, so the wise remove desire with desire itself. Just as a washerman makes a cloth clean by removing its dirt with some dirty matter, so a wise man makes himself pure only with what is impure. Or as a looking glass becomes clean when rubbed with dust, just so things which are offensive are for the annihilation of offence when enjoyed by the wise. A lump of iron when thrown into water surely sinks, but when flattened out and shaped into a vessel it not only floats on water but enables others also to do so. In the same way when the mind is strengthened by wisdom it remains free even while enjoying the things that men desire and at the same time helps others to obtain freedom. The object of desire when enjoyed by the unwise becomes a fetter to him, but to the wise the enjoyment does not work against liberation. Poison when taken in accordance with proper method acts like life-giving ambrosia; but even good food, such as ghee, cake, etc. if taken improperly, acts like poison. Ghee mixed with honey in equal portion becomes poison, but the same thing taken according to rules becomes an excellent tonic saving one from the ravage of senility and disease. As copper blended with quick-silver becomes faultless gold, just so the impurities or passions (*kleśas*) to those who know what true knowledge is, are efficient in causing good.'¹⁸

Let us now turn to the Blessed One, the Buddha. What is the truth according to him? As we have seen, there is great difference as to what he actually taught. Scholars are still carrying on discussions over the point. Yet, it is agreed on all hands that the truth as propounded by him is *Anātman* – a doctrine diametrically opposite to that held by most of his predecessors.

But how could he arrive at that strange conclusion in the face of the Upaniṣadic doctrine of Ātman with which the atmosphere was so much surcharged? It seems to me that it is the Upaniṣadic doctrine of the Self itself that led him to arrive at such a decision. That desire is to be rooted out was his strong conviction, which was also the conviction of his predecessors. And he searched within himself where that desire is, where it comes forth, and to find what its cause is. It is evident in our daily experiences that whatsoever we love we desire. And the more we love it, the more we desire it. Now what do we love most in the world? It is the Self. We can give up all that we have, but we tremble at the very idea of giving up the Self. Offer the kingdom of the heaven and tell a man that he may accept it, but only on condition that he shall give up his life. Certainly he would not accept the offer. What can he do with that kingdom when he himself is no more? So the greatest love we feel is for the Self, for there is nothing dearer than it. There it is said in the Upaniṣad (Br. Up., I.4.8):

'It is dearer than a son, dearer than wealth, dearer than all else, and nearer than anything. And if one were to say to one who declares another than the self dearer, that

he will lose what is dearer to him, very likely it would be so. Let him worship the self alone as dear. He who worships the self alone as dear, the object of his love will never perish.'

In fact, the sole object of love is the Self. We love other things, no doubt, but it is only owing to its relation to them. In reality, loving others we love nothing but the Self, as the following passage of the Upaniṣad (Br. Up., II. 4. 5), which is very well-known to most of you, expresses very clearly:

'Verily it is not for the desire for a husband that husband is dear, but it is for the desire for the Self that the husband is dear. Verily it is not for the desire for a wife that the wife is dear, but it is for the desire for the Self that the wife is dear. Verily it is not for the desire for a son that the son is dear, but it is for the desire for the Self that the son is dear. Verily it is not for the desire for wealth that wealth is dear, but it is for the desire for the Self that wealth is dear.' And so on.

Thus thinking over the nature of the Self as expressed in the above or similar passages of Upaniṣads some of our ancient sages resorted to a particular way of realizing it, as has been described in the first lecture, in order to put a final stop to suffering, and declared (Br. Up., II. 4.5) in the words of Yājñavalkya to his beloved wife Maitreyī:

'Verily the Self is to be perceived, to be heard, to be thought, and to be meditated, O Maitreyī, by perceiving, hearing, thinking, and understanding the Self all this is known.'

It is not that the Blessed One did not accept it. But his perception or realization of the Self was quite different from that of the actual followers of the Upaniṣads, though there was no difference with regard to the fulfilment of the purpose for which the realization of the Self is meant.

There is no doubt whatever that he felt that the greatest object of one's love is the Self, and necessarily the greatest desire one cherishes is for the Self. But he also felt that when there is desire there must be its evil consequences – sufferings and miseries. He is reported to have said once to Visākhā (*Udāna*, VIII. 8) who just lost her very dear grandchild:

'Whatever grief, lamentation, or sorrow in different forms, there is in the world, is all due to love. If, however, there is no love, these are also not there. Therefore, those who have love nowhere in the world are free from grief and are happy. So one who wants what is stainless and sorrowless (*virāja* and *asoka=nirvāṇa*) should make love nowhere in the world.¹⁹

With this attitude of the mind and being strongly influenced by the idea of the transitoriness and sorrowfulness of the world, and thinking again and again over the characteristics of the Self, *viz.* independence, permanence, and blissfulness, as propounded by his predecessors in the **Upaniṣads**, he searched in his heart as to where that Self is. He found it nowhere. He perceived that Self is only in name or merely an idea (*prajñaptisat*), and not in reality (*dravyasat*). For, that which is held to be the Self has not the nature described above. What is it then? Nothing but the five *skandhas*, *viz.* *rūpa* 'material form,' *vedanā* 'feeling,' *saṃjñā* 'perception,' *saṃskāra* 'co-efficients of consciousness,' and *vijñāna* 'consciousness.' He would analyse each of them and put searching questions to his disciples in order to bring home to them the actual truth about the Self. Here I should like to call your attention to the following passage in an abridged form, found in the Vinaya **Piṭaka** (*Mahāvagga*, I. 6.38-47) and either fully or partly in many other places in the canon:

"Then the Blessed One addressed the band of the five monks:

'The material form, O monks, is not the Self. If it were so, O monks, the material form would not be subject to sickness, and it would be possible to say of the material form "Let my material form be so and so, and not so and so." But inasmuch, O monks, as the material form is not the Self, it is subject to sickness, and it is not possible to say of it, "Let my material form be so and so, and not so and so."

On the other hand, as the material form, O monks, is not the Self, it is subject to sickness, and it is not possible to say of it, "Let my material form be so and so, and not so and so."

Now what do you think, O monks, is the material form, permanent or impermanent?'

'Impermanent, Sire.'

'But is that which is impermanent, sorrow or joy?'

'Sorrow, Sire.'

'Now that which is impermanent, full of sorrow, and subject to change, is it possible to say of it, "This is mine, this am I, this is my Self?" '

'Certainly not, Sire.'

Similarly he dealt also with the remaining four aggregates (*skandhas*): feeling, perception, co-efficients of consciousness, and consciousness, leading the monks to the

same conclusion as with regard to the material form, that is, of none of them it is possible to say “This is mine, this am I, this is myself.” Then he proceeded:

‘Perceiving this, O monks, the learned and noble disciple feels an aversion (*nirveda*) for all the aggregates beginning with the material form, and feeling an aversion for them he becomes divested of attachment (*virāga*), and by the absence of attachment he becomes free, and when he is free he becomes aware that he is free, and he knows that rebirth is exhausted, that successful is his life that he has lived and his duty is fulfilled, and there is nothing for the world.’

Also from other discourses that he gave to his disciples from time to time it is evident that according to him there is no identity whatever of each of the aggregates with the Self (*rūpaṃ nātmā*, etc.); nor is the Self with it (*rūpaṃ nāiva ātmā*, etc.), like a tree with its shade; nor is it in the Self (*nātmani rūpaṃ*, etc.), like fragrance in a flower; nor is the Self in it (*nātmā rūpe*, etc.), as a gem in a basket.²⁰

Thus and in various other ways, too many to be mentioned, the existence of a permanent Self or Ātman, as accepted in other systems, was utterly denied by the Buddha, thereby pulling down the very foundation of desire where it can rest.

Mark here the trend of the discourse quoted just above which drives at emancipation through the absence of desire or attachment that arises from the notion of Ātman.

Now how this desire springs up owing to the notion of Ātman is shown very clearly in some passages, the substance of which I give below:

If one knows that really there is Ātman his notion of ‘I’ (*ahaṅkāra*) does not disappear, and consequently one’s suffering does not cease. For when there is the cause there is the effect. When a man sees that there is Ātman he identifies his body with it, and there arises his lasting love for it. This love rouses thirst for comforts and the thirst prevents him from realizing the deficiency of the objects he wants to enjoy. And he imagines the things that he desires to be good and loves to think that ‘they are mine,’ and adopts means for their attainment. When there is the notion of the Self, there arises also the notion of the other than the Self, and owing to this division of the Self and the other than the Self, there spring up the feelings of attachment and aversion, and being bound to these two all evils arise.²¹ So one extols the Blessed One:

‘If there is the notion of ‘I’ (*ahaṅkāra*) in the mind, the continuity of birth does not cease, nor goes away the notion of ‘I’ from the mind if there is the notion of Ātman. And there is no other teacher than you in the world advocating the absence of Ātman. Therefore, there is no other way than your doctrine for deliverance.’²²

So says Candrakīrti in his *Madhyamakāvātāra* (VI. 123): ‘Having seen by wisdom all the passions and evils arising from the view of Ātman (*satkāyadr̥ṣṭī*), and having also known that the object of it is Ātman, a Yogin denies its existence.’²³

And Śāntirakṣita tells us, that liberation follows the cessation of the notion of ‘I’ is an opinion held even by the heretics (*tīrthyas*). But this notion of ‘I’ does not cease if really there is the existence of Ātman.²⁴

The denial of Ātman is called *nairātmya* ‘the state of being devoid of Ātman.’ Radically the word Ātman means ‘nature’ (*svabhāva* ‘own being’), which never undergoes any change, nor depends on anything for its being. The Self is called Ātman, because, according to those who believe in it, it has the nature just described and of which it is never devoid, and necessarily it is held to be eternal. This *nairātmya* is two-fold: *pudgalanairātmya* and *dharmanairātmya*. *Pudgala* is nothing but what is known to us by such terms as *sattva*, *jīva*, *puruṣa*, and *ātman*, etc., that is, the Self. By *pudgalanairātmya* we understand that what is believed to be a *pudgala* or self has no independent nature of its own and consequently no existence in fact, and therefore it is not a thing in reality (*vastusat*), but exists merely in imagination as a name, a term, a designation, a convention for serving the purpose of ordinary life. Similarly the *dharmas* or things around us have not their *ātman* or nature, because they depend for their being on causes and conditions (*pratītyasamutpāda*). This is *dharmanairātmya*.

Desire, the cessation of which is sought for, naturally requires for its very being both a subject and an object. Therefore, while by *pudgalanairātmya* its subject is denied, it is *dharmanairātmya* that removes its object. Thus, there being neither the subject nor the object, there is not room for desire to come forth, and therefore none for its evil consequences, sorrows and miseries.

When we find the Blessed One often declaring that these three worlds are only *citta* or *vijñāna* ‘consciousness,’²⁵ we approach a very important and influential section of his followers, known as Yogācāras or Vijñānavādins. They are believed to have truly expounded the significance of that and similar utterances of the Buddha. They declare that the only real thing is ‘consciousness’ which is momentary, and they utterly deny the existence of all external things which are said to be just like the phantoms created in dream-state. They explain to us also the two-fold *nairātmya*, *pudgalanairātmya* and *dharmanairātmya*, just referred to. Passions, *i.e.* desire and the rest of them (*rāgādayaḥ kleśāḥ*) spring up from a conception of *ātman* (*ātmadr̥ṣṭī*) and as such disappear when there is realization of *pudgalanairātmya*; by the realization of *dharmanairātmya* vanishes away the ignorance about the *dharmas* or things which are, in fact, not what they appear to us being only the transformations of consciousness. This ignorance is an obstruction, and like darkness covers the knowable, *jñeya* (*i.e. tathatā*), and is thus called *jñeyāvaraṇa*.²⁶ The passions (*kleśas*) referred to above, are also regarded as a ‘cover’ (*kleśāvaraṇa*), for they, too, obstruct the realization of the truth.

Again, when the Blessed One is reported to have often declared that the things are void, (*śūnyā eva dharmāḥ*)²⁷ we seek the help of another school of his followers, equally important and influential, *viz.* the Mādhyamikas. This school, too, leads us to the same place, *viz.* *nairātmya*, both *pudgalanairātmya* and *dharmanairātmya*, otherwise called *pudgalaśūnyatā* and *dharmasūnyatā* respectively. For, as the teachers belonging to this school hold, there is nothing real, as everything is devoid of its innate or independent nature, and that being the case everything that appears before us depends for its being on cause and conditions. It cannot therefore be said that there is anything in its own or innate form (*svarūpa*). We see a thing, no doubt, but it appears before us only in its imposed (*āropita*) form, and not in its own form (*svarūpa*).

There arises a question: If a thing visible to us is only in its imposed form, of what kind is it then in reality? What is its own form (*svarūpa*)? The answer is, it is *dharmatā* 'the state of being a *dharmā* 'thing.'²⁸ But what is *dharmatā*? Own being (*svabhāva*). What is 'own being?' Nature (*prakṛti*). And nature? That which is called voidness (*Śūnyatā*). What does voidness mean? The state of being devoid of own-being (*naiḥsvābhāvyā*). And what are we to understand by it? That which is 'suchness' (*tathatā*). What is this 'suchness?' Being of such nature (*tathābhāva*), that is, the state of being not liable to change (*avikāritva*), the state of permanent existence (*sadaiḥva sthāyitā*).²⁹

To be more clear, *svabhāva* of a thing means only that which is independent of another (*paranirapekṣā*) and consequently natural (*akṛtrima*), and thus having not been before it does not come into being (not *abhūtvā bhāvaḥ*). Therefore, the *svabhāva* of fire is nothing but its non-origination (*anutpāda*), and not its heat, because it depends on its cause and conditions, and comes into being after having not been at first. Thus there appears nothing, nor does anything disappear; nothing has an end, nor is anything eternal; nothing is identical, nor is there anything differentiated; nothing comes hither, nor goes anything thither only there being Dependent Origination (*pratītyasamutpāda*), where cease all one's expressions (*prapañcōpaśama*).

Viewing things in this light these teachers, the propounders of the doctrine of *śūnyatā*, declare that anything, external or internal, that appears to us as existing, is, in fact, unreal, and just like the imaginary town in the sky (*gandharvanagara*). Thus there being nothing, internally or externally, the notion of 'I' and 'mine' (*ahaṅkāra* and *mamakāra*), technically known as *satkāyadr̥ṣṭi*,³⁰ disappears completely, as there is neither the subject nor the object of the notion. The disappearance of this notion is followed by the disappearance of *saṃsāra*, which has its roots struck deep in it. Thus the sole object of the followers of the *śūnyatāvāda* is to root out the notion of 'I' and 'mine' or the Self and that which belongs to the Self (*ātman* and *ātmīya*), or in other words, *satkāyadr̥ṣṭi*.³¹

Asto why this doctrine of *anātman* or *śūnyatā* is so much insisted upon, I may place before you the following lines from a very old text:³²

‘One who believes in the void is not attracted by worldly things, because they are unsupported. He is not delighted by gain, nor is he cast down by not gaining. He does not feel proud of his glory, nor does he shrink from lack of glory. Scorn does not make him hide, nor does praise win him; he feels attached neither to pleasures, nor does he feel aversion to pain. He who is not so attracted by worldly things knows what the void means. Therefore one who believes in the void has neither likes nor dislikes. He knows that to be only void which he might like, and regards it as only void. He who likes or dislikes anything does not know the void, and he who makes quarrel or dispute or debate with any one does not know this to be only void nor so regards it.’³³

What we gain by the doctrine of *anātman* has been explained by Nāgārjuna in this way:³⁴ When there is no *ātman* and when the notion of *ātman* disappears, the notion of *ātmīya* ‘mine’ also necessarily disappears (as the parts of a chariot are also burnt when the chariot itself is burnt, and as such they cannot be found out).³⁵ When the notion of both *ātman* and *ātmīya* ceases one becomes free from the idea of ‘I’ and ‘mine’ (*nirmama* and *nirahaṅkāra*). When this idea of ‘I’ and ‘mine’ vanishes both internally and externally, all the holdings up (*upādānas*), viz. desire (*kāma*), wrong views (*dr̥ṣṭi*), belief in rites (*śīlavrataparāmarśa*), and soul theories (*ātmavāda*) also vanish, and this extinction of holding up is followed by that of birth. Thus karmas and passions being extinct *mokṣa* is obtained.

Now in connection with the extinction of the notion of ‘I’ and ‘mine,’ which leads to liberation, as shown above from the Buddhist point of view, we are reminded of what has been said in the *Bhagavadgītā* (II. 71): ‘The man who forsakes all desires, and being free from yearnings and devoid of the notion of ‘I’ and ‘mine’ marches onwards, attains peace.’³⁶

The whole religious literature of India is replete with this idea, and therefore it is useless to dilate further upon the point. Yet, let me quote the following couplet from Narahari’s *Bodhasāra* (in the section *Jñānagaṅgātaraṅgiṇī*, 14):

ahantāmamatātyāgaḥ kartuṃ yadi na śakyate |
ahantāmamatābhāvaḥ sarvatraiva vidhīyatām ||

“The idea of ‘I’ and ‘mine’ is to be given up, but if you cannot do so, then you should apply the idea everywhere.”³⁷

Thus we have seen that for the fulfilment of the common object, viz. the extinction of desire, while the followers of the *Upaniṣdas* laid all stress on the perception of *ātman* which according to them is eternal (*nitya*) and pure bliss (*ānanda*, *sukha*), the

Buddha totally denied its very existence by his doctrine of anātman, according to which there is no ātman in its accepted sense, and which holds everything to be impermanent (*anitya*), and as such the cause of pain (*duḥkha*), and which emphasises that that which causes pain cannot be ātman. We have also seen that it is the extinction of desire round which has directly or indirectly centered all that is said by the Buddha as well as by his followers.

Indeed, by his denial of the very existence of a permanent soul, the Buddha took a very bold and peculiar step, and, I am sure, most of you will raise questions in connection with it as did king Milinda in his dialogue with the venerable Nāgasena in the *Milindapañha* (II. I. 1). The king asked him: 'If, most revered Nāgasena, there be no permanent individuality (no soul) involved in the matter, who is it, pray, who gives to you members of the Order your robes and food and lodging and necessaries for the sick? Who is it who enjoys such things when given? Who is it who lives a life of righteousness? Who is it who devotes himself to meditation? Who is it who attains to the goal of the Excellent Way, to the Nirvāṇa of Arhat-ship? And who is it who destroys living creatures? Who is it who takes what is not his own? Who is it who lives an evil life of worldly lusts, who speaks lies, who drinks strong drinks, who (in a word) commits any one of the five sins which work out their bitter fruit even in this life? If that be so, there is neither merit nor demerit; there is neither doer nor causer of good or evil deeds; there is neither fruit nor result of good or evil karma. If, most revered Nāgasena, we are to think that were a man to kill you there would be no murder, then it follows that there are no real masters and teachers in your Order, and that your ordinations are void.'

These and such others are the objections against the denial of the soul, and for the sake of convenience they can briefly be stated as follows:

That which comes into being one day and vanishes the next day or at some other time is impermanent and that also is impermanent which is momentary (*kṣaṇika*), that is, which undergoes changes every moment. That everything changes every moment is a fact, and it was well-known long before the Buddha; but while his predecessors made an exception with regard to the soul (*kṣaṇaparivartino hi bhāvā ṛte citiśakteḥ*), the Buddhists carried it to the furthest extreme. In dealing with the Buddhist position, by impermanence we are to understand this momentariness.

Now, if there be no permanent individuality, and if everything is momentary, there can in no way be any relation between a man and his action and its consequence (*karmaphala-sambandha*). For a man who performs an action at one moment does not remain the same at the moment when the consequence thereof is to be experienced. In the same way the man who experiences the consequence cannot have been the agent of the action, both the moments being different. And it follows from the above that an action though actually performed does not produce any result, and it thus lost

(*kṛtanāśa*), and that while there is a consequence there is in fact no action at all (*akṛtāgama*).

Again, there is no possibility of the relationship of cause and effect (*kāryakāraṇabhāva*). For, it is neither the past nor the future cause that can produce an effect. Nor is it the present cause for it cannot remain so for long, being only for a moment. Similarly there cannot be bondage or liberation. Nor are possible recollections (*smṛti*) or recognition (*pratyabhijñā*), or any decision preceded by doubt (*saṃśayapūrvaka niścaya*). Nor can a man search for a thing that he might have laid down somewhere (*nihitapratyanumārgaṇa*). Nor does also exist the possibility of satisfying the curiosity that one might have entertained after having seen a desirable thing (*kutūhalavirati*).

As too much has been said or written either against or in favour of the problem before us, and as this is not the occasion for a detailed discussion, I should like to offer you only two main arguments by which the adherents of the doctrine of anātman meet the objections raised against them as mentioned above.

The first argument consists in the regularity of the relationship of cause and effect (*kāryakāraṇabhāvapratinīyama*), and if that can be demonstrated satisfactorily as existing there would then be no room for the question of the intervention of the soul, for in that case there would be absolutely nothing for it to do.

In Buddhism the law of Dependent Origination (*pratītyasamutpāda*)³⁸ is well-known. It shows that the origination of a thing depends only on its cause and conditions. In order to make it clear let me quote an example. If there be a good seed, and favourable conditions, the sprout invariably comes out from the seed, and from the sprout comes the leaf, from the leaf the joint, from the joint the stalk, and so on, gradually up to the fruit. Evidently here there is not intervention of ātman, there being nothing for it to do. If there were no seed nor the conditions, such as earth, water, heat, air, space, and season, there would be no sprout, nor leaf, etc. Now when there is the origination of the sprout from the seed, the seed does not think: 'I cause the sprout;' nor does the sprout think: 'I am caused by the seed.' Similarly the earth and the other conditions referred to above do not think: 'We do our respective functions with regard to the origination of the sprout;' nor does the sprout think: 'I am caused by these conditions.'³⁹

Again, the sprout is produced not by itself (*svayaṅkṛta*), nor by another (*parakṛta*), nor by both (*ubhayakṛta*), nor by God (*Īśvarakṛta*), nor from the Primeval Cause (*prakṛtikṛta*), nor is it owing to the transformation due to time (*kālapariṇāma*), nor is it dependent only on cause (*ekakāraṇādhiṇa*), nor is it produced without any cause (*aḥetu*).

This Dependent Origination does not involve the question of permanency (*śāśvata*), or annihilation (*uccheda*), or transition (*saṅkrānti*). There is no identity of the seed and the sprout, for clearly they are two different things; and it is evident that when the seed is destroyed the sprout comes into being. Thus it cannot be held that in the origination of the sprout there is any permanency. Nor can it be said that there is annihilation, for the sprout comes into existence from the seed which is neither wholly destroyed nor wholly undestroyed; the fact is that the moment the seed is being destroyed the sprout comes into being, just as the rising up and coming down at the same moment of the two ends of a balance. Again, as the seed is one and the sprout another it cannot also be held that there is transition.

Now as the external (*bāhya*) matter, such as the sprout referred to above owes its existence to nothing other than the law of Dependent Origination, so also in exactly the same way the internal (*ādhyātmika*) matter, *i.e.*, the things constituting the body and mind of what is known to be an individual, depends for its being solely on the same law of Dependent Origination without any supervention of the self.

In accordance with the two aspects, *viz.* external and internal, the law of Dependent Origination is also of two kinds, external and internal.

Now what are the constituent parts of the so-called individuality? By analysis we find mainly two things, *nāma* (Skt. *nāman*) and *rūpa*. These two words are generally translated by 'name' and 'form' respectively, which, however, is not correct. It is quite true that in the Upaniṣadic texts⁴⁰ these two terms convey the above meanings, but in Buddhist literature they are employed in quite different senses. By *nāma* we understand primarily the mind (*citta*, *vijñāna*, *manas* 'consciousness') and secondarily the mentals (*caitasika dharmas*), *i.e.*, feeling, perception, and the co-efficients of consciousness (*vedanā*, *saṃjñā*, *saṃskāra*). As the mind with the mentals 'inclines' (*namati*) towards its objects, it is called *nāma*.⁴¹ The word *rūpa* in this connection literally means the thing that 'suffers oppression' (*rūpyate = bādhyate*), and 'suffering oppression' implies 'change.' Therefore that which undergoes change owing to cold, heat etc. is *rūpa*. Others are of opinion that that which is 'susceptible to resistance' (*pratighāta*) is *rūpa*.⁴²

Therefore the words *nāma* and *rūpa* may be translated by 'mind' and 'matter' respectively. For 'mind' we may use 'spirit' also.

Thus the so-called individual is nothing other than these *nāma* and *rūpa*, or in other words, the five *skandhas*.

These *skandhas*, just like the sprout, etc. must have their cause and conditions without which their existence is in no way possible. In brief, the cause is ignorance (*avidyā*), from ignorance springs bad and evil actions of body, mind, and speech, or lust, hatred, and delusion (*saṃskāras*), as others say, from them the consciousness (*vijñāna*),

and so on up to death, grief, lamentation, suffering, dejection, and despair, as in the Twelve-fold Chain of Causation (*dvādaśāṅga nidāna*).

The conditions are the six elements, *viz.*, earth, water, fire, air, space, and consciousness. Each of them has some special function, as for instance, it is the element of earth that causes the hardness of the body. The function of the element of water is to bind together the body. To assimilate the food and drink is the function of the element of fire. And so on. Now, as before, ignorance does not think: 'I cause the action of the body, mind, and speech;' nor do these actions think: 'We are caused by ignorance.' Similarly these conditions do not think that they cause those particular functions of the body; nor is there any thought on the part of the body that those functions are performed by the conditions. Yet, when these conditions, the elements of earth, etc. are unimpaired the body comes into being from their union. Here in the body the element of earth is not ātman or self or a living being, not a man, not a woman, not a neuter; and not I, not mine, nor any one else's. So also with the elements of water, fire, air, space, and consciousness. Thus all questions relating to individuality are solved by the law of Dependent Origination and no room is left for the intervention of Self. Let me quote here the following words of the Blessed One addressed to his disciples:

'There are, O Bhikṣus, action and retribution; but there is found no agent that abandons these *skandhas* and takes others, excepting the 'Law of Elements' (*dharmasaṅketa*).⁴³ And this is the Law of Elements: that being, this is; by the origination of that, the origination of this.'⁴⁴

And in this connection the great commentator of Pali works, Buddhaghosa, cites the following stanza in his *Visuddhimagga* (p. 513) embodying the final decision of the philosophical system he represents:

dukkham eva hi na ca koci dukkhito
kāraṅko na, kiriyā ca vijjati |
atthi nibbuti, na nibbuto pumā
maggam atthi, gamako na vijjati ||

'Only sorrow is there, but not an afflicted man. There is action, but not the agent. There is *nirvāṇa*, but not one who realizes it. And there is way, but not he who goes thereby.'

Now the second argument that I want to advance is with regard to meeting the objections raised against the theory of momentariness, in accordance with which there is no identity of a man even in two succeeding moments, though the identity is absolutely necessary for recollection, recognition, and so on, as has already been shown.

This contention of the opponents rests solely on the assumption that the succeeding moments are altogether different from each other. But the fact is not so. The Buddhists would say that they are neither identical nor different (*na anyah, na cānanyaḥ*). In order to make the point perfectly clear I should like to quote the following passage from the *Milindapañha*, II. 2 (p. 40):

The king said: 'He who is born, Nāgasena, does he remain the same or become another?'⁴⁵

'Neither the same nor another.'

'Give me an illustration.'

'Now what do you think, O king? You were once a baby, ... lying flat on your back. Was that the same as you who are now grown up?'

'No. That child was one, I am another.'

'If you are not that child, it will follow that you have had neither mother nor father, no! nor teacher.....what great king! is the mother of the embryo in the first stage different from the mother of the embryo in the second stage, or the third or the fourth? Is the mother of the baby a different person from the mother of the grownup man? Is the person who goes to school one, and the same when he has finished his schooling another? Is it one who commits a crime, another who is punished by having his hands or feet cut off?'

'Certainly not. But what would you, Sir, say to that?'

The Elder replied: 'I should say that I am the same person, now I am grown up, as I was when I was a tender tiny baby, flat on my back. For all these states are included in one by means of this body.'

'Give me an illustration.'

'Suppose a man, O king, were to light a lamp, would it burn the night through?'

'Yes, it might do so.'

'Now, is it the same flame that burns in the first watch of the night, Sir, and in the second?'

'No.'

'Or the same that burns in the second watch, and another in the third?'

'No.'

'Then is there one lamp in the first watch, and another in the second, and another in the third?'

'No. Through the connection with the same (lamp) it burns all the night through.'⁴⁶

'Just so, O king, by the continuity of the elements (*dhammasantati*), which are put together, one comes into being, another passes away; and the link is, as it were, simultaneous. Therefore neither as the same, nor as another it arrives at the last consciousness (of the life).'⁴⁷

Let me give you another extract from the same work, II. 2.6 (p. 46):

The king said: 'Who is it, Nāgasena, that is reborn?'

'Mind-and-matter is reborn.'

'What, is it this mind-and-matter that is reborn?'

'No; but by this mind-and-matter deeds are done good and evil, and by these deeds (this karma) another mind-and-matter is reborn.'

'If that be so, Sir, would not that man be released from the evil karmas?'

'Yes, if he were not reborn. But just because he is reborn, O king, he is therefore not released from the evil karmas.'

'Give me an illustration ...?'

'Suppose, O king, a man were to choose a young girl in marriage and give the nuptial gift (*suñka*, *śulka*) for her and go away. And she in due course should grow up to full age, and then another man were to give the nuptial gift for her and marry her. And when the first one has come back he should say: "Why, you fellow, have you carried off my wife?" And the other were to reply: "It's not your wife I have carried off! The little girl, the mere child, whom you chose in marriage and gave the nuptial gift for is one; the girl grown up to full age whom I chose in marriage and gave nuptial gift, is another." Now, if they, thus disputing were to go to law about it before you, O king, in whose favour would you decide the case?'

'In favour of the first.'

'But why?'

'Because, in spite of whatever the second might say, she has grown out of the first girl.'

'Just so, great king, it is one mind-and-matter which has its end in death, and it is another in rebirth. But the second is derived from the first. Therefore he is not free from the evil deeds.'⁴⁸

It is thus, I hope, clear from the above that there being the regularity of the relationship of cause and effect, as well as the law of Continuity of Elements (*dharmasantati*), so far as I have been able to elucidate in the limited scope of the present lecture, there is nothing that can demand the intervention of *ātman*.

Thus by eradicating the notion of 'I' (*ātman*) and 'mine' (*ātmīya*) the Buddha struck at the very root of *kāma* 'desire,' rightly described as *Māra* 'death' without the extinction of which none can aspire to the realization of NIRVĀNA.

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Karma: From the Buddhist Point of View

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KARMA FROM THE BUDDHIST POINT OF VIEW

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by
BHIKKHU SILACARA

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KARMA

In its simplest form, expressed in the simplest words, the Buddhist doctrine of Kamma or Karma (*Sanskrit*) can be readily understood by the smallest child. For it says to that child: "Be good and you will be happy, now and in the future. But if you are bad, you will be unhappy, now and in the future. But if you are bad, you will be unhappy, now and in the future. The world is made like that." And if the child should ask, as children will, "Why is the world made like that?" the only correct answer on the part of the adult asked will be: "I do not know why it is made like that. I also do not know why water is wet, or why fire is hot. They just are so, as you will find out for yourself when you try them, and see. And the world also is made like that, as you will find out as you go on living and getting older, that is, when you try *it* and see." However, the adult himself will wish to know a little more about what this law of the world,—of all worlds,—means, and how it works, than is expressed in this bald statement to the child in years and understanding. And when he makes enquiry into that law, as expounded by the Buddha, he finds that in the details of its nature and working, it has unexpected ramifications which require some attention and study fully to understand. And even then, with all the study that may be given to it, it can never as a whole be fully understood by the mind of ordinary men. Only a Buddha is possessed of the mental calibre sufficient to grasp to the full the whole sequence of causation which brings about a given state of affairs in the life of any being, at any given point of time. For anyone else to attempt to plumb all these depths of causation—it is the

Buddha himself who gives the warning—would be to run grave risk of mental alienation, in plain English, of madness, at the very least, temporary, and it might even be, permanent. This, however, need not deter us from trying to understand to the best of our ability, all that *can* be understood by minds such as ours. So to this task let us now address ourselves.

And first we must note what a great misfortune it is, from our Buddhist point of view, that the earlier introducers of this word, Kamma, under its Sanskrit form Karma, into the vocabulary of the western world, were not Buddhists, and consequently stamped upon the word a meaning, in the average westerners's mind, which is altogether different from the meaning it has for us who have learned the Buddha's doctrine at its original sources. The greatest offenders in this regard have been the representatives of an alien faith who went out into Eastern countries to propagate that faith of theirs. For, in the course of their efforts to pick up the language of the lands to which they had been sent, in their talk with the dwellers in these lands, they frequently heard the expression, when such were talking of something that had happened to them (generally of an untoward nature): "O, it is my karma; it is my karma," and forthwith jumped to the conclusion that what their Oriental acquaintances were saying was: "Oh, this is my fate; this is my destiny. This is something imposed on me by a power beyond my control, to which I must helplessly submit." And they mentally noted down that among the other lamentable evils prevalent among those unfortunate Orientals this also was one: that they were fatalists, people who believed that their fate in life was all fixed in advance beforehand, and that nothing now that they might do, could alter it.

What excuse or grounds had these missioners for jumping to this conclusion? Only this: that already in their own continent some such similar ideas were at one time widely held by their own fellow-religionists, and championed and propagated by several of the most outstanding and able men in the history of their own religion! There was, for instance, Augustine, Bishop of Hippo, who in his book, "De Necessitate," proved with irrefragable logic that everything that happened in the process of nature, did so in strict dependence upon an antecedent cause; and left no loophole for the possibility of any change in a "sinner's" career save the intervention of what he called "grace," which again could intervene, only according to the good will and pleasure of "God". Thus the "sinner" remained in a perfectly hopeless position, unless and until it should happen that "God" was pleased to bestow on him "grace".

Then there was John Calvin, of Geneva, a member, and a leading member, of the reformed Christian church, as Bishop Augustine was of the unreformed church, who also with perfect logical consistency proved from passages in the Christian's "holy book" that some persons by divine decree were foreordained to be saved from eternal suffering, and others equally foreordained to suffer cruel torment through all eternity by the decree of the same god, and neither the one class nor the other, whatever they

might do or not do, could avoid the destiny allotted to them in advance before ever they were born, by their god.

And finally, there was Jonathan Edwards, of Boston, U.S.A., also an eminent preacher in the reformed Christian church of his country, who, from the dogma of the foreknowledge of the god who made the world and all in it, men included, deduced with clear and incontrovertible logic, that since all that was going to happen was already known to this god, then it had as good as already happened in his mind; and any idea human beings might entertain that they were making things happen, according to their own wills, in one way or another, was pure illusion. Their efforts to make things happen were themselves already known in advance by the god, thus, they were not free efforts, but already ordained to happen, together with all their results.

With these ideas concerning the necessitated, predestined, foreknown nature of human action preached in their day by these three eminent worthies of the Christian church, floating about in their minds, it was little wonder that the first Christian missionaries to Indian and Indian-influenced lands, supposed that in the teaching of Karma or Kamma, they had merely lighted on an Oriental form of this belief of some of their own eminent co-religionists. Yet, despite the close resemblance in *form* to their own ideas which they thought they had discerned, it was an entirely erroneous idea of the *substance* of this Oriental saying, "It is my karma," at which these Christian missionaries arrived.

The word Karma, or in its Pali form, Kamma, is the substantive derived from the verb *karoti*, to do, to make, to perform; it is this, and absolutely nothing else whatsoever. So that, when an Oriental, whether Buddhist or Hindu, says: "This is my Karma or Kamma," all he is saying is: "This is my action; this is my doing; this is my deed. It is not somebody else's doing; it is not somebody else's deed. It is not a god's doing, not a decree of necessity, or predestination, or foreknowledge. I did this myself." Thus, when they said: "This is my Kamma or doing," they were saying the *very opposite* of what the Christian missionary, with his ideas of predestination and foreordination and foreknowledge, thought they were saying. They were asserting their own power of making their destiny; and all the time they were asserting this, the missionary thought they were asserting the power of something else to make that destiny what *it* chose despite all that the human being might struggle and strive to effect!

Again, what excuse had the missionary for such a terrific misunderstanding, such a complete misapprehension of the phrase he heard, that he took it to mean the exact opposite of what it did mean? The answer must be, as was Dr Johnson's on a celebrated occasion: "Ignorance, madam! sheer ignorance!" For the men who go out to these Eastern lands to try to win adherents to the nominal religion of their own land are not usually of any great knowledge. Only too often they have little else in their heads but the petty little stock of ideas that have been planted there in the petty little missionary

colleges and training schools in which they have spent several years getting ready, as well as may be, to attack and overwhelm the supposed false views and ideas of the "heathen" once they come face to face with them. And so trained, so taught, and knowing hardly anything else about the movements of ideas current at different epochs in their own quarter of the globe, they were ignorant of the idea of *re-birth*, of *re-embodiment*, of the *repeated* manifestation at separate intervals in the visible world, of the same stream or line of human causation. Never having heard of anything else in their schools and colleges, they have entertained the naïve idea that when a human being is born anywhere into our world, this is a wholly and completely new creation of mind, of character, of the entire psychic make-up which constitutes that being. So that when an Oriental of the Hindu or Buddhist religion, said in their hearing: "This is my action," they did not reflect that one of the great chiefs of their own religion in its early days, to wit, Origen, on the authority of the holy book of that religion—"Did this man sin.... that he was *born* blind?"—had believed in the possibility of men committing evil before they were born into their present life, and therefore of reaping the result of that evil doing now that they are born,—they never reflected on this, and indeed, *could* not reflect on it, never having been taught that such an idea once had currency in the early days of their religion, and so they never had any possibility of understanding this teaching about Kamma.

For the idea of Kamma or Karma is intimately bound up with that of re-birth. In a sense it may be said to be part of it. One might even say with perfect correctness, that they are the same doctrine, looked at, in one case subjectively, and in the other, objectively. In a manner of speaking, Kamma is re-birth, latent and, for the time being, unmanifest; and re-birth is Kamma become active and manifest. Kamma is like a cable running unseen under the surface of a sea, and every now and again emerging above the surface of that sea and exposing to view a small portion of its length, making its appearance known to our human vision, manifesting itself to our physical sight. Each of such emergencies is what we call a "lifetime," only because we have no other better word for it. But in strict truth, the real "lifetime" is the stretch of the cable's whole length both beneath and above the surface of our supposed sea, both when manifest and visible, and when unmanifest and invisible, to human perception. And the end, the completion of *the cable of Kamma*, and not the mere termination of one of the manifestations of a portion of the Kamma-cable we usually call a "lifetime," not that mere lapse into non-manifestation of the Kamma-cable which in current phrase we name "death." To borrow a little of the language of physics, we might say that Kamma is energy, that special form of energy which makes, or rather is, a living being. And body through which that energy manifests itself when such a being is as we say, "born," is the particular collection of matter through which that energy makes its presence known in the physical world, energies being known to us here only in association with some form or other of matter, not otherwise.

When or why did this energy begin to run its course, entailing all that is involved in that course, for sentient beings, of sorrow and gladness, pain and pleasure, of the undesirable and of the desirable, — entailing, in short, all that is involved in the history of a universe? Useless to ask! Who knows? Who can know? To ponder, with intent to find an answer, too deeply and long upon such questions, were to invite the breakdown of the brain that so pondered. “The beginning of beings is not to be perceived,” says a Buddhist Scripture. All we know is that the *ending* of Kamma, of beings that suffer, may be achieved; all the teaching of all the Buddhists being nothing else but the pointing out of the Way to that ending. Leaving aside, then, this question regarding the beginning of Kamma as profitless alike to ask and answer, we may now turn to what is of more practical use in the life we now live; we may turn to the consideration of some of the details of the working of this law of the continuity of energy in the field of the life of conscious beings.

The first thing we have to note about Kamma is that real, effective Kamma, the sort of Kamma which runs on from lifetime to lifetime, is *mental* Kamma, is volition. “Kamma is volition, I declare,” is one of the Buddha’s sayings. Action of the body or of speech in which there is no volition, no intention involved, such action is not Kamma in the effective sense of the word; it does not involve any serious long-lasting fruit or result. It was on this point that the Buddha differed in his teaching about Kamma from the sect of “naked ascetics” as they were called in his day, who to-day are known as Jains. They held that every act whatsoever, even the most accidental and unintentional, produced full fruit; and so when they drank water or went walking anywhere, they took great precautions to see that in performing these most ordinary acts, they did not take any life, even in the humblest form. They drank all their water through a sieve of fine mesh, and carefully brushed the path on which they were walking, before taking each step thereon. But the Buddha, in argument with them, as recorded in the Upali Sutta of the Majjhima Nikaya, proved to them that as regards ultimate effect, such meticulous care about externals was not nearly so necessary as it was to cleanse the *mind* of all tendency to hurt and harm. It was *mental* action that involved real Kamma-vipāka, real Kamma-result. The rest, though also important and to be observed, was yet only second in importance to this mental Kamma.

The next thing we have to note about Kamma is that it is not such a simple matter as in ordinary popular exposition it is frequently made out to be. In expounding Kamma and its consequences, action and its fruit, by way of illustration, use is sometimes made of the simile of an electric current. Kamma is said to be like a current of electricity running along a wire, and in its course flowing through the filament in an electric bulb-lamp, and manifesting itself, showing its presence, as light, as illumination. When the lamp is broken, or wears out, and the light therefore is extinguished, this does not mean that the current of electricity has ceased to exist, so it is said; it only means that its method of manifestation for the time being has been denied to it, taken away from it, but that the current is still in existence, and only waiting for a fresh means of

manifestation to be provided, whatever this may be (another bulb-lamp, or an electric heater, or an electric motor), when it will again show itself as light, or heat, or motive energy, as the case may be. The electric current, in this illustration, represents the line or flow of Kamma; and the bulb-lamp, or heater, or motor, stand for the various "lifetimes" of an individual in this world of visible things.

Now this illustration will do well enough as a first rough illustration of the Buddhist doctrine of Kamma, for those who have never heard of it before, for at least it does one thing effectively; it shows the difference between Kamma as expounded outside Buddhism, and as it is expounded inside our Religion. Outside, Kamma is regarded as something made by an individual. But this illustration of it as an electric current shows that the current, that is the Kamma, *is* the individual. The so-called individual is only the manifestation of Kamma, its "visibilisation," its making manifest, just as the light in an electric bulb-light is only the making visible and manifest of the presence of the electric current. So far the illustration is quite correct. It only is defective in this point, that it makes out the current of Kamma to be a simple homogeneous thing such as is an electric current, whereas in reality the current of Kamma of which each living being is the present temporary manifestation is a highly complicated and complex thing. It is not a simple homogeneous line of energy, but rather a broad stream containing in its flow a number of simultaneously running currents of widely different character; at least, this is so, so far as is concerned the ordinary normal man of every day, such men as you or I.

Or, perhaps, just for the sake of clearness, we had best first regard it, not as a single thin thread but as a thick cable made up of a great number of thin threads, each of these threads having a different colour, being of a different character. Thus the cable is not of one colour, whether black or white or red or green or any other colour, but is made up of, and to anyone who could see it with the physical eye, would present the appearance of, a highly speckled, variegated coil, of every variety of colour. In other words, the Kamma each of us ordinary men has behind him, the line of Kamma of which each of us is the present manifestation, is a complex of many different mental impulsions, some good, some bad, some neither one nor the other, some happy, some unhappy, some merely indifferent, some beautiful, some ugly, some just "plain Jane." And of all this complex, lying in our background, what is manifest to-day as you and I, is just a little bit of one or two of these vari-coloured threads in the thick cable; the remainder of the threads in the cable have not yet shown themselves to the light of day in actual life in this world.

For, still pursuing our metaphor of the cable made up of many threads of various colours, this cable is to be thought of as running along beneath the surface of a sea, where it is not seen by our eyes. Every little while it emerges above the surface of this supposed sea, and for a brief while shows a portion of its length, nay, only a small portion of that portion, just a few threads of may be one or two of the colours that make

up its girth; and then, it sinks under the surface of the sea again, and becomes invisible to us. Each such emergence of the cable out of invisibility into visibility is what we call a living being's lifetime; and thus it is the making visible and seen, not the whole of the cable, but only a few threads in the composition of the cable. In other words, dropping all metaphor: The lifetime of any being is not a full manifestation of all the Kamma that makes that being, but is only a manifestation of a very small part of that Kamma. Much, very much, of a very mixed kind in us ordinary people, still remains to be manifested at some future time; and will manifest itself, if in the meantime, by our present action, by the Kamma we are now making, some of these threads are not changed in their character and composition, or—as is *possible*, but not very probable in the case of ordinary men—completely cut out, extirpated, by our present action, our present Kamma, or by some future action or Kamma of ours.

This is the explanation of that phenomenon in human life frequently observed by those who have lived long enough to see and note something of the ways of themselves and their fellowmen—the doing of a deed by a man which takes us by complete surprise, so utterly, so unexpectedly inconsistent with his character does it seem to us, so unlike what we should ever have expected a man like him to do, as we say; nay, sometimes it is the doing of a deed of evil sort, by ourselves, of which we had not believed ourselves capable! “There is no fathoming the depths of the human heart,” is a frequent saying on the lips of our moralists of the West. Put more Buddhistically,—and that means, more accurately, more scientifically—this saying would run: “There is no telling what kind of Kamma lies at the back of any man, ourselves included, which may come forward and make itself manifest at any time.” “We are fearfully and wonderfully made,” says another passage from one of the religious Scriptures of the World. It is quite true. Our past Kamma is a fearful and wonderful mixture; and we never can tell which part of that mixture, or bad or good, or dark or bright, given propitious, favouring circumstances, is not going to come to the surface and reveal its existence in open, outward word and act.

It is the consideration of this fact of the very mixed nature of the Kamma lying behind each human being which inspires us Buddhists to an attitude of *caritas*, of “charity” towards our fellowmen, even the so-called worst of them, the evil-doing man, the criminal. Indeed, we cannot help having such an attitude; we are compelled to it when we reflect that, for all we know, in us too, in the background, may lurk just such evil Kamma-vipāka, fruit of action from our past, which may at any time when circumstances favour, come into the foreground, and then we too, may find ourselves borne almost helplessly along by that undesirable, impulsion into the corresponding act that will stamp us in the eyes of others as a criminal. More than that, for all we know, there may lie in the background of the evil-doer who is so despised and rejected by those who know nothing of the possibilities of Kamma-vipāka behind each man,—there may lie in his background some brilliant threads of the finest, whitest texture, some good Kamma of a quality we who think we have the right to despise him, will have a

great deal to do before we acquire anything like it. When the present evil Kamma of the criminal is worked out and finished with, how do we know what good Kamma of his from his past may then come into effect and make of him in the world's eyes a good man in the highest degree, perhaps even a saint? Such things have happened. Men of notoriously evil lives have turned round and become saints, like that Augustine, who in his wild youth was wellnigh the breaker of his pious mother's heart, and yet later in life, became one of the pillars of the Church which he joined. But even on a lesser scale, there is hardly any of us who does not know of some instance in our experience of men who have completely changed their character as it seemed, and turned from evil to good. Yet, as a matter of fact, they have not changed their character at all. What has happened is only that one black line of cause and effect in that Kamma which was the man's character, one dark thread in the cable of Kamma, has run its course, come to an end, and now another and brighter and better one takes up the running in the visible outward manifestation of the man's life. And as it has been with him, so it may be with us. We are none of us, even so-called good men, so good as we think we are, or as our fellows think we are. Neither are any of us, even the so-called bad, so bad as their contemning fellows think they are. We are none of us all white or all black. The vast majority of men are just piebald, white in spots and black in spots! Hence there is no call for anything but forbearance for the evil-doer of the moment, for pitying charity towards his unlovely ways, since, for ought we know, they may any time, — if not in this lifetime, then in another, — turn and change to good and lovely ways.

In another regard, the stream or cable of Kamma is more complicated than in the simile of the electric current it is represented to be. In that simile, it is represented as running straight forward from one lifetime to the next. But this is not what actually happens. The actions, the Kamma, of this life in general, do not give rise to their appropriate results, their due fruit, *in the immediately succeeding life*; but those results, that fruit, are reaped, come to fruition, in any subsequent life, *after* the next lifetime. The only part of the Kamma of this lifetime of any man which bears its fruit in the immediately following lifetime is the last thought which he has at the moment of death. This thought, of whatever nature it may be, bad or good, sad or glad, gloomy or bright, decides the character of the immediately following lifetime.

Hence the great, the serious importance of the thought which may be occupying a man's mind when he is on the point of death. Hence the duty laid upon all who have to be present at the death of any fellow being, is to encourage him in every way possible, to think only good, happy, wholesome thoughts as his death hour approaches. And this, as a matter of fact, is what is done at every Buddhist death-bed. All friends and relatives who are about the dying person try to keep his mind directed upon everything of a comforting and happifying nature. They advise him to think of all the good things he has done to others, of all the good that others have done to him; to think of the good that has been done both to the world and to himself by the Buddha, the Dhamma, and the Sangha; and to pass away happy in the knowledge that he has put

his trust in these three good things, these three precious treasures. If they can succeed in doing this, then they feel confident that they have done their departing brother-man the greatest service at the last that they could do him; they have ensured him a happy and favourable immediately following lifetime. Of all that he has done of evil, in the past, he is exhorted to repent and then forget, put behind him, think no more of. For if he were to dwell upon that evil, so that evil were the last thought in his mind on deceasing, then an evil following birth would be the result.

Here we see of what benefit, odd as it may sound from a strictly rationalistic standpoint, is a "death-bed repentance," when such a thing can truly be brought about. It makes it possible for the dying man to have a good thought in his mind as he passes out of this life into his next. Yet let no man deceive himself and imagine that because this may possibly be brought about, all may be well with him for his next life, after he has lived a lifetime filled full of evil living. For it is by no means certain that even the presence of all the helping relatives one has about one on one's death-bed, will be able to counteract the Kamma, the result of a lifetime spent in evil thought and deeds. "The ruling passion strong in death" is not a mere pretty saying: it is a serious fact. If a man has spent a lifetime in say, acting the miser, thinking gold, talking gold, working only for gold, when his last hour and moment comes, he is only too likely to carry on even then the thoughts and desires by which he has been dominated all his life, in spite of what all about him may be trying to do to turn his mind and thoughts in worthier directions. The accumulated thought of all his life-time may be too strong despite all his friends are trying to do for him, and may still persist in his mind, keeping out everything else, and so there may lie before him only another sordid life-time given over to his pitiful lust for filthy lucre and all the mean ways of getting possession of it which have characterised his life-time that is drawing to a close. For all that mis-spent life-time has done for him, he is no whit nearer to the goal of the Good.

Or if a man has been a lifelong drunkard, living only for the stimulation, the excitation, the exhilaration which alcohol taken into the body gives, then how hard it will be for him, at his dying hour, as he feels his powers waning, his life ebbing away from him, to help craving, craving with all his might, for another draught of the liquor to which he has looked all his past life-time for the revival of his powers, the imparting of a sense of well-being! It will be almost impossible for him, notwithstanding what all his friends round him may be trying to do, to turn his mind in happier directions; and so he will be only too likely to die with a last craving thought of liquor in his mind, and so prepare for himself another drink-sodden career in a new body.

For the point here is, that in the absence of any other force powerful enough to overmaster it, the last thought of a dying man is most likely to be that by which he has been most dominated all his life. His last thought is likely to be that which he was most in the habit of cherishing during his life. Thus, though technically, the last dying thought of a man determines his immediately following life, actually in most cases, it is

the dominant thought of his whole lifetime which determines his next birth, save and except in those cases where by one means or other a “death-bed repentance” is brought about, or good friends surrounding his dying couch, are able to turn his thoughts away out of the channel they have followed all through his life, and are able to direct them into good and happy directions, leading thereby to a good and happy immediately following birth.

It was said above that the only thought-Kamma which is effective in fruit, in result, in the lifetime immediately following that in which it is “made”, is the last dying thought of the deceasing person, and that this last thought, in the absence of any more powerful Kamma generated at the time under the instigation of kind friends or other ministrants about the death-bed, will be the thought which was most predominant throughout the person’s life. What, then, of all the other thought-Kamma generated by a person during his life? What of all the other countless mental impulses set going by a person throughout his lifetime in addition to the one most prevailing? Are these of no account? Are they without fruit? Do they entail no result? By no means. There is indeed a class of thought which bears no fruit, entails no result, if it be not immediately given the opportunity to bear fruit, produce result. It is, as it were, not full-grown thought; it is thought only in its initial stage, which has gone no further than the first faint stirrings of volition. This is the only kind of mental Kamma, thought-action which entails no consequences in the future, if it has no consequences immediately following in this lifetime, then it has no consequences at all. It is dead Kamma. By a figure of speech one might say that it is Kamma which has never properly been alive. But all the rest of a person’s mental Kamma must produce effects in the future, does not die out and perish without result, but waits, gathers together, accumulates, till a suitable occasion for its working out arrives in some future lifetime, any future lifetime, after the immediately following one. It is, as it were, a great storehouse, out of which may be drawn at any time in the future after the next lifetime, treasures of gleaming gold and of precious stones, or unlovely heaps of foul dross and rubbish, or worse still, of noxious poisons to infect the whole of the lifetime in which they appear. Always behind each of us ordinary folk who are yet a long way from the *summum bonum*—the clearing up and cancelling of all the accounts of Kamma—there lies this heaped-up mass of Kamma of the past, all waiting its due turn to come forward and ripen into active, actual effects in this or in some future lifetime.

But these effects, that fruit, is not all settled and fixed to its smallest detail, in advance, like some fate or doom. There is nothing settled and fixed and frozen into immobile rigidity, in the universe as it is envisaged by the Buddha. It is all mobile, flowing, fluid, changing; and therefore at all times, at any moment, to be changed and modified and given new shape in some degree, however small. Kamma is never something settled and done with; it is always something that is happening now, and by its happening now, influencing and modifying and changing the results of the Kamma of the past.

Kamma, in short, is not altogether a cable made up of a great number of threads whose colours are fixed, and therefore remain as they are all through the length of the cable. It must rather be various colours through the influence upon them of the threads that run alongside them. Or perhaps it will be better to drop the simile of the cable altogether, as being too static a thing to represent the mobile, changing flow of Kamma, and to imagine Kamma as a stream of water, or rather of many-coloured waters running in currents alongside one another in the main bed of the stream, and continually imparting some of their own colouring to the neighbouring currents, and from these neighbouring currents receiving in return some colouring that changes their own character, while all the time also, new bodies of coloured water are being added to the stream, and strengthening, intensifying whatever current of its own colour is already part of the stream.

For this is exactly how Kamma is continually working. Past Kamma, past action, is continually being modified in its present results by present action, present Kamma. And also, present Kamma in its results is continually being modified and altered by past Kamma.

To simplify matters, let us suppose the stream of Kamma representing a given living being to be composed just of two currents, one of white and one of dark water. If now, that being by his present thought-action, his present mental Kamma, pours some white water into the stream, he has thereby made the effect of any blackness that may have flowed down from the past, a little less black. He has influenced the effects of past Kamma. But *how much*, he makes it less black, depends upon *how much* of blackness has come down from the past. If the volume of black water from the past is very great, then what white water he has added to the stream, will make only a little difference in its blackness. But if the volume of black water from the past is only a small one, then the white water now added will make a great difference in the general whitening of the stream. The Kamma of the past is influencing and modifying the Kamma-vipāka, the Kamma-fruit of the present, either in one direction or another.

Thus, at every moment our lives are in our own hands to mould afresh in whatever direction we wish to mould them. The past is not unchangeable and fixed. We can change it now by our present action. Still less is our future inevitably fixed and settled by reason of our present action, our present Kamma. When that future comes, then as now, we can again pour into the stream of our Kamma fresh water, good or bad, clear and white or muddy and dark, and make it one way or the other, as we ourselves shall determine, and no other.

This present Kamma by which we weaken or intensify past Kamma in its results, is what is called technically, *supportive* Kamma; and it is this which furnishes the opportunity for, and calls forth into activity the various portions, good or bad, bright or

dark, of our accumulated Kamma of the past. Our present Kamma, our action of today, may furnish "support" either for the good or the bad that may lie in our past, and thus bring to present powerful fruition the one or the other, according as we shall ourselves choose. If we are so strong in the making of good Kamma as to heap up a great quantity of good, there is even the possibility, not only of *modifying* past bad Kamma but even of *wiping it out* altogether, of completely cancelling it. But this is a tremendous thing to do, even though it *can* be done by one sufficiently strong. For most of us, the best we can hope is by diligent attention to create such a standing stock of good Kamma as will powerfully modify the effect of our past bad Kamma, and reduce its baneful power to a minimum. But the powerful Kamma generated by an Arahan, or by one on the Higher Eight-fold Path, the Kamma generated by the practising of the Jhānas and the deeper meditations, can and does obliterate all the past bad Kamma of the practiser of these mighty exercises, and so he is quit of his life's sum; he has solved it; he has Nibbāna. It follows that this wiping out of his account of all his past bad Kamma, takes place in the last lifetime of the Arahan.

It should now be clear that a human being *is* not anything but is always *becoming* something; and that something which he is becoming depends entirely on his own action, his own Kamma, and on nothing else. Thus his fate is entirely of his own making. It is never fixed. At any, at every moment, we may each begin to change it for the better, if it has been bad. Also, alas! we may, if we are not always on guard, always practicing heedfulness, Sati—also we may at any moment begin to change it for the worse. "Thou good man," says Dr Paul Dahlke, in a striking passage in his *Buddhismus als Religion und Moral*, "Thou 'good man,' be not over proud in thy 'goodness'. Thou *art* not good; thou only *becomest* good in so far as thou dost not permit thyself to become evil, in so far as thou strivest after goodness. 'The heritage which the fathers have earned and passed on to the sons, these sons can only inherit on condition that they earn it anew for themselves each new day,' as Goethe says. And thou 'bad man,' be not despairing in thy 'badness'. Thou *art* not bad; thou only *becomest* bad in so far as thou dost not strive after goodness. But now, now, this very minute, thou mayest turn; thou mayest begin to become good."

This is so. At every moment we may, nay, at every moment, whether we want to or not, we *are* making additions to our stream of Kamma of good or bad, and so turning it in one direction or the other by some slight degree which, if we permit it, will go on increasing until we have a powerful mass of habitual Kamma of the one kind or the other, which will produce correspondingly powerful effects in our whole life. It is this "habitual Kamma" as it is technically called, to which we ordinary people must look for our salvation, as it were, from past evil Kamma. The Arahan only can make the powerful Kamma by a few acts which will wipe out his evil from the past; but we can produce something not quite so strong to efface past evil, but still extremely powerful in that direction, by a *habitual* cultivation of good states of mind, day by day.

It is always a good thing, and will if persisted in, even though no good effects are immediately seen, produce very great results eventually, if every day we devote some time to thinking good thoughts, thoughts of kindness and good-will to all, of sympathy with all that are afflicted, of a fellow-feeling of happiness with all that are enjoying happiness, and of equanimity and even-mindedness towards whatever may befall ourselves, so long as others are obtaining happiness and comfort, a state of mind in which envy and jealousy is impossible. To practice these Brahmavihāras, as they are called, these "lofty or divine dwellings" of the mind, is to make very good Kamma which may have very great effect in the future if not in this present life, in turning our lives to happy issues. Of course, besides this mental practice, the true Buddhist will not neglect the actual practice of Dāna, of giving to those who need, as far as his means will allow him, and of abstaining from doing wrong to anyone in the directions indicated in the Five Precepts to refrain from taking life, from theft, from unchastity, from evil speech, and from intoxicating liquor. All these things, mounting up, as they are steadily pursued and practised, make that accumulated habitual Kamma which will stand us all in good stead in whatever future lies before us. Indeed, it is all that will stand us in good stead. We have no other helper but our good deed; no other condemner but our own evil deed. We have no one to fear but ourselves. No evil demon whatever can do lasting hurt or harm to the man of uprightness. He can afford to be fearless; for there is nothing of which he need be afraid. His deeds are his strong protector; he can have none stronger.

Thus it is in this world that men make their destinies, and make them themselves. "Here and now, is the whole fact," as the American seer Emerson once said. Here and now, according to this doctrine of Kamma taught by the Buddha, we are making our own heavens and our own hells, for there are no others but those we make for ourselves. No god can plant us in the one, and no devil despatch us to the other, apart from our own deed. It is this world, or nothing, for us. Hence the foolishness of those who despite life in this world, or, in a fit of madness, so hate it, as to throw it away in the act of the suicide. Life here is not despicable, is not hateful. It is our only chance of making good Kamma to counterbalance any evil Kamma we may happen to have made in the past, or at the very least, modify its evil effects. It is our sole opportunity of making good Kamma which, flowing down into the future may mount up and at length wipe out all our evil Kamma either of past or future doing, and so bring us to Nibbāna's threshold. Hence a suicide is doing the foolishest thing any man can do. He is cutting off from himself the one most important benefit to be derived from the privilege of having been born a man, he is depriving himself, for the time being, of the opportunity of making any good Kamma. Suicide is not "sinful", as ecclesiastics say, it is silly. It is not a "crime", as some legalitarians say; it is a blunder. It is a silliness, a blunder, of the worst kind, inasmuch as it is a negation of the whole purpose of life for each man born.

It is also so useless. It fails to produce what the foolish person who resorts to it, supposes it will produce,—release from some unhappy, miserable state of things in which he finds himself involved.

Since a man's last dying thought is that which colours his immediately succeeding life-time, and the suicide's last dying thought, by the very fact that it is a suicide's, is a thought of misery and unhappiness, his next lifetime, that immediately following, will be a life of misery and unhappiness also. So the suicide achieves nothing whatever of what he intended by his foolish deed. He is still where he was before he committed his rash act, still involved in the same tangle of unhappiness. He is much in the position of some schoolboy who has been given a difficult sum to solve on his slate, and in despair of solving it, smashes the slate on which it is written. The slate indeed is smashed, but the sum that was written on it still remains unsolved by the boy; and he only has it given him to solve on a fresh slate, the same old sum, with an extra punishment added, mayhap, for his fault in breaking his last slate. Much better to have kept the old slate unsmashed, and done one's best to work out the solution there, since worked out it must be on some slate or other, before each scholar in life's school may pass on to the next higher problem and its solution.

There are a number of people in this wonderful world of ours who are so unfortunate as to be required by the nature of their profession, to find evil or what they suppose to be evil, in every form of religion but their own, and to rejoice over this rather than over the finding of good. One finds a plentiful quantity of them scattered all over the lands of the East, but they seem inclined to gather most thickly, like a plague of locusts, wherever things are pleasant, wherever soft breezes blow, laden with spicy odours, and every prospect pleases, as in Ceylon, for instance. Such people, as they move about the streets of the city where they live and do their peculiar kind of work, from time to time hear the deep boom of a bell, struck with a deer horn, from the platform of one of the pagodas in the city, and as they hear, nod to themselves with a superior smile and mutter: "Ah, some of our good Buddhist friends have done another good deed, and are calling the attention of the gods to it to make sure they don't forget to chalk it up to their credit in the account books of Kamma." And in the course of talk with these "good Buddhist friends" and others, they will bring forward the charge: "O, Buddhists are far too selfish. They think about nothing else but their own Kamma. They are always trying to make more 'merit' for themselves. That's all they care for: something for themselves."

Being compelled as just said, by the nature of their profession to find all the unpleasant things they can in all other religions but their own, and to overlook and ignore, or if they cannot do that altogether, at least to disparage and make light of anything pleasant they may find in such religions, such people, to some extent may be pardoned for the false idea they here have conceived of the working of Kamma,

namely, as an affair that has solely to do with a man's own self. For it *is* a false idea which they, and others akin to them, have formed of Kamma in this regard.

To begin with: When, after having performed some work of merit on the platform of the pagoda, such as providing some Bhikhus with a meal, or offering flowers or candles before some image of the Buddha, or reciting invocations to the Buddha, the Dhamma, and the Sangha, a Buddhist strikes the great bell on the pagoda-platform with the deer-horn which lies beside it for that purpose, he is *not* calling the attention of any supposed keeper of the records of Kamma to another item which is to be set down in his books to the credit of the person who has struck the bell. What he is saying is this: "All ye to whose ears comes the sound of this bell, know that a deed of merit has just been performed upon the platform of this pagoda. The doer of the deed hereby gladly offers you a share of his merit from the doing of the good deed, and begs you with equal gladness to accept of the same."

That is what the bell-beating on pagoda platforms in Buddhist countries means; for besides Kamma, there is Patikamma, as it is called in the Pali. Besides Kamma pertaining, or adhering, to the so-called individual, there is such a thing—and it is constantly being practised—as sharing one's merit with others, transferring it, or part of it, to other individuals. Many are the touching, and sometimes amusing, little stories one hears in the East of people undergoing voluntary renunciation of pleasures of one kind and another, so that the "merit" of so doing may go to some loved one and assist him or her through some dangerous illness or other misfortune of which there are so many to be met with in this life of ours. For the thread of Kamma which is any given individual's, is, after all, not an isolated thread running a lonely course through empty space, but a thread which all the time is running out and in with other threads, is being worked into, interwoven, with these other neighbouring threads into a single fabric which makes, indeed, *is*, the world. Each individual's Kamma is running alongside of, and inter-working itself with the threads of the Kamma of other individuals in his family, his city, his nation, his race, his world.

Even though he may not deliberately will and intend that his 'merit' shall be 'transferred' to another in any given cases, if he is a powerful personality, one of the great ones of the earth, his merit, as also his demerit, transfers itself to others in his neighbourhood, and beyond. It "overflows", as the technical expression puts it, and if powerful enough, may considerably affect the Kamma of countless persons the individual never saw or was ever likely to see. Instances of this particular kind of "overflow" Kamma are found in the careers of the great "conquerors" of the world, such as Alexander the Great, and Napoleon; or in modern times, of William the Second of Germany.

The Macedonian, beginning his life career in a little state in a little corner of the European continent, before he ended it, had produced effects that made themselves felt

as far away as the Indus and the whole Punjab Province of India, and affected powerfully the Kamma of all the peoples who lay between his own little native peninsula of Greece and that huge peninsula which juts out into the Indian Ocean.

Napoleon, too, born in a small island in the Mediterranean Sea, was such a very powerful personality that his Kamma overflowed all Europe, and produced the most profound changes in the Kamma of nearly every country in that continent, and of vast numbers of men living on that continent,—changes which were, some for good, and some for evil.

While, our modern example of one man's Kamma producing changes in other's Kamma, is the painful one of the exile of Doorn in Holland, once Emperor of all the Germans, and now a runaway refugee, glad of the hospitality of a little country he once in his pride thought was his at any time, for the taking. What profound changes this one man's Kamma, this single monarch's action, has produced in the Kamma of millions of men living and dead, there is hardly any need to speak. Indeed, it were better not to speak, so uniformly evil have many of these changes been. Yet, as already said, there is no such thing as unmixed good or unmixed evil in this world. And so, the "overflow Kamma" of such an one as was William the Second of Germany, has doubtless also led to many changes for good in the Kamma of many individuals in his native continent of Europe and his natal country of Germany; as, for instance, in the deliverance of the present generation of youthful Germans from the slavery of three year's subjection to the life of military barracks during the most impressionable period of their lives, and all that that implied of physical and moral degradation to their less fortunate fathers.

For this "overflow Kamma," may also be of the meritorious kind; it may be good Kamma, not bad. And such it is in the case of all powerful, good personalities. Of this we may take as first and greatest example, the Lord Buddha himself. How enormously rich and beneficent in its effect on his own continent and the world has been the "overflow Kamma" of this one individual! Countless millions of beings born in the lands of the East, in India and Burma, in China and Japan, in Ceylon and Siam, in the far-spreading plains of Mongolia, have had their Kamma completely changed for the good through the "overflow Kamma" of Gotama, the Buddha. And the Kamma has not yet exhausted itself. It is still flowing on; and in its flow fertilising the minds and enriching the hearts of many even to-day in the spiritually dullard West, who happily are open to receive its influence.

From the Buddha's Arahans, the first missionaries whom he sent forth to propagate his religion, there also overflowed good Kamma which their simple presence among them brought to the peoples in the distant lands to which they made their way. In no other manner can we understand the speedy effect for good which was brought about among the wild, half-savage tribes of Mongolia, the brutal-living horsemen of the

Asiatic steppes, by the arrival among them of the first missionaries of the Buddhist religion; and the quick and fertilising influence which their arrival also had upon the thoughtful and cultivated literati of China and Korea, and ultimately upon Japan.

But coming down to lower levels than that of the Araham, every good man confers a benefit upon the world simply by living in it. His good Kamma—some of it, at least,—overflows from him and benefits all about him. And also, unhappily, every evil man, simply by his living in it, does the world an injury. Thus, we are all of us, at all times, whether we think of it or not, benefactors of the world, simply by our continuing to exist in it. The little thread of Kamma which we call “ours”, is thus not exclusively ours—how can it be, when, in ultimate truth and fact, there is no “us”?—but in its course through the fabric of our national, and our world-Kamma, imparts something of its colouring to its neighbour threads; and if its colours are strong and full, even to many threads far removed from it in the fabric. As we have seen, one thread—that of a Buddha—may colour the threads of a whole continent, nay, of a whole world! We do not live, and cannot live, to ourselves, even if we want to. The many living threads of the so-called individual’s Kamma twine and intertwine with other threads, and change the course and colouring of these other threads for good or ill, according as our own particular thread is a good or an ill one.

Up to this point in our discussion, there is one word which has been left entirely unmentioned, and which, in the opinion of most Westerners, so they would say, ought to be mentioned, and that is *heredity*. Brought up, as most of them have been, in the mental atmosphere created by Darwin and Wallace and others around the subject of human characteristics, they will feel that an explanation of these characteristics which does not take into account, the inheritance of qualities by living creatures from their parents and more remote ancestors, is incomplete, and if it ignores this altogether, defective, nay, even more, false.

Well, the Kamma doctrine of the Buddha does not ignore heredity, the inheritance of characteristics from forebears in physical generation; it only says that inheritance does not apply to, and does not account for, the possession of *mental* characteristics, of the inner, most essential qualities of a man, that, in fact, which makes the man, apart from the shape of his nose, the cast of his hand, the colour of his hair, and so on. Physical heredity accounts for a man’s physical characteristics, but that is all. It accounts for the physical qualities of a being, but not for his mind.

Any one can see that this is so. There is only one Shakespeare. There is no Shakespeare before the one we know of, who transmits to that Shakespeare all those rich qualities of mind and heart which make him the author of plays that seem as if they will be remembered as long as our race remembers anything. Nor did that Shakespeare beget another Shakespeare who reproduced all that admirable, wonderful mental endowment which resulted in Hamlet, Lear, Macbeth, Othello.

There has only been one Mozart. There was not another Mozart before him who gave him along with his blood, the power of conceive enchanting melody. Nor was there another Mozart after him, who inherited that power from him, and showed it forth to the world.

There is only one Newton. No other that the world has heard of, preceded him as the physical transmitter to him of the powers that made the man we call Newton, the daring voyager in strange seas of thought, alone.

But leaving these outstanding specimens of the race, coming to ordinary people like ourselves, can it be said of any of us that we are the continuations *in character* of our progenitors, of our fathers and mothers? These indeed have given us some of our physical characteristics, a brow, a nose, a chin, sometimes a gait in walking; but our *character* is our own, and often—to the surprise and bewilderment, and sometimes, the deep sorrow, of parents—altogether different from that of our father and mother. This is a fact of common experience. What is the explanation? Simply this which the Buddha gives: that the line of Kamma manifesting in a human being is a thing independent of the human physical heredity, and only makes use of this latter, so far as it may, for its own manifestation.

Suppose that some person deceases who as his last dying thought, has one of craving for alcohol—a person, in fact, who has been a drunkard. That last dying thought of craving for alcohol by natural affinity seeks out and finds a fertilised human ovum of the same nature as itself. It seeks out and finds for its embodiment afresh in this visible world, a pair of parents full of the same craving, in short, a drunkard's heredity. Or suppose that some being deceases whose desires are of a superior nature, whose last dying thought is of goodness and truth and beauty; such a thought, by natural affinity, will seek out and find a human womb akin to its own nature, for its fresh embodiment in human life; and as a consequence there will be born a being with the *physical basis* required for the manifestation of his qualities of love of beauty, truth, and goodness. Furnished with that physical basis, he now proceeds, as he grows up, to manifest the qualities he possesses, which qualities his physical parents did not possess in anything like the same measure, if at all, (as in the cases of Shakespeare, Mozart and Newton, for outstanding example), but only *the physical foundation* for the manifestation of such. In short, heredity does not account for men's character, but only provides the means for the manifestation of character, for its embodiment in physical form, its showing forth in our physical world.

Considered thus, if we wish to search for the heredity of the *character*, the inmost, essential qualities of a Shakespeare, or a Mozart, or a Newton (or, indeed, of any of us), we have to go much further back than to the two persons, male and female, who provided us with a body. In the case of these geniuses, we have to go right back in

history and try to discover there some other character who showed forth the qualities of a Shakespeare, or a Mozart, or a Newton; and when we have found any who resemble such, then we shall have at least a little foundation for saying: "Here is Shakespeare's progenitor," as we regard the person of one of the great dramatists of ancient Greece, or "Here is Newton's true progenitor," as we consider one of the great scientist-philosophers of ancient days in that same wonderful little country. Between those distant days and our own, their particular stream of Kamma may many times have shown, many of its vari-coloured threads in this our visible world, but only now, in the sixteenth century, in England, displayed again richly to physical eyes, that particular thread of dramatic, poetic power which made the man we call William Shakespeare. Similarly, between the days of ancient Greece and now, the cable of Kamma on which there once appeared in the light of this world, a great Grecian philosopher-scientist, may since have emerged into our physical world many times, showing at due intervals, many of its other coloured strands; but only in this present age, in England, brought to the light that particular thread of acute intellectual power which made itself known, when provided with a physical body by suitable parents, as the genius Newton.

As to *how* Kamma seeks out and finds the body best suited to its next embodiment, this is something which we do not know. Yet, we may hazard the guess that it finds its path to its next goal as an aerial electric charge finds its path to earth, namely, through the means that offers the best, readiest mode of release of tension. We do not, and minds like ours, *cannot*, know all the full details of Kamma and its working. This was one of the four things which the Buddha himself declared to be *acinteyya*, that is, not to be thought about too much. Such thought, such brooding, would be liable to bring on mental derangement, he said. Only a Buddha is capable of fully understanding Kamma and all its methods of working.

"Then Kamma is as much a matter of faith as any god-believer's belief in his god!" some will say.

In a way it is, but with this very important difference, that the god-believer's belief is belief in a pure unknown quantity which, just because it is unknown, is invoked as the cause of anything about whose cause he is unable to find out anything; thus, it is an unknown quantity pure and simple, an *x* sign, which may mean anything or nothing, when at last it is found out what it stands for. But Kamma, causation, is one of the fundamental laws of the actual visible world we know in our experience of every day. And the Kamma-doctrine of the Buddha is simply the extension of that every-day known and manifested law to the field of human character itself. It is simply the transference of the best known law of physics to the field of psychosis.

It is a fact that men are born with innate, inborn dispositions or characters which are not accounted for by heredity. How is that fact to be explained? How is the phenomenon of the emergence of such a complicated thing as a human character (a

phenomenon which is occurring every second somewhere or other upon the surface of the inhabited globe) to be accounted for? It must have a cause, like every other phenomenon. To say that a god has produced it, is no answer at all in this case, any more than it is in any other. The savage in the African forest will also tell you, when you ask him how anything has happened which he cannot otherwise explain, with the—to him—perfectly sufficient answer, that his Ju-ju did it. But this is not a perfectly sufficient answer to anybody but himself, that is, to anybody who has got beyond the stage of the savage in mentality.

So it is here. We reason from the known to the unknown. We know that cause and effect prevail in the physical world. It is therefore only a fair presumption that they also equally prevail in the psychical world. Most certainly that extraordinarily complicated phenomenon, a human character, cannot just spring up out of nowhere in particular, every time a human ovum is fertilised and in due course issues upon the world a new human being. The onus of proof that such a monstrosity occurs lies upon those who maintain it. It does not lie upon others to prove that it is not so; for it is the universal law of the world that all phenomena have their due and appropriate cause in an antecedent condition without which they cannot come about. But, as already said, the character of the human parents or the nature of the upbringing or the environment by which the new being is surrounded, do not account for its character, which is always itself, and sometimes so in complete *defiance* of all these factors. Hence the believer in the doctrine of Karma holds that belief as one firmly based on reason, that is, upon inference from facts already known with certainty in the fields where he possesses full means of ascertaining facts and their connections.

It was said above that Karma finds its way to the womb that will provide it with most accurate expression as lightning reaches the earth by the path that offers it easiest access thither. This is so. Drunkard in last life goes to drunken womb; refined nature to womb that favours the continuance of such a nature; and so on. But what if the nature is so refined, so super-earthly in its characteristics that no human womb can provide it with the encasement or embodiment appropriate to its refined, super-earthly quality? In that case, of necessity, it finds the embodiment it requires in some sphere higher than earth, in one or other of the “worlds of the gods,” as Orientals call them, or “heavens”, as Occidentals name them. But suppose the Karma is of a very low, gross, degraded sort, so low, so gross, so degraded, that no earthly womb can possibly supply it with appropriate embodiment, then it will necessarily have to seek, and will find, that appropriate embodiment in a world lower and more gross than our physical world, a world of suffering greater than ours is, in short, it will find its appropriate embodiment in one of the hell-worlds. Yet another possible embodiment remains to the Karma according to its nature. Suppose it is not so degraded as to be able to find its only appropriate embodiment in a hell-world, but yet is so gross in some ways, say, in the way of gluttony, that no human womb can provide it with an appropriate expression of that gross vice, then the unpleasant possibility lies open of its taking its next

embodiment in the form of an animal of gluttonous character, say a pig. Or if the character of the deceased person has been of such a very fierce, ferociously cruel nature that no human womb can give it adequate expression through a human body, then it is an animal body which will have to provide that expression, an animal of some of the more ferocious beasts of prey. In the opinion of the present writer it is not a very likely thing that any human being among the civilised races of to-day could be of so swinish or so tigerish a disposition that only a pig's or a tiger's body could appropriately give expression to their swinish or tigerish disposition; nevertheless, it remains an unpleasant *possibility*.

“Only an unpleasant possibility!” some readers may say. “Why, it's a perfectly *horrible* idea, that a man should be born a pig. I never want to believe anything so disgusting as that; and I don't know how you Buddhists manage to do it.” Well, we Buddhists don't believe that a man is born a pig. What we believe is that piggish Kamma takes shape, and must take shape, in piggish form. But when that piggish Kamma which has been given temporary expression in corresponding form, is worked out, then some section of the heap of accumulated Kamma which lies behind nearly every living being, will now come into effect, and the next birth in that line of Kamma will be, most likely, a human birth.

For no states are eternal – as, how can they be? – in a universe whose very nature is of the essence of change, of mutation. It is a horrible idea that any being should be subject through all eternity to unending torment in a hell-world; and Buddhists have difficulty in understanding how any reasonable, decently feeling person can calmly contemplate the possibility of such a thing, let alone actually believe that such a thing is so. To our logical, Buddhist understanding of things, it is a completely false idea. Hells cannot be eternal any more than any other state in a flowing universe. They must come to an end, as does everything else, at some period or another; and the sufferers therein obtain release from their torment when they have worked out the Kamma which took them there. And similarly with the descent to that variety of hell-world, the animal kingdom, with its constant, never-ceasing exposure to all sorts of alarms and apprehensions and cruel deaths. The state of the being who unhappily falls thither is not an eternal one; it has its end, that unhappy kind of life, and it may be, and often is, a very speedy end. And then the being is born again in a happier form, in a human one, as the result of penultimate Kamma coming into effect; and he again has the opportunity, as result of that human birth, to make good Kamma for the future which may prevent him from ever again falling into the hell-world of the animal kingdom.

There remains yet another Kamma-possibility, this time the best possibility of all. It may happen that all the Kamma, both good and bad, of a certain given stream of Kamma is completely cleared off, except a very small portion, which portion it is that keeps the individual still alive and active in our world. Now, by the performance of powerful Kamma of the good sort, the individual wipes out the last remnant of the bad

Kamma he may have behind him. All his Kamma-accounts are squared; there is no more left unsettled of either sort. He is what is called an Arahān, and when his present body expires, there being no more Kamma remaining, there can be no further embodiment of Kamma; in other words, there is no more re-birth. There remains only Nibbāna, more accurately, Pari-Nibbāna. For Nibbāna, the complete extinction of self-referring activity of any kind, can and does take place, even in his present embodiment, in one who has striven successfully to bring all self-ideas, all Atta-notions, to an end; and so he has Nibbāna, even in this present body.

But most of us ordinary folk are a long way from that high consummation of all efforts on the path of the noble. Our present task is to make all the good Kamma we possibly can as a counterbalance, as far as may be, to what bad Kamma we may have made in the past, and unhappily, may quite possibly still make in the future. This we have to do, here and now in this earth-life of ours, since there is nowhere else to do it in. This and this alone, our good deeds, will stand by us as our saviour and supporter in any future state we may encounter. For it is no mere sententious saying but a solemn truth, that our Kamma, our action, is our father and our mother, the family, the race, to which we belong; that we have no other friend, no other refuge, but our good deeds. These, and only these, can be depended on to go before us and receive us with kind welcome in whatever future lies ahead of us, as friends and relatives greet the wanderer who returns from a far journey.

A strong sense of self-responsibility is thus the key-note of the character of every man who has understood even a little the Kamma doctrine propounded by the Buddha. For such an one knows that at every moment, by what he thinks, or says, or does, he is adding to the stock of the good or the evil, that is, of the happiness, or the unhappiness of himself, and so, of the world of which himself is a part. He knows that in the last resort he has no friend but himself, but his own good deed; and no enemy but himself, but his own evil deed. And so knowing, he abases himself before no god for its favours, fears no devil for its malice, but puts his whole trust in his own right endeavour, strengthened and encouraged in that endeavour by the knowledge that in the twenty-five hundred years that have passed since first it was taught by the Buddha, all who have practised it right on to its culmination in Arahān-ship, have found it lead to the final ending of Kamma, to the *summum bonum*, the Good Supreme, Nibbāna.

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Foreword.

The world is already full of many series, and there appears little justification for launching upon it a new one. Modern civilization, if it has most eminently succeeded in any sphere of its varied activities, it has most assuredly in the department of

publication, and it would seem a healthy rule for every lover of truth to discourage this tendency and rid the world of much of its hollowness and vanity. The reader will not be a little surprised to learn that this series is undertaken in strict conformity to this rule, in short to show every other series its place, and to expose the superfluity of much that goes current in the name of truth. In justification of this assertion, we refer the reader to the actual substance of what is published, and are quite confident of his judgment, if only it is careful and dispassionate.

The series is going to be published by the Indian Institute of Philosophy, Amalner, founded by Shrimant Pratap Shet. The Institute derives its inspiration wholly from him and his teacher, master Savalram Balaji Naik. I speak mainly their thoughts, excepting in places where criticisms of western philosophers have been thought necessary. I, therefore, take no credit for the truth contained in the following pages or in other members of the series that may follow from my pen. On the other hand, I cannot feel absolved from the responsibility for the errors that may be found in my presentation of their views.

The real object of the series is to bring to every thoughtful reader, in a simple, direct and intelligible form the truth of Advaitism. Special care will be taken to avoid too many technicalities of expression, and abstruseness of thought; for these are the enemies of truth, and instruments of mere shufflers. The writer will be exceedingly thankful for any criticisms and suggestions that may be forwarded to him in the interest of Truth.

*The Indian Institute
of Philosophy, Amalner.
21st*

G.R. Malkani.

The Meaning and the Problem of Philosophy

Who is a Philosopher?

Prof. W. James in his book on Pragmatism says, "I know that you, ladies and gentlemen, have a philosophy, each and all of you, and that the most interesting and important thing about you is the way in which it determines the perspective in your several worlds.....; the philosophy which is so important in each of us is not a technical matter; it is our more or less dumb sense of what life honestly and deeply means; it is our individual way of just seeing and feeling the total push and pressure of the cosmos." Every one no doubt has a philosophy, if by philosophy we mean a dumb sense of the real; but it is the rarest thing to analyse this sense and find out 'what life honestly and deeply means.' The Philosophy which is unconsciously possessed by

every one is the philosophy of the common-sense, that starts with *given* instruments of knowledge, gives unquestioned assent to their evidence, and spends its fruitless energies in an impossible effort to graft upon this assent questions about the nature of the highest reality. True philosophy requires an uncommon sense, and till that is cultivated, philosophy has not yet come to birth.

Is then mysticism the true type of all philosophy? In one sense it is, in another it is not.

Philosophy and mysticism.

Philosophy is mysticism, if by the latter we understand the perception of truth by the *individual* himself, with his own powers, and in his own consciousness. The truth of philosophy cannot be *held to view*, it must be seen; the individual is its only ground, personal direct perception its only proof. It is not one of those commodities which are accepted by the public with a ready and almost unconscious 'yea'; it is an achievement of the individual, and not a ready-made dish of the universe presented to every one as his birth-right. But philosophy is not mysticism, if the latter signifies the exercise of a mysterious and hidden function. There is nothing so natural to us and so convincing as the process of philosophical reflection. There is no leap in the dark, no mystery-mongering here; we start with common experience, with common and human ways of knowing truth; we walk in the light of the day, with all our senses about us fully awake; we have only to guard against slumbering and the somnambulism of practical life. Thus, if we walk true, the common will take us beyond itself, Truth will appear the most uncommon thing on earth, and its perception the most uncommon sense in man.

Origin of the philosophical impulse: Is it curiosity to know?

What is now the nature of the philosophical problem? An answer to this question can only be given after we have understood the origin of the philosophical impulse. Some people think that this origin is to be traced to our natural *curiosity to know*, or what is also described as knowledge for the sake of knowledge. I deny the possibility of such disinterested knowledge; behind all such assertions there is utilitarian interest. But granting the possibility, it is quite reasonable to ask, what use is this knowledge to us? It is representative to me of the attitude implied in the solving of an example in Algebra. Taking a solitary student, untrammelled by class-competition, teacher's appreciation, examinations etc, what will be his interest in solving an algebraical problem? Perhaps no more than the satisfaction that he had solved it, that his intellect was sharp, acute and alert, and capable of over-riding certain assumed difficulties. But as to the result whether x was equal to 2 or 20, it matters little to him, — he is unaffected by it. In this case then, the pleasure of the student is due to his consciousness of a powerful instrument, or the possession of a great utility; the answer as such is indifferent to him and his happiness. Just the same is the psychology of the

metaphysician who wants to know for the sake of knowing. Since he has undertaken a disinterested search like that of the student of Algebra above, it should matter very little to him whether the truth of the world is x or y , an omnipotent God or blind molecules; the solution has nothing to do with him or his happiness. Such knowledge, however, is not only without interest and without utility, but it has the further disadvantage of being unverifiable. The student of Algebra has a standard of verification; he proceeds according to rule and with definite assumptions, and his results can be checked. But the metaphysician has no such standard; his very disinterestedness disinclines him to take his stand on any particular aspect or group of phenomena; wherever he sees divergence, he must leave it as it is, and pass on. The only right attitude for him will be to see *all* and know *all*, and then pass any judgment. Till he has done this, he has no right to speak about the nature of the Ultimate Reality, or as a matter of that, about the nature of any thing; he must wait till the slow and plodding course of science has unravelled all secrets, co-ordinated all branches of phenomena, and reached a final Law or Principle. How far science is capable of discharging the function of philosophy will be shown in a later member of the series. Here it may only be pointed out that the methods and the aims of science and those of philosophy are as poles asunder.

Interest is the only force of reality in things.

Disinterestedness, carried to its true logical significance, will mean 'nothing is as it is.' It is interest that is the force of reality in things, and makes them what they are; and it is but literal truth to say that all existence is rooted in interest, without which nothing can be proved to be what it is. I, the Self, am therefore the force of all reality, and the truth of all things, for in *my* interest is *their* existence. What is outside me, and indifferent to me, is at best an x which may mean anything, and of which it is impossible to determine the exact value; and if reality is meaning, the possibility of this x itself is ruled out; it is that indeterminate of which nothing can be said, not even non-existence, for that too is a form of my interest. I, or what is the same thing, my interest, therefore, is the only value, the only meaning, the only test of truth of anything.

Where pragmatism and Advaitism differ.

Advaitism thus partakes of pragmatism in-as much as it emphasises that there is no disinterested search after truth. All truth is a certain interest. But while pragmatism seeks to define this interest on the empirical basis of certain instincts in man, Advaitism goes to the very root of the meaning and the possibility of interest. All the instincts of man, physical, moral, intellectual etc. which give value to certain things or forms of action are rooted in the Self, which is therefore the greatest value and the dearest possession; "for Its sake is the mother dear, not for the sake of the mother, is she so dear; for Its sake is the wife dear, not for the sake of the wife is she so dear; not for the sake of gods are the gods dear, for the sake of the Self are they so dear; not for the sake of the all are the all so dear, for the sake of the Self are they so dear etc."† In fact

everything, including forms of intellectual and moral activity, are dear and valuable to us for the sake of the Self; but the Self is not dear for the sake of anything beyond Itself. It exists for Itself alone, but It gives value and interest to everything else. It abides in Its own nature, but is the basis of the reality of all other things. We can never own or disown It, seek It or lose It. It is true in Itself and for Itself; and it is just because we identify It with certain instincts in us that the objects of these instincts are real to us.

This then is the great difference between Advaitism and other systems. Our search after Truth is always interested; and the greatest interest of man is his own Self. "I am what I am always the same, immutable; I can never get out of my Self, disown my Self, seek other than my Self. I am the soul of all values, the only value; there is nought but my Self." The end of all philosophy is accordingly to seek to know this Self. Any reality that is outside me, other than me, let it be even the great God, is valueless and worthless, even if it were possible. Interest is the reality of all things, and my Self is the Interest of all interests, the only Interest. So far therefore as anything appears to exist outside me, I am its Creator; so far as anything appears to transcend me, I am its transcension. 'In' or 'out' 'immanent' or 'transcendent,'—they are my creations; they respond to certain instincts in me, and I am the Self of all my instincts.

World is the creation of Desire.

This explains the strange theory of Advaitism that the world is a creation of Desire. Bergson in his *Matter and Memory* has proved that things represent certain utilities, or modes of reaction of our organism upon them. He admits that things cannot be separated from their images, but considers, however inconsistent it is with his above position, that these images have an independent existence beyond the affections of the body. If they were really independent of the living organism, they will cease to be mere forms of certain utilities or modes of our reaction, a fact which cannot be too much emphasised from Bergson's standpoint. It is only the average man who argues that things and their images precede the affections, and the affections precede the desire. But this is based upon imperfect analysis, the fallacy of which we cannot open out here at length. We need only point out in general terms that a thing is only the image of a certain utility, a mode of affecting me for good or bad, which affection will be impossible in the absence of all desire. The body together with its senses represents only different kinds of desires, and it is this that makes it *my body*; for the rest, it is mere earth, or inanimate forms of matter. It is desire then that creates things and makes 'otherness,' and in this 'otherness' lies perpetual fear and all our unhappiness. Take away desire and there is nothing but myself, no 'other' to me, no things and no world; but with the seed of desire intact, there is an 'other,' things come into existence, and appear real and independent. Yet, I am the sole basis of their reality and independence all the time, for they are mere forms or images of *my* desire.

What should be the aim of all philosophy?

We have seen that philosophy does not originate in a disinterested search after truth; it is essentially an attempt to define my greatest interest. It begins from my unhappiness, from some want in my being, some sore somewhere. This want assumes for us the form of a question, – what is the nature of Reality and why am I so unhappy being within It? All other questions about the world etc. are resolvable into this one. If then this is our starting point, what shall be our goal? Naturally, release from unhappiness, removal of the question, and a return to the peace of myself, or what is called in Indian philosophy *móksha*, or liberation. The possibility of the above question makes this answer inevitable; it is the only end and justification of philosophical travail. Western philosophy, starting from mere curiosity, reduces this branch of knowledge to a part of its web of culture, and takes no more than an aesthetic pleasure in the results of philosophical reflection. It reserves the Destiny and the well-being of man to ethical and religious activity.

The stand-point of western philosophy: F.H. Bradley.

The stand-point of western philosophy may be judged from F.H. Bradley's introduction to his *Appearance and Reality*. He says, "We may agree, perhaps, to understand by metaphysics an attempt to know reality as against mere appearance, or the study of first principles or ultimate truths, or again the effort to comprehend the universe not simply piecemeal or by fragments, but somehow as a whole." When questioned as to the possibility of such knowledge, Bradley allows that his theoretical search cannot be crowned with complete success. He says, "But to the question, if seriously I expect to succeed, I must, of course, answer, No. I do not suppose, that is, that satisfactory knowledge is possible. How much we can ascertain about reality will be discussed in this book, but I may say at once that I expect a very partial satisfaction. I am so bold as to believe that we have a knowledge of the Absolute, certain and real, though I am sure that our comprehension is miserably incomplete." The knowledge of the Absolute, according to him, is imperfect but it is not worthless; and why? Because, it is not possible 'to abstain from thought about the universe.' But have the results justified this tendency? This brings out a significant admission from him. "I certainly do not suppose that it would be good for every one to study metaphysics..... (still) there is no other certain way of protecting ourselves against dogmatic superstition." Secondly, according to him, intellectual approach to the Deity or the Invisible is a temperament with certain persons. Thirdly, "whether there is progress or not, there is change; and the changed minds of each generation will require a difference in what has to satisfy their intellect." He even goes further and says, "What is really worse may serve better to promote, in certain respects and in a certain generation, the exercise of our best functions," – hence the justification of new metaphysics. Lastly, and this is his most significant statement, he says, "And assuredly the way through speculation upon ultimate truths, though distinct and legitimate, is not superior to others."

Indeterminateness of the question reflected in the inadequacy of the answer.

The real object of philosophy is not to 'know reality as against mere appearance etc.' We do not begin with a distinction of appearance and reality, we do not know the meaning of first principles or ultimate truths, we do not care to comprehend the universe 'somehow as a whole.' What philosophy is keenly interested in, is not mere intellectual or æsthetic pleasure of grasping an abstract unity of the universe somehow, but the connection of the Real with my happiness and unhappiness. I do not care whether the universe is one or multiple, whether its diversity is the manifestation of one principle or of many; what I do care is whether it cannot resolve the discord in my being, or what is the same thing, whether my unhappiness partakes of the nature of the Real, and is, as such, necessary and inevitable. This gives point to philosophical reflection, makes the question insistent and the answer certain. But Bradley, having started with an indefinite object to 'know the universe somehow as a whole,' is forced to admit that his attempt cannot be crowned with complete success. Failure is the sign of an incomplete and imperfect question,—an aimless inquiry. No doubt he says that we have a knowledge of the Absolute, certain and real, but being miserably incomplete in comprehension, the certainty and the reality suffer to that extent. The only justification for such imperfect knowledge lies in our inability 'to abstain from thought about the universe.' Its worthlessness is further proved by his admission that he does not suppose 'that it would be good for every one to study metaphysics,' as though this study were merely an adornment of the individual and not a necessity of every man's life and existence. If the world can do without metaphysics, it is because the world has lost its senses, it is in a fit of insanity. Bradley says, metaphysics is justified because it protects us from dogmatic superstition. But mere protection from dogmatic superstition is no revelation of truth, nor the temperamental necessity of an intellectual approach to the Deity has any warrant of utility. That his philosophical quest is limited in its objective and uncertain in scope is shown by the fact that he does not claim any inherent necessity or superiority for it, but only a satisfaction of the intellectual needs of the times, which, according to him, may be conciliated even by inferior stuff. What serves best the exercise of our best functions is all his care, and not any *necessity* of knowledge itself or the *importance* of the solution sought. To crown all, he does not claim for his speculation a place or necessity which may not be fulfilled by some other way or means. It is a hollow search, a mere need of intellectual gymnastics and no more; and the solution arrived at, does not get beyond these limitations.

The path of knowledge: Can action or devotion replace it?

As we have already pointed out, *all other systems*, whether Eastern or Western, seek the highest happiness and the greatest good of man in his actions or his devotion. But these can only bear *specific* fruit, and that too so long as they last. No doubt good actions and devotion make up a serene and harmonious personality which appears to

survive them; goodness and love become a part of individual's nature, and not merely his extraneous fittings; he has assimilated them, the struggle is ended and he is reconciled with himself. But let us examine the real situation. Is not this serenity and harmony empty without *actual* goodness and *actual* devotion? How is it to be distinguished from the serenity and the harmony of a stone excepting by *good and devotional attitudes*? Goodness and devotion are in their *doing*, and not in any result after them. All the systems then which find the highest good of man in this doing, build on unsound foundation. As there can be no endless doing and no eternal result, there can be no eternal and real happiness. The devotee must *always* remain a devotee to enjoy the fruits of his devotion. Sleep, death and other physical vicissitudes so far as they affect his *doing*, must be a loss to his happiness, his stability. The result of devotion is in *devoting* and not after it. It is therefore meaningless to say that a devotee as a devotee is released from bondage and the attending unhappiness, in this life or after it. His devotion is his only release; apart from it, we cannot conceive any miracle happening with him. Granting that after death he is released for ever and his misery ended, we may reasonably ask, 'what happens with him?' Is he no longer a devotee? Then he must have ceased all doing. But this only means that he has lapsed into a stone-like existence. He has ceased to do anything, and accepted an eternal death. Such is the only kind of release we can think of a devotee beyond his devotion.

Does not knowledge also partake of the same impermanence?

Advaitism makes goodness and devotion subsidiary in its system. They are means of purification of the mind or detachment from sense-objects, and are a preliminary to a real search after Truth. But a question may here be raised, what is this search to lead it? If it leads to the knowledge of Truth, it can only lead to a temporary result; we do not know the Truth; by effort we shall know It, and by effort sustain It. It is only a different version of the doing implied in devotion; it cannot lead to a permanent or ever-lasting result.

This is very sound reasoning. We learn science, mathematics, history, geography etc; by losing contact with them, we forget what we have learnt. To keep our knowledge alive, we must keep up our contact,—we must remain in a state of doing. If we attend to anything else, we lose sight of the knowledge we had acquired before it. Knowledge of Truth which we are seeking can only lead to similar results. We must continue to know to enjoy the fruits of knowledge, as we must continue to worship to enjoy the fruits of worship. What Advance has Advaitism made? It has brought us to the same instability of the highest good. Sleep, death etc. are big ruptures in our knowledge and so in our happiness.

Its significance in Advaitism.

But Advaitism does not seek the highest end of man in such knowledge. Its search after Truth is not the search after an unknown *x*. The student beginning to learn geography, is completely ignorant of what is awaiting his acquaintance. It is in every sense a *new* acquisition for him, and he has to keep it alive by intermittent effort. However well he may have committed it to heart, time must tell upon his knowledge, for that knowledge is a sort of grafting upon his mind. The memory of it may remain intact in some other region, but so far as the thinking and waking person himself is concerned, it is so much loss to him, and he cannot make any *use* of his forgotten knowledge. In short, knowledge which is *acquired, retained* and *forgotten* is not the sort of knowledge in which Advaitism seeks the greatest good of man. No doubt, we cannot take our eye away from the provisional character of all knowledge; we do not and cannot always know. This is quite true. But then we must realize that 'seeking to know' is a fault, which renders the understanding of Advaitic Truth impossible. It proceeds by the way of our ordinary knowledge which seeks to know what is not already known, to acquire what is not already acquired. It starts with the conception of Truth as specific and formal, something that may be known and forgotten, acquired and lost. That is not the Truth of Advaitism. What is then this Truth and how can It be known? A complete answer to this question cannot be given here. We can only state in somewhat anomalous and contradictory terms that the best knowledge of this Truth is the realization that It can *never* be known, for It is before all acquisition and after all forgetfulness; we seek It in ignorance, and in ignorance is all search true. When the knowledge has dawned, we feel a sense of befoolment, for did we not possess It complete and entire before we went in search after It? The seeker was there before the search after Him began, the knower remained in His nature before the attempt to know Him could ensue. The search after Truth, therefore, never leads to specific results; and our question never gets an answer the way it seeks it. We only come to know that the search was foolish, and the question meaningless. The Truth always shines in Its own nature, self-proved, self-established; it is our True Self Hence-forth we search no more; and our question has disappeared in the certitude of knowledge, and the bliss of our being. It is a strange commentary on human indifference that while in his daily dealings he measures the certainty of all other things and existences by his own Absolute Certainty as expressed in expressions such as 'as sure as myself,' 'as certain as that I exist' etc., in his assumed rôle as a philosopher he wanders about, clinging to one instrument of knowledge after another, dissatisfied, almost despairing of a Truth that may completely satisfy him and set all his questions at rest; it is something like 'going to foreign lands to seek our home we have left behind.'

No Doing can add anything to you.

This then is the great message of Advaitism. The highest Truth and the greatest happiness are not to be sought in any *doing*; all doing is in ignorance, and all seeking and searching is mere folly. No moral victories are to be achieved, no spiritual values renewed; these cannot add a tithe to what you already are, infinite knowledge and bliss.

You have reached your end and highest goal when you can say, 'Nothing remains to be achieved, nothing done undone.' All other ideas of Absolution fall short; they at best refer to certain abodes or forms of existence that only last till the activity giving rise to them is effective. The following verse of Shri Sankaracharya is very significant in this connection.

("Hindi passage omitted here")

"Abiding in the same world, living in the presence, assuming the same form etc.,—these differences are established by specific good actions; but what is obtained by action does not lead to permanence; thinking thus, who will not turn to renunciation."

Aristotle on man's highest end.

Aristotle who portrayed in a remarkable way the mentality of Western thinkers, began his Ethics with the inquiry as to the greatest end of man or his highest happiness; and he set it forth as an unquestioned fact that the greatest happiness can only be sought in some form of activity, and the greatest happiness of man in pure activity of man's nature, which was conceived by him to be reason. According to him, then, God or the greatest man (and these two terms signify one and the same thing, God being always merely a magnified devotee), is pure rational activity, or what may also be described as thinking upon thought's own substance. So far as he finds happiness in some activity, Aristotle sets forth the tendency of all Western philosophy. But there is always in the best Greek thought a queer admixture of the Western and the Eastern mind. The highest happiness is to be sought in the pure activity of Reason. What does this signify? We know that reason only thinks things or forms,—it can never get out of them. Pure rational activity cannot give a slip to reason itself and do away with its forms; if it is rational activity, it will remain like reason formal, and all talk about its purity is meaningless and delusive; there can be no purity about rational activity. If, however, any sense can be attached to it, it can only take us out of 'forms,' out of 'otherness,' out of 'activity' to where all such expressions become meaningless. Man becomes truly divine when he knows that he is the Self that is pure knowledge itself, the very form of wholeness, completeness, myself-ness, blissfulness; for there is no 'other' there, no 'not-self' existing by Its side. Activity and non-activity are idle terms here; there is no coming no going, no doing no non—doing. The Self always remains where It is, pure and always Itself,—doing does not draw It away, nor non—doing bring It back.

Philosophy and Life.

We have seen that mere curiosity to know cannot explain the mission of philosophy. Some of the modern philosophers realize this, and they define philosophy as 'thinking that aids a harmonious life and progress.' If this is true, pragmatism is

justified. Philosophy can have no *original* message for us. That will be good philosophy which can answer our idea of a happy and harmonious life; and since this idea changes with times, different philosophy will be good for different generations; there will be types of philosophy as there are types of life. No doubt these philosophers try to restore to philosophy something of its unity and originality by their attempt to achieve through it a synthesis of the types of life; but this is a forlorn hope. It is of the very nature of life to emphasise a particular aspect of human nature,—physical, intellectual, emotional or volitional; and it is an established fact that the philosophy of different ages has always conformed to one or the other of these tendencies in a sort of re-actionary mood. How can life be otherwise than as emotional, intellectual or volitional? By combining these three, we cannot get a new type of life, different from each.† Life is activity and activity must necessarily be formal; there is no meaning in a synthesis of life, unless it signify that all forms of activity are to receive their due attention in an all-round and balanced personality, none being carried to an extreme; but this is hardly synthesis; for forms remain side by side quite distinct from each other. By this alliance of philosophy and life, therefore, we have not achieved anything; we remain where we were. The fact is that it has not been sufficiently recognized that philosophy has an original message; that it is not merely a body of doctrines that may change with times, according to the moods of persons and their needs. It seeks that Truth which is true for all generations and all persons, and is not at the mercy of ‘will to believe’ etc; for It is hand-maid to nothing else,—It is true in Itself and so an end in Itself. This then is the Truth which Advaitism seeks. *It* is the true synthesis of life, for in It life and activity melt away as the phantasmagoria of a dream. It is not dependent upon the whim of a philosopher, but is an eternal and self-established Fact that does not require to be constructed or made out.

The Thing—in-Itself of Advaitism.

Advaitism then rests upon this solid foundation, The Thing—in-Itself, which Kant posited in the world outside, with the result that It receded from him as an unknown and unknowable x , but which Advaitism finds in the Supreme Self of man, the Atman, Which is knowledge itself, bliss itself, and the truth of all that is known or unknown. Man may not recognize It, but It is always there, before all recognition or non-recognition; for these proceed *by* It and never *towards* It; Its best recognition is that It can never be recognized, — and this not in a sense of despair or disappointment that characterizes the agnostic, but with a sense of completeness, wholeness and satisfaction that is the mark of the true knower. Advaitism then seeks that Truth which exists by Itself, and that happiness which is the happiness of Existence. That is true Life and not the life that we lead here; that is true immortality, and not any supposed permanent state of the soul after death.

The question of philosophy must persist so long as death challenges the individual's integrity.

We have said that philosophy begins in dissatisfaction, and that this dissatisfaction assumes for us the form of a question. It may be argued now that dissatisfaction does not come to all, and the question does not arise to everyone. Looking at the mere surface of things, this appears true and Bradley justified in claiming philosophical truth only for a few; not many persons have a question, and fewer still know what they exactly want. Is then the universality and the necessity of philosophy impugned thereby? Not even in the least. The apparent apathy and indifference of persons is merely apparent; every man, every thinking being has this question about reality in him, for his happiness and unhappiness is intimately bound up with this question; only he is not conscious of it; the philosopher makes it explicit, and the presence of the question is at once detected by the interest which he arouses in every person of every grade of society. If a man speaks of geography, not many will listen to him; if he speaks of science, fewer still will perhaps be interested; if he speaks of science, fewer still will perhaps be interested; if he speaks of higher mathematics, it is not improbable that he may find hardly anyone to lend him an easy ear. But if he speaks of philosophical questions in sufficiently plain and intelligible language, every man will attend to him with interest; for these have a direct and most intimate bearing upon his life, and envelope with a sort of *standing dissatisfaction* all his other needs and requirements; high and low, rich and poor alike share in this feeling; for, no state of life, however full of glamour it may appear from the outside, but has its woes and worries; mankind may appear flushed from the outside, but sorrow lives at its heart; its reckless joy and headlong activity are no indication of a fullness within, but rather of a sad hollowness. And to crown all, the mystery of death overhangs the sweetest moment of his earthly existence. No doubt, death is absent from most men's minds excepting when they lose a dear and near relative; and this has given currency to the belief that the horror of death is not natural but artificial, and speaks of an unhealthy and perverted mentality. The ordinary man never thinks of death, much less fear it; it is only the mystification created about it by the philosopher that perturbs him; and less of the intrigues of the latter in the normal course of human life, the better for mankind. Those who argue in this way forget that the very fact that the average man is moved *at all* is an evidence of a lurking fear or question in him. How can it be otherwise? Here is a phenomenon of life that goes beyond life, that challenges life, nay challenges individual human existence,-a most intolerable thing. No doubt scriptures of different religions, and scientists who have devoted their lives to psychical research, assure us that the individual persists after death. But their vague assurances, and still vaguer descriptions of the condition of the soul after death and the plan of the universe to which these souls have to conform, cannot make up for the evident break in our personality, a personality which we have come to recognize only in its earthly bearings, such as racial characteristics, family ties, professional habits, and all other individual and peculiar marks of recognition that characterize each person. What *interest* have I in my existence after death, if I am no longer the brother of so and so, husband of such an one, father of those boys, friend of these men, scholar of such repute, wealthy and

honoured etc? For after all it is *this personality* that we appear to know, recognize and love. Suppose for a moment that by a fiat of the Almighty, you forget everything about you, – your mother, wife, sister, son, friend etc, and you are imported into new surroundings with new relatives and new connections all round; suppose you are now told that in your previous state you had different relatives, different friends and different surroundings altogether. Will you look upon this information with any more interest than that bestowed upon a piece of theological curiosity. You are now interested in the well-being and the honour of the person, living in this particular sphere and this particular world; you want a continuity in those physical and mental characteristics that distinguish you from every other individual; you want to persist as John or Jack, and not as anybody; and if there is going to be any break in these characteristics, you shudder at the prospect of it, you feel threatened with your own personal existence. And naturally so; for you have come to associate yourself so much with the world in which you live, that any transplantation from this world must necessarily appear like an annihilation of the older person and the creation of a new one in his place. From this fear of death, therefore, theologians, scriptures and scientists with their fantastic explanations of life after death, cannot relieve us. The continued existence of the person I am now interested in, is not assured to us by any one of them; death is at best a gate towards a new sphere of activity and new forms of existence, in which the older myself appears lost to itself. There is as great a gulf between their personalities as there is between one person and another even in this life. The analogy of sleep and wakefulness does not apply here; for the waking man knows that he it was who was sleeping, and was awake before going to sleep; there is direct recognition of myself through the states, but there is none through the changing bodies. This standing dread of death therefore continues, notwithstanding the assurances of theologians of personal continuity; and this dread is a powerful impulse towards philosophical reflection, the importance of which Advaitism fully realizes. It is the greatest of our fears, for it challenges our personal security and stability; and anything that can tackle it, carry the diagnosis to the bitter end, and bring forth visions of unutterable glory and life ever-lasting, naturally draws our keenest interest.

Catholicity of outlook, and irrefragability of conclusions,–the characteristic marks of Advaitism

Unhappiness in this world and fear of death drive us into the arms of philosophy; they give rise to the question of the nature of Reality and man's connection with It. It is this question and the *interest* hanging about it, that makes the solution possible, significant, and satisfactory. Advaitism proceeds from this question, and is therefore the most comprehensive and catholic system on the one hand, and irrefragable in its conclusions on the other. It does not quarrel with lower stages of thought; for it regards these as the results of an inadequate and not sufficiently pointed question; they are therefore true in their own way, true in the sense that they lay to rest the question that lies at *their* bottom. If a child hugs the toy to its bosom as a reality, the

wiser will do well to leave the child all alone. So does Advaitism. It supersedes all other systems, but it does not quarrel with them. On the other hand, its solution is irrefutable; for it never leaps into the dark; it proceeds by the way of the question, which is the surest way to check conclusions, and the surest measure for all solutions. If the question does not arise to anyone, it gives him a wide berth, for to such a one any system is as good as Advaitism; 'grafting' is never so much out of place as in the philosophical domain. But if any one feels the question honestly, sincerely, and insistently, he will be led *by the analysis of his own question to the only possible result and the only possible Truth*; the reach of his question alone can determine for him the extent of his satisfaction and enlightenment. It is the glory of Advaitism that by following the track of the question, it leads up to that Truth which dissolves all doubts, and renders all questions impossible; where the question is still lurking and the satisfaction is not complete, Advaitic Truth has not yet dawned; absolute sincerity of purpose and the power to rake up lurking questions, are therefore of the utmost importance for understanding the significance of what Advaitism has to say; and where these are in any degree lacking, the solution is bound to fall flat and appear no more than a mere empty abstraction. The result is that we get two sorts of persons,— those who are enraptured by its Truth, and those who scoff at it as mere verbal and idle jugglery; *and between these there can be no understanding.*

Analysis of the question of Advaitism.

We have seen what is the nature of the question of Advaitism. It is, the nature of the Real and my connection with It. this general question can be further broken up into three subsidiary ones. (a) Is the world really as it appears? Do not the senses deceive me? And then there is perpetual change; nothing remains in its own nature. This revolts against my sense of the Real. *What then is the truth of the world?* (b) I, the living creature, am continually undergoing some change, culminating in the great mystery, called death. Shall I then after all cease to be? They say that there is life after death; but I find my continuity at least broken; death may be only a sleep, but it is the precursor of that life and that wakefulness which does not *feel* itself continuous with my present state of existence. Shall I then sacrifice my continuity and my stability to the evidence of theologians and scientists? What guarantee have *I* for my own immortality? The break which birth and death introduces in me is to me intolerable; it makes me lose my bearings; it challenges my immortality. *What then is the truth of myself?* (c) There are limitations to my knowledge and happiness. The world is infinite and my knowledge is very limited. And then I am continually subject to the changing moods of the body and the environment; physical existence can never feel stable and secure from the opposites of pain and pleasure. Is there not a term of existence where these limitations may be transcended? Or, in other words, *what is the nature of the Absolute Reality?* Advaitism follows the lead of each question, analyses our experience, and tries to find within it a means of resolving the doubt. We are absolutely bound down to our experience, and can never jump out of it,—a healthy warning to those who suppose that truth can only

be got by *breaking* with our present experience and rising to an intuition of the Real. But while remaining where we are, we must examine our ailment, locate the trouble, and see what remedy is necessitated by the case. What is wanted of the seeker is this sense of ailment, for the sick alone shall be made well; for the rest, he is required to be healthy and normal, sincere and discriminative, and the Truth will be brought home to him, to his complete satisfaction and wonderment; he will then begin to feel that a miracle had been wrought with him.

Books published by the same author: —

1. Problem of Nothing, royal size, pp 35. Price Re. 1
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Foreword.

This little pamphlet is a humble attempt to settle the controversy whether the proof of Advaitism is reason or revelation. This controversy will be found to be completely barren and misdirected, as soon as the true Advaitic position is understood. The subject is treated here without any technicalities, and it is hoped that the following few pages may go a long way to clear the confusion regarding it. Although the writer himself is absolutely convinced of the position he has taken up, he will only too gladly and thankfully receive suggestions and criticisms that may be forwarded to him by friends interested in the subject.

The last section is devoted to a criticism of Prof. Zimmermann's article in the Indian Philosophical Review on "Truth and its Criterion in Sankara's Vedanta." Mr V. Subrahmanya Iyer of Mysore has met the professor's attack ere this in an article in the April (1920) issue of the same magazine. I agree with him on almost all the points, though the individual modes of expression and forms of thought can never be identical

of two different persons. A careful reader will find complete agreement between his observations and my own.

For the rest, all thanks are due to my teachers within the Institute, Mr Pratap Sheth and Master Savalram, whose company has been to me a source of great enlightenment and joy.

Amalner. }
15-9-20 }

G.R. Malkani.

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Chapter 1 - Criterion of Truth

The unity of the proof with the thing proved.

It is a matter of paramount importance for every system of philosophy to determine for itself the criterion of its truth. We must know our weapons before we devise means for conquering the enemy. We must similarly know the nature of proof, before we can conceive anything as proven. This is not however quite an easy task, for the proof and the thing proved cannot be held apart, as the weapon and its destructive effect; in the latter case, the effect lies entirely in our doing, and not in the nature of the weapon as such; while in the former case, the proof does not prove anything owing to *our activity*,—it simply cannot be held apart from the thing proved. No one can say, "Here is the proof! It lies in my power to prove anything with it or not." Eye is the proof for all visual perceptions.* but we cannot separate it from the latter, and still hold it forth as a proof. Take away the perception and you reduce the eye to the status of the rest of the organism. A non-seeing eye is as much a proof for the forms of things, as my foot or any other odd member of the body. It is seeing that makes the eye, it is perception that gives it the status of a proof. How otherwise could we say of anybody that he is blind? Our only basis for the statement is the lack of perception on the part of the individual in question. It is not any configuration of the material particles of the pupil that gives us our evidence of blindness or otherwise; rather we study these configurations following the lead of the state of vision. The scientist can speak volumes

about these configurations, but he is absolutely ignorant *why* a particular configuration should be allied with a particular state of vision,—the former does not contain in itself any reason for the latter. It is this vision that is our *only* and *unerring* evidence of sight or otherwise. It is therefore more correct to say that perception is the proof, rather than that eye is the proof; for it is perception that makes the eye, and not the eye the perception.

If then perception is our proof, it cannot be held apart from the perceived. We cannot say, “Here is our perception, and we shall perceive things at our pleasure;” nor again, “Here are the things, we shall prove them at our pleasure.” In perceiving alone, perception becomes a proof, and the thing perceived as proved; the two are inseparable; nay, we cannot even determine any line of demarcation between them, so as to justify our verbal distinction of the proof and the thing proved. This simple and incontrovertible position is full of great possibilities of transforming our whole view of reality as we shall see on a later occasion. Here we must face the difficulties relative to the problem in hand. If the proof cannot be held apart from the thing proved, how are we to determine our criterion of reality? We wanted to fix our criterion first, and then make up our minds what to believe as true, and what to reject as false. But here we find that the proof is already stuck up in the mud of reality, and to accept or reject the one is to accept or reject the other automatically. There is no space or interval between the proof and the proved, between the method of philosophy and its content.

No proof can ever be shown to be false: the consequent dilemma.

This alliance gives us our most difficult problem. The very fact that every proof has its object, and is thus rooted in some aspect of our experience, makes it almost impossible for us to prove it to be false; the moment we say we have an eye, we have set up its character as evidence beyond doubt; for it is there with its object, forming an irrevocable part of my perceptual experience. What are we then out for? Is it only to know that proof is proof, and cannot be otherwise? If this is all we wanted, we had better spared ourselves the trouble of a pretentious show and an empty inquiry about the Criterion of Truth. We should have rested satisfied with the position that every thing that appears is true, that conflicting appearances are equally true, and that there can be no third power to decide between them in case of their variance. If the sky appears to me blue, my intellect cannot prove it to be otherwise; for every such proof will be based upon some other perception, which cannot falsify my present one or displace it; both can exist and do exist within Reality. The snake is as real as the rope, for both are my perceptions, equally unmistakable in their way. The dream cannot be falsified by my waking consciousness, for it is distinct and real so far as it goes, and is a part of my experience which I cannot deny; it has its place within Reality *equally* with the presentations of the waking consciousness. From this point of view then, there is no error; everything is as it appears, and in appearance is all reality. Error is a creation of your desire or practical requirements which give preference to certain presentations

over others. Why do you call the snake an error when you see the same thing as rope? These are two distinct perceptions equally real in their time. Why do you call the dream an aberration of reality, when it was an undoubted fact of your experience? You make both error and truth by your unwarranted preferences. The same eye that is the proof of the rope, is equally a proof when it sees the snake. But if it is a proof in the former case and not in the latter, it ceases to be the real proof, which we must seek in some outside conditions; here again one set of conditions is as good as any other, neither of them having an inherent justification for promoting truth. The fact is that there can be no Criterion of Truth, proceeding by the evidence of the senses. Where everything is equally true, where there is no error, there is no possibility of a question arising, no scope for our discriminative power, no place for philosophy. The intellect will be powerless where all its presentations are equally true; it has no longer any function in the discernment of what is real as distinguished from the unreal; it can at best be a useful instrument in our practical dealings for the selection of the beneficial and the avoidance of the injurious. As for deciding what is true and what is false, it is quite useless, for it is entirely dependent upon its reports and these are all equally false or equally true.

The question of a criterion only arises from a doubt of all 'proofs.'

The question of the Criterion of Truth is significant only when the reports of the senses do not satisfy our sense of the Real. We want to get at the very authoritativeness of the senses themselves. If we are not prepared to go beyond them and the intellect, we need not worry ourselves about a criterion of truth. In their acceptance we have already answered our question, we have taken *them* as our criterion, and only delude ourselves by long philosophical dissertations. We must know what we exactly want, before we undertake any inquiry. If the reports of the senses are true, the intellect can neither add nor detract from them, illusion and error stand on a par with the so-called truth, and no lengthy intellectual explanations about outside conditions or circumstances can in any way affect for truth or falsehood the character of the original perception. The enquiry ends where it began,—nothing is particularly true or particularly false. The question about criterion is meaningless.

This Criterion is nothing out-of-the-way, a heavenly intuition.

If, however, we want to sense the nature of true authoritativeness, we must be prepared to go beyond the superficial evidence of the senses, and get to the very root of their power for belief over us. This does not mean that we should close our eyes, stop all intellectual operations, and thereby arrive at our criterion; nor does it mean that we should pitch our faith upon some word, or an unknown reality, that stands as a stumbling block to our intelligence, if not in actual contradiction to its accredited experience; nor lastly are we to resort to some hidden power of perception, call it religious emotion or intuition, which is to decide our case, and set the rule to our senses

and the intellect. We have to do nothing out of the way, nothing that can make us lose our foot—hold on the solid ground of actual and living experience. We should proceed by our ordinary thinking, from the facts of common experience, only following the lead of our question honestly, truly, to the very end.

The unreliability of the senses, and the impossibility of eliminating error.

Are senses our sole authority? Then there can be no unity or continuity about reality; for while the sameness of an object is a mere postulate (no two perceptions of it being exactly alike), its appearance varies with its position, distance, state of vision of the on-looker etc. The senses outwit us almost at every step; we are constantly misjudging by them; there is never any certainty about the colour, form, size, or distance of things. No doubt we shall be told that we must eliminate all error according to established scientific methods, and perceive the object only normal conditions. But can we ever achieve this? Can we ever be sure that we have eliminated all possibility of error, and that we are perceiving truth as it is? We think we discover some of the deceptions which the senses practise on us, expose some of their tricks; but we can never make certain that they have not involved us in some other trap. It is with *their* help that we expose their deceptions; how can we get at certainty that way? They have tricked us once; we can never be sure that they are not tricking us again. A dishonest witness can only be exposed by the evidence of a true witness; but in the absence of the latter, mere inconsistency of statements is no revelation of truth. We can at best damn him as dishonest, but can never get out of him the honest statement. When the defence story falls through, the prosecution story is upheld, for the law proceeds on the *assumption* that one of them must be true and the other false. But suppose we get a circle of defence and prosecution stories; what is affirmed by one party is denied by a second; what is affirmed by the second is denied by a third; and so on till the last statement is denied by the first; each of them points to the statement preceding it as false, and itself as true. Justice itself will be at its wit's end to decide which of them is false, and which true. Similar is the case with the evidence of the senses; each perception belies another; we can only show that the evidence of the senses is altogether unreliable, for it is inconsistent with itself; but can never prove that at any point it is reliable. The intellect can correct their evidence not for truth or falsehood, but only for useful action. It goes out of its way, when it gives to its judgments an intrinsic value for discriminating the true from the false.

No court of appeal can be an undisputed criterion of truth.

But if the senses and the intellect are powerless, is there any weapon *besides* them to show us our way to the real? There is none besides them; if there were, it will be equally amenable to doubt. Besides, the contradiction which it will set up against the reports of the senses will react upon itself; the sense can as well disprove it as it can disprove them, in the absence of a third court of appeal; and when such a court is

provided, it too will become a belligerent, its authority will be questioned and a different power will be required to decide our case;† and so on ad infinitum; our appeal will never come to a decision, and we shall only too gladly accept the dictum, “Seek not justice within Courts.” No court can be infallible, human or divine; shall reality require a court to decide its fate? The fact is that when we want to know what is true and what is false, we do not want to be dictated to, that this is true and that is false. That man says, that scripture says, or as a matter of that the senses say, – all these sayings are out of place; they have authority only for him who accepts it, or what is the same thing, though apparently paradoxical, *we* give authority to them in all such cases. If they were authoritative in themselves, doubts will melt away in their presence; but instead we find that they subsist only as certain forms of doubt itself. It is *we* who have certified these doubts as instruments of certainty, and thereby endowed them with authority. Those who have called up these ghosts from the unknown, are the only victims of their malicious influence; man need only stand up before them as their Creator, and the Creatures will vanish into the air of nothingness.

The unintelligibility of the question as it stands: The solution is presupposed in it.

At any rate, it is beyond doubt that when I ask what is true and what is false, I never mean to be lectured about them. If that were not so, the question would never arise in the absence of such lecture. If I am to learn their significance from others, I have only substituted their question for my own; to me the words are meaningless and so also the question. It is mere presumption then on my part to seek the solution of a question which I do not understand. The question is meant to rid one’s self of every form of blind faith and authority, and it can only be grappled by the individual himself, with his own powers and in his own understanding. The very fact that the question arises to me proves that I am not to be lectured in the matter, that nothing *outside* me has to decide my question, that I know perfectly well what is true and what is false, and that the question only needs to be stated to reveal its inherent fallacy. I already know what is true and what is false before I put the question; in the absence of such knowledge, the question would never arise; and yet the question is absolutely inconsistent with the knowledge. I question in ignorance, but when I am shown the incontrovertible truth of this question, I find the question gone, and all ignorance dissipated in the light of knowledge.

The form of the question precludes its resolution.

But is this not mere logical trickery? The fact that I put the question shows that I do not know the solution, that I am really ignorant and want to be instructed. That is no doubt how a plain man thinks; and it is better to be plain though a little dull – minded in the interest of truth than to be mystical. Let us then be all plain men. We want a reply to our question, what is true and what is false. As soon as we formulate our question in this way, we imply that reality is not self-proved, and that its truth is

dependent upon evidence which is capable of being false or perverted. The same eye which is the proof for the truth of certain images, is also a proof for the falsity of others; and between these two evidences there is no absolute demarcation, but only one that is supplied by the practical requirements of life; and so on with regard to all kinds of proof. In any case, *the question of being true or false is relative to some instrument of knowledge, and the limitations of this instrument will be the limitations to the truthfulness of its contents.* We thus find that any definite reply to our question what is true and what is false will be detrimental to that very truth in the interests of which we drew the distinction; for we only get different versions that are equally true and equally false just on account of the limitedness of the witnessing instrument; the question can never be satisfactorily answered; the ground on which it is raised does not admit of a determination of the absolutely true from the absolutely false.

The Criterion that is the Truth Itself.

There is only one way of solving the question. It is not by insisting upon an objective distinction of the true and the false; for this distinction, as we have already seen, is arbitrary and conventional. The kind of knowledge, the sensuous knowledge, on which it is based, is uncertainty itself, so much so indeed that the perceptions which we regard as true carry no more warrant of truthfulness and necessity than no perceptions at all; they do not settle down in conviction, and the wise see in them no more substance, no more reality, no more truth than in the absence of those perceptions.[†] The misconceptions of philosophers are due to the fact that they seek truth in the mere form or appearance and not in the *force of conviction or certainty*; and here perception and its absence are both alike. Truth does not lie somewhere outside us in and by itself; it is that sense of inalienability and unotherwiseness which clasps us to itself whether we will or not, believe or not; it is the force of the Self, the force of all reality; that is the conviction, the only certainty, the only absolute warrant; and whatever else appears to exist besides It, does so only as a form of this one eternal conviction. Truth and falsehood are alike in It, for this is their truth, the only truth. The Self affirms and denies, rejects and accepts, but nothing can ever affirm or deny It, reject It or accept It. We never know It through any instrument, never doubt or question It; we question the objects of these instruments, and once started on that path, never cease questioning. The only way to resolve our doubts and reach up to Certitude is to know the Self, the Criterion that is the Truth Itself, the Knowledge that lies at the root of every question and is therefore the only way to its dissolution.

That is where Advaitism leads us to by the analysis of our question. It does not tell us what is true and what is false; where we make this distinction, both are equally meaningless, and a real absolute Criterion is unthinkable; but where we do get to this Criterion, there likewise, the true and the false lose all meaning, for the Self is the truth of them both. I am the first truth, the testimony of all testimonies, the proof of all proofs, the touch-stone of all reality, the basis of truth and error, of judgment an

misjudgment, the meaning of all questions, the certainty of all doubts,—the Incontrovertible I. There is nothing *specifically* false or *specifically* true within Reality; these are mere terms, coined by the intellect, and relative to our practical life which can only proceed by creating contradictions; I am the only reality; and I am before all such distinction, its very basis,—the incontrovertible first. In Me, Truth becomes truthless, for it has no contradiction; in Me, discrimination becomes indiscriminating, for there is no falsehood. That I, the only test of all truth, is Truth Itself, and not a self-constituted tribunal for judging disputes that are no more than presumptions equally unfounded. But we want a *criterion* to decide these disputes; we have cried ourselves hoarse for a *test* of truth, we do not want the Truth Itself. That is the tragedy of most of the philosophical thinking.

Power of discrimination presupposes me; but it can never reach me, for I am before it. The intellect may become never so sharp, able to perceive the finest distinctions, but it can never turn upon myself, reduce me to an object and so amenable to doubt. I am the 'One without a second,' the only impregnable fortress of certitude; I cannot be distinguished from aught else, for nothing exists besides me but only in me. This is the Criterion that is the Truth Itself. But we want them separate. We want a third impartial tribunal to decide what is true and what is false, without inquiring whether a tribunal of that kind can be anything but arbitrary.

The wholeness that is self-established.

The fact is that the Self appears to us empty; for we consider knowledge to lie in making distinctions, fine subtle distinctions; without these, Reality appears to us meaningless,—either empty or chaotic. The Self cannot be handled, distinguished, or somehow operated upon; it appears meaningless and without content. Hence all our energies are directed towards scientific research; and here we feel most at home, for that is the natural play—ground of our intellect. We have created our world of knowledge by making classes, categories and laws,—all based upon the intellectual operations of dividing and drawing distinctions and then uniting under common heads or principles. But all the unities we arrive at in this way will be formal, abstract, made-up affairs, for they are based upon a sense—view of things. Science is no doubt the glory of human intelligence, but it can never reach certitude about anything, never reach a real unity, for its method precludes it from taking a whole - view or grasping the entirety of things. It is doomed to take cognizance only of forms, to *break* up reality and know mere abstractions. When however we reject the intellect, we do not place another instrument in its place to take in the whole - view of things; for there is no such instrument; nay, there *can* be none. The 'wholeness' of things is not outside, requiring an instrument to grasp it; that is the way of formal existence. The world as outside can never be a true whole as distinct from me. That moment and in that distinction, we shall have reduced it to a mere form and the Self to another form; they will have ceased to be wholes. All distinctions are intellectual, merely formal; there can be no distinction

of wholes,- there are no *wholes*. I can distinguish paper and pencil in their colour, in their shape, in the degree of their toughness, smoothness of surface etc; but there is no meaning in the distinction of paper and pencil as two wholes. Each of them represents to us a number of forms, and as such alone are they amenable to our intellect. We do not know the nature of wholeness in either; we cannot distinguish wholenesses, cannot know them; they are mere names. Nay, we shall go further. Our inability to know wholes is not a defect of our knowledge, but a defect of the question or the way we seek to grasp the whole. Wherever we see duality and distinction, we get forms and aspects but never the whole; the whole must be that in which all differences are reconciled and made one. Such a whole cannot be outside, where every-thing exists only by distinction from something else; such a whole cannot be my object; such a whole can have no 'other' to it; *and such a whole is my Self*. I am the only wholeness; in Me, red and blue exist together side by side, without myself being either red or blue; in Me, truth and falsehood have meaning, without myself being either true or false; in Me, differences become differences, but nothing differentiates itself from Me, rejects Me and stands apart,-for nothing exists in its own nature but only in me, - I the only Self-existence remaining in my own nature; in Me alone, contradictions become contradictions, without contradicting me. That I, the supreme infinite I, is the only whole, the only 'one without a second,' and the only basis of all that is and shall ever be. That I is neither inside nor outside, that I has no form, that I is the only Certitude and the only Reality. The evolution of the intellect may enable us to make finer distinctions and perceive new unites among things, but can never help us to a knowledge of the Self; for That is before knowledge and understanding, non-distinct, all alone. The intellect never reaches me; yet I never appear to myself as chaotic, or non-existent, or even as doubtful. My limits are never known, for I am limitless; my reality is never questioned, for I am beyond the opposition of the real and the unreal; I am first, and these are afterwards; I am first; and every question is afterwards. That I is the only certitude, the only truth and the only criterion.

The unstable cannot be the truth of the stable.

The intellect cannot be the test of truth,-it comes and goes. A thing unstable in itself, not residing in itself, never sure of itself, how can it be the surety of other things? It loses its own bearings in sleep, fainting etc, what guarantee can it possess for what is admittedly outside itself? "Take care of thyself, before thou takest care of other things," - that will be a sound rule for it. But that Reality which is the witness of the coming and the going of the intellect itself, but the coming and the going of which none else is aware of, - that immovable, permanent, limitless Self, always abiding in Its Own nature, established in Its certainty, the beginning and the end of all knowledge, - That alone is the criterion of truth, the surety of all things assured. We go about seeking a criterion outside, little knowing that what is outside myself can have no binding authority over me, it can be a criterion of truth for me only by sufferance and never by necessity. I am the only necessity of myself, the only authority, the only criterion.

The unity of the proof and the proved consummated in the Self.

We have already seen that the proof and the thing proved cannot be separated, and that the method and the content of philosophy are one. We have also seen that the Self is the only criterion, and the only certainty. Here then the union of the proof and the proved is perfected. The senses and the intellect indeed could not be separated from their objects, and yet they appeared as distinct from the latter, and gave the impression that they merely brought to *our* knowledge and proved to *us* what existed already and independently of them. But the Self is that Fact which is knowledge itself; in It, reality and its proof can never be separated even in imagination; It is reality that is proof itself, – the only self – proved existence. Wherever there *appears* to be a distinction between the proof and the thing proved, wherever we have a reality that *requires* proof, doubt shall prevail, the requirement remain unfulfilled, and the question of criterion unsolved. Shall truth require a *test* and reality a criterion? Then that truth and that reality, not standing upon their own legs, are mere shams, no more than presumptions. Truth must stand upon its own legs, it must be its own criterion, its own proof; and the Self alone is that truth.

We shall now be able to understand the position occupied by reason in the system of our knowledge, and then proceed to examine some of the objections brought by Father Zimmermann of St. Xavier's College against the Advaitic position.

Chapter II - Critique of Reason

Kant's postulate.

There can be no two opinions with regard to the position that the starting point of every system of philosophy must be common experience, and its procedure rational. The days of blind faith are gone, and reason has assumed its rightful place in the life of humanity. But few have ever cared to inquire into the authoritativeness of reason itself. Kant undertook this task with the full consciousness of its importance, and so he stands unique in the history of philosophy. But he started with a false postulate, which warped his judgment and prevented him from arriving at his conclusions free of all bias. That postulate was that our knowledge of the world is real, and only requires to be justified.

The fundamental agreement between Kant and Hume.

There is *really* no difference between his stand-point and that of Hume. The latter explained knowledge by habit or the laws of association, and Kant by the forms of the mental constitution. But so far as either could not go *beyond this knowledge itself* to

seek its authoritativeness or validity, it is immaterial whether we explain it after the manner of Hume or after that of Kant. This knowledge is common ground for both of them, and both have only sought to give explanations conformable to that knowledge. Their explanations may differ, and do differ widely, but they agree that they refer to the same knowledge. They keep this knowledge as it is, and then want to give us a theory most conformable to it. But such theory is bound to leave the concrete ground of knowledge itself, and revel merely in abstractions by setting apart elements which have no reality in the dissociation. What we want is not a theory; *no theory could explain the rise of knowledge*. The perception of the senses is our *starting point*, and the supposed thing-in-itself does not in any way *explain* this perception. Nor are we the better for the elaborate delineation of the Kantian categories. They do not make our knowledge more of a knowledge or endow it with a certificate of authority other than what it already possesses. Such explanations do no more than abstract from knowledge what does not subsist as an abstraction. Besides, they proceed on the assumption that our knowledge of the world is true. But if that were the case, where is any need of an explanation or a theory of knowledge? A question arises only where there is a doubt. We must doubt the validity of our knowledge, and the instruments through which we arrive at it, before an inquiry for a criterion of truth can have any meaning. But then also we shall no longer be able to keep on the ground of that knowledge itself, or seek its authoritativeness within its own limits. The very fact that a doubt has once arisen with regard to it, shows that it does not contain within itself its own authority, and that we must go beyond it to get at the true criterion of reality; the knowledge is self-condemned, we have not to *prove* its invalidity or otherwise

Agnosticism, the practical result of Kant's inquiry.

Kant, however, takes his stand upon the validity of this knowledge, and then tries to work up a theory to justify it. Reason, no doubt, it his great God. But how did he vindicate it? He could not, of-course, reach up to the affirmation of the Pure Reason Itself. He merely took for granted that it had in its constitution a number of forms, the operations of which on the material supplied by the substratum of the world outside, endowed the latter with the status and the dignity of knowledge. Even a superficial acquaintance with Kant's writings will make it evident that the forms or the categories which constitute the chaos of the world into a cosmos of knowledge, were not read into the original constitution of the Pure Reason Itself, or the knowing Self, in Which these categories were supposed by him to be inherent. The Self was beyond approach and absolutely unknowable; for all the approach of our knowledge is through these forms and never without them. The fact is that the categories could never be *traced* to the Self; Kant got them by abstraction from the actual knowledge itself upon which he took his stand; the result was that instead of *justifying* knowledge, he left it where it was, as mysterious as ever. Again we find that the Pure Reason or the Self could not be made one with sensibility; the latter always remained formal, and the Self retreated from it in disgust. The actual result of Kant's Critique is therefore agnosticism. All knowledge,

according to him, is made up of the forms of thought; and where these forms have no access, knowledge is not possible, and nothing can be proved to exist. On the one hand, therefore, our knowledge of the world, formal in character, remains unjustified; on the other, there is no reality, at least one that is intelligible, beyond the forms. The Self is not amenable to these forms, and is for ever unknowable; it is real only so far as it is apprehended as a formal and empty unity in our actual knowledge of the world outside; when this knowledge disappears, no trace of the Self can be found or conceived to exist,—which means that the Self has no self-existence and is only *relative* to our formal knowledge. The contrast between Kant's objective and his conclusion is almost comic. He appealed in all reverential awe to his Lord, the Pure Reason, to refloat the sinking ship of world's knowledge, and justify to man his faith in its validity. But this knowledge has dragged down the God Himself from His pedestal on high, bound Him up with its own chains and made Him justifiable to *itself*. The authoritativeness of Pure Reason disappears like camphor into the air of formal knowledge which began and ended Kant's inquiry. Our knowledge of the world was not explained or justified by him, but only analysed,—and that by first artificially separating the rational and the sensuous, and then uniting them by a process which is foreign to knowledge itself.

He, however, pointed the right way to metaphysical truth.

In fact, Kant's Critique is more important in its collateral results than in its main thesis. It may be said of him, as one writer has said of Plotinus, that he destroyed where he intended to build, and built where he intended to destroy. He wanted to justify our knowledge of the world, especially in its scientific form, and set Reason on its own legs again; but he only succeeded in showing the hollowness of Reason, and the unreality of our knowledge of the world. On the other hand, he directed his attacks with all vehemence against any *knowledge* about soul, God and immortality; and yet he pointed the right way to their knowledge, though he did not himself quite realize it. They are not to be sought or known as outside ourselves, as our *objects*; that way they are unknowable, nay unreal. On the other hand, they are our *only true knowledge*, for they are mere designations for the Self which can never be cancelled or doubted, proved or disproved; It alone remains in Its own nature, self-proved, self-existent, and the basis of all that is known or unknown.

The Self, the basis of all proof.

That Self does not contradict reason and its forms; for all contradiction is within the latter; it is a law of reason itself, not a law outside it. The Self is presupposed in every act of contradiction, It can never be its object. It is what makes the operations of reason fruitful and convincing so far as they go; how can It remain at their mercy?* The son cannot contest with the father, for he knows that he cannot open the secret of fatherhood; he is dumb in his presence; and so is reason in the presence of the Self. It has never any tendency *towards* the Latter, and never makes an attempt to prove It or

disprove It. It always tends outwards, towards its objects, but never towards its Origin, the Self. The eye does not see the seer, but it sees things outside; and so does reason. It reasons about everything but that Svânubhuti or Self – knowledge, which gives stability and the power of conviction to reasoning itself. Similarly all proofs tend outwards, but are quite ignorant of that which gives them their provability, the Self; to attempt to prove This is, as the poet says, an attempt to burn up fire with the fuel.

(“Hindi passage omitted here”)

The only way to dislodge subjective idealism.

Reasoning, as we know, is a formal activity of dissociation and classification. Accordingly, our knowledge of the world is composed merely of certain relations; every thing is known in its dependence upon something else, – as it resembles one thing and differs from another; it is *sâpeksh* knowledge. There is nothing there that stands its own ground, free, independent, and self-positing. Subjective Idealism can never be defeated by merely *postulating* a world outside to match the impressions of our senses; we have never any access to that world, even if it were possible; we are locked up within our own sensations and the formalities of our reason. The only way to defeat this idealism is to show the emptiness of all formal knowledge; our sense of reality, substantiality, and independence is outraged by it; we never get at the *core* of things, – something that subsists by itself and in itself. We seek this core outside, as something hidden among the forms of things; we do not know that we have it always with *ourselves*, in that Self in which all things are rooted and have their being. Reason has no place here; not because this Thing-in-Itself is unsubstantial and unreal; but because it cannot see It. It lies dazed before Its Feet, even as the cave – dwellers of Plato before the Sun of Truth. No eye can turn upon the Self, for It is the light of all eyes; no ear can hear It, for It is the hearing of all ears; no thought can think It, for It is the thinking of all thought. It sees Itself alone, It hears Itself alone, It knows Itself alone, – for It is all alone, all-knowledge, all-bliss.

Where reason fails!

The demand to subject everything to the test of reason is no doubt just; it is the only safeguard against blind faith and superstition. But after all how many things do we really take in, on the authority of reason? If we begin to reason before we believe, we shall never believe anything at all; for reasoning is only doubting, – its very forum is that of ‘may be’ of ‘may not be;’ it never affirms anything categorically, but only conditionally; without taking something for *granted*, such as sense – impressions, reason cannot proceed; it is hemmed in with limitations on every side; it is neither free, nor self – authoritative. The fact is that those who deify reason, want a convenient philosophy; they want to have somehow certified, what they are already prone to believe; ‘raking up’ is not in their nature; to go deep down to the very root of all

certitude is too painful an effort for them. Reason can never account for our belief in the world, much less for our belief in our own existence. How can it be otherwise? Reason does not stand upon its own legs; it is rooted in the Self, the Which is our only revelation, the only unwritten word, always unproven, the immemorial scripture and authority for all things that are and shall ever be. This is the Truth, and to require rational proof for It is to fail to recognize the nature and the limits of a proof.

Chapter III - Professor Zimmermann's Criticism of Advaitism

Prof Zimmermann of St. Xavier's college in his article on 'Truth and its Criterion is S'ankara's Vedanta' contributed to the Indian Philosophical Review, has tried, in a rather elaborate way, to examine the basis of Advaitic philosophy, and has come to the conclusion that notwithstanding its long tradition and following, notwithstanding also its appreciation by some over-enthusiastic but not equally critical Western scholars, Advaitism miserably lacks in all the requirements of a reasoned, (and may we not also say wholesome?) philosophical system. It will not, therefore, be out of our way, to examine here some points in his thesis which have struck us as rather very interesting.

The unity of truth a fundamental requirement.

He lays it down as a general principle (p. 307) that "it is unthinkable that a thing may be represented in philosophy by one source of knowledge, say the senses, as A, and by another, deductive reasoning, for instance, as Not-A, perhaps-B." This is undoubtedly true. If different means of knowledge give us different or contradictory versions of the same thing, either the versions are false, (and in the absence of a single court of appeal, scepticism is the result), or the thing represented is not the same in both cases. We completely agree with him when he says that 'the unity of truth remains in all cases a categorical imperative.' But the principle is never violated in Advaitism when it makes the distinction between *parā vidya* and *aparā vidya*, as Prof. Zimmermann appears to think. He says (pp 318-319), "Besides the contents of the two *vidyās* the origin of the distinction between the *parā* and the *aparā vidyā*, as well as the criteria of truth on which they are based, prove that their mutual relation is mainly that of logical contradiction.....What appears true in the one may be false in the other; for the tenets of the *parā* and the *aparā vidya* constitute each a separate domain of truth. Naturally the *parā vidyā* embodies the final, supreme, unchangeable truth, the *aparā vidyā* has, if the two collide, to be corrected by the *parā vidyā*. The criteria valid for the *aparā vidyā* may have to be nullified by the criteria of the *parā vidyā*, even one and the same criterion may lead to different conclusions in the two *vidyas* respectively."

This is not violated by Advaitism.

There can be no greater misunderstanding of Advaitic position than that which is displayed in the passage above. What is represented by the senses and the intellect (the criteria of the *aparā vidyā*) is neither contradicted nor even corrected by the *parā vidyā*. What appears red to the senses is not represented as white or yellow, or as any other colour, by the higher knowledge. Contradiction is only possible when opposite attributes are applied to a thing presumed to be the same. Hence there is an essential unity in contradiction, though that unity may be presumed and never demonstrated. Without this unity, the law of contradiction is meaningless. But where is any common platform between the higher and the lower knowledge, to which the application of the law of contradiction is attempted? The lower knowledge, or the knowledge of the world, is made up of certain forms, attributes and qualities. Contradiction is possible here when opposite attributes are applied to a thing assumed to be the same. But can the same relation exist between *parā* and *aparā vidyā*? *Do they give opposite versions of one and the same reality?* Let us take an instance. We see the red colour there; our eye certifies it as true. Now, how does the *parā vidyā* represent it? Evidently, it does not represent it as some other colour; instead, the question of colour or no-colour, the question of any attributes whatsoever (no-colour also being a negative *attribute*), does not arise there. We shall now ask Prof. Zimmermann, what is the sameness between the red colour which is a specific quality, and this unqualified and attributeless character of *parā vidyā*. And if no such element can be found out, contradiction can never be possible. Even if it is said that the essential thing (or the *thing-soul* if we may so call it), which is the basis of the red colour is also the basis of the attributeless truth of *parā vidyā*, it can never be shown that this essential thing and this attributeless truth are in any way distinguishable, or that they stand in the relation of a substance and a quality as in the former case. The fallacy will be evident as soon as we symbolise the different elements. Let x represent red colour, y the attributeless truth, and A the thing which is supposed to be their common basis. Here A is not red colour, or as a matter of fact *any colour*, i.e. $A = \text{not-}x$. Again y is not red-colour or any other colour, i.e. $y = \text{not-}x$. The conclusion is inevitable that $A=y$. If then the representation of the *parā vidyā*, namely y , lies at the basis of the representation of the *aparā vidyā*, namely x , where is any contradiction between them? The fact is that there is and can be nothing in *common* between the formal knowledge of *aparā vidyā*, and the attributeless Brahman. What is represented by the senses as A , is not represented by some Advaitic intuition as no- A or B . How can there be any *sameness* (on which all contradiction is based) between the qualified and the unqualified, between the formal and the formless? All contradiction is within the *aparā vidyā*, between attributes,—the work of the senses and the intellect. But where these have no place, and forms have no meaning, where duality does not exist,—how can such Reality contradict or be contradicted?

Shall we stop with the testimony of the senses?

We agree with Prof. Zimmermann when he says that a cognition 'is never more or less true, it is true or false.' The cognitions of the senses that make up the *aparā vidyā* are true so far as they go; none will call them false. Even Sankarācharya said that he would continue to believe the fire to be hot, even though the Sruti said otherwise. So far there is no question of falsehood about the world; it is true, and none will be so foolish as to go against the testimony of the normal healthy senses and the intellect, and make out a case for some other form of reality. So far also then philosophy has no special function; we can leave it safely to science to determine the nature of reality by the evidence of *what it may regard* as the healthy and the normal condition of the senses, and the laws of intelligence. The loudly trumpeted effort of philosophers to find out a criterion of truth has only resulted, after unnecessary and learned disquisitions, in the simple and self-evident dictum, "what appears to normal and healthy senses and does not contradict reason is true," –as though a philosophy was required to teach this to common sense. Prof. Zimmermann's three tests of a true criterion make very interesting reading in this connection.

Prof. Zimmermann's idea of a true criterion: (a) The criterion must be intrinsic.

He says, the criterion of truth must be *intrinsic*. And what does he mean by this? No more than the bare explanation of the word, an explanation that may be found in any dictionary. For he says in effect that every cognition is true in itself. I leave it to my readers to make out any other sense from the following words. "The purpose of the criterion of truth is to assure that a certain cognitive act represented the objective state of things on the one hand; on the other we know that the mind is able to attain the truth: therefore there must be within the mind, or more accurately within the complete act of cognition with its object, the final authority for the correctness of the mental representation."†

(b) It must be objective.

His second test of a true criterion is that it must be *objective*. He says (313), "It goes without saying that the motive of certainty must lie on the side of the object more than on the part of the mind; it must be objective and not merely psychological. For unless the certainty is based on the object itself, we shall have to look for its foundation in the knowing subject itself, and mere subjectivism in cognition becomes as unavoidable as it seems inadmissible." This is an absurd position. It violates every sense we can attach to a criterion. The object in itself does not require a criterion, does not require to know whether it is true or false, real or unreal. The question of criterion arises to us, who want to know how the object is in itself. But can we ever get out of our knowledge as it comes to us by our natural sense-organs, or compare this knowledge with the object as it is in itself? What sense is there, then, in saying that the criterion should be objective? Criterion is ours, a state or a standard of our organs which we *presume* is representative of outside reality. The object *itself* never enters into our

criterion. The doubt about its reality is to us and not to itself, the surety we want is for *our* satisfaction, and not for the satisfaction of the object; the means of correcting or fixing the standard is entirely relative to what *we* consider as true by the testimony of what *we* regard as the normal and healthy senses. The object does not inform us upon this point, it does not tell us what is true and what is false, it has nothing to do with the determination of our criterion. Prof. Zimmermann's objective test is absolutely meaningless.

It must be immediate.

But the matter does not stop here. There is yet another test, and more astounding than the first two. The criterion must be *immediate*. He says (p. 315), "The constitutive elements of complete certitude are the psychological act and the object. Within these two elements the criterion must reside, as it cannot be but intrinsic; the criterion of truth is based (directly) on the manifested object of cognition: therefore it must be immediate." I confess I fail to give any sense to the learned professor's words. The immediacy he is advocating here does not inform us about the criterion at all; for what cognition is not immediate, be it false or true? Even fancy and illusion are immediate in knowledge,—their manifested objects come directly within cognition. Are they then true? If they are, we need not have gone after a criterion of truth, for we make no distinction between truth and error. If they are not, immediacy is a mark of the criterion as it is of any cognition whatsoever, and no sense can be attached to the statement that the criterion of truth must be immediate. In fact, Prof. Zimmermann wants to achieve by the hypnotic spell of certain words, what he cannot by clear unmistakable thinking. He has left the problem of criterion untouched, and where it was.

Philosophy begins where science ends.

Advaitism leaves it to science to determine by the testimony of the senses, supported by the laws of thought, what the world is or is not. Philosophy has no function here; it must accept the conclusions of science so far as they go. It functions only when doubt has arisen as to the instruments themselves of scientific knowledge. Science can never go beyond the testimony of the senses, and so it can never eliminate doubt completely. Within its restricted field, guided by experimental results, it may appear to correct certain presentations by others more true; but these in turn will require correction, and so on *ad infinitum*, so long as there is no *absolute* standard of correction and science is entirely dependent upon its instruments. Under the very best circumstances conceivable, doubt will still remain as to the truthfulness of our senses. Is the reality after all such as it appears? Who will solve this doubt, get beyond the testimony of the senses, and expose or confirm their reports? Here begins the problem of philosophy and the question of a criterion of truth. Certitude is what we want, absolute certitude, for that must be the nature of Truth.

The absolute certitude.

The testimony of the senses is not contradicted then by the *parā vidyā*, for this testimony is not replaced by another more reliable. So long as we are dependent upon some sort of testimony, we can never, be sure of its absolute reliability. What Advaitism shows is that truth cannot be taken on testimony, for that may be false or true (it can never be supposed to be the latter by its very nature), but that which gives the character of testimony to testimony itself, and imparts to it the power of making convictions, must be itself beyond testimony, beyond proof and beyond all doubt.† That is our Self. We never question It, never doubt It, never seek Its proof. It does not contradict the evidence of the senses and the intellect, as Prof. Zimmermann appears to think, but makes them any evidence at all. All contradiction is relative to these Its instruments, but never with It. The senses as such are mere principles of doubt and not of conviction; but this doubt is relative to a certainty, the certainty of all certainties, the Self. And when we put the question, what is truth, we have in that very question demonstrated that nothing outside the questioner can ever, or in any sense, carry the badge of Reality. We may even place God outside, but even He will be liable to doubt, and subject to cancellation; He will partake of the rest of our sensuous knowledge.

There are thus no *two* standards of truth, No two standards, and no *two* domains, as may easily be construed by Western writers from the distinction of *parā* and *aparā vidyā*. There can be no *kinds* of certitude; certitude must be one and absolute. To say the *aparā vidyā* and *parā vidyā* are both true is to say that doubt partakes of the nature of certainty, and that there can be no criterion of truth. I cannot think that Prof. Zimmermann will agree to such a position.

Wherein Prof. Zimmermann errs?

All his difficulties arise because he conceives *anūbhava* (according to him the main proof of Advaitic Truth) on the lines of other instruments of knowledge. So conceived, it is quite meaningless, or at best some mysterious faculty beyond the pale of sane philosophical thinking. Naturally having once conceived *anūbhava* as an *instrument of knowledge*, Prof. Zimmermann is led to identify it with intellectual activity. He says (p 323), "A doubt however might be raised whether the *anubhava* in question is of such a nature that guarantees the absolute correct representation of its object.....Hence it is necessary that the act of *anubhava* should be of a purely intellectual nature, free from any foreign admixture that might be suspected to enter into the act either as efficient or final cause." Having so conceived, or better misconceived it, he then turns round, contrasts it with other specific proofs and finds no difficulty in demonstrating its futility. He says (pp 336-37), "But the philosophical student must be allowed to ask, *Quo jure* does S'āñkara put an act of *anūbhava*, the nature and object of which may be open to criticism at least, above unimpeachable

pramānani, such as pratyaksha and anumāna?..... But the staunchest admirer of his doctrine will have to admit that by putting anūbhava not only above but against the other sources of knowledge a double standard of truth is introduced into one and the same system of thought.....Can it ever be philosophically acceptable that one or more than one acknowledged source of knowledge is nullified by another which is not better but, if anything, worse accredited at the court of truth? Are we under any circumstances justified to use simultaneously or successively a double measure of truth, any more than to apply a double standard of morality?" All we can say is that Prof. Zimmermann is only fighting the illusions he himself has set up. Anūbhava is not a distinct form of proof as opposed to other forms; but if it is taken as one, it is meaningless and illusory, beyond at least all sensible and philosophical thinking. V. Subrahmanya Iyer, in his reply to Prof. Zimmermann in the April issue of the Indian Philosophical Review, has shown that anūbhava is not a specific instrument of knowledge for parā vidyā. He says (p 194), "We rely upon 'Pratyaksha' etc., i.e., perception, inference, and others, ultimately only on the ground of anūbhava." This anūbhava then must be understood not as a specific form of proof co-ordinate with other forms, but as the basis of all these; for it is that Self Itself, which is the proof of all proofs, the knowability of all knowledge, pure Intelligence.

The absurdity of his notion of Advaitic Reality.

But if Prof. Zimmermann is mistaken in his conception of Anubhava, no less is he mistaken in his idea of Advaitic Reality. He is labouring throughout his essay to show the inadequacy of anubhava to prove the identity of jivātmā and Paramātmā. He takes this distinction for granted, and then proceeds to examine the evidence which anubhava can offer for their identity. Not even the greatest miracle anubhava may be capable of, can render an *admitted duality* into a real *identity*. And yet Prof. Zimmermann with all philosophical gravity proceeds to show the incapacity of anubhava to prove the identity of jivātmā and Paramātmā, in an elaborate chain of reasoning. He says (p 324), "Now, can the Paramātmā be said to be purely internal in the aparā vidyā? Certainly not before the anubhava, for it is the anubhava which in S'añkara's teaching makes us realize the paramātmā as internal and not distinct from the jivātmā, the same paramātmā whom the aparā vidyā represents as distinct and external. For if the anubhava perceives already the paramātmā as identical with the jivātmā, then the anūbhava does not produce and convey any parā vidyā which is above and beyond the aparā vidyā. Would the anūbhava in fact not become superfluous? It may be said, the anūbhava only manifests to the jñānin the abheda that exists independently of his parā or aparā vidyās. Certainly, but this is just the point in question, how the ajñānin may become a jñānin, how he is enabled to obtain the Samaygdaars'anam." Even the most superfluous student of Advait will not take up such a ridiculous position,-the paramātmā is external, the jivatmā is internal, and anūbhava is somehow to weld them together, and make them both internal and non-distinct. To be external or internal are ideas altogether foreign to what Advaitism

regards as the Real; these form part of our knowledge of the world outside, of aparā vidyā; they have no place whatsoever in the highest Reality which is beyond all spatial distinctions; and yet Prof. Zimmermann wants to make parā vidyā out of aparā vidyā by making what is external in the latter appear internal by some fiat of anūbhava.

A deeper error underlies it.

A deeper misunderstanding, however, underlies all this. According to the learned professor, anūbhava is to *achieve* something; it is to 'produce and convey parā vidyā which is above and beyond the aparā vidyā.' Nothing can be more foreign to Advaitism, the very fundamental postulate of which is that Reality is ever complete and perfect; nothing is to be improved in It, added to It, or made up in It. Anūbhava is not to achieve a new victory, say the identity of paramātmā and jivātmā; all victory is in ignorance, all achievement mere vanity. The Truth always remains in Its nature, unaffected by what you do or do not do. Atman and Brahman are only two names for the same Reality, they are not two things to be united in a third or melted one into the other. But Prof. Zimmermann little understands this, and goes on in the same strain on p. 326, where he says, "..... the anūbhava is the only means of arriving at the individual consciousness that the I is identical with brahma....."

A genuine obstacle.

We recognize that there is one genuine difficulty in the way of Prof. Zimmermann, without the removal of which all our attacks against his position will remain ineffective and futile. If the Reality is self-luminous, always perfect and complete, if nothing is to be achieved or made good, let us all disperse to our respective homes, close up books of philosophy, and cease all talk about jñani and ajñani, ignorance and knowledge, bondage and liberation, Advait and dvait etc. The very fact that we claim superior knowledge, and quarrel about the nature of Truth, shows that all is not well with us, and so with Reality of which we form a part. Surely our present undertaking itself is a proof that we regard some, say Prof. Zimmermann in this instance, as quite ignorant of the Truth, and thus make a real distinction between jñani and ajñani; how is the gulf between them to be bridged without some effort and achievement?

Some considerations for removing it.

This difficulty formidable though it appears is due to misunderstanding. We shall set forth different points of view and leave it to our readers to judge whether the objection can hold ground. Here the most important point to consider is that we must know the mentality of a jñani and that of an ajñani perfectly, before we can say that certain means are necessary to make a transition from the one to the other. Do we really consider ourselves in ajñan or ignorance? We may have conceded it for the sake of

argument, but surely we have no sense of what is ajñan, and regard ourselves as very learned and wise indeed; similarly jñan is also to us a mere *postulate*, some distant happy *state*, which may be obtained somehow, but which we do not understand at present. It is evident here that we have raised a question, which is couched in terms that are to us absolutely meaningless; it is no question at all, if intelligibility be the characteristic of every true and honest question. On the other hand, so long as we make jñan a *state* as distinguished from ajñan, we have not known the Truth; for that is beyond all states. The consciousness that I was ignorant and has now come to know, if it were possible, would justify the reality of ajñan, and give it and so the world of aparā vidyā a place side by side with Brahman, which will thereby cease to be the sole Reality. But this consciousness, according to Advait, points to ignorance, and not to true enlightenment as yet. From the point of view of this, there is no jñan and ajñan,-these are mere creations of human fancy; there is no truth in them. It is in this spirit that Sankaracharya says in Atma Bodha, sloka 5.

(“Hindi passage omitted here”)

Lastly, the mentality of the true jñani, if it can be portrayed at all, will run in something like the following strain:—“Oh, it was a great folly to go about searching what was already secure in possession; to obtain what was already obtained, to seek what had never been lost, to know what was always known; it was mere ignorance to go about seeking and doing” How can it be otherwise? The Self which is ever present and always known, we think to be distinct from us and outside. But there is a comic aspect to this question;—the Self does not appear to us as any sort of valuable reality; we may regard It as always with us, and always undoubted, but It does not impress us in any way; It appears to give us a sense of emptiness; we want a *great reality* to dazzle us or fill us,—*to do something with us*. We forget that it is *by* our Self that we go about proving and disproving, establishing and demolishing, doing and undoing; and that it is in that Self alone, that dazzle becomes dazzling, and power Till Prof. Zimmermann can make up his mind to learn this, all our arguments will appear to him as mere empty air; we cannot help it; Advaitism is too delicate a discipline for the average mind; we can never teach by argument what to call real and what to call unreal, even as the blind cannot be made to see by reasoning; the sense of their distinction is original and natural to the mind that sees; but he who refuses to see, for him there is no way; we cannot make him see.

Books published by the same author:—

1. Problem of Nothing, royal size, pp 35. Price Re. 1.
2. Metaphysics of Energy, Royal size, pp 200. Price Rs. 2-8 as.
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The books can be had from the Indian Institute of Philosophy, Amalner, E. Khandesh.

Printed by H.F. Maharaja at the Shri Venktesha Press, Amalner, and published by G.R. Malkani M.A.

¹See *Introduction*, p. 2.

²C.W. Leadbeater, *The Hidden Side of Things*, p. 8.

¹C.W. Leadbeater, *The Hidden Side of Things*, p. 5.

²C.W. Leadbeater.

¹“Scientific Corroborations of Theosophy” and other monographs (see Scheme).

²Frederick Soddy, *The Interpretation of Radium*.

¹Monographs on “Archæology” and “Psychic Research” (see Scheme).

²Monographs on “Theosophy and Modern Science” and “Whither Science” (see Scheme).

³Monograph on “Archæology” (see Scheme).

¹*Nature*, 8 May 1937, p. 784.

²*Nature*, 12 June 1937, pp. 997 to 1,012.

¹“Anthropology” and several other monographs (see Scheme).

¹*Vide infra* p. 14; and also *Current Science*, January 1938, p. 340. Presidential address by (the late) Lord Rutherford on “Transmutation of Matter”.

¹“Chemistry” (see Scheme).

²*The Secret Doctrine*, I, 518.

¹“It is impossible not to feel the greatest respect for Madame Blavatsky’s writings on this subject [What is the Soul?]; of respect, and if the word be permitted, of admiration, writing when she did, she anticipated many ideas which, familiar today, were in the highest degree novel fifty years ago.” (From an article by Prof. C.E.M. Joad on “What is the Soul?” in *The Aryan Path*, May 1937).

¹Marcault and Hawliczek, *The Next Step in Evolution*, p. 8.

ⁱGerald Heard, *Science Front*, 1936, pp. 169-172.

ⁱⁱ“Science, a Basis for Philosophy,” a lecture by Lord Samuel, President of the British Institute of Philosophy, on the occasion of the Silver Jubilee of the Indian Science Congress, Calcutta, *Current Science*, January 1938, p. 321

ⁱⁱⁱ“Chemistry” (see Scheme).

^{iv}*The American Theosophist*, October 1936, p. 229.

^vEddington, *The New Background of Science*, p. 282.

¹*ibid.*, p. 283.

¹S.D., I, 293-4.

²S.D., I, 299.

¹III, 14, 3, trans. Max Muller.

²V, vi, trans. Max Muller.

¹Much of the information in preparing this table is taken from E.W. Preston’s *The Earth and its Cycles*.

¹The reader is referred to the Tibetan commentary to the *Book of Dzyan* recorded in *The Secret Doctrine*, Vol. II, p. 339. How did the ancient writer of this commentary know that the slowing down of the rotation of the earth or its speeding up would produce exactly the effect that our modern scientists are evoking to explain the ultra-modern discovery of riverbeds under the sea? *Vide* Professors H.H. Hess and McClintock of Princeton University in *Science* of 3 April 1936.

¹C.W. Leadbeater, *The Masters and the Path*, pp. 376-385.

¹For the rationale of number seven see the monograph on "Chemistry" (see Scheme). — Ed.

¹*Nature*, vol. 139, p. 994 (1937).

²*The Story of Atlantis*, p. 27 et seq.

³The remarkable cave art of "Stone Age" man in France and Spain is of course much older than this, but though the drawings and paintings would do credit to a modern artist, these men had no knowledge of masonry, pottery, weaving or agriculture, and therefore cannot be considered civilized. Occult research indicates that these people, the Cro-Magnons, were the degenerate descendants of one of the Atlantean races. See *Corroborations of Occult Archæology*, p. 21.

¹*The Story of Atlantis*, p. 3.

²Other centres of this period are discussed in *Corroborations of Occult Archæology*.

¹*The Story of Atlantis*, p. 17 et seq.

¹Occultists and some geologists believe that Lemuria extended into the Pacific.

¹See his *Die Geschichte des Atlantischen Ozean*, 1927.

²The grounds on which these authorities base their views are summarized in E.W. Preston's *The Earth and Its cycles*, pp. 82-88. See Bibliography.

³*The Changing World of the Ice Age*, p. 84.

¹*The Changing World of the Ice Age*, p. 157, et seq.

²*ibid.*, p. 48.

¹*The Changing World of the Ice Age*, p. 181.

²The land would rise under the influence of two distinct processes known technically as plastic and elastic recoil.

The deep-seated viscous material under the area of depression would be squeezed outwards and would cause an upward pressure beyond its borders. See *The Changing World of the Ice Age*, p. 119 et seq. Elastic recoil would operate as follows: It seems reasonable to suppose that Poseidonis sank through some deep-seated weakness in the crust giving it inadequate support. For a time the stable crust surrounding it would resist the tendency for Poseidonis to sink and the crust would then become depressed under the tremendous load. When the strain became too great the crust must have fractured (faulted), the island-continent sunk into the depths of the Atlantic, and the surrounding areas, released from their load, must have sprung upwards.

¹*The Changing World of the Ice Age*, p. 70.

²F. Nansen, *Avhand, Norske Videnskaps-Akad*, Oslo, KI, I, No. 12, 1928, p. 63.

¹*The Changing World of the Ice Age*, p. 65.

²*Man: Whence, How and Whither*, p. 312.

³See *Climate through the Ages*, Chap. III.

⁴*The Changing World of the Ice Age*, p. 57.

¹The dates are based on the work in recent years of De Geer and his pupils. In parts of Sweden the clay deposits left by the retreating ice have been laid down in thin layers, one layer each summer as the ice retreated. De Geer counted these layers and thus obtained a positive chronology. His work has been accepted by every geologist who has examined the evidence. See Art. "Glacial Period," *Enc. Brit.*, 1929.

¹*The Changing World of the Ice Age*, p. 59.

²*Man: Whence, How and Whither*, p. 266 et seq.

¹E.L. Gardener, in *The Theosophist*, September 1932, p. 747, was the first to point out that this expedition had confirmed the existence of an inland sea in the Gobi.

²*Across the Gobi Desert*, 1931, p. 376.

¹ C.P. Berkey and F.K. Morris, *The Geology of Mongolia*, 1931, pp. 14-18 for an account of early expeditions. The appendix to this work contains a full bibliography.

²*The Lost Lemuria*, p. 13.

¹*Man: Whence, How and Whither*, p. 412.

² *ibid.*, p. 247.

³*The Changing World of the Ice Age*, p. 58 et seq.

¹*The Geology of Mongolia* (1931), p. 383, and fig. 157.

¹*Man*, p. 292 and Chap. XVIII. Further details will be found in *The Lives of Alcyone*, V, VI, IX, X, XI.

²J.H. Breasted, *Ancient Times*, 1916, p. 128. The exact date is controversial.

³*ibid.*, p. 107.

¹From the context it is clear that by Semite the Arab type is meant.

²*Recherches sur les Origines de l'Egypte*, 11, p. 269.

³*Ur Excavations; Al-Ubaid*, 1927, pp. 216, 240.

⁴*Sumeria*. p. 15.

⁵Though excavations were first undertaken by Taylor in 1854, a series of examination of the sites were not made till after the World War. *Enc. Brit.*, Art. *Ur*. (1929). See C. Leonard Woolley's *Sumeria and Ur of the Chaldeas*, and Prof. Langdon's *Excavations at Kish*.

¹*Sumeria*, p. 115 et seq.

²See *Illustrated London News*, 20. 27 September and 4 October 1924; 27 February and March 1926.

³*Sumeria*, p. 49.

⁴*New Light from the Most Ancient East*, 1933, p. 184.

⁵*ibid.*, pp. 140, 182.

⁶The first (preliminary) account of the excavations at Mohenjo-daro appeared in *Report Arch. Survey India*, 1923-4, pp. 52-5. *Sumeria*, pp. 8, 9.

¹*Cambridge Ancient History*, vol. 1, p. 362. (1923).

²*The Indo-Iranian Borderlands*, (1934).

¹*New Light from the Most Ancient East*, p. 277.

²*Sumeria*, p. 24, et seq.

³*Earth and its Cycles*, p. 121.

¹*New Light from the Most Ancient East*, p. 147.

¹*Man: Whence, How and Whither*, 1913, p. 279 et seq.

² *ibid.*, p. 290.

³*The Lives of Alcyone* 1924, p. 70.

¹*Man: Whence, How and Whither*, p. 290; *Ancient Egypt*, 1929, p. 41.

²*The Theosophist*, Vol. XXXIII (1911-12), p. 263 et seq; *The Lives of Alcyone*, pp. 47, 55.

³*The Lives of Alcyone*, pp. 61, 71.

¹*The Lives of Alcyone*, p. 70.

²In Europe pottery was not known until the much later Neolithic age.

³Sir Arthur Keith, *New Discoveries Relating to the Antiquity of Man*, Chap. X.

¹*Nature*, 21 March 1925, p. 426.

¹*Nature*, 30 March 1929, p. 495.

¹J.B. Rhine, *Extra Sensory Perception*, 1934.

¹*The Story of Atlantis*, p. 19.

²*The Changing World of the Ice Age*, p. 48.

¹*The Changing World of the Ice Age*, pp. 57-8.

²*ibid.*, p. 157 *et seq.*

¹*Corroborations of Occult Archæology*, p. 31.

¹S.D., III, 74.

¹For cyclic law, see "Chemistry" (see Scheme). — Ed.

²*Lettre sur l'Atlantide*, p. 15, quoted in S.D., II, 785.

³S.D., II, 821.

⁴S.D., I, 362.

⁵French historian (1795-1856) quoted in S.D., I, 739.

⁶S.D., II, 235.

¹S.D., II, 235, and also 804-21.

²S.D., III, 295-96.

¹*L'Origine de tous les Cultes*, 10 volumes, by 'le Citoyen Dupuis.' "It is an absolute necessity to apply the astronomical key to Ancient Theology, as without it the sanctuary of the Gods remains closed for us. Mythology in its origin is a work of science; science alone will explain it" (Vol. IX, p. 235).

¹For the elaboration of all this see *Studies in Symbolism* by the author of this monograph.

²*The Next Step in Evolution*, p. 32. (The italics are mine. — M.M.S.)

¹Perception for the Race is the taking consciousness of itself, and establishing the elements of its basic structure, those elements being the seeds of its septenary unfoldment.

²This Principle is rudimentary in animals. Men are perfecting it, and are not to be compared to animals, for, in man, consciousness is individualized and joined to a spiritual Ego, while in the animal consciousness is specific, *i.e.*, belongs to the group.

¹Forces in Nature; 36 in the manifested world, 49 in all.

²*L'Origine de Tous les Cultes*, Vol. II., p. 182.

¹This refers to the possibility of production of gold from mercury by the expulsion of one helium atom. — Ed.

²C.W. Leadbeater, *Glimpses of Masonic History*.

³"Symbolism and Psychology," an article by Professor J.E. Marcault in the Quarterly Bulletin of the Theosophical World University (March (1930) out of which some of our data are taken.

¹*Pagan and Christian Creeds*, pp. 51, 67.

²*The Book of the Beginning*, Vol. II, p. 246.

³"Symbolism and Psychology."

¹*The Mystical Hymns of Orpheus*; Proclus' commentary on Plato's *Republic*; Taylor's translation, p. 71, note 61.

¹"Symbolisme et Psychologie," an article in the French Revue Théosophique *Le Lotus Bleu*.

¹Theosophical students have started establishing those correspondences, using them in the interpretation of symbols. See Bibliography.

¹Extract from a leaflet issued by the Research Group for Symbolism of the Theosophical University, 1932.

²The synthetic primordial substance out of which emerge the elements and which is consequently the Source of all things. A plenum.

³*The Next Step in Evolution*, Chapter X.

¹S.D., III, 366.

¹ S.D., I, 343. (Italics mine. — M.M.S.)

¹ See on that subject our work: *Space and the Cross: Their Symbolism in Cosmos and in Man*.

¹ S.D., I, 398-99.

¹Introduction, p. 1.

²H.P. Blavatsky, *The Secret Doctrine* was first published in 1888.

¹ By courtesy of the Editor, *The Theosophist*.

¹ By courtesy of the Editor, *The Theosophist*.

¹A perusal of these is recommended along with this Introduction.

²*The Times of India*, Bombay, 26-8-32.

¹"Notes and News" by the Editor himself in the *Journal of the University of Bombay*, Vol. I. Part II, September 1932.

¹Annie Besant, *The Basis of Morality*, 1915, pp. 17-18.

¹ See "Scientific Corroborations of Theosophy," Part I. Also, "Archaeology," and other monographs in the book.

² See Introduction, Part I, pp. 1-6. (The relationship between metaphysics and science is also discussed here.)

³Monographs on "Archaeology" and "Psychic Research" (see Scheme).

¹See Introduction, Part I, p. 2, for a detailed account.

²*Current Science*, January 1938, p. 340. Presidential Address by (the late) Lord Rutherford on "Transmutation of Matter."

³J.W.N. Sullivan, *Limitations of Science*, p. 194.

⁴ S.D., I, 518.

⁵Eddington, *New Pathways in Science*, p. 26.

⁶J.W.N. Sullivan, *Limitations of Science*, p. 192.

¹"Relativity," p. 99.

²"Chemistry," diagram 2.

³Part I, p. 6.

⁴The monographs on "Yoga," "Philosophy" and "Psychology" in Part III of this Series deal with this subject.

¹Introduction, Part I, p. 4. Dr Lester Smith's article on "The Future of Science" in *The Theosophist*, June 1938, p. 248.

²Introduction, Part I, p. 9.

¹Introduction, Part I, p. 13.

²S.D., I, p. xxi.

¹In pseudo-occultism one thinks only of gaining power, getting-rich-quick, etc., for one's own aggrandizement by the exploitation of others. The talisman in true occult life, on the other hand, is a clean, loving, unselfish life of service and sacrifice.

²*Nature*, 8 May 1937, p. 784. *ibid.*, 12 June 1937, pp. 997 to 1,012.

¹J.W.N. Sullivan, *Limitations of Science*, p. 196. See also Introduction, Part I, pp. 3-4.

²C. Jinarajadasa, *First Principles of Theosophy*, p. 140.

¹S.D., the Stanzas of Dzyan, III, 10.

¹S.D., I, 635. (S.D. stands for *The Secret Doctrine*.)

²S.D., I, 281.

¹For the help received in writing the short sketch given here on the "Theosophical View of the Origin and Creation of Matter," the writer is indebted to the classic theosophical literature. He has made free use of the information given in C. Jinarajadasa's *First Principles of Theosophy*, particularly Chap. VIII (T.P.H., Adyar) and Annie Besant's *A Study in Consciousness*, Introduction and Chap. I, (T.P.H., Adyar) for which he tenders his grateful acknowledgements both to the authors and the publishers. For an exhaustive account of this subject the reader is referred to Madame Blavatsky's *The Secret Doctrine*, Vol. I, which deals with the question of Cosmogony.

¹C. Jinarajadasa, *First Principles of Theosophy*, pp. 127-28.

¹For a detailed account of the formation of planes and sub-planes, see the monograph on "Matter and the Atom." – Ed.

²S.D., I, 309.

¹R.F. Goudey, "The Occultism of the Atom," *The Theosophist*, April 1937.

²C. Jinarajadasa, *First Principles of Theosophy*, p. 140.

¹S.D., I, 600.

²Proceedings of the Royal Society, 9-6-1898.

¹S.D., I, 171.

²S.D., I, 162.

¹S.D., I, 601.

¹S.D., I, 622.

²Energy of the Logos.

³S.D., I, 163.

¹S.D., I, 671.

²1888, the date of this writing.

¹The Mahatma Letters to A.P. Sinnett, p. 341.

¹Soddy, *The Interpretation of Radium*, p. 250.

¹*Vide infra*, p. 52.

¹*Nature*, 31-7-1937, p. 188

²24-4-1937.

¹See Part I of this Series, Introduction, pp. 10-14.

²S.D., I, 609.

³S.D., I, 615.

¹See Part I of this Series, pp. 141-43.

¹Kingsland, *The Physics of The Secret Doctrine*, p. 141.

¹S.D., I, 497.

¹See in this connection F. Petrie's *Revolution of Civilization*.

¹ Diagram 7. The lines of research are indicated in the monograph on “Matter and the Atom.”—ED.

¹ See the monographs on “Psychology” and “Psychic Research.”—ED.

²Eddington, *New Pathways in Science*, p. 26.

³ Diagram 7.

⁴ S.D., I, 174.

¹ S.D., I, 171-72.

² *Current Science*, January 1938, p. 340, Presidential address by (the late) Lord Rutherford on “Transmutation of Matter.”

³ See Part I of this Series, Introduction, p. 14.

¹ Diagrams 7 and 1.

² C. Jinarajadasa, *First Principles of Theosophy*, p. 97.

¹ S.D., I, 517-18.

¹ S.D., I, 560.

¹Lodge, *Ether and Reality*, p. 139.

¹Lodge, *Ether and Reality*. p. 139.

¹E.L. Gardner, *The Fourth Creative Hierarchy*, Transaction of the Blavatsky Lodge of The Theosophical Society, London.

¹ S.D., III, 534.

²For rhythms in Nature see the monograph on “Chemistry,” p. 55.—ED.

¹How very close to this is the description given by Sir James Jeans in 1930 (42 years later) in his book *The Mysterious Universe*, p. 77, when he speaks of matter as “nothing but a sort of congealed radiation.”—ED.

¹ S.D., III, 508.

² S.D., III, 509.

¹O.C. Gangoly, “The Birth of Melodies,” in *The Aryan Path*, January 1937.

¹For details see *Ragas and Ragini*, by O.C. Gangoly.

²*The Theosophist*, April 1936, p. 11.

¹This is my personal experience. I have received a glimpse of this science from an Indian sage living at present at Nasik, India.

¹There is a science of colour, sound and numbers. They all go together. The sages of ancient India had a knowledge of this science. There is a vast field for research here. It is a field of research in which scientists and occultists may well collaborate.—ED.

²S.D., I, 606.

¹Quoted from J.W.N. Sullivan’s *Limitations of Science*, p. 84.

¹A.P. Sinnett, *Esoteric Buddhism*, 1884, p. 172.

¹ S.D., I, 683.

²*The Physics of The Secret Doctrine*, p.66.

¹ S.D., I, 136.

² S.D., I, 523.

³ S.D., I, 561.

⁴ S.D., I, 521.

⁵Trans. Blav. Lodge, ii, p.27, quoted from *The Physics of The Secret Doctrine*, p. 133.

¹ S.D., III, 399.

² S.D., I, 295.

¹*The Physics of The Secret Doctrine*, pp. 11. 25.

²S.D., I, 167.

¹*Nature*, 8-5-37, p. 784 and 12-6-37, pp. 1,000-1,012.

²*ibid.*, 12-6-37, p. 1,000.

³S.D., I, 518.

⁴In this connection I may particularly draw the attention of my readers who are interested in Science in its relation with Theosophy, to read the series of brilliant articles in *The Theosophist* of June 1938, written by learned members of the Science Group of the Theosophical Research Centre, London.

¹ S.D., I, 560.

² S.D., I, 605.

³ See in this connection *Studies in Evolutionary Psychology*, by Preston and Trew.

¹ Sullivan.

²Max Born, *The Restless Universe*.

¹Westaway.

²Sullivan.

¹The Principle of Least Action may mean either the *Shortest* or the *Longest Route*, as the mathematical principle from which it is derived only makes the first differential of the path zero.

²*The Stanzas of Dzyan*, I, 1, 5, 7; III, 1, 2.

¹S.D., I, 40, 45.

¹For a graphic representation of what is described here, see diagrams in the monograph on "Chemistry," particularly diagram 2. — ED.

²W.F.G. Swann, *The Architecture of the Universe*.

¹Einstein.

¹ Crowther, *Soviet Science*.

¹Fohat is the energy of the Logos. — ED.

² S.D., I, 43.

¹Westaway.

²Lytton, *Zanoni*.

¹Jauncy, *Modern Physics*.

¹See in this connection the monograph on "Chemistry," p. 50.

¹*The World As I See It*.

¹Aristippus Cyrenaic.

¹Issac Newton.

²Benjamin Peirce.

¹Edwin Arnold.

²G.H. Lewis.

³Paul Carus.

¹*Life of Lord Kelvin*.

¹S.D., I, 303.

¹Adapted from *Evolution in the Light of Modern Knowledge* (a collective work).

¹Quarterly Bulletin of the Theosophical World University, 1931. No 2. "Environment: Human and Non-Human."

² *ibid.*, 1930, No. 3. "The Psychological Basis of Individual Education."

¹ S.D., II, 308.

² S.D., II, 313.

¹ C. Jinarajadasa. *First Principles of Theosophy*. p. 5.

²H.T. Edge, *The Theosophical Path*. June 1932.

¹*The Great Design*, edited by Frances Mason, p. 286.

²*ibid.*, p. 130.

¹*ibid.*, p. 132.

¹ Diagram 4 in the monograph on "Chemistry" brings out clearly the fundamental difference in constitution between the human kingdom on the one hand and the mineral, plant and animal kingdoms on the other. — Ed.

¹Mu. Up., I. 2. 7-8.

²Chā. Up., VIII. 1. 6.

³ tam evaikam ātmānaṃ jānatha, anyā vāco vimuñcatha, amṛtasyaiṣa setuh. Mu. Up., II. 2.5.

⁴ sarvasya vaśi sarvasyeśānah sarvasyādhipatih. Br. Up., IV. 4. 22.

⁵ vidyayā vindate'mṛtam. Kena Up., II. 4.

⁶ yadā sarve pramuñcyante kāmā ye'sya hr̥di sthitāḥ |
atha mar̥tyo'mṛto bhavaty atra brahma samaśnute ||

⁷The utter futility of such attempts is shown by the author of the *Bhagavadgītā* (II. 59) saying that the objects of senses may turn away from a man who does not take food, but not his desire for them.

⁸AN., III. 653: iti kho kālāmā yaṃ taṃ avocumha—ettha tumhe Kālāmā mā anussavena mā paramparāya mā itikirāya vā mā piṭakasampadānena mā takkahetu mā nayahetu ākāra-parivitakkena mā diṭṭhinijjhānak-khantiyā mā bhavyarūpatāya mā samaṇo no garū ti, yadā tumhe Kālāmā attanā va jāneyyātha—ime dhammā kusalā ime dhammā anavajjā ime dhammā viññuppasatthā ime dhammā samattā samādinna hitāya sukhāya samvattanti—atha tumhe Kālāmā upasampajja vihareyyāthā ti—iti yaṃ taṃ vuttaṃ idam etam paticca vuttam.

⁹ tāpāc chedāc ca nikaṣāt suvarṇam iva paṇḍitaiḥ |
parīkṣya bhikṣavo grāhyam madvaco na tu gauravāt ||

Jñānasāra-samuccaya, 31.

The original Sanskrit of the *Jñānasāra-samuccaya* which is attributed to Āryadeva is not yet found, but there is a Tibetan translation by Upādhyāya Kṛṣṇarava of India and Bhikṣu Dharmaprajña (Chos kyi śes rab) of Tibet. See Tanjur, mdo, tsha, fol. 26; Cordier, III, p. 298. In Tibetan it is called *Ye śes sñiñ po kun las but pa*. It is a collection of only thirty-eight kārikās some of which are found quoted in the *Subhāṣitasan̄graha*. The above kārikā in Sanskrit is quoted in TSP., pp. 12, 878, and the Tibetan version in the *Grammar of the Tibetan Language* of Csoma de Körös, 1834, p. 168. Cf. the following couplet embodying the attitude of Haribhadra:

pakṣapāto na me vīre na dveṣaḥ kapilādiṣu | yuktimaḍ vacanaṃ yasya tasya kāryaḥ parigrahaḥ ||

'I have no partiality for Mahāvira, nor have I any aversion to Kapila and others; but he whose words are reasonable is to be accepted.'

¹⁰ Sometimes instead of *saraṇa* the reading is *śaraṇa*. See *Dharmasan̄graha*, LIII. In fact, the meaning is the same.

¹¹ *Bodhisattvabhūmi*, I. xvii (AK, IX. 246):

punar bodhisattvaḥ° prajānan yuktipratīsarāṇo bhavati na sthavireṇābhijñānena vā pudgalena tathāgatena vā saṅghena vā ime dharmā bhāṣitā iti pudgala-saraṇo bhavati. sa evaṃ yuktipratīsarāṇo no pudgalapratīsarāṇas tattvārthān na vicalati aparapratyayaśca bhavati.

Sometimes for *yukti*° we have *dharmā*° ‘truth.’ MVt, § 74: dharmapratīsarāṇena bhavitavyaṃ na pudgalapratīsarāṇena.

¹²MN, Vol. I, pp. 426 ff., 483 ff.; SN (*Avyākata Saṃyutta*), Vol. IV, pp. 374 ff.

¹³*Tathāgata*, according to Buddhaghosa, in such cases means *jīva*, i.e. ‘soul.’

¹⁴ attachment to the worldly enjoyments (*kāmesu kāmasukhallikānuyoga*) and self-mortification (*attakilamathānuyoga*) as preached by the Blessed One in the *Dhammacakkapavattanasutta*; and the other avoiding the two extremes or points (*antas* or *koṭṭis*), such as ‘it is’ and ‘it is not’ (*asti* and *nāsti*); ‘it is eternal’ and ‘it is not eternal’ (*nitya* and *anitya*); ‘it is ātman’ and ‘it is not ātman’ (*ātman* and *anātman*), and so on. See MK, XV. 7:

kātyāyanāvavāde ca asti nāstīti cobhayam |
pratiśddham bhagavatā bhāvābhāvavibhāvinā ||

See also MV, p. 269; SN, II, p. 17; KP, § 60.

¹⁵MK, XV. 10; *Catustava*, III (*Acintyastava*). 21; *astīti śāśvatagrāho nāstīty ucchedadarśanam |*

¹⁶śāśvatocchedanirmuktaṃ tattvaṃ saugatasammatam. AS, p. 62.

¹⁷evamādyenottarottarakramalakṣaṇavidhināvyaḥkr̥tāti pr̥ṣṭāḥ sthāpanīyaṃ bhagavatāvyaḥkr̥tam iti vakṣyanti, na tu te mohapuruṣā evaṃ jñāsyanti yathā śrotrṇāṃ buddhivaikalpāt, tathagatā arhantaḥ samyaksambuddhā uttrāsapadavivarjanārthaṃ sattvānāṃ na vyākurvanti. avyākṛtāny api ca mahāmate tīrthakaradr̥ṣṭivādavyudāsārthaṃ nopadiśyante tathāgatāiḥ. tīrthakarā hi mahāmate evaṃvādino yad uta sa jīvas taccharīram anyo jīvo’nyac charīramity evamādye ‘vyākṛtavādaḥ. tīrthakarāṇāṃ hi mahāmate kāraṇavisammūdhānāṃ avyākṛtam, na tu matpravacane. matpravacane tu grāhyagrāhakavisamyukte vikalpo na pravartate. teṣāṃ kathaṃ sthāpyaṃ bhavet. ye tu mahāmate grāhyagrāhakābhiniṣṭāḥ svacittadr̥ṣyamātrānavadhāritamatayas teṣāṃ sthāpyaṃ bhavati. caturvidha-padaprasnavyākaraṇena mahāmate tathāgatā arhantaḥ samyaksambuddhāḥ sattvebhyo dharmāṃ deśayanti. sthāpanīyaṃ iti mahāmate kālāntaradeśanaishā mayā kṛtāparipakvendriyāṇāṃ na tu paripakvendriyāṇāṃ sthāpyaṃ bhavati.

See also TS with its *Pañjikā*, verse 348 (p. 129).

¹⁸It was an old custom in the country and is still prevalent here and there that it was at the last stage of one’s life that one would tell one’s favourite son or disciple the most secret thing. This is called ‘the closed fist of a teacher’ (*ācariyamut̥ṭhi*, *ācāryamuṣṭi*).

¹⁹AK, V, 22:

[*ekāṃśena vibhāgena pṛcchātaḥ sthāpanīyataḥ |*
vyākṛtaṃ] maraṇotpattiviśiṣṭātmānyatādivat ||

See LA, pp. 116, 280; MVt, § 86; DN, III, 229; AN, I. 197, II, 46; MP, p. 144; Vyāsa’s commentary on *Yogasūtras*, IV. 33.

²⁰ Cf. *śūnyatā sarvadr̥ṣṭināṃ proktā niḥsaraṇaṃ jinaiḥ |*

yeṣāṃ tu śūnyatādr̥ṣṭiḥ tān asādhyān babhāṣire ||

It is quoted in Candrakīrti’s commentary on *Catuḥśataka*, Visvabharati, p. 272; BAP, p. 414; SS, pp. 25-26; *Abhisamayālaṅkāraloka*, GOS, p. 478.

It means that *śūnyatā* is declared by the Jinas as a remedy for getting rid of all wrong views. But those who have the view of *śūnyatā*, i.e. the strong adherence (*abhiniveśā*) to *śūnyatā*, are said by them incurable.

²¹ Br. Up., III. 9.26; IV. 2.4; 4.22.

²²*Kaṭha* Up., I. 2.7: āścaryo vaktā° āścaryo jñātā. See also *Bhagavadgītā*, II. 29.

²³ *anakṣarasya dharmasya śrutiḥ kā deśanā ca kā |*
śrūyate deśyate cāpi samāropād anakṣaraḥ ||

Quoted as the speech of the Blessed One in MV, p. 264; BAP, p. 365. See also MV, pp. 348, 429:

yo 'pi ca cintayi śūnyaka dharmān
so 'pi kumārgapapannaku bālah |
akṣarakīrtita śūnyaka dharmāḥ
te ca anakṣara akṣara uktāḥ ||

'That man, too, who thinks all things to be void in essence is foolish and has gone astray. The things which are void are described in letters; but in fact they have no letters (for their description), yet they are described in letters.'

²⁴ paramārtho hy āryāṇāṃ tūṣṇīmbhāvaḥ. MV, p. 56.

²⁵ na maunais tathāgatāir bhāṣitam, maunā hi bhagavaṃs tathāgatāḥ.

²⁶ paramārthas tv anakṣaraḥ.

²⁷ paramārthas tv asaṃlāpyo gocaro vacasāṃ na saḥ.

²⁸ na kvacit kasyacit kaścid dharmo buddhena deśitaḥ.

²⁹ MV, p. 370: loko mayā sārddhaṃ vivadati nāha lokena sārddhaṃ vivadāmi. See SN, III, p. 138: na bhikkhave dhammavādi kenaci lokasmiṃ vivadati.

³⁰ sayam abhiññā sacchikatvā. DN, III, p. 76.

³¹ DN, II, p. 217; *Visuddhimagga*, p. 216: ehi passa imaṃ dhamman ti evam pavattam ehi-passa-vidham arahatiti.

³² *Yogasūtra*, Comm. of Vyāsa, II. 15; *Sāṅkhyasūtra*, Comm. of *Vijñānabhikṣu*, I. 1 (Introduction); *Nyāyasūtra*, Uddyotakara's *Vārttika*, I. 1. 1.

³³ evam koṭikoṭigrāmātmakeṣu ṣaṇṇavativaiṣayeṣu ṣaṇṇavatibhāṣayā likhitam. — *Vimalaprabhā*, a commentary on the *Laghukālacakratantrārāja* described by Haraprasad Shastri in his *Descriptive Catalogue of Skt. MSS in the Government Collection*, Vol. I, p. 77.

³⁴ *Vinaya Piṭaka*, XI. 1. 1.

³⁵ LA, pp. 134-135; SP, pp. 46, 48. *Brahmayāna* seems to be the same as *Mahāyāna*.

³⁶ Govt. Oriental Series, Poona, 1924, p. 19.

³⁷ *Lalitavistara*, Bib. Ind., pp. 448, 458.

³⁸ LA, p. 204:

vaidyā yathāturavaśāt kriyābhedaṃ prakurvate |
na tu śāstrasya bhedo 'sti doṣabhedāt tu bhidyate || 115
tathāhaṃ sattvasantānaṃ kleśadoṣair viduṣitam |
indriyāṇāṃ balaṃ jñātvā nayaṃ deśemi prāṇinām || 116
na kleśendriyabhedena śāsanam bhidyate mama |
ekam eva bhaved yānaṃ mārgam aṣṭāṅgikaṃ śivam || 117

³⁹ LA, pp. 48-49:

deśanāpi yathā citrā deśyate vyabhicāriṇī |
deśanā hi yad anyasya tad anyasyāpyadeśanā | 122
āturo āturo yadvad bhiṣag dravyaṃ prayacchati || 123
SS, p. 20 (97):

āturo āturo bhiṣajyaṃ yadvad bhiṣak prayacchati |
cittamātraṃ tathā buddhāḥ sattvānāṃ deśayanti vai ||

⁴⁰ *Bodhicittavivaraṇa*, 97-98 (Tib.), quoted in the *Sarvadarśanasaiṅgraha*, Bombay Sanskrit Series, p. 45:

deśanā lokanāthānāṃ sattvāśayavaśānugāḥ |
bhidyate bahudhā loka upāyair bahubhiḥ punaḥ ||

⁴¹ SP, II:

upāyakaśālya mamevarupaṃ
yat trīṇi yānany upadarśayāmi |
ekaṃ tu yānaṃ hi nayaś ca eka
ekā cyaṃ deśana nāyakānaṃ || 69
sarvehi tehi puruṣottamehi
prakāśitā dharmā bahū viśuddhāḥ |
dṛṣṭāntakaiḥ kāraṇahetubhīś ca
upāyakaśālyāśatair anekaiḥ || 72
sarve ca te deśayi ekayānam
ekam ca yānam avatārayanti || 73

⁴²LA, pp. 135 ff.:

devayānaṃ brahmayānaṃ śrāvakīyaṃ tathaiva ca |
tāthāgataṃ ca pratyekaṃ yānān etān vadāmy ahaṃ || 203
yānānāṃ nāsti vai niṣṭhā yāvaca cittaṃ pravartate |
citta tu vai parāvṛtte na yānaṃ na tu yāyinaḥ || 204
yānavyavasthā naivāsti yānabhedam vadāmy ahaṃ |
parikarṣaṇārthaiḥ bālānāṃ yānabhedam vadāmy ahaṃ || 205

⁴³Ed. Tucci, JRAS, 1932; Prabhubhai Patel, IHQ, 1932, Vol. VIII, p. 319 (21).

⁴⁴dharmadhātor asambhedād yānabhedo'sti na prabho |
yānatritayam ākhyātam tvayā sattvāvatārataḥ ||

—Quoted in SS, p. 14 (20), Advayavajra's *Tattvaratnāvali* in AS, p. 22.

⁴⁵Advayavajra's *Tattvaratnāvali*, p. 21: nanu yadi mahāyānanirṇīta evārthaḥ paramārtho'sti asya (?
atha ?) kimarthaṃ tarhi śrāvakaḥ pratyekayāne bhagavān deśitavān. tan na. mahāyānaprāpyaprāpaṇārtham
eva śrāvakaḥ pratyekayānanirmāṇāt. tad uktam:

ādikarmikasattvasya paramārthāvatāraṇe |
upāyas tv ayaṃ sambuddhaiḥ sopānam iva nirmitaḥ ||

⁴⁶ cittaṃ mātraṃ bho jinaputrā yad uta traidhātukam.

—*Daśabhūmiśvarasūtra*, ed. Rhader, p. 49: SS, fol. 25; *Madhyamakāvatāra* (Tib.). VI. 83; TSP, 550; VM, p. 13.

⁴⁷ śūnyā eva dharmāḥ. — KP, p. 94.

⁴⁸MV, p. 276; SS, p. 20 (98):

cittaṃ mātraṃ jagat sarvam iti yā deśanā muneh |
uttrāsaparihārārthaṃ bālānāṃ sā na tattvataḥ ||
⁴⁹asti khalv iti nīlādi jagad iti jaḍiyase |
bhāvagrāhagrahāveśagambhīranayabhīrave || 71
vijñānamātraṃ evedaṃ citraṃ jagad udāhṛtam |
grāhyagrāhakabhedenā rahitaṃ mandamedhase || 72
gandharvanagarākāraṃ satyadvitayalāñchanam |
ameyānantakalpaughabhāvanāśuddhamedhase || 73

—SS, p. 14.

See also with regard to the first of these three classes of people the following stanza in SS, p. 19:

evaṃ hi gambhīranayān padārthān
na vetti yas tam prati deśaneyam |
asty ālayaḥ pudgala eva ceti
skandhā ime vā khalu dhātavaś ca ||
⁵⁰ ātmety api prajñāpitam anātmety api deśitam |
buddhair nātmā na cānātmā kaścid ity api deśitam ||

⁵¹ nayo hi dvividhaṃ mahyaṃ siddhānto deśanā ca vai |

deśemi yaṃ ca bālānāṃ siddhāntaṃ yogināṃ ahaṃ ||
LA, p. 172 (61). See also pp. 148, 171.

⁵² See MV, pp. 43, 597-8; *Bodhisattvabhūmi*, I, xvii; AK, IX, pp. 246-7.

⁵³ Quoted in MV, p. 43.

⁵⁴ MV, p. 43; MVt, § 73: nītārthasūtrapratisaraṇena bhavitavyaṃ na neyārthasūtrapratisaraṇena.

⁵⁵ *Sandhābhāṣita*, *sandhābhāṣā*, and *sandhāvācana* are synonyms. See SP, pp. 34, 39, 60, 70. For the meaning see IHQ, IV, 1828, p. 287 ff.

⁵⁶ SP, II. 144:

etādṛṣī deśana nāyakānāṃ
upāyakausālyam idaṃ variṣṭham |
bahūni sandhāvācanehi cokaṃ
durbodhyam etaṃ bi aśikṣitehi ||

See also note 55.

⁵⁷ mātaraṃ pitaraṃ hantvā rājāno dve ca khattiye –
raṭṭhaṃ sānucaraṃ hantvā anīgho yāti brāhmaṇo ||
mātaraṃ pitaraṃ hantvā rājāno dve ca sottiye |
veyyaggha-pañcamaṃ hantvā anīgho yāti
brāhmaṇo ||

⁵⁸ See Max Müller's observations, SBE, Vol. X, pp. 71 ff.

⁵⁹ dve sṛṭi aśṛṇavaṃ piṭṛṇāṃ ahaṃ
devānāṃ uta martyānāṃ |
tābhyāṃ idaṃ viśvam ejat sameti
yad antarā pitaraṃ mātaraṃ ca ||

⁶⁰ Cf. in the same sense the phrase *yad antarā dyāvā-prithivī* in the same Upanishad, III. 8. 3-7.

⁶¹ *Satapatha Brāhmaṇa*, VI. i. 1-2, etc.; Br. Up., VI. 2.2. etc.: parokṣapriyā iva hi devāḥ
pratyakṣadviṣaḥ.

⁶² catvāri śṛṅgā trayo asya pādā
dve śīrṣe sapta hastāso asya |
tridhā baddho vṛṣabho roravīti
maho devo martyāṃ ā viveśa ||

⁶³ *A Descriptive Catalogue of Skt. MSS in the Govt. Collection* under the care of the Asiatic Society of Bengal, 1917, Vol. I, Buddhist MSS pp. 131 ff. See p. 133 specially.

⁶⁴ See IHQ, 1930, Vol. VI, pp. 389, 576.

⁶⁵ ekaṃ tu yānaṃ hi nayaś ca eka ekā ciyaṃ deśana nāyakānāṃ ||
SP, II. 69. See also 70, 73; AAA, pp. 120-121.

⁶⁶ *The Supplement to Nirukta (Nirukta-pariśiṣṭa)*, XIII. 11.

⁶⁷ Mahāparinirbbānasutta, VI. 1.

¹ For instance, the Vedāntins say in the *Iśā Up.*, 2: kurvann eva hi karmāṇi jijīviṣec chatam samāḥ. – 'One should wish to live a hundred years only performing karmas.' The *Bhagavadgītā* will lend here strong support.

² MN, III, p. 203; MP, p. 65.

³ Here *cetanā* and *citta* are synonymous. See MV, XVII. 1-2.

⁴ AN, III, p. 415: *cetanāhaṃ bhikkhave kamman ti vadāmi. cetayitvā kammaṃ karoti kāyena vācāya manasā vā.* See MK, XVII. 1-2 with MV; BAP, p. 472; AK, IV. 1.

⁵ *sattvalokam atha bhājanolokam*
cittam eva racayat aticitram |

karmajaṃ hi jagad uktam aśeṣaṃ
karma cittam avadhūya ca nāsti ||

It is quoted in BAP, pp. 99, 472; Pañcakramaṭ. p. 40.

⁶ BA, V, 9-10:

adaridraṃ jagat kṛtvā dānapāramitā yadi |
jagad daridraṃ adyāpi sā kathaṃ pūrvatāyinām ||
phalena saha sarvasvatyāgacittā jane 'khile |
dānapāramitā proktā tasmāt sā cittam eva tu ||

⁷ śārīraṃ kevalaṃ karma kurvannāpnoti kilbiṣaṃ |

⁸ kāmas tad agre samavartatāgre
manaso retaḥ prathamam yad āsīt |
sato bandhum asati niravindan
hr̥di pratiśyā kavayo manīṣā ||

⁹ *Taittirīya Brāhmaṇa*, II. 8.9.5.

¹⁰ Vyāso'pi smarati:

kāmbandhanam evedaṃ
nānyad astīha bandhanam |

¹¹ *Taittirīya Brāhmaṇa*, II. 2.5. 6: samudra iva hi kāmaḥ na hi kāmasyānto 'sti.

¹² jyāyān samudrād asi kāma manyo.

¹³ Translation by Whitney.

¹⁵ na jātu kāmaḥ kāmānām upabhogena śāmyati | haviṣā kṛṣṇavartmeva bhūya evābhivardhate ||

¹⁶ *i.e.*, passions.

¹⁷ *Kaṭha Up.*, VI. 14-15.

¹⁸ *Op. cit.*, I. 23-26.

¹⁹ Translation by MaxMüller.

²⁰ *Dhammapada*, 153-154:

anekajātisamaṣāraṃ sandhāvissaṃ anibbisam |
gahakāraṃ gavesanto dukkhā jāti punappunam ||
gahakāraka diṭṭho si puna geham na kāhasi |
sabbā te phāsukā bhaggā gahakūṭam visañkhatam |
visañkhāragatam cittam tañhānam khayam ajjhagā ||

Eng. Tran. from Warren's *Buddhism in Translation*, 1922, p. 83.

²¹ āpūryamāṇam acalapratiṣṭham

samudram āpaḥ praviśanti yadvad |
tadvat kāmā yaṃ praviśanti sarve
sa śāntim āpnoti na kāmakāmī ||

vihāya kāmān yaḥ sarvān pumāṃś carati niṣpṛhaḥ |
nirmamo nirahaṅkāraḥ sa śāntim adhigacchati ||

II. 70-71.

²² SN, XX. 1. Trans. by Mrs Rhys Davids.

²³ *Itivuttaka* (§ 40), p. 34.

²⁴ tattve 'pratipattir mithyāpratipattir ajñānam avidyā. *Śālistambasūtra* quoted in ŚS, p. 222; BAP, p. 352; MV, p. 564.

¹⁷ mā māṃ pralobhayotpattyāsaktaṃ kāmeṣu tair varaiḥ |
tatsaṅgabhīto nirviṇṇo mumukṣus tvām upāgataḥ ||
bhṛtyalakṣaṇaṅjijñāsura bhaktaṃ kāmeṣv acodayat |
bhavān saṃsārabhījeṣu hr̥dayagranthiṣu prabho ||

nānyathā te 'khilaguro ghaṭeta karuṇātmanah |
yas tu āśiṣa āśāste na sa bhṛtyaḥsa vai vaṇik ||
āśāsāno na vai bhṛtyaḥ svāmīny āśiṣa ātmanah |
na svāmī bhṛtyataḥ svāmyam icchan yo rāti cāśiṣah ||
ahaṃ tv akāmas tvadbhaktas tvam ca svāmy anapāśrayah |
nānyathehāvayor artho rājasevakayor iva ||
yadi dāsyasi me nātha varāṃs tvam varadarṣabha |
Kāmānāṃ hr̥dy asaṃrohaṃ bhavatas tu vṛṇe varam ||

Bhāgavata Purāṇa, VII. 10.2-10.

¹⁸ *Cittaviśuddhiprakaraṇa*, ed. Prabhubhai Patel, Visvabharati Series, 1933:

karṇāj jalaṃ jalenaiva kaṅṭakenaiva kaṅṭakam |
rāgeṇaiva tathā rāgam uddharati maṇiṣiṇah || 37
yathaiva rajako vastraṃ malenaiva tu nirmalam |
kuryād vidvāṃs tathātmānammalenaiva tu nirmalam || 38
yathā bhavati saṃśuddho rajonirghṛṣṭadarpaṇah |
sevitā tu tathā vijñair doṣo doṣavināśanah || 39
lauhapīṇḍo jale kṣipto majjaty eva tu kevalam |
pātrīkṛtaṃ tad evānyaṃ tārayet tarati svayam || 40
tadvat pātrīkṛtaṃ cittamprajñopāyavidhānataḥ |
bhūñjāno mucyate kāmān mocayaty aparān api || 41
durvijñaiḥ sevitaḥ kāmah kāmo bhavati bandhanam |
sa eva sevito vijñaiḥ kāmo mokṣaprasādhakah || 42
yathaiva vidhivad bhuktaṃ viṣam apy amṛtāyate |
durbhuktaṃ ghṛtapūpādi balavat tu viṣāyate || 43
ghṛtaṃ ca madhusaṃyutaṃ samāṃśaṃ viṣatāṃ vrajet |
tad eva vidhivad bhuktaṃ utkr̥ṣṭaṃ tu rasāyanam || 50
rasapr̥ṣṭaṃ yathā tāmrāṇi nirdoṣaṃ kāñcanaṃ bhavet |
jñānavidas tathā samyak kleśāḥ kalyāṇasādhakāḥ || 51

¹⁹ ye keci sokā paridevitaṃ vā
dukkhā ca lokasmim anekarūpā |
piyaṃ paticeva bhavanti ete
piye asante na bhavanti ete ||
tasmā hi te sukhino vītasokā
yesaṃ Piyam n'atthi kuhiṇ ci loke |
tasmā asokaṃ virajaṃ patthayāno
piyaṃ na kayirātha kuhiṇ ci loke ||

²⁰ SN, III. 3 (with the *Atthakathā*): rūpam attato samanupassanti, rūpavantaṃ vā attānaṃ, attani vā rūpaṃ, rūpasmiṃ vā attānaṃ, ahaṃ rūpaṃ mama rūpaṃ.

SS, p. 21:

rūpaṃ nātmā rūpavān naiva cātmā |
rūpe nātmā rūpam ātmany asac ca ||

See Nāgārjuna's *Suḥṛllekha* (Friendly Epistles) in the *Journal of the Pali Text Society*, 1886, p. 15 (verse 49).

²¹ yaḥ paśyaty ātmānaṃ tasyāham iti śāśvatasnehaḥ |
snehāt sukheṣu tṣyati, tṣṇā doṣāṃs tiraskurute ||
gunadarśī paritṣṇān mameti tatsādhanam upādatte |
tenātmābhīniveśo yāvat tāvat tu saṃsārah ||
ātmani sati paraṃ jñā svaparavibhāgāt parigrahadveṣau |

anayoḥ sampratibaddhāḥ sarve doṣāḥ prajāyante ॥

—Quoted as of Ācāryapāda (=Nāgārjuna) in the BAP, p. 492, as well as in the Commentary by Guṇaratna on the *Saḍdarśanasamuccaya*, Bib. Ind., p. 192. The last kārīkā is quoted also in the AAA, p. 67.

²²It is said to be of Stotrakāra (Mātrceṭa). The original runs:

sāhaṅkāre manasi na śamaṃ yāti janmaprabandho
nāhaṅkāraś calati hr̥dayād ātmadr̥ṣṭau ca satyām |
nānyaḥ śāstā jagati bhavato nāsti nairātmyavādī
nānyas tasmād upaśamavidhes tvanmatād asti mārgaḥ ॥

—Quoted in TSP, p. 905; as an āgama in the Ṭikā of Āścaryacaryācaya (wrongly named *Caryācaryaviniścaya*), ed. Hara Prasad Shastri in his *Bauddha Gāna o Dohā, Vaṅgīya Sāhityapariṣad*, 1323 B.S., p. 61; AK, IX, p. 230. See also the following stanza in Śīlāṅka's Ṭikā on the *Sūtrakṛtāṅga-sūtra*, Āgamodayasamiti, 1921. I. 1. 1 (p. 13 a):

mamāham iti caiṣa yāvad abhimānadāhajvaraḥ
kṛtāntamukham eva tāvad iti na praśāntyunayāḥ |
yaśaḥsukhapipāsitair ayam asāv anarthottaraiḥ
parair apasadaḥ kuto 'pi katham apy apākṛṣyate ॥
²³ satkāyadr̥ṣṭiprabhavān aśeṣān
kleśāṃś ca doṣāṃś ca dhiyā viśayaṃ ca buddhavā
yogī karoty ātmaniṣedham eva ॥

MA, VI. 120; MV, p. 340; see TS, 3489.

²⁴TS, 3493.

²⁵ cittamātram bho jinaputrā yad uta traidhātukam. See *Daśabhūmikasūtra* ed. Rahder, p. 49; *Trimśikā* ed. Lévi, p. 3; MA, VI. 23 (p. 181); SS, p. 9; VM, p. 43.

²⁶The Mādhyamikas would, however, explain it, as in BAP, IX. 55 (p. 447), saying that the knowable itself is a cover being mere imposed (*samāropita*).

²⁷KP, p. 94.

²⁸ *dharmāṅgāṃdharmatā* is generally translated as 'the element of elements.'

²⁹ yadi khalu tad adhyāropād bhavadbhir astīty ucyate kīdr̥śam tat. yā sā dharmāṅgāṃdharmatā nāma saiva tatsvarūpam. atha keyaṃ dharmāṅgāṃdharmatā, dharmāṅgāṃsvabhāvaṃ. ko 'yaṃsvabhāvaṃ, prakṛtiḥ, kā ceyaṃ prakṛtiḥ, yeyaṃśūnyatā. keyaṃśūnyatā, naiḥsvābhāvyam. kim idaṃ naiḥsvābhāvyam, tathatā. keyaṃ tathatā, tathābhavo 'vikāritvaṃ sadaiva sthāyitā. sarvadānutpāda eva hy agnyādīnām paranirapekṣatvād akṛ trimatvāt svabhāva ucyate. MV, pp. 264-265.

For the explanation of *tathatā* see *Madhyāntavibhāga-sūtrabhāṣyaṭīkā*, ed. V. Bhattacharya and G. Tucci, Calcutta, 1932, p. 41 (I. 15-16); *Trimśikā*, ed. Lévi, p. 21.

³⁰The term *satkāyadr̥ṣṭi*, Pali *sakkāyadiṭṭhi*, is explained variously according to various derivations of *satkāya*. Mainly the following two derivations are possible: (i) *sat-kāya*, and (ii) *sva-kāya*. With regard to the first (i), *sat* in *sat-kāya* may be derived from the roots (a) √ as 'to be' meaning 'existing,' and (b) √ sad 'to perish' meaning 'perishing.' The latter is supported by both Tibetan and Chinese reading *hjiḡ* and *hoái* respectively. The literal meaning in the first case of *satkāyadr̥ṣṭi* is the view (of *ātman* and *ātmīya*) on the existing body (or collections, *skandhas*); and in the second, the view (of *ātman* and *ātmīya*) on the perishing body. As regards the second derivation, *sva-kāya*, it is suggested by Childers and others that Skt. *sva-kāya* becomes in Pali first *sa-kāya* and then *sakkāya*, the *k* being reduplicated just as from *anudaya* we have *anuḍḍaya* in Pali. According to Prof. Walleser the derivation is *svat-kāya* (from which Pali *sakkāya*) *svat* being for *sva*. Cf. *tvad*, *mad* (to which *yad*, *tad*, *anyad*, etc. may also be added). In support of this view, as pointed out by Prof. Walleser, cf. also *Kathāvatthu*, PTS, p. 86: *anuppattasadattha* with *anuprāptasoakārtha* in the *Aṣṭasāhasrikā Prajñāpāramitā*, Bib. Ind., p. 23. In favour of *svakāya* see Nāgārjuna, MK, XXIII. 5, where *svakāyadr̥ṣṭi* is used, and Chandrakīrti explains it thus: *svakāye dr̥ṣṭir*

ātmaṁyadṛṣṭiḥ. Therefore, the meaning is the belief of 'I' and 'mine' on one's own body or *skandhas*. For further details see ZDMG, Vol. 64, pp. 581 ff., and Poussin: AK, V, p. 15.

The *satkāyadṛṣṭi* is termed variously with different shades of the meaning as *ātmavāda*, *ātmaḡrāha*, *ātmadṛṣṭi*, and *ātmābhiniṣeṣa*.

For its consequence see BAP, p. 492; MV, p. 361, SS, p. 247.

³¹MV. p. 340: ādhyātmikabāhyāśeṣavastvanupalam-bhena adhyātmaṁ bahiś ca yaḥ sarvathāhaṅkāramamakāraparikṣaya idam atra tattvam. kāyadrṣṭimūlakam eva saṁsāram anupaśyaṁs tasyāś ca satkāyaṛṣṭer ālambanam ātmānam eva samanupaśyaṁ ātmānupalambhāc ca satkāyadrṣṭiprahāṇaṁ tatprahānāc ca sarvakleśavyāvṛttiṁ samanupaśyaṁ prathamataram ātmānam evopaparikṣate.

³²*Āryadharmasaṅgītisūtra* as quoted in SS, p. 264: na śūnyatāvādī lokadharmaiḥ saṁhriyate 'niśritatvāt. na sa lābhena saṁhṛṣyati, alābhena vā vīmanā bhavati. yaśasā na vismayate 'yaśasā na saṅkucati. nindayā nāvaliyate praśaṁsayā nānuniyate. sukheṇa na rajyate duṣkheṇa na virajyate. yo hy evaṁ lokadharmair na saṁhriyate sa śūnyatāmjānāti. tathā śūnyavādino na kvacid anurāgo na virāgaḥ. yasmin rajyate tac chūnyam eva jānīte, śūnyam eva paśyati. nāsau śūnyaṁ jānīte yaḥ kvacid dharme rajyate vā virajyate vā. tathā nāsau śūnyatām jānīte yaḥ kenacit sārddham vighrahaṁ vivādaṁ vā kuryāc chūnyam eva jānīte śūnyaṁ paśyatīti ādi.

³³Trans. by Bendall and Rouse, slightly modified.

³⁴MK, XVIII. 2-5:

ātmany asati cātmīyaṁ kuta eva bhaviṣyati |
nirmamo nirahaṅkāraḥ śamād ātmātmanīnayoḥ ||
mamety aham iti kṣiṇe bahirdhādhyātmam eva ca |
nirudhyata upādānaṁ tatksayāj janmanaḥkṣayaḥ |
karmakleśakṣayān mokṣaḥ

³⁵As explains Candrakīrti.

³⁶vihāya kāmān yaḥ sarvān pumāṁś carati niḥspṛhaḥ |
nirmamo nirahaṅkāraḥ sa śāntim adhigacchati ||

³⁷The compound word *ahantāmamatābhāvaḥ* is explained by the Commentator, Divākara, a disciple of the author, taking the last member of the compound as *abhāvaḥ*, but evidently it cannot be accepted.

³⁸It is the same as the 'Law of Relation to This' (*idampratyayatā*), and the 'Law of Elements' (*dharmasaṅketa*). See below, and p. 90, notes 43, 44.

³⁹na ca pratyayasāmagryā janayāmiti cetanā |
na cāpi janitasyāpi janitor 'smīti cetanā ||

BA, VI. 26.

Evidently this is based on the *Śālistambasūtra* quoted in Mahāyāna works: BAP, pp. 481, 577; ŚS, pp. 220, 225; MV, pp. 562, 566.

⁴⁰For instance, Ch. Up., VI. 3. 2-3; VII. 14. 1.

⁴¹*Sammohavinodanī*, PTS, p. 135: namatīti nāma; *Visuddhimagga*, Simon Hewavitarane Bequest, 1920, p. 394: namanalakkhaṇaṁ nāmaṁ sampayogarasam; p. 419: ārammaṇābhīmukhaṁ namanato. But see MV, p. 544: tatra karmakleśāviddhaṁ tasmin tasminn upapattyāyatane nāmayatīti nāma, saṁjñāvaśena vārtheṣu nāmayatīti nāma. It means that because being thrown by *karma* and *kleśas* it makes itself incline towards different places of birth it is called *nāma*. Or because through perception it makes itself incline to the objects it is called *nāma*.

⁴²SN, III, p. 86; AK, I, p. 24. It may be noted here that there are two roots: (i) √rūp, cl. 10, rūpayati, from which we have rūpa 'form,' 'shape,' colour 'beauty' etc.; and (ii) √rup, cl. 4, rupyati, 'to suffer violent pain.' It is used in Vedic and Pali texts. From *rupyati* Pali is *ruppati*. It is connected with the root √lup.

From this \sqrt{rup} are derived *ropa* ‘confusing, disturbing,’ *ropaṇa* ‘causing bodily pain.’ In the formation and meaning these two roots are confounded.

⁴³Stcherbatsky in his *Central Conception of Buddhism*, 1923, p. 28, translates the term by ‘Theory of Elements.’ According to Yaśomitra’s *Vyākhyā* on AK, IX, p. 260, as pointed out by Poussin *dharmasaṅketa* is *pratītya-samutpādalakṣaṇa*, and *saṅketa* is *hetuphalavyavasthā* (III, p. 18). The word *saṅketa* may literally be translated by ‘convention.’

⁴⁴ *iti hi bhiksavo ‘sti karma asti phalaṃ, kāraṅkaṅ tu nopalabhyate ya imān skandhān vijahāti anyāṃś ca skandhān upādatte, anyatra dharmasaṅketāt. atrāyaṃ dharmasaṅketo yad asmin sati idaṃ bhavaty asyotpādād idaṃ utpadayta iti.*

This passage with some unimportant variations are often quoted: BAP, p. 474; MSA, XVIII. 101; TSP, pp. 11, 173. See MV, p. 9; AK, V. 27.

⁴⁵ *yo uppajjati so eva so udāhu aññoti.*

⁴⁶ *taṃ yeva nissāya sabbarattim padipito.*

⁴⁷ *evam eva kho mahārāja dammasantati sandahati, añño uppajjati añño nirujjhati, apubbaṃ acarimaṃ viya sandahati, tena na ca so na añño pocchimaviññā-ṇasaṃgahaṃ gacchati.*

⁴⁸Eng. tr. in SBE, slightly modified.

† Refer to Brihdaranyakopanishat, Adhyaya II, Brahmana 4.

† I am quite conscious of Eucken’s position, according to which Spirit is the true synthesis of life, for through It life and all its values are perpetually renewed. But there is a long way between the two categories, as we shall show, when we consider the position of Advaitism later on.

* Here it, will be noted that the word ‘visual’ is only an adjectival form of the word ‘eye’ In fact, so intimates is the connection between the proof and the thing proved, that the latter cannot be designated in terms other than those employed for designating the proof itself.

† It is this that makes the conflict between devil and God in Paradise Lost so interesting. The sentiments which Milton has put in the mouth of the devil are those of true justice, nobility and independence and nobody can arise from their perusal without sympathy for the devil. A God who imposes His will is arbitrary, and we may take it as a rule that a God who can be opposed or contradicted cannot be a God in any sense of the term.

† Descartes considered clearness as the test of truth. But clearness itself is relative to the satisfaction of the perceiver. A man looks at the world, and surely his perceptions are clear enough. But is he satisfied that he has grasped the truth, that all his questions and doubts have been dissolved? And without such satisfaction, there can be no sense of the Real. Accordingly, Plato and all perceivers of truth have regarded our knowledge of the senses as a mist of ignorance. It offers nothing to our grasp, no substance; and yet, it always keeps our question in tact.

* Note in this connection the following sloka from Punchdashi: –

(“Hindi passage omitted here”)

Svānubhuti being discredited, of logic also there will be instability; how will he who considers himself a logician obtain certitude?

† p. 313.

† Refer to chapter II.